Genesys

Workforce Management 8.1

Administrator's Guide

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Preface

Welcome to the *Workforce Management 8.1 Administrator's Guide.* This document introduces you to the concepts, terminology, and procedures relevant to Genesys Workforce Management.

This document:

- Introduces the product, lists new features, and presents the WFM architecture.
- Offers deployment-planning recommendations and considerations.
- Explains how to configure and install the Workforce Management (WFM) components.
- Explains how to start and stop all components.
- Explains how to use the WFM Database Utility.
- Provides troubleshooting suggestions.
- Includes a list of WFM-specific terms and their definitions.

This document is valid only for the 8.1 release(s) of this product.

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This preface provides an overview of this document, identifies the primary audience, introduces document conventions, and lists related reference information:

For information about related resources and about the conventions that are used in this document, see the supplementary material starting on page 385.

About Workforce Management

Genesys Workforce Management is designed to provide contact center managers with the tools they need to better manage their workforce. The product offers the ability to create accurate staffing plans that take into account not only projected contact volumes and average handle times, but also the various skills and skill levels of their agent population. This is achieved through advanced forecasting, scheduling, contact-center performance monitoring, and real-time agent adherence capabilities.

Genesys Workforce Management has been designed to integrate tightly with the Framework components of the Genesys Customer Interaction Management Platform. Agents and their skill sets are entered and maintained in Genesys Configuration Manager, so there is no need to re-enter this information in a stand-alone workforce management application. This integration also allows contact centers to leverage real-time statistics, contact-center performance, and agent adherence data across all communication channels.

Designed for the true multi-media, multi-site environment, Genesys Workforce Management provides optimal schedules for multi-skilled agents who may handle customer interactions of different media types. Agent preferences, skills, proficiency, customer segmentation, historical trends such as e-mail response times, and outbound call lengths are all considered within the forecast, schedule and adherence components.

Intended Audience

This document, primarily intended for contact center managers and system administrators, assumes that you have a basic understanding of:

- Computer-telephony integration (CTI) concepts, processes, terminology, and applications.
- Network design and operation.
- Your own network configurations.

You should also be familiar with:

- Genesys Framework architecture and functions
- Industry-standard workforce management terms and practices.

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Document Change History

This document has been updated for new and changed functionality in the initial 8.1 release of Workforce Management (WFM), as described in the Release Notes and online help for WFM components.

This section lists topics that are new or that have changed significantly since the first release of this document.

New in Document Version 8.1.201.00

- In Chapter 1, "Overview," on page 21 the "New In This Release section has been update to describe the new features introduced in this release.
- In Chapter 5, "Configuring the Options Tabs," on page 123 descriptions for two new options, `PageLimit` and `PageLimitForCSV`, have been added.
- A new Appendix I, "WFM Overtime Functionality," on page 377 has been added to describe how to set and view Overtime.

New in Document Version 8.1.102.00

In Chapter 13, "Localizing WFM," on page 249, a new section "Using Genesys Localization Software" was added and the existing section was renamed to "Using Self-Localization" to provide more information about how WFM 8.1 software can be localized.

New in Document Version 8.1.101.00

The following configuration options were added or modified:

- "AdjustCarryOverByBonus" on page 127
- "AutoPublishTimeOffToSchedule" on page 127
- "CalendarOverScheduleData" on page 128
- "PreventTimeOffNoAvailability" on page 129
- "RecalculateForecastStaffing" on page 131
- "TrackAhead" on page 171
- "TrackBack" on page 171
- "WaitlistTimeout" on page 129

Appendix H, "MS SQL Database Replication," on page 371, is new.

Appendix G, "Enabling and Configuring Wait-list Functionality," on page 365, is new.

New in Document Version 8.1.001.00

The following configuration options were added or modified:

"MaxSchedulingThreadPoolSize" on page 142

"MultiSiteActivitiesEnabled" on page 143

"AllowAccessToCarpools" on page 157

"ShowSSGonFirstPageOnly" on page 167 *(not new to 8.1; previously undocumented)*

Chapter

1 Overview

Genesys Workforce Management (WFM) unifies forecasting, employee scheduling and calendar management, monitoring of real-time agent-adherence and intra-day contact-center performance, and historical reporting into a robust contact-center resource-planning application.

This chapter discusses these topics:

About Genesys Workforce Management

Genesys Workforce Management (WFM) provides a sophisticated package of contact-center management tools. It provides additional value through its tight integration with Genesys Framework and Genesys Routing. Key functionality is presented through a web interface, which increases its accessibility and flexibility.

WFM is a strategic asset in advancing your goals of providing the highest-quality customer service for the best value. In today's contact center, interactions take a multitude of forms, and agents may have a broad variety of skills. WFM creates forecasts and schedules for multi-skilled agents who are handling interactions in a variety of media, as well as for a more traditional single-skilled agent pool handling mostly voice interactions.

WFM enables Supervisors to create proposed future schedules, Agents to bid on those schedules, and Supervisors to integrate the bids into real schedules.

WFM enables agents to request time off and specific working hours, and also to trade schedules with other agents, without sacrificing optimal staffing levels. Flexible agent scheduling can help improve agent retention, resulting in fewer new hires who require training before they can become effective promoters of your business.

WFM provides real-time contact-center performance and agent-adherence monitoring. You can immediately adjust the number of agents working on a specific activity if you see that the service-level statistics for that activity have fallen out of the acceptable range. Or, if the service levels are more than satisfactory, you can encourage agents to spend additional time upselling new products, move them to another activity, or even give them time off.

The sections in this chapter give a high-level overview of the Genesys WFM features and functions. The final section, "New Features in 8.1.1" on page 43, presents recent additions and changes to WFM functionality that may be of particular interest to those migrating from an earlier release of Genesys WFM.

High Availability

Data Aggregator supports `Hot-Standby` high availability. You can install a second Data Aggregator server as a backup and configure it to take over automatically in case the primary server goes down.

The backup reads the same information as the primary Data Aggregator, so if it is necessary to switch to the backup, there is no delay or loss of data. At the transition, the backup Data Aggregator simply starts writing to the database starting from the point when the primary Data Aggregator left off.

Because the failure of other WFM servers does not result in critical data loss, they do not support `Hot-` or `Warm-Standby` high availability. However, if you are using Management Layer, you can configure the Local Control Agents running on the server computers to restart the WFM processes and re-establish their connections.

Integration with Other Genesys Solutions

Workforce Management 8.1 is tightly integrated with the Genesys Customer Interaction Management (CIM) environment.

Configuration Layer Integration

WFM can automatically retrieve agent and skills information from the Genesys unified configuration environment, reducing the effort needed to maintain the WFM system and removing the chance of human errors caused by redundant data entry. You can configure WFM to place agents within a site automatically, based on their switch logins, if the switch is used to represent a site in WFM. Also, you can easily configure WFM to retrieve statistics from Routing objects (queues, routing points, virtual queues, and so on) within the Genesys platform, reducing the effort needed to support changes in routing strategies.

Management Layer Integration

Management Layer delivers powerful solution-wide control of Genesys solutions from a single access point. Through Solution Control Interface (SCI), Management Layer provides control and monitoring functions that allow a user to start or shut down single applications, or an entire solution, in a single operation and to monitor current runtime status of applications and entire solutions.

Workforce Management 8.1 is integrated with the Genesys Management Layer, enabling easy solution-wide configuration, overview of Workforce Management status, and automatic switching to backup servers if necessary.

If you use Management Layer to control and monitor WFM, each computer on which a Workforce Management server is installed also runs a Local Control Agent that constantly checks that server's status. If a server goes down, SCI signals the user, enabling a prompt response.

Problems are centrally logged for convenient access. For more information on the Management Layer, see the *Framework 8.1 Management Layer User's Guide*. Management Layer installation and configuration are described in Genesys Framework documentation.

Enterprise-Routing Integration

You can configure Genesys Enterprise Routing (ER) to route calls based on WFM schedules. Doing so can help ensure a more-balanced multiskill workload for agents and improved schedule adherence.

Routing strategies can route based on the anticipated availability of an agent. For example, interactions are not routed to agents immediately before they are scheduled for a break. This improves agent adherence and leads to better customer service and worker efficiency. Schedules are created in WFM Web for Supervisors and stored in the WFM database. You configure WFM routing strategies in Interaction Routing Designer, a user interface provided with ER to create routing strategies.

User Security Settings

The WFM Configuration Utility User Security module enables you to fine-tune the precise access each user has to WFM objects and functions. For example, you can:

- Limit certain users so that they can view only certain sites or teams.
- Limit certain users so that they can read the schedule but not change it.
- Limit access to reports.
- Limit access to WFM configuration settings modules, such as Contracts and Time Off Types.

Pending Schedule Changes

User Security enables you to control who can make changes to schedule scenarios and to the Master Schedule. Users may be able to enter changes to the Master Schedule, but unable to commit or approve changes. Such changes are in pending status. An authorized user can then review the changes, and either commit/approve them or roll back/delete the changes.

This enables contact center managers to provide Master Schedule access to certain users who might not ordinarily have access. For example, supervisors who manage teams of agents, but who don't normally have any scheduling responsibility, can enter team meetings or other exceptions into the schedule. Workforce-scheduling professionals can then review these to ensure that coverage is not adversely affected.

Calendar Management

WFM's unique agent-based scheduling approach enables robust agent-calendar management prior to scheduling. WFM can incorporate known obligations into agent schedules to ensure that agents can keep appointments and request adjusted shifts or working hours while WFM maximizes contact-center efficiency. By more accurately planning for known obligations, WFM can take the guesswork out of forecasting for staffing overheads, leading to more efficient use of the agent pool.

Planning and Scheduling Meetings

The Meeting Planner provides great flexibility when planning meetings. You select the meeting participants, define the range of time in which the meeting should occur, and set the duration of the meeting. You can configure recurring meetings, specifying either the number of occurrences or the start and end dates of the meeting series and the interval (weekly, for example).

The Meeting Scheduler builds the meeting into the work schedules of the participants during the scheduling process, finding the optimal times for agents' shifts and the meeting at the same time.

The meeting is included as an exception in all attendees' schedules. WFM displays the meeting exception in the Schedule views using the meeting short name, so you can find it easily when looking at schedules. If a sufficient percentage of participating agents is unavailable, then the meeting is not scheduled, and you receive a warning.

Additional Functionality

Use the Meeting Scheduler...

- to insert meetings directly into multiple agent schedules as an exception after building the schedule.
- to create optimally-scheduled meetings within an existing schedule.

Use the Meeting Planner...

- to configure meetings that are pre-planned, such as recurring team meetings.

Play 'what if'...

You can add a meeting to a schedule that has already been built, and WFM will insert the meeting into the most optimal time slot, based on the list of participants.

Supervisors can use this feature to better determine the optimal meeting times that otherwise required manual calculation or guesswork.

Time Off

You can use the WFM Configuration Utility Time Off Types module to configure multiple types of time off. Doing so enables you to set different characteristics for each type, define different rules for the accumulation of accrued time off and distribution of awarded time off, and fine-tune your record-keeping using the Time Off Report.

Note: In releases prior to WFM 7.1.2, Time Off was called Vacation and was the only time off type. No additional Time Off Types could be created.

Time off can be accrued or awarded. The settings for these differ slightly, but both are configured in the WFM Configuration Utility's Time-Off Rules module. You can configure separate time-off rules for each time-off type.

You can associate multiple time-off rules with one time-off type. For example, you might want to have different accrual rules for agents with more seniority than for those who are recent hires. By assigning the appropriate time-off rule to each agent who receives time off of that type, you can determine the rate at which each agent accrues the time off.

Use the Calendar module in WFM Web for Supervisors to set time-off limits. You can set time-off limits for an activity, for a team, or for an entire site. You can also set different time-off limits for a specified period. For example, you might want to further limit time off because of special circumstances.

You can also set different time-off limits for various periods during the day. For example, you might permit more time off in the evening than in the busier morning.

Agents can view their balances for each time-off type and request time off in WFM Web for Agents. Agents can request both full-day and part-day time off. Supervisors can enter time-off requests into the WFM Web for Supervisors Calendar module.

Requested time off may be manually approved by the supervisor or automatically approved by WFM Web, based on agent time-off balances and the limits set on the number of agents with time off per activity, team, or site.

When the Scheduler runs, all time off that has been granted is scheduled. Additional time off may be scheduled, depending on whether it meets time-off limits and scheduling optimization constraints. Once time off is scheduled, agents can no longer edit or remove the time-off assignment using WFM Web for Agents.

Time Off Wait List

When a time-off request is made, but time off limits have already been reached, if the agent asks for the request to be wait-listed, the request remains in the WFM Calendar in a `Preferred` status, rather than being declined. Supervisors can view this “wait list” in the Calendar, sorting the time off requests by timestamp, and selectively grant time off requests.

Supervisors can grant agent time off for future periods, if the time off limits are raised, or if other agents cancel their existing requests. This enhances supervisor productivity by no longer requiring them to track these requests with a paper-based system.

Your supervisor can enable automatic approval (also known as auto-granting), which eliminates the need for that supervisor to approve your legitimate time-off requests.

Schedule Exceptions

Exceptions are additions to a schedule that are not work but which must be taken into account to allocate agent time correctly. Examples of exceptions include meetings, training, and special projects.

Exception Types

You create exception types based on the needs of your contact center. These types can be extremely flexible and you can link them to other WFM scheduling features. For example, you can specify that some exception types are used in meeting planning, and that some can be converted to a day off, if necessary.

Exceptions can be full-day or part-day. You can assign multiple part-day exceptions, assuming they do not overlap or otherwise violate internal WFM consistency checks.

Exception and Preference Hierarchy

Exceptions and preferences are ranked in a hierarchy. This means that, if multiple exceptions and preferences are assigned for an agent on a single day, Calendar Management analyzes the assignments and immediately selects the highest-priority exception for assignment, noting the others as declined.

However, declined exceptions and preferences are stored in the WFM database, in case of later changes to calendar information. If, for example, a training session is canceled, an agent's previously overridden day-off preference might then change status and be available for scheduling.

Forecasting

Use this tool to predict contact-center workload and staffing requirements based on historical data or user-defined templates. WFM provides multiple methods of forecasting the workload and staffing requirements for work activities. You start by creating one or multiple forecast scenarios. Creating multiple scenarios enables you to see the effects of changes to forecasting parameters, such as service objectives and predicted interaction volume. When you have determined the most satisfactory forecast, you publish it, making it the Master Forecast on which schedule scenarios, and eventually the Master Schedule, are based.

If you choose to, you can derive workload forecasts from historical information that is either collected automatically by WFM from the Genesys system or imported from `.csv` files using the WFM Configuration Utility. You can also create workload and staffing forecasts as reusable templates. Once you have generated a workload prediction, WFM determines the staffing requirements needed to service the workload, taking into account any applicable service objectives.

Using Historical Data

WFM automatically collects historical data from Stat Server for all work activities handled by the Genesys platform encompassing all media, contact segments, and service types. Using Genesys Stat Server, rather than automatic call distribution (ACD) reports, provides you with far greater flexibility in defining and gathering statistics that provide an appropriate measure of contact center performance over time.

WFM analyzes interaction volumes and average handling time (AHT) in order to predict future trends for each work activity. This data enables WFM to build accurate forecasts for the anticipated workload, and to calculate the staffing required to meet that workload.

Using the WFM API, you can also develop a custom application that will enable Interaction Volume and Average Handle Time data from a 3rd-party system to be imported directly into the WFM database. This is useful if you want to use WFM to forecast and schedule a type of work that is not being routed by Genesys.

Using Forecasting Events

WFM can track events that may affect interaction volume. A sales promotion or marketing campaign, for example, may cause a predictable peak in interaction volume. Such events are entered in WFM Web for Supervisors and used by the advanced WFM algorithms. If an event recurs, the forecasting algorithms learn the impact of that event and account for its impact in future forecasts.

Setting Service Objectives

With WFM forecasting, you can set specific service objectives. You can also adjust these objectives and then rebuild the forecast, which provides a detailed “what-if” analysis of the potential impact of staffing or service-objective changes. WFM forecasting uses parameters such as interaction volumes, average handling time (AHT), average speed of answer (ASA), desired percentage of interactions handled within a target time (service level), occupancy, and maximum percentage of abandoned interactions to determine effects of different service objective settings.

Flexible Forecasting

WFM supports an unlimited number of forecasting scenarios. With them, you can create multiple forecasts and evaluate how changes in the parameters or the forecasting method that you use affect expected service objectives. Resource planners can then easily create reliable forecasts, fine-tuning the results in tabular and graphical data views. You can also save forecast workforce data as templates for use in subsequent forecast building.

WFM offers several different forecasting methods of varying complexity:

Template-Based—Good for work activities with little historical information or for activities with very predictable interaction traffic.

Expert Average Engine—Good for work activities that have a reasonable amount of historical data or those that fluctuate more dramatically because of unknown factors.

Universal Modeling Engine—Good for work activities with more than one year of historical data and accurate forecasting event information.

Copy Historical Data—Good for work activities when you have some historical data, but not enough to use the Expert Average Engine or the Universal Modeling Engine. You can combine the historical data with overlap templates, which fill in gaps in the historical data.

Use Value—Good for work activities if your site activity load is very regular. Applies a specific interaction volume or AHT to each time interval in the scenario.

Deferred-Work Forecasting

WFM is designed to consider deferrable work activities, such as e-mail, as inherently different from “immediate” work, such as a phone call. WFM uses a proprietary algorithm designed to distribute the backlog of deferrable interactions across the day in order to satisfy your service goal, which is expressed in minutes, hours, or days. Spreading out the deferred work enables you to avoid spikes in workload forecasts when a contact center opens for the day, or during brief periods of high volume.

Multi-Skill Support

A multi-skilled contact center presents an opportunity for increased productivity.

An agent might be idle in a single-skill environment, because she cannot answer calls that are queuing for a particular activity/skill that she possesses—because the schedule prevents her from using that skill.

In a multi-skilled environment, the agent can use her additional skills to answer calls. A multi-skilled agent is qualified to work on multiple activities, and therefore he or she can perform different types of work during a shift.

In a multi-skill environment, an agent may be available for multiple activities during any timestep. The agent can be scheduled to work on an activity for only part of a timestep, and only the fraction of the time period during which she or she works is counted.

Because of this, the value for staffing can be expressed as a fraction. For details, see Appendix C, “Multi Forecasting Primer,” on page 333.

Scheduling

WFM uses the published Master Forecast to create agent schedules that comply with user-defined business constraints. Or you can create “empty” schedules to which you can then assign agents. Schedule constraints include available personnel with required skills, staffing requirements, employment contracts, business policies, and agent preferences.

The staffing requirements act as a target for schedule generation. An optimized schedule ensures the least amount of over- and understaffing while still meeting contractual obligations. WFM uses each agent’s individual skills, contracted working rules, and calendar items as guides to help identify when each agent can work, and what he or she will work on.

WFM aids compliance with regional working rules by helping to apply the following aspects of Contract rules:

- User-defined weekend days
- Schedule synchronization based on specific days of the week
- Maximum number of consecutive weekends an agent may work

You can schedule agents to be available to perform multiple types of work at once or you can schedule them to work on specific types of work for periods of time within their day. You can also combine these, to create schedules in which some periods are set aside for specific types of work while at other times agents perform any work that arrives for which they are qualified.

Once you finalize your schedule, you can publish it to the Master Schedule, where it immediately becomes available for agents to view through WFM Web for Agents. Agents may then trade their schedules as needed, if the schedule trade complies with trading rules and is either auto-approved or is approved by a qualified supervisor.

Maximum Agents by Length of Schedule Period

You can build schedules for up to 5,000 agents and 6 weeks. Memory requirements are decreased, and contiguous memory is not necessary for scheduling. If you have 1.5 GB of virtual memory available, you can now build large schedules (5,000 agents). Generally, for schedules with 2,000 or fewer agents, 600 MB of virtual memory is enough.

Warning! Consider the preceding limits to be rough estimates; scheduling duration varies depending on your configuration. There is no way to provide a general estimate for schedule build time, based on just a few simple parameters such as the number of schedule weeks and the number of agents. The maximum schedule size must be determined uniquely by each user, based on specific performance requirements.

Profile Scheduling

Although agent-based scheduling offers a multitude of advantages, in some cases you must build schedules without agents assigned to them. To do so, you create a schedule composed of empty schedule slots that are appropriate for the contract types or agent skill sets you currently have, or for which you anticipate hiring. WFM offers several methods for creating blank schedules to which you can assign agents:

Scheduling Using Profiles—*Profiles* are based on contracts and include a skill set. They are used to represent a typical kind of agent or a proposed new agent classification. For example, you can create a new flexible full-time profile to enable planners to evaluate the adoption of a 4-day, 10-hours-per-day work week. Each profile has a skill set with assigned skill levels. Scheduler uses either a user-specified number of each profile type or a blend of profiles based on the current staff, to create blank schedules to which you can assign qualified agents.

Mixed Scheduling—You can build schedules using a combination of profiles and actual agents. This can enable planners to create additional optimized schedules for expected new hires or for outsourced agents to use.

Schedule Bidding—Supervisors create an optimal set of schedules with no agent names, authorize a set of agents to participate in the bidding process, and open the schedules for bidding. Agents review the schedules on which they are qualified to work, and bid by numbering the most desirable and least desirable schedules 1, 2, 3, and so on. The Supervisor can then have WFM assign the schedules to the agents automatically, based on the agents' bids as well as their seniority and/or rank."

Automated Schedule Bidding

Automated Schedule Bidding allows supervisors to create schedules with no agent names associated, and then distribute them to agents via the Web. The agents can view, filter, and sort these schedules, and bid on their favorite schedules over a preconfigured period of time. An automated assignment engine then assigns schedules to agents, based on their bids and their seniority and/or rank. When possible, preplanned Calendar items such as granted time off, days off, and exceptions are integrated into agent schedules when the schedules are published to the Master.

This new and powerful feature helps contact centers to comply with union regulations requiring that agents be assigned their desired schedules based on their seniority or rank. It also enhances supervisor productivity by automating the process. Even in nonunionized contact centers, automated schedule bidding improves agent satisfaction by giving agents more control over their future schedules.

Multi-Site Planning

Using a familiar tree structure, you can configure WFM's objects to correspond exactly to your Enterprise organization. For centralized, multi-site contact centers, WFM enables forecasting and building of schedules for work activities spanning all sites.

For decentralized, multi-site contact centers, WFM supports two main models.

- For multi-site contact centers that distribute calls based on percentage allocation, WFM enables you to forecast interaction volumes centrally and distribute the workload to each site for further planning efforts. Each site can set parameters such as service objectives and staffing requirements, and can build schedules.
- For multi-site contact centers that are virtualized and distribute calls based on agent availability, skill set, and so on, WFM enables you to forecast staffing centrally and then split the staffing requirements to each site. Schedules may then be built for each site. By building staffing requirements centrally, WFM can account for the efficiencies of scale that are seen in a true virtual contact center environment.

The browser-based capabilities provided by WFM ensure that in any multi-site environment users across the enterprise can participate in the planning process.

Also see Appendix C, "Multi Forecasting Primer," on page 333.

Agent Preferences

The Scheduler can optionally consider agent preferences when building schedules. Agents can enter preferences for shifts, days off, availability, and time off using WFM Web for Agents. Supervisors can enter agent preferences in WFM Web for Supervisors and, with the appropriate security permissions, can grant or reject preferences. If a supervisor grants a preference, the calendar algorithm considers that agent's preference when building the schedule, along with various other criteria such as seniority.

Preference Fulfillment and Schedule Optimization

Contact center administrators can also specify whether preference fulfillment or schedule optimization is the more important goal. This adds another layer of control over preference scheduling.

Flexible Shifts

The method WFM uses to create shifts enables you to configure flexible shift durations and start and end times. Additionally, WFM schedules use flexible break and meal parameters.

In a sense a WFM shift is an abstraction, representing countless possible working times. This is true even if the shift is configured to produce very regular, fixed, agent schedules. This is in contrast to the conventional notion of a shift with a mandatory fixed weekly start time, fixed duration, and set breaks.

A single WFM shift can incorporate hundreds of possible start times and durations as long as they fall within the parameters of the associated contract. However, through synchronicity constraints and use of more-rigid shift configuration settings, you can fix agent start times and workday durations. This combination of flexibility and structure makes the WFM shift a tremendously powerful scheduling mechanism. In fact, in some cases, you can configure an entire contact center using only a few WFM shifts.

The WFM Shift

For example, consider a contact center with a standard full-time shift of 8 hours a day, 5 days a week, and an alternative full-time shift of 10 hours a day, 4 days a week. You can schedule both types of agents using a single shift with a flexible duration of 8 to 10 hours per day. In either case, the agents are contracted to receive 40 hours work each week and to work 4 or 5 days. You can configure WFM to guarantee that specific agents work 4 days a week and others 5 days, or let the WFM Scheduler determine how many agents of each full-time type to use to provide the most effective schedule.

Task Sequences

WFM task-based scheduling enables you to configure sequences of work activities to be used in shifts. These *task sequences* guarantee that a specific period of time is spent on a specified activity or set of work activities.

Using task sequences, multimedia contact centers can generate agent-friendly schedules that build in extended periods of time set aside for handling specific tasks. Agents are thus able to focus on a single media or skill set, enabling them to complete their tasks more effectively, without the confusing effects of frequently switching media. Contact center planners can ensure that task time is equitably distributed among all qualified agents. And WFM can optimize the assignment of task times based on forecasted staffing requirements.

For example, you can guarantee that all appropriately skilled agents receive exactly 2 hours of outbound work for every shift, or you can allow WFM to determine how much outbound work to distribute to each agent. You can configure Genesys Routing to use WFM schedule information as input for routing decisions. In this way, you can use task-based scheduling to provide a closed-loop routing system that complements an agent-based approach to contact center management.

For more information on task sequences, see Chapter 9, “Configuring Task Sequences” on page 227.

Schedule Trading

WFM schedule trading enables agents to trade schedules among themselves. They can do so either through a trade with a specified agent or through a trade open to any qualified agents within their community.

Contact center planners no longer need to spend an excessive amount of time managing and processing agent schedule-trade requests. Agents feel that they have flexibility when they need to change their usual schedule and that they have more proactive control over the times they work. In some cases, schedule trades can be approved without supervisor intervention, enabling managers to focus on trades that may affect service levels or violate company policies.

Marked Time

Use marked time to distinguish any periods of time that are not otherwise tracked and reported on in an existing WFM category. For example, you can create a marked-time type for a particular project. Or you can use marked time to identify overtime periods that you want to appear in a report.

You configure marked-time types using the WFM Configuration Utility. You can specify marked time in WFM Web for Supervisors and view periods of marked time in its Intra-Day schedule view. You can report on marked time using the Schedule Marked Time Report and the Schedule Marked Time Totals Report.

Intra-Day Scheduling

The WFM Web for Supervisors Intra-Day schedule views enable you to make real-time adjustments to schedule scenarios or to the Master Schedule. You can insert exceptions, edit or change shift start and end times, assign meetings, enter time off for an agent who has suddenly gone home ill, change the activities agents are working on, or make other changes to the schedule to improve contact center performance and to make the schedule reflect actual contact center circumstances.

You can make changes one at a time or use one of the Schedule wizards to make changes to multiple agents' schedules at once.

Intra-day Schedule Re-Optimization

When you build a schedule in WFM, the scheduling algorithm minimizes the over and under-staffing of agents against the forecasted staffing requirements, while meeting the configured working rules. Since schedules may be built several weeks in advance, a variety of circumstances may cause the schedule to become suboptimal by the time a particular schedule day arrives. Some examples:

- Contact center management may have re-forecasted volumes and staffing for the day.
- Agents may have called in sick or been granted time off.
- Existing agent schedules may have been manually adjusted.
- Additional agents may have been added into the schedule.
- Meetings or other types of exceptions may have been added to the schedule.

It does not make sense to re-optimize schedule items for days or hours that have already passed. For most contact centers, it is also not practical to re-optimize the current hour. Any changes to meals, breaks, and/or work activities may be difficult to communicate to the affected agents. For these reasons, a re-optimization wizard allows you to select the date, start time, affected agents, and the set of schedule items to be re-optimized.

For example, you have the option to re-optimize the placement of:

a. Breaks only.
b. Meals and breaks only.
c. Activity sets/task sequences/activities only.
d. Breaks/meals/activity sets/task sequences/activities without affecting shift start/end times.
e. Breaks/meals/activity sets/task sequences/activities, and shift start/end times.

This gives some flexibility if you do not wish to change certain shift items or work activities because it may be difficult for your agents to adjust to those changes. For example, if agents use their meal breaks to go out of the office and go to appointments, you may not want to change these times once they have been published.

Similarly, you can decide whether shift durations should be allowed to change or not. In some contact centers, this may be done in order to offer additional work hours to certain agents. In other contact centers, this is not a desired practice.

Additionally, you may choose to exclude from this re-optimization any agents whose schedules have already been manually edited. You may have already spent time manually adjusting shift items or work activities for an agent (for example, you moved meals or breaks based on a particular request from an agent) and you don’t want to lose those changes.

Pending Schedule Changes

Users who do not have the Approve Changes security permission enabled can make only pending changes to the Master Schedule. Pending changes do not affect the official version of the Master Schedule.

A user with the Approve Changes security permission enabled must *commit* pending changes before they are incorporated into the official schedule. Discarded changes are *rolled back*.

Alternatively, such a user can go to the Master Schedule Changes Approval module (invisible to users without the Approve Changes security permission enabled). There, she or he can review the pending changes to the Master Schedule made by any user, and approve or reject them.

You can also enter pending changes into a schedule scenario. Such pending changes are visible only to the user who entered them. You can later review your pending changes, and either commit them or roll them back. Once committed, the changes are visible to all users with access to the schedule scenario.

Note: If a scenario with pending changes is published to the Master Schedule, the pending changes are not included.

Schedule State Group Totals View

This view provides intra-day totals of the number of agents in each schedule state group (Meetings, Lunch, Breaks, and more).

It helps managers and supervisors understand how many agents are scheduled for each type of activity during a particular time period, and provides a snapshot view of productive vs. nonproductive time on an intra-day basis.

Notifications

The Notifications module in WFM Web for Supervisors allows you to configure e-mail notifications by site for the following types of events:

- Schedule trade status changes. This type of notification can be received by both agents and supervisors who are affected by a schedule trade proposal or response.
- Time off request status changes. This type of notification can be received by both agents and supervisors who are affected by a time off request.
- Schedule modifications. This type of notification can be received by the agent who is affected by the schedule change.

See also: Chapter 11, “Using E-mail Notifications in WFM,” on page 235.

WFM Daemon

A standalone server component, WFM Daemon, sends out notifications to agents and supervisors.

Note: By default, WFM does not send notifications. In order to send notifications, you must select at least one site to send notifications of given type in the `Targets` tab of the `Notifications` module and save. Agents and supervisor users who are to receive e-mail notifications must have e-mail addresses configured. These e-mail addresses are stored as part of the `Person` object in the Genesys Configuration Database and are (optionally) synchronized into WFM using the WFM Configuration Utility. Additionally, WFM must be set up properly and connected to a customer-supplied SMTP server. (See "Options Tab for WFM Daemon" on page 168 for details on configuring the WFM Daemon to send notifications.) Once you have performed these steps, notifications of the selected type(s) are sent.

Schedule Trade Status Changes

WFM Daemon uses the following rules when sending schedule trade status change notifications:

- Both the proposing agent (creating the trade request) and responding agent (receiving the trade proposal) associated with the selected site(s) get notified when a trade status is User-declined, User-approved, Auto-declined, Auto-approved, or Cancelled.
- Supervisor(s) associated with the selected site(s) get notified when a trade status is Pending.
- The responding agent gets notified when the status of a trade proposal is In Review or Open.
- The proposing agent gets notified when the response status of a trade proposal is Accepted, In Review, or Cancelled.

Time Off Request Status Changes

WFM Daemon uses the following rules when sending time off status change notifications:

- When a supervisor manually changes agent time off in the Calendar module, the affected agent receives a notification.
- When an agent time off request is saved in a Preferred status, any supervisors with access to the agent's team, are notified.

Schedule Modifications

When a supervisor changes one or more schedule days, WFM sends a schedule modification notification to the configured site's affected agent.

Performance

The Performance modules compare the forecast and schedule to what is actually happening in the contact center. WFM shows intra-day statistics, such as interaction volume, average handling time (AHT), agents logged in, service level, average speed of answer (ASA), and abandons, and compares them to the planned values.

Intra-day contact-center performance data is displayed in an informative and easy-to-read format, enabling efficient performance monitoring and quick response to unanticipated interaction flow or agent-staffing situations.

WFM also provides a "what-if" calculator as an aid to decision making. You can enter new values for staffing, interaction volume, and/or other performance statistics into the What-If window. The What-If calculator then supplies the results to be expected if the values change as you project.

Adherence

Workforce Management provides real-time agent-adherence data, which compares the current agent status to the scheduled status.

Agents who are not adhering to their schedules (within user-defined thresholds) are highlighted in yellow if they are *nonadherent* or in red if they are *severely nonadherent*. WFM also displays the amount of time, in minutes, that the agent's current status has differed from the scheduled status. This running total is continually updated.

Using Reason Codes

WFM enables you to enter reason (aux) codes when you configure agent-adherence rules. The reason codes are linked to Genesys `Agent States` and add additional details to the state information. The Genesys `state + reason code` combination is mapped to WFM Scheduled State Groups and is displayed in `Adherence` views.

Note: When you filter on user-defined reason codes in the `Adherence Filter` dialog box, the reason code that you specify must not contain any spaces within or at the end of the key value.

For example, an agent might signal that she is in a `NotReady` state. By adding a reason code, she can specify that she is doing after-call work or answering e-mail. This detailed information then appears in the WFM Web `Adherence Details` view and agent-adherence reports.

Note: To use reason codes, your switch must support them. See your T-Server documentation to find out whether your switch can include reason codes when it sends Genesys TEvents.

Reports

WFM Web for Supervisors provides access to a variety of reports designed to present key contact-center data in a flexible and accessible format. The report types are:

- Configuration Reports—Present information on work activity configuration.
- Policies Reports—Present information on agents, contracts, shifts, and rotating patterns.
- Calendar Reports—Present information on time off and agent calendar items.
- Forecast Reports—Display forecast interaction volumes, AHT, and staffing requirements in tabular and graph formats.
- Schedule Reports—Display schedule data for agents, activities, teams, sites, multi-site activities, and business units at various granularities. Also present budget information and schedule validation warnings and errors.
- Performance Reports—Present various types of contact-center performance statistics in detailed and summary formats.
- Adherence Reports—Present agent-adherence information for agents, teams, sites, business units, and the enterprise.
- Audit Reports—Offers the ability for users to audit a history of changes made within the Calendar subsystem and a history of changes made to the Master Schedule.

The WFM Integration API

The WFM Integration API enables you to create a client application that, in turn, enables you to retrieve some WFM information and to make certain changes to WFM objects.

For example:

- The WFM Schedule includes planned meetings, trainings, time-off, and so on for all agents. You can use the WFM Integration API to facilitate integration of this WFM data with third-party human resources applications and PIMs such as Outlook.
- You can take information from third-party applications and incorporate it in WFM without having to manually re-enter each update into WFM.

- You can retrieve WFM data and use it to generate custom reports using your preferred reporting tool.
- You can read agent schedule information, such as the total number of paid hours an agent worked during a particular day, and automatically feed this information into a payroll system.

Note: Not all WFM functionality is available through the WFM Integration API.

For detailed information about the WFM Integration API, see the *Workforce Management API Reference* (JavaDoc).

New in This Release

This section contains a brief description of the new features in Genesys Workforce Management (WFM) 8.1.x releases.

New Features in 8.1.2

This section contains a summary of new features in WFM 8.1.2.

Effective Date for Contracts

Users can specify an effective start date for a Contract and assign agents to the contract accordingly. The agent can have multiple assigned Contracts, but each one must have a different effective date.

See the Supervisor help topics:

- `Configuration > Agents > contracts and Rotating Patterns.`
- `Policies > Contracts > Agents`

Effective Date for Rotating Patterns

Users can specify an effective start date for a Rotating Pattern, which is the date that the Rotating Pattern becomes effective for the agent. The agent can have multiple assigned Rotating Patterns, but each one must have a different effective date.

See the Supervisor help topics:

- `Configuration > Agents > contracts and Rotating Patterns.`
- `Policies > Rotating Patterns > Associated Agents`

Effective Date for Activities

Users can specify an effective date for activities, which is the start date that the agent becomes eligible to work on the activity.

See the Supervisor help topic `Configuration > Agents > Activities`.

Automated Time Off Carry Over

Users can set the calculation of Time Off Carry-Over to occur automatically.

See the Configuration Utility help topic `Policies > Time Off Rules > Carry-Over Rules Section`.

View Web Agent Schedule on Mobile Devices

Agents can log in to WFM Web and view their schedule on their iPhone 4, iOS 5 mobile device.

See the Agent help topic `Getting Started > Overview`. or the Supervisor help topic `Getting Started > Overview.`.

Contact Center Performance Report Enhancement

Users can now view forecast-related data in the Contact Center Performance Report and Contact Center Performance Graph Report.

See the Supervisor help topic `Reports > Performance Reports`.

Forecast Splitting by Using Percentages

Users can specify a percentage to allocate volumes from a multi-site activity to each Child (site) activity or apply a template. The interval can be the entire forecast scenario, weekday, or timestep.

See the Supervisor help topic `Forecast > Forecast Scenarios > Volume Split Wizard`.

Forecast Staffing Totals Displayed in FTE or Man Hours

Forecast staffing totals are now displayed in the WFM interface and reports as Forecast Total Equivalent (FTE) or man hours and are editable in both modes (in views in which totals are editable).

See the Supervisor help topics:

- `Forecast > Graph View Options > Graph View Options Staffing`
- `Schedule > Schedule Scenarios > Scenario Summary View`
- `Schedule > Master Schedule Views > Master Schedule Summary View`
- `Schedule > Master Schedule Views > Master Schedule Overtime Requirements View`
- `Reports > Forecast Reports > Forecast Report` and `Forecast Graphs Report`
- `Reports > Performance Reports > Actual Overhead Report`
- `Reports > Schedule Reports > Schedule Summary Report, Weekly Schedule Coverage Report,` and `Activity Weekly Schedule Report`

MSA Button Always On

Users can now set the `Use Multi-Site Activities` button to `On` in any view and it will be set to `On` in all views, in which this button is available.

See the following affected views in WFM Web:

- `Forecast Volume (Scenario and Master)`
- `Forecast Staffing (Scenario and Master)`
- `Forecast graphs (Scenario and Master)`
- `Forecast historical data views (Volumes and Graphs)`
- `Performance Intra-day view`
- `Performance monitor`
- `Schedule Coverage (Scenario and Master)`
- `Schedule Intra-day, performance part (Scenario and Master)`
- `Schedule Summary (Scenario and Master)`
- `Schedule State Group Totals (Scenario and Master)`
- `Schedule Overtime requirement (Master)`

System Security: Last Log In Timestamp

To improve on system security, an enhancement enables the timestamp information from the previous login to display in the GUI the next time a user logs in to WFM Web through the Supervisor, Agent, or Agent Mobile interfaces, alerting users of any unauthorized use of their login credentials.

See the Supervisor help topic `Getting Started > Logging In` and the Agent help topic `Getting Started > Logging In`.

New WFM Splash Screen

A new splash screen displays when WFM Web is loading the Log In GUI.

Page Limit for Reports

Two new options, `PageLimit` and `PageLimitForCSV` can be used to limit the size of generated reports, controlling the maximum number of pages a report can contain and improving performance.

Objects and Functionality Moved

Some modules, configuration objects, and functionality that were previously in WFM Configuration Utility have been moved to WFM Web. See the following topics in the *Workforce Management 8.1 Web for Supervisors Help*:

- `Policies > Contracts`
- `Policies > Rotating Patterns`
- `Configuration > Agents > Activities`

- Configuration > Agents > Contracts and Rotating Patterns

Localization Kits Include Context Information

WFM Localization kits now include context information for resources displayed in the product that will be translated.

See "Context Information in Localization Kits" on page 250.

New Features in 8.1.1

This section contains a summary of new features in WFM 8.1.1.

Automated Shrinkage Forecasting

Users can evaluate scheduled shrinkages (overheads) against forecasted ones and can also create Overheads Forecast templates from the scheduled overhead data.

See the Supervisor help topic Schedule > Master Schedule Views > Master Schedule State Group Totals > Actions Menu/Toolbar Buttons.

Selective Historical Forecasting

Users can specify unique, multiple periods of historical data during the forecast build process to create forecasts that reflect seasonality. This ensures that staffing needs are adequately met.

See the Supervisor help topic Forecast > Forecast Scenarios > Volumes Build Wizard > Select Historical Data.

Schedule Audit and Rollback

WFM tracks which parameters were changed in a schedule, and provide an option to go back to a previous schedule (before the change was made).

See the Supervisor help topics:

- Reports > Audit Reports > Schedule Audit Report
- Schedule > Modify Individual Agents' Schedules > Modify Individual Agents' Schedules Overview
- Schedule > Modify Individual Agents' Schedules > Schedule History

Schedules now display with Time Zone adjustments

The Intra-day Schedule View displays schedules with time zone offsets.

See the topic Intra-day Schedule View in Supervisor help.

Automated Time Off Wait List

WFM can automatically grant Time Off to requestors on the wait-list (based on their position in the queue) and can automatically insert valid Time Off

Requests into the Master Schedule. Additionally, agents can now see their own position in the queue.

See the Agent help topics:

- `Time Off > Requesting Time Off`.
- `Time Off > Time Off > Recalling a Time Off Request`.
- `Time Off > Deleting Time Off`.

See the Administrator's Guide sections:

- "AutoPublishTimeOffToSchedule" on page 127.
- Appendix G, "Enabling and Configuring Wait-list Functionality," on page 365.

Exception Management

Users can select a specified item (such as an Exception) and find all items like it for a selected agent or agents—and then make a bulk edit or change.

See the Supervisor help topic `Schedule > Insert Multiple Wizard > Select Exception Screen`.

Microsoft SQL Database Replication

WFM now supports peer-to-peer transactional replication of all database tables between all locations, which provides MS SQL database users with an alternative to deploying terminal services when the server is not located near the database.

See Appendix H, "MS SQL Database Replication," on page 371.

Miscellaneous Modifications

- You can click the Current Whole Day ("Today") button to display data for the current day in the Master Schedule Intra-Day view. See the Supervisor help topic: `Schedule > Master Schedule Views > Master Schedule Intra-Day View > Master Schedule Intra-Day View Overview`.
- Government agencies and other corporations can now comply with Handicap Accessibility Regulations. Accessibility for the blind, color blind, and users of limited mobility was improved to the WFM Web for Supervisors module. See the topic `About WFM Web` in Supervisor help.
- Employee ID was added to these reports: Schedule States, Individual Schedule, and Weekly Schedule. See the Supervisor help topics `Reports > Schedule Reports > Individual Schedule Report`, `Schedule States Report`, and `Weekly Schedule Report`.
- Platform support changes are detailed in the *Genesys Supported Operating Environment Reference Manual*. Below is a summary:
    - Discontinued OS support: IBM AIX 5.1 and 5.2, 32- and 64-bit versions.

- Added support of web browser Microsoft IE9.
- Terminal servers WFM DB and Configuration Utilities added support for Citrix XenApp version 6 (Platinum Edition).

WFM Web Server support limited to: Red Hat Enterprise Linux, version 6 and IBM WebSphere Application Server, version 8.

New Features in 8.1

New features were added to WFM 8.1. This section summarizes the most significant additions and changes.

Shared Transport

WFM now supports the ability to group agents who share transportation (such as carpools or service busses) by building schedules that allow these agents to start and leave at the same time. Agents Supervisors, and Administrators can create new shared transportation groups as well as joining or removing existing ones. Supervisors and Administrators can also switch the scheduling of these groups on and off during the schedule build process. For detailed information, see:

- WFM for Web Agents help: Shared Transport
- WFM for Web Supervisors help: Configuration > Configure Shared Transportation, Schedule > Intra-Day Schedule Rebuild Wizard > Shared Transportation Constraints
- WFM Configuration Utility help: Configuration > User Security > Security Options > Configuration Security Options
- WFM Administrator's Guide, Chapter 5: Configuration Options: `AllowAccessToCarpools`

Simultaneous Scheduling of Deferred Work Activities

The forecasting algorithm for deferred work activities is enhanced so users can optimize the way that Deferred Activities are processed at an interval level, without impacting service levels for Immediate Activities. This facilitates the user's ability to address unplanned staffing variances and make better use of the available resources. For detailed information, see:

- WFM for Web Supervisors help: under Forecast > Forecast Scenarios, Staffing Build Wizard and Volumes Split Wizard
- WFM Configuration Utility help: Configuration > Activities > Statistics Configuration for Activities

E-mail Notifications Enhancements

WFM now provides a security option that controls which WFM Web Supervisor receives e-mail notifications regarding an Agent's Time Off balance. These notifications will be sent when a Time Off change is made in the calendar or schedule. For detailed information see:

- WFM Configuration Utility help: Configuration > User Security > Security Options > Notification Options

Build Schedule Scenarios based on Forecast Scenarios

Now you can build a "test" schedule based on a forecast scenario. For detailed information see:

- WFM for Web Supervisors help: Schedule > Schedule Scenarios > New Scenario Wizard

Working Rules/Scheduling Constraints

It is now possible to define in the Contract the maximum amount of Sundays that can be worked at a given site. Users can select both the `Minimum Duration Between the Start Times of Two Consecutive Working Days` and the `Minimum Duration Between the End of One Day and Start of Next Working Day`. For detailed information see:

- WFM Configuration Utility help: Policies > Contracts > Contracts Overview, Contract Constraints, Contract Weekend Rules, and Contract Synchronization

Print Schedule Without Relying on the Browser

Agents can print a schedule without relying on the print functionality of their browsers. For detailed information see:

- WFM for Web Agents help: Schedule > My Schedule Tab Overview

Estimate Time Off Limits Wizard

Time Off Limits will now take into account the total number of agents that may take time off, along with the start/end of contract availability, the earliest stat/end times of shifts assigned to the contract (including week days) and Activity open hours for which the agent is skilled to work. These constraints optionally include Rotating Patterns and Granted Calendar items. For detailed information see:

- WFM for Web Supervisors help: Calendar Module > Time-Off Limits > Set Time Off Limits Wizard

Accessibility

Enhancements to the WFM Web Agent and Supervisor interfaces allow corporations to comply with Handicap Accessibility regulations. These include not using color to display statuses, tabulation enhancements to provide focus to a visible control point, the ability to skip navigation links when using a screen reader, allowing agents to change the visual representation of the OS, and ensuring that all frames have titles.

Operating Systems Supported

- IBM AIX, 64-bit, version 7.1
- Microsoft Windows Server 2003, x64
- Microsoft Windows Server 2008 R2 Standard, x64
- Microsoft Windows 7, x32 and x64
- Support discontinued for Microsoft Windows Server 2000, x32

Databases Supported

- DB2 9.7
- Microsoft SQL Server 2008

System Platforms Supported

- Native support of 64-bit executables on MS Windows 2008 R2 for WFM Server, Builder, Daemon, Data Aggregator
- VSphere 4 Hypervisor virtual platform

System Protocols

- Protocol IP v6 for WFM Server, Builder, Daemon, Data Aggregator, Database Utility, Configuration Utility, Web

System Security
(Radius meta-message display)

- Support for the ability to display to application end users any meta-text associated with successful authentication attempts to a Radius server: Database Utility, Configuration Utility, Web

System. Secure Data Storage

- Encryption support for data stored in: Oracle 11g, MS SQL Server 2008

Secure Connections

- Secure communications (SSL/TLS) between all WFM components, and between WFM and Genesys components: WFM Server, Builder, Daemon, DA, DBU, CU, Web

For a complete list of all databases and operating systems supported by Genesys, please refer to the Genesys Supported Operating Environment Reference Manual.

New Features in 8.0

New features were added to WFM 8.0. This section summarizes the most significant additions and changes.

Time Off Management Report

A new report within the WFM Web Supervisor application displays an Agent's Time Off Balance. You can see the history of all Time Off rules assigned to an Agent, and if or when bonus hours were granted. Supervisors can view the Time Off view for a specified Agent, including the Time Off balance.

Benefits Users can easily manage Time Off disputes in one central view; there is no need to navigate multiple applications.

Who is Affected All users.

Overtime Management

Users can publish available overtime opportunities for agents to take on a first-come, first-serve basis, if they are skilled to work on that particular activity.

Benefits Users can easily address understaffing situations and quickly publish overtime opportunities for agents.

Who is Affected All users.

Shrinkage Tracking

Users can select and apply multiple Overhead Templates that contain percentages of individual shrinkages, which can then be applied to a Forecast. These values are displayed in the Schedule State Totals view as a total percentage, and each Scheduled State is displayed individually so users can see the total impact of shrinkage on the day.

Benefits Improves the accuracy of Forecasting, so a supervisor can schedule the proper number of staff. Users can see the impact of shrinkage on an actual day.

Who is Affected All users.

Multi-Site Scheduling

Users can build schedules for multiple sites. Each individual site is taken into account when building the subsequent Schedules; meals, breaks, meetings and task sequences are accounted for as a whole, rather than on a site-by-site basis. This functionality also applies to the intra-day rebuild of schedules.

Benefits Contact centers can manage their business virtually and better optimize work activities in WFM.

Who is Affected Customers who have multiple sites in their business unit.

Multi-Site Meeting Scheduling

Users can select participants from any site within a single business unit when using the meeting scheduler. To select participants from multiple sites, you must select the exception type from the business unit level (a site exception type cannot be used). WFM configures the earliest start and latest end time in the time zone of the user.

Benefits Improves ease of use and efficiency when users create team meetings since not all contact centers have agents that are co-located.

Who is Affected Customers who have multiple sites in their business unit.

Split Meeting Scheduling

Users can define a split meeting, and if necessary WFM will schedule non-overlapping meeting instances so that all selected participants are scheduled for a single meeting instance.

Benefits You can schedule multiple instances of the same meeting if all participants cannot be scheduled for a single meeting.

Who is Affected All users.

Configuration of WFM Objects at Business Unit Level

You can configure the WFM objects at the business unit level: exception types, time off types, marked time types and activities.

Benefits Multiple Sites can use the same configuration objects; users do not need to add them at each individual site.

Who is Affected Customers who have multiple sites within their business unit.

Agent-Team History Tracking

WFM now stores the historical association of Agent to Team. Prior to WFM 8.0, if an agent was moved from one Team to another, no record was kept, which rendered some Team-based reports inaccurate.

Benefits Allows correct reporting of metrics that are team-based and can change over time.

Who is Affected All customers who build teams.

Configuration Audit

Users can track which WFM configuration object (such as a “Full Time Contract”) was changed along with the specific parameter of the objects (i.e., “Maximum Paid Hours per Day”). Additionally, the “out of the box” audit report displays which user made the change and the timestamp.

Benefits Allows customers to better understand who made changes that may have resulted in problems and, if necessary, how to restore the configuration to its previous state.

Who is Affected All customers, particularly in large contact centers where more than one person has access to configuration objects.

System Requirements

OS: Support added for IBM AIX 64 bit versions, version 6.1, Microsoft MS Windows Server versions Windows 2003 x64 and Windows Server 2008.

Support discontinued for Windows Server 2000 x32.

Databases: Support added for Oracle 11g and Microsoft SQL Server 2008.

Web Browsers: Support added for Firefox 3.

Virtual Platforms: Support added for IBM Power VM and Sun Solaris containers.

Benefits Increased customer flexibility.

Who is Affected All users.

Chapter

2 Architecture

This chapter explains the interconnections among the various components of Genesys Workforce Management (WFM) and how WFM interacts with the Genesys Framework. This chapter has these sections:

Workforce Management Components

Workforce Management (WFM) functionality is presented via four graphical user interface (GUI) applications and four servers.

See Figure 1 on page 55 for a layout of all the components and their connections.

The user-facing applications are:

- WFM Database Utility (client application)
- WFM Configuration Utility (client application)
- WFM Web for Supervisors (browser-based)
- WFM Web for Agents (browser-based)

These applications are supported by these servers:

- WFM Server
- WFM Data Aggregator
- WFM Builder
- WFM Web
- WFM Daemon (server/background process)

In addition, you need to use a web server as a container for the WFM Web server. Genesys WFM supports Tomcat and WebSphere. WFM does not include Tomcat in its installation package. You must obtain and install it separately.

Note: For supported versions of Web Sphere and Tomcat, see the *Genesys Supported Operating Environment Reference Guide*, which you can find on the Genesys Technical Support web site.

WFM Database Utility

Use this application to create and format a new database (for new users or those migrating from a pre-7.0 release of WFM), to migrate your existing data to the new database, and to perform database maintenance and cleanup.

You also use the WFM Database Utility to update the WFM database, which is a common task that must be done as part of an upgrade to a newer WFM release. If you are upgrading from WFM 7.x to the most recent 8.1 release, you will need to perform a database update.

Note: If you are migrating from an earlier release to WFM 8.1, see the procedures provided in the "Workforce Management Migration Procedures" chapter of the *Genesys Migration Guide* for important advisories about the database migration process.

WFM Configuration Utility

Use this application to configure sites, business units, shifts, task sequences, and most other Workforce Management database objects. Also use it to set constraints such as site rules, working hours, and time-off accrual rules; to define contracts; and to set the week start day and the default time zone.

WFM Web

WFM Web is a server application that is hosted on a servlet container and provides content for two Web browser-based user interfaces, one for Supervisors and one for Agents. The appropriate interface opens after login, depending on the login information you enter.

WFM Web for Supervisors

WFM Web for Supervisors includes calendar management, forecasting, scheduling, real-time agent adherence, contact-center performance statistics, configuration of e-mail notifications, and reporting. These functions are all entirely accessible through any computer with a supported browser and network access.

When you open WFM Web for the first time in your browser, it installs a Java applet on your machine. This applet provides WFM functionality and is presented in the user's web browser. An updated version of this applet is downloaded to each user's machine each time a more recent version of WFM Web is installed on the web application server.

Note: There is an increased demand on the web server where WFM Web is deployed because it now provides almost all client user-interface functionality. In addition, starting with WFM 7.2, WFM Web is also the server component responsible for generating reports. Please refer to the *Genesys Hardware Sizing Guide* for sizing recommendations on the WFM Web server.

Configuration

The Notifications module in WFM Web for Supervisors allows you to configure e-mail notifications by site for the following types of events: schedule trade status changes, time off request status changes, and schedule modifications.

The Colors module in WFM Web for Supervisors allow you to configure colors for a Supervisor's schedule views. Two tabs control the colors to apply to schedule items:

- Default colors can be chosen for: Work, Days Off, Meals, Breaks, Activity Sets, Exceptions, Time Off, and Marked Times.
- Specific individual colors can be chosen for these object Types: Activity Set, Exception, Time Off, and Marked Time.

Calendar Management

Enables planners to enter known obligations, such as time-off, meetings, and training sessions, into agent calendars prior to scheduling.

The unique agent-based scheduling approach that WFM provides enables robust agent-calendar management prior to scheduling. You can use WFM to incorporate known obligations into agent schedules to ensure that agent appointments are kept while maximizing contact center efficiency. By enabling more accurate planning for known obligations, WFM enables you to take the guesswork out of forecasting for staffing overheads, leading to more-efficient resource utilization. See "Calendar Management" on page 24 for more information.

Forecasting

Enables contact-center managers to predict workload and staffing requirements based on historical data or user-defined templates. See "Forecasting" on page 27 for more information.

Scheduling

Uses the forecast to create agent schedules within user-defined business constraints, to create empty schedules to which you can assign agents, and to create and control bidding schedules. See "Scheduling" on page 30 for more information.

Adherence

When you use Genesys WFM scheduling to control the delivery of work to agents, you can monitor agents to see their current activity as well as what they are scheduled for. WFM will automatically identify agents who are not adhering to their schedules for durations longer than the acceptable configured limit. See “Adherence” on page 38 for more information.

Performance Statistical views reveal how closely actual events match the forecast and schedule. See “Performance” on page 38 for more information.

Reporting Enables you to create reports on contact center operations. See “Reports” on page 39 for more information.

WFM Web for Agents

Enables contact center managers to easily distribute schedule information to their employees and provides agents with proactive scheduling capabilities, such as entering schedule preferences, planning time off, schedule bidding, and trading schedules.

WFM 8.1 Servers

The GUI applications are supported by the following servers:

- **WFM Server**—Acts as the main data and application services source and locator for WFM clients.
- **WFM Data Aggregator**—Automatically synchronizes configuration data, collects historical data, and provides real-time agent-adherence information to users of WFM Web for Supervisors.
- **WFM Builder**—Builds WFM schedules.
- **WFM Web Server—**Serves content for the Web browser-based GUI applications and generates reports upon request from users of WFM Web for Supervisors.
- **WFM Daemon**—can be configured to send (through a customer-supplied SMTP server) e-mail notifications to agents and supervisors.

Database

WFM also requires a database to store all the relevant configuration, forecasting, scheduling, agent adheren8.1ce, performance, and historical data.

Note: If you have been using WFM 6.x, you must migrate your existing data into a new database using the WFM Database Utility before starting to use WFM 8.1. See the “Workforce Management Migration Procedures” chapter in the *Genesys Migration Guide* for details.

Connections to the Genesys Framework

Genesys WFM connects to:

- Stat Server—Provides statistical data to WFM Data Aggregator.
- Configuration Server—Provides Genesys' centralized configuration information to the WFM Configuration Utility, and authenticates all WFM users and components.

WFM 8.1 works in a single-site environment or across a multi-site enterprise.

Workforce Management Data Flow

Figure 1 shows the Workforce Management components and their interrelationships. It also shows how WFM draws on Configuration Layer data and statistical data that Stat Server provides.

Note: Tomcat and WebSphere, the supported web server containers, are not Workforce Management components. This graphic includes them to show how they fit into the total Workforce Management architecture.

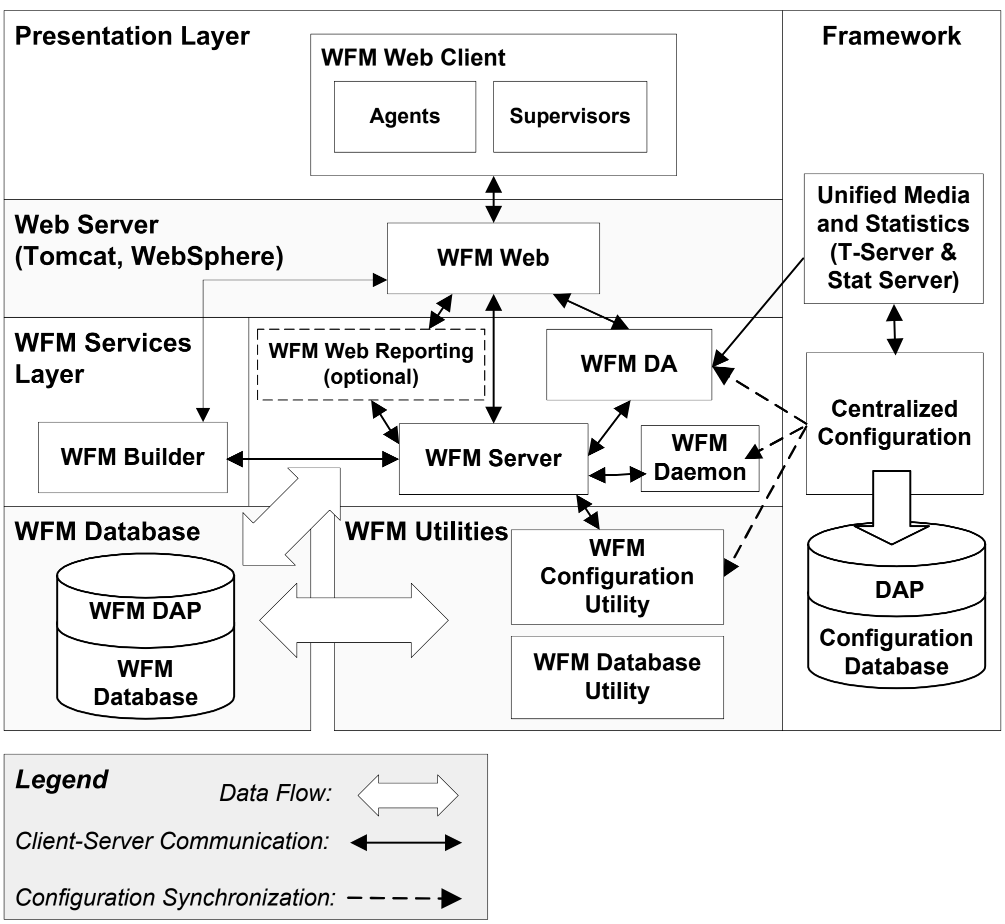

Figure 1: Workforce Management Components Data Flow

Component Connections

Table 1 on page 57 shows the connections that are configured on the `Connections` tab of each component's Application object. These connections offer an alternative, but complementary, way of understanding the Workforce Management architecture.

- As you can see, WFM Server acts as a hub, connecting to, and being connected to, every component.
- The WFM database (represented in the table by its Data Access Point (DAP) as described on page 83) forms a different sort of central hub, with many of the components connecting directly to it. Others connect indirectly, through WFM Server.
- Through its connection to Stat Server, WFM Data Aggregator provides one point of interaction between Workforce Management and the Genesys Framework. All components are connected to the Configuration Layer in the sense that they exist as objects in the Configuration Database. The WFM Configuration Utility draws actively on this connection to import configuration objects, such as agents, agent skills, and time zones, into the WFM database during synchronization.

Note: The WFM Configuration Utility accesses large amounts of data from the WFM Database during its normal operation. As a result, users of the WFM Configuration Utility who are not co-located on the same LAN as the WFM Database will experience slow response times when accessing certain parts of the software.

Therefore, Genesys recommends that the WFM Configuration Utility be deployed over Citrix or Windows Terminal Services for those remote users. Users of the WFM Configuration Utility who are on the same LAN as the WFM Database should not see this issue with application response time.

- If you are using Management Layer, the Message Server connections and the WFM Solution object specification of the instance of SCI used to control the solution also connect Workforce Management with the Genesys Framework.

Table 1: WFM Component Connections

Component Name	Connections							
	WFM Server	**WFM Builder**	**WFM Dae-mon**	**WFM Data Aggreg.**	**WFM Web**	**DAP**	**Stat Server**	**Msg. Server**[1]
WFM Server	(X+)[2]	X+[3]	X			X		(X)
WFM Builder	X							(X)
WFM Daemon	X				(X)			(X)
WFM Data Aggregator	X					X	X	(X)
WFM Web	X				(X)			(X)
WFM Cfg and DB Utilities	X					X		

Legend:

- **X**—single connection
- **X+**—one or more connections
- **(X)**—optional connection

Footnotes to Table 1

1. Configure the Message Server connections if you are using Management Layer to run Workforce Management.
2. WFM Server may connect to other instances of WFM Server if you are using an environment with a number of WFM Servers and want to create schedules for all the sites they serve. See "Configure Multiple WFM Servers" on page 91 for information about how to create this configuration, and Appendix C, "Multi Forecasting Primer," on page 333.
3. You can configure and connect to multiple instance of WFM Builder. See "Configuring Multiple WFM Builder Applications" on page 118.

Note: The WFM Daemon background process connects to Genesys Configuration Server for authentication, configuration and connection to other Genesys servers' information. It retrieves all data required for its work from WFM Server.

Chapter

3 Deployment Planning

A successful Workforce Management (WFM) deployment requires more than installing and setting up the software. You must design effective strategies for translating corporate business rules into WFM objects and constraints. For this reason, it is important to understand key WFM concepts before configuring and using the application.

This chapter introduces the WFM features and functions you must understand to effectively deploy this product in your enterprise. It includes the following sections:

Use the information in this chapter to achieve an efficient, precisely customized deployment.

Note: This chapter provides a conceptual overview of WFM objects and settings. For software and hardware prerequisites, see the *Genesys Supported Operating Environment Reference Guide*, and the *Genesys Hardware Sizing Guide,* both of which are available on the Genesys Technical Support web site.

Predeployment Overview

Plan a detailed, suitable combination of Configuration Manager objects and WFM activities before configuring WFM. *This information is the basis for all subsequent workforce planning and should not be changed.* Any changes to the WFM activity configuration may compromise the usefulness of historical data.

Agents, users, time zones, and skills are defined as objects in Configuration Manager. These objects are brought into WFM through synchronization with the Configuration Database performed by the WFM Configuration Utility. Carefully consider the relationships among these objects when using them for enterprise planning. The relationship between skills, configured in Configuration Manager, and activities, created in the WFM Configuration Utility, is especially important.

Using the WFM Configuration Utility

You configure WFM objects and working rules in the `Configuration` and `Policies` sections of the application. Configuration objects include user security settings, organizations, activities, schedule-state groups, skills, time zones, and events. Organization rules, contracts, shifts, task sequences, time-off types, time-off accrual rules, exception types, meetings, marked-time types, and rotating patterns are set up in `Policies`.

The WFM Configuration Utility also includes a module that enables you to import and export historical data.

Using WFM Web

WFM Web for Supervisors provides calendar management, forecasting, scheduling, performance monitoring, real-time agent-adherence monitoring, and reporting capabilities. The success of your forecasts and schedules depends considerably on the accuracy and completeness of your configuration of WFM objects and working rules.

About the WFM Configuration Objects

The Configuration module of the WFM Configuration Utility enables you to configure a number of object types. The following sections briefly describe each object type and offer some considerations to assist you in planning your configuration.

Note: The following sections provide only brief introductions to these objects and focus on aspects relevant to deployment planning. For a full description, refer to *Workforce Management 8.1 Configuration Utility Help*.

User Security

The `User Security` module enables you to configure security settings for all supervisors (that is, all non-agents who use WFM). It groups security settings into the following categories: `General`, `Configuration`, `Policies`, `Calendar`, `Forecast`, `Schedule`, `Trading`, `Performance`, `Adherence`, reports, and `Data Import/Export`. Under each category are various options.

For example, `Notifications` is an option under `Configuration`. If a user is assigned `Notifications` permission, that user can then access the `Notifications` module in WFM Web for Supervisors. Users without this permission cannot access and therefore cannot modify the configuration of e-mail notifications.

The user security settings allow for a great deal of flexibility. You can specify which sites and business units, teams, and so on, the user can access. You can configure no calendar, forecast, and schedule access; read-only access; or full access.

In addition, you can enable users to make only pending schedule changes—that is, schedule changes that require approval from a qualified user before they are incorporated into the Master Schedule.

To configure user security settings efficiently, determine the access levels appropriate for all users. You can change settings at any time, as necessary. You may also use Security Roles to more easily configure security settings for users, by creating a Security Role, assigning permissions to it, and then assigning one or more WFM users to that Security Role.

An administrator can configure a security role as the default. All new users added to the WFM system will be assigned to this default security role—and will be limited to its access permissions.

Procedure: Defining the Default Security Role

Purpose: To specify the access permissions that will be assigned to all new users who are added to the WFM system.

Prerequisites

- You installed WFM Configuration Utility. See the procedure Installing WFM Configuration Utility, page 109.

Start of procedure

1. Open WFM Configuration Utility.
2. In the `Modules` pane, select `User Security`.
3. In the `Objects` pane, select `Security Roles/Users`.
4. (Optional): In the `Objects` pane, create a new security role.
5. In the `Data` pane, select a security role from the `Default Security Role` drop-down list.
6. Click **Apply**.

The selected role becomes the Default Security Role.

End of procedure

Note: The default security role has a special icon; its upper left corner is red.

Organization

Use this module to configure sites and business units (formerly called virtual PABXs), teams, and agents. To configure this module, determine the sites that belong to business units. Decide on the site properties, the maximum seats, the Data Aggregator and WFM Server the site uses, the switch you will use to collect statistics (if you want to use one different from the one automatically associated with the site during synchronization), and so on. Collect information about agent team and site associations, as well as agent settings, such as rotating pattern (if any), contracts, and rules for the accrual of accrued time off.

Keep in mind that there are many WFM configuration objects which are associated with a site, including Rotating Patterns, Contracts, Activities, Time Off Types, Time Off Rules, Exception Types, and more. When you move an agent from one site to another, you must reassign that agent to a new Contract, Time Off Rules, and new Rotating Patterns—if these were previously assigned. You must take this action to correctly schedule the moved agent under the new site.

Creating a New Business Unit

You may need to create a new business unit during database synchronization.

Procedure: Creating a New Business Unit

Purpose: To create a new business unit.

Prerequisites

- You installed WFM Configuration Utility. See the procedure Installing WFM Configuration Utility, page 109.

Start of procedure

1. Open WFM Configuration Utility.
2. In the Modules pane, select `Organization`.
3. In the Objects pane, right-click an empty area (or on an existing business unit).
4. Select **New BU** from the shortcut menu, or from the Actions menu.

   The New BU Attributes window opens.

> **Note:** New Business Units are created with the default name, `New BU for <site_name>`. However, the BU name must be unique. Therefore, it is recommended that you change it to a unique name, otherwise an error message appears, prompting you to edit the name.

5. Select a time zone for the new business unit.
6. In the Data pane, select a security role from the Default Security Role drop-down list.
7. Click **OK**.

End of procedure

A new business unit appears with the default name New BU. For help with configuration of your new business unit, see the Configuration Utility help topic Configuration > Organization > Business Units > Business Unit Properties.

Activities

Activities are defined as different categories of work that comprise the total workload for a contact center. Workload and staffing forecasts are created for each activity. Each site configures its own activities, to take into account of local conditions. All agent work that is forecast and scheduled must be assigned to an activity.

Activities can take various forms. They might describe types of work, such as inbound calls or e-mail; groups of customers served, such as preferred customer care; or work times, such as overnight. You can also use activities for non-CTI work. Each activity is then associated with one or more preconfigured skills. Because activities are a fundamental unit for forecasts and schedules, it is critical that you configure them accurately.

Maximum Simultaneous Users for Activities

The Maximum Simultaneous Users feature limits the number of agents that can be scheduled for an activity, even if the workload requires more. Maximum Simultaneous Users can be understood as a way to prevent excessive staffing for some activities so that the agents can be moved to more important activities, even if it leaves some less-important activities understaffed. This feature is best used when the contact center is understaffed as a whole. As the Maximum Simultaneous Users value is reached, agents are then assigned to other activities.

Note: Only use the Maximum Simultaneous Users feature in a multiskilled environment.

Multi-site Activities

Multi-site activities, formerly called *virtual activities*, are performed at multiple physical sites. They enable you to view several local activities as a single WFM object. The performance information is split among the sites that perform the activity. You can build an interaction volume forecast and view contact center performance for multi-site activities.

Multi-site activities, formerly called *virtual activities*, are performed at multiple physical sites. They enable you to view several local activities as a single WFM object. The performance information is split among the sites that perform the activity. You can build interaction volume forecasts, staffing forecasts, and view contact center performance for multi-site activities.”

Configuring Statistics

WFM uses the WFM Data Aggregator to track four statistical categories: `Interaction Volume`, `Abandonment Percentage`, `Quality of Service`, and `Handle Time`. These statistics are written to the WFM database, providing the historical data necessary for WFM Forecasting, Scheduling, Performance monitoring, and Adherence monitoring.

Because WFM Data Aggregator receives its statistics from the Genesys Stat Server, it supports a very flexible configuration. In the WFM Configuration Utility you associate Stat Server statistics with activities. These Stat Server statistics may be ones that are provided out-of-the-box, or they can be customized statistics.

For example, you can sum up values from any set of statistics you want, such as `totalTalkTime + totalHoldTime + totalAfterCallWorkTime`. This type of flexible configuration overcomes the limitations of ACD switch reports and integration, allowing you to choose the statistics that best represent the work associated with servicing each customer interaction.

Adding Reason Codes

When associating agent schedule states provided by WFM with Genesys events, you can configure reason codes with Genesys events. This allows you to refine the Genesys agent-state information that WFM uses to track agent compliance with their scheduled states.

WFM Data Aggregator can process reason codes that come from hard and/or soft phones. To receive reason codes from hard phones, or in a mixed hard/soft phone environment, set the `ReasonCodeKeyName` option in the `WFM Data Aggregator` application object to `ReasonCode`:

Procedure: Setting the `ReasonCodeKeyName` option in the WFM Data Aggregator application object to `ReasonCode`

Purpose: To enable Data Aggregator to process Reason Codes.

Prerequisites

- You created a WFM Data Aggregator application object for the current installation in Configuration Manager.

Start of procedure

1. Open Configuration Manager (a Management Framework component).
2. Open the `WFM Data Aggregator` application object.
3. On the `Options` tab, create an option named `ReasonCodeKeyName`, if it does not already exist.
4. Set the value of `ReasonCodeKeyName` to `ReasonCode`.
5. Save the change.

Note: You can use reason codes only if your CTI environment supports them.

End of procedure

Using Hot-Standby Backup for WFM Data Aggregator

You can configure a hot-standby backup WFM Data Aggregator for each primary WFM Data Aggregator server: see Step 5 on page 93. The backup reads the same information as the primary WFM Data Aggregator, so if it is necessary to switch to the backup, there is no delay or loss of data. At the transition, the backup WFM Data Aggregator simply starts writing to the database starting from where the primary WFM Data Aggregator left off.

If configured properly, WFM Data Aggregator also backs up data in the event of a disconnect from the database and the subsequent WFM Data Aggregator shutdown. It first writes all current data to a local “dump” file. You must specify a path and file name for the `DBDumpFile` option on the `Options` tab of the `WFM Data Aggregator Application` object.

Procedure:
Specifying a path and file name for the DBDumpFile option on the Options tab of the Data Aggregator Application Object

Purpose: To enable an emergency Data Aggregator info dump.

Start of procedure

1. Open Configuration Manager.
2. Open the WFM Data Aggregator Application object.
3. On the Options tab, create an option named `DBDumpFile`, if it does not already exist.
4. Set the value of `DBDumpFile` to a path and file name—for example: `C:\DAEmergency\DBDumpFile.txt`.
5. Save the change.

If WFM Data Aggregator loses its connection to the database, before closing down it writes all current data to the local file (the so-called *dump file*). After restart and reconnection to the database, WFM Data Aggregator reads the dump file, writes the data to the database, and deletes the dump file.

Note: The dump file does not prevent data loss during the period that WFM Data Aggregator is shut down.

End of procedure

Skills

You can configure interactions to be routed to specific agents within a contact center, based on skill definitions.

For example, you may want to have incoming interactions go first to an agent at the highest level of a certain skill. If no agent with that skill level for that activity is available, then the interaction can be routed to an agent with the next highest level of that skill. If no agent is available at that level, then the interaction can be routed to the next available agent, regardless of the agent's skill level for the activity.

The contact center manager can decide whether to staff for the higher skill levels, or whether to staff so that any agent can handle the interaction.

Skills are defined and assigned to agents in Configuration Manager. To learn how to import Configuration Manager skills into the WFM Utility Skills list, see the "Configuration > Skills" topic in Configuration Utility Help.

Matching Skills and Activities

Activities often correspond to skills but may also correspond to agent skill levels. Choosing an appropriate strategy for a contact center's activities allows for improved staffing decisions.

For example, in a simple scenario, the relationship among the queue, skills, and activities is a 1-1-1 correspondence. As things get more complex, the relationships get more complex. Activities consist of multiple skills, and each site has many activities associated with it. The goal is to find the best combination of relationships to meet staffing requirements.

Schedule-State Groups

A *schedule-state group* is a collection of schedule states that is linked to a site. These include breaks, meals, exceptions, activities, time off, and so on. You can group these, and then associate the group with one or more Genesys states.

Additionally, you can configure adherence thresholds for this schedule state group, which define when an agent should be considered to be non-adherent to the schedule states contained in the group.

To configure schedule-state groups, determine what schedule states you are using, what are the most logical groupings, and which Genesys state(s) best corresponds to each group.

To learn how to configure Schedule State Groups and Adherence Rules for them, see the "Configuration > Schedule State Groups" topic in Configuration Utility Help.

Events

Events are specific instances of occurrences that affect scheduling requirements. For example, a catalog drop might increase demand for agents handling inbound interactions. By configuring an event, you can forecast and schedule to incorporate its effects, ensuring appropriate staffing levels throughout the period that the event affects.

To learn how to create and configure Events and Factors (Events are instances of Factors), see the "Configuration > Events" topic in *Configuration Utility Help*.

Time Zones

Time zones are set up in Configuration Manager and imported into WFM during synchronization. You can assign time zones to sites and business units. You can also configure a default time zone, for efficiency in configuring new objects, and a user time zone, which is used as the alternative time zone in WFM Web Performance views. All newly created sites and business units use the default time zone, unless specified otherwise.

To learn how to configure and work with Time Zones, see the "Configuration > Time Zones" topic in *Configuration Utility Help*.

Synchronization

Synchronization brings Configuration Database objects, such as agents, agent skills, time zones, and users into WFM. You can configure security settings to determine the users who are able to perform synchronizations.

To learn about synchronization, see the "Configuration Utility Interface > Synchronizing" topic in *Configuration Utility Help*.

Note: To avoid errors during synchronization and further work, your configuration should not contain duplicate names for switches, time zones, or skills—not under different tenants, and not in different Configuration Manager instances that access the same WFM database.

About the WFM Policies Objects

Contractual obligations, legal requirements, and business practices comprise constraints under which a contact center operates. WFM enables you to specify constraints in great detail, resulting in forecasts and schedules that comply with constraints while optimizing staffing levels.

Time-Off Rules

This module enables you to set allocation parameters for both accrued and awarded time-off types. Constraints include the number of hours that are assigned per year or that accumulate per working period, and the carry-over date for each time-off type you use, and whether time-off requests can be auto-approved.

Each type of time off can be associated with one or more time-off rules. Because you can configure a number of time-off types (using the WFM Configuration Utility Time-Off Types module), you can have time off accumulate at different rates, providing more flexibility in managing contact-center staff.

You also use this module to assign time-off rules to specific agents. Agents can have multiple time-off rules assigned, each with its own time-off type.

Configure Time Off Rules

To learn how to create and configure Time Off rules, see the “Policies > Time Off Rules” topic in *Configuration Utility Help*.

Activity Policies

This module enables you to set activity open hours and staffing constraints. You can also use it to create activity sets (previously called exclusivity sets).

Activity sets provide a means to combine activities into groups for multiskilled scheduling. Activity sets are associated with sites. Any agent can work on an activity set if that agent has the skills required for the activities included in the activity set. When performing activity set work, agents must perform only the activities included in the set for a specified period of time.

When planning your deployment, consider which activities could logically be grouped into activity sets.

Contracts

Contracts are sets of rules that describe the contact center’s contractual obligations to agents. The maximum working hours for a contract should include allowances for meetings, training, overtime, and other planned, paid activities. You can configure an unlimited number of contracts. In some cases a unique contract might be necessary for each agent.

Use contracts to describe a single agent’s availability. For example, a student might prefer to work Monday, Wednesday, and Friday evenings, any time Tuesday and Thursday, and have weekends off for study and fun. You could configure this student’s contract to enable these availability parameters.

A contract is not the same as a shift. A *shift* indicates the hours an agent *will* work, whereas a contract describes how many hours an agent *should* work. For further details on shifts, see “Shifts” on page 70.

Constraints for Working Days, Hours, and Days Off

You can set the numbers of working days and hours and days off for one of several scheduling periods, depending on which best suit your enterprise’s business practices and any applicable legal requirements. You can set these parameters per week, per month, or per any period of 2 to 6 weeks.

For example, you can ensure that employees always receive 2 weekends off per month or work an exactly specified number of hours per 6-week period.

Configuring Profiles

A *profile* is an abstract or hypothetical agent constructed from user-defined contract data. You can create multiple profile types, which you can use to construct schedules containing empty schedule slots appropriate for the contracts you have or intend to hire for. You can insert actual agents into the schedule slots after you build the schedule.

Shifts

The method used to create WFM shifts allows for a flexible description of shift durations and of start and end times. Additionally, WFM schedules use flexible break and meal parameters.

In a sense, a WFM shift is an abstraction, representing countless possible working times, even though you can configure a shift to produce very regular, fixed, agent schedules.

A single WFM shift can incorporate hundreds of possible start times and durations as long as they fall within the parameters of the contract. However, through more rigid shift configuration, agent start times and workday durations can be fixed. This combination of flexibility and structure makes the WFM shift a tremendously powerful scheduling mechanism. In fact, in some cases, you can configure an entire contact center using only a few WFM shifts.

Taking Advantage of the WFM Shift

The WFM shift contrasts sharply with the conventional notion of a shift, with fixed weekly start time, fixed duration, and set breaks. You can configure shifts to work in tandem with contracts, which efficiently and effectively controls the placement of working times.

For example, consider a contact center with a standard full-time shift of 8 hours a day, 5 days a week, and an alternative full-time shift of 10 hours a day, 4 days a week. Both types of agents can use a single shift with a flexible duration of 8–10 hours per day. In either case, the agents are contracted to receive 40 hours work each week and to work 4 or 5 days. You can configure WFM to guarantee that specific agents work 4 or 5 days a week, or you can leave it to the WFM Scheduler to determine how many agents of each full-time type should be used to provide the least costly schedule.

Such an efficient method of shift allocation allows you to take into account the effect of complex scheduling requirements and agent-centric considerations, while making the best possible use of multiskilled agents.

If you have a need in your contact center for more precise control over when an agent works and the duration of his workday, you may consider using Rotating Patterns. This is a way to lock in specific types of schedules for an agent without creating a unique shift for him.

Exception Types

Exception types define periods of time when agents are engaged in non-work activities, such as training or meetings. Each site configures its own set of exception types based on its business requirements. You can configure exceptions to be considered during Meeting Planner use, to be convertible to a day off, and so on. You can assign agents to multiple partial-day exceptions if the exceptions do not overlap.

Because you can group agents into teams, you can assign exceptions to large groups of agents at one time.

Note: Prior to WFM 7.1.2, time-off types, particularly part-day time-off types, were configured using exception types. Genesys recommends that you make use of the new time-off capabilities rather than configuring time off using exception types.

Meetings

Use this module to create meetings and assign them to agents. You can set up a series of recurring meetings that must meet your constraints for frequency, number of occurrences, and so on.

Use the Meeting Planner in the WFM Configuration Utility to configure pre-planned meetings such as team meetings that recur weekly or monthly. If you need to create an ad hoc meeting, use the Meeting Scheduler within the WFM Web Supervisor application.

Time Off Types

Use this module to create time-off types for each type of time off that you want to be able to track.

Time-off types can be accrued (time off accumulates over time) or awarded (the total amount of time off for the year is assigned at a single time). For example, you might want personal time off to accumulate, whereas holidays—since there is a fixed number during the year—can be awarded.

You can associate multiple time-off rules with a single time-off type. This enables you to have different time-off types accumulate at different rates. For example, you can set different time-off rules for different levels of seniority.

Marked Time

By configuring marked-time types, you can specify periods of time that you want to monitor and report on that are not already labeled using an existing category. For example, you might want to mark the periods that agents worked on a particular project. Or you can mark overtime so that you can report on it.

You can insert and view marked time in the Schedule Intra-Day views. Two new reports, the Schedule Marked Time Report and the Schedule Marked Time Totals Report, display marked time statistics.

Rotating Patterns

Rotating patterns increase scheduling flexibility and control. A *rotating pattern* is a series of weekly patterns arranged in a repeating sequence. You construct each weekly pattern from a combination of shift assignments, agent availability times, days off, and so on, depending on what constraint is most important for any specific day.

Rotating patterns include availability times as options for weekly pattern days. If used, these availability settings override the availability settings that you configured in the Contract module for that day. Rotating pattern assignments are displayed in the Calendar along with all other pre-planned data.

Forecasting Considerations

You can create forecasts based on various kinds of data. Ideally, you already have a substantial quantity of good-quality historical data on contact center interactions that you can import into the WFM database. If you have historical data, you can use either of two forecasting algorithms depending on the amount of quality historical data available. The Expert Average Engine requires a full week of historical data with no missing timesteps. To use the Universal Modeling Engine, you must have at least a full year of historical data to create forecasts.

If historical data is unavailable or of poor quality, you can create forecasts based on templates. Templates reflect estimated interaction levels for different days and times and can be constructed for each activity.

When you do not have enough historical data to use the Expert Average Engine or the Universal Modeling Engine, you can combine the historical data with overlap templates, which fill in gaps in the historical data.

Creating optimal forecasts depends not only on whether historical data is available, but also on usual workflow. Contact centers with very regular interaction volumes require different forecasting considerations than contact centers that experience frequent or marked variations of interaction levels.

If your site activity load is highly predictable, you can apply a specific interaction volume or AHT to each time interval in the scenario.

Forecasting also incorporates figures such as staffing overheads, service objectives, and occupancy into the staffing calculations, allowing precise regulation of forecasting levels. You can create a variety of forecast scenarios using different service objectives or staffing parameters to help you create realistic contact center strategies for varying circumstances. After you decide which scenario best fits your environment, you publish it to the WFM database, where it becomes a part of your Master Forecast, upon which schedules are built.

Factors and Events

WFM can track events that may affect interaction volume. These events are based on factors, which are event types upon which events are built. When planning your forecasting, consider what factors and events may affect forecasts so you can configure them before creating forecasts. A sales promotion or marketing campaign, for example, may cause a predictable peak in interaction volume. Such events are entered in WFM Web and used by the advanced WFM algorithms. If an event recurs, the forecasting algorithms learn the impact of that event and account for its impact in future forecasts.

Scheduling Considerations

WFM schedules each agent individually, building schedules that allow for intra-day overhead. Therefore, you do not need to inflate staffing requirements to accommodate overhead. The only overhead additions that you need to account for are intangibles, such as starting up agent desktop applications, bathroom breaks, and so forth, and unplanned overhead, such as training or meetings that are not yet scheduled (or sick days, which, presumably, are always unplanned).

Note: The schedule is only as accurate as the forecast. If you do not build the forecast carefully, the schedule will not necessarily provide adequate coverage.

Because each site is different, some planners might choose to fully configure meetings and training. Others might opt to build these into the schedule after it is generated. WFM supports both strategies. However, a good rule of thumb says that if the meeting or training must occur at a specific time, it should be configured beforehand. Otherwise, you can add meetings and training after building the schedule.

Creating Blank Schedules

Because agent-based scheduling may not always be appropriate for your contact center, you can also create schedules using profile agents. Profile agents are user-defined, hypothetical agents, based on contract data. Using profile agents results in blank schedules that contain an appropriate number and assortment of schedule slots for the agents to be hired.

Note: You can combine profile agents with actual agents when creating a schedule.

Managing Schedule Bidding

Supervisors can create a profile schedule which authorized Agents then bid against, for the schedule slots that they prefer. The Supervisor can automate the resolution of conflicting bids according to stated Agent preferences as well as their Seniority and Rank, and then tweak it manually before publishing the official schedule. Such a schedule can be designed to repeat over an entire quarter.

About Performance Monitoring

The Performance module of WFM Web for Supervisors enables you to view how closely your service objectives are being met at the site, business unit, and activity level. You can also configure alerts to appear when service objective statistics fall outside of an acceptable range. You need to consider what your target service objectives are. To help you determine the most effective way to resolve unacceptable performance, the Performance module includes What-If capabilities, where you can see the potential effect of changing some parameter in your environment.

Table 2 lists the statistics shown on the Performance `Intra-Day` window and explains how each is calculated. For more on statistics configuration, see "Locating Preconfigured Stat Server Statistics in Configuration Manager" on page 177 and the "Activities" section in *Workforce Management 8.1 WFM Configuration Utility Help*.

Table 2: Performance Intra-day Statistics

Statistic	Definition
Interaction Volume—Forecast	Taken from the Master Forecast Interaction Volume. For sites, business units, and the enterprise, this is the sum of the associated local activities.
Interaction Volume—Actual	The Interaction Volume collected by WFM Data Aggregator. The specifics of the statistic being monitored is determined by the Interaction Volume statistic defined for this activity in the WFM Configuration Utility. For sites, business units, and the enterprise, this is the sum of the associated local activities.

Table 2: Performance Intra-day Statistics (Continued)

Statistic	Definition
AHT—Forecast	Taken from the Master Forecast AHT. For sites, business units, and the enterprise, this is the weighted average of the associated local activities (weighted by the corresponding forecast interaction volumes).
AHT—Actual	The AHT collected by WFM Data Aggregator. The specifics of the statistic being monitored is determined by the AHT statistic defined for this activity in the WFM Configuration Utility. For sites, business units, and the enterprise, this is the weighted average of the associated local activities (weighted by the corresponding actual handled interaction volumes).
Abandoned-Calls Percentage—Scheduled	The percentage of calls that would be expected to be abandoned with the number of scheduled agents working, assuming that the forecast IV and AHT are correct. For sites, business units, and the enterprise, this is the sum of the associated local activities (weighted by the corresponding forecast interaction volumes).
Abandoned-Calls Percentage—Required	The percentage of calls that would be expected to be abandoned with the number of required agents working, assuming that the forecast IV and AHT are correct. For sites, business units, and the enterprise, this is the sum of the associated local activities (weighted by the corresponding forecast interaction volumes).
Abandoned-Calls Percentage—Actual	The actual number of abandoned calls as collected by WFM Data Aggregator. The specifics of the statistic being monitored is determined by the Abandoned Calls Percentage statistic defined for this activity in the WFM Configuration Utility. For sites, business units, and the enterprise, this is the sum of the associated local activities (weighted by the corresponding actual interaction volumes).
Service-Level Percentage—Scheduled	The Service Level that would be expected if the scheduled number of agents are working, assuming that the forecast IV and AHT are correct. This calculation is based on the Service-Level objectives defined when you built the Staffing forecast. If you did not define these objectives, this value is not calculated. For sites, business units, and the enterprise, this is the weighted average of the associated local activities (weighted by the corresponding forecast interaction volumes).

Table 2: Performance Intra-day Statistics (Continued)

Statistic	Definition
Service-Level Percentage—Required	The Service Level that would be expected if the required number of agents are working, assuming that the forecast IV and AHT are correct. This calculation is based on the Service-Level objectives defined when you built the Staffing forecast. If you did not define these objectives, this value is not calculated. For sites, business units, and the enterprise, this is the weighted average of the associated local activities (weighted by the corresponding forecast interaction volumes).
Service-Level Percentage—Actual	The actual Service-Level percentage collected by WFM Data Aggregator. The specifics of the statistic being monitored is determined by the `Service Level Percentage` statistic defined for this activity in the WFM Configuration Utility. For sites, business units, and the enterprise, this is the weighted average of the associated local activities (weighted by the corresponding actual distributed interaction volumes).
ASA—Scheduled	The ASA that would be expected with the number of scheduled agents, assuming that the forecast IV and AHT are correct. For sites, business units, and the enterprise, this is the weighted average of the associated local activities (weighted by the corresponding forecast interaction volumes).
ASA—Required	The ASA that would be expect with the number of required agents, assuming that the forecast IV and AHT are correct. For sites, business units, and the enterprise, this is the weighted average of the associated local activities (weighted by the corresponding forecast interaction volumes).
ASA—Actual	The ASA collected by WFM Data Aggregator. The specifics of the statistic being monitored is determined by the ASA statistic defined for this activity in the WFM Configuration Utility. For sites, business units, and the enterprise, this is the weighted average of the associated local activities (weighted by the corresponding actual interaction volumes).
Staffing—Scheduled	The number of agents per timestep for each activity. Taken from the Master Schedule. In a multi-skill environment, an agent may be available for multiple activities but will only be scheduled for one activity in any timestep. If an agent is scheduled to work only part of a time interval, only the fraction of the time period during which she or he works is counted. Therefore, the value for staffing may be expressed as a fraction. For example, if an agent is scheduled to work for 10 minutes of a 15-minute timestep, she is counted as 2/3 (or .667) of an agent.

Table 2: Performance Intra-day Statistics (Continued)

Statistic	Definition
Staffing—Required	Required number of agents per timestep scheduled for each activity. Taken from the Master Forecast.
Variance—Scheduled Staffing Difference	The value obtained by subtracting the scheduled number of agents working during a timestep from the optimal staffing for that timestep. *Optimal staffing* is a calculation based on actual interaction volume, actual AHT, and the service objectives specified in the forecast. This value is not displayed but is used in calculating Variance values.
Variance—Required Staffing Difference	The value obtained by subtracting the required number of agents working during a timestep from the optimal staffing for that timestep. *Optimal staffing* is a calculation based on actual interaction volume, actual AHT, and the service objectives specified in the forecast. This value is not displayed but is used in calculating Variance values.
Number Of Agents—Scheduled	The number of agents scheduled for each timestep. Multi-skilled agents are counted once for each activity they can potentially work on for each timestep. If a multiskilled agent has the skills to work on two activities that are both open during a particular timestep, she or he is counted twice. As a result, in a multiskilled environment the total number of agents for a timestep may be larger than the total number of agents.
Number Of Agents—Actual	The actual number of agents working on an activity during each timestep. This value may be a fraction because an agent may work on the activity for only part of a timestep.

About Adherence Monitoring

WFM Adherence monitors real-time agent status using statistical information that Data Aggregator draws from Stat Server. Agent adherence to schedule states is evaluated based on user-defined adherence thresholds. To enable Adherence features such as real-time monitoring, you must configure Stat Server and WFM Data Aggregator to collect and store the appropriate interaction information.

See “Configuring Stat Server Statistics” on page 175 for more a detailed explanation of the setup required for accurate adherence monitoring.

Chapter

4 Installing and Configuring Workforce Management

This chapter provides step-by-step instructions for installing and configuring Workforce Management (WFM), including creating your WFM database.

Note: If you are migrating from a previous version of WFM, read the instructions in the "Workforce Management Migration Procedures" chapter of the *Genesys Migration Guide* before beginning your installation. In particular, WFM 8.1 requires a new, separate database into which your existing data is imported.

This chapter includes the following sections:

You can install create and configure WFM using the Configuration Wizards or manually. The procedures are the same through the section "Import the WFM Templates" on page 86. For instructions on performing a manual setup of your `Application` objects, see "Manually Create and Configure the Applications" on page 100.

Note: Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Before running Workforce Management Setup or the Installation and Configuration Wizards:

- Review the predeployment topics in Chapter 3, "Deployment Planning," on page 59.
- Verify that you have set up the computers that will be running WFM as described in "Preliminary Preparation," which follows.

Preliminary Preparation

WFM 8.1 works in conjunction with a number of software components. Before installing WFM, set up Genesys Framework. The installation should include at least the following components:

- Configuration Manager
- Configuration Server
- DB Server
- T-Server
- Stat Server

Note: WFM 8.1 is compatible with Genesys Framework 7.x and 6.5. However, for full interoperability with WFM 8.1, the Genesys components must be release 7.0 or later. Using WFM 8.1 with earlier releases of these components limits use of the Configuration Wizards, Management Layer support, and Reason Code support. For example, the WFM Daemon wizard will work only with Genesys Framework 7.6 or greater, because it uses new the `WFM Daemon` application type, which was introduced in Configuration Manager 7.6.

Software Requirements

For complete and up-to-date information on software requirements, review the *Genesys Supported Operating Environment Reference Guide*, which is located on the Technical Support web site. You will need a Genesys-supplied login and password to access certain documents there.

Management Layer System Requirements

The Management Layer of Genesys Framework enables administrators to start, stop, and monitor the status of entire solutions from a centralized location. To use Management Layer, you must also have the following Genesys Framework components installed:

- DB Server
- Configuration Server
- Message Server
- Log Database
- Solution Control Server (SCS)
- Solution Control Interface (SCI)
- Local Control Agents (LCAs)

For more information on installing any of these components, see the documentation for Genesys Framework.

To use Management Layer, you must install LCA on the servers running WFM Builder, WFM Server, WFM Data Aggregator, and WFM Daemon.

Register the Server Host Computers

You must register each host computer that runs one or more of the servers.

Procedure: Registering a host computer

Purpose: To enable the computer to run one or more servers required by WFM.

Prerequisites

- Prerequisite. The computer to register must be on the same networked as the computer you are using to register it.

Start of procedure

1. Identify the host computer's assigned name on the network.
2. Open Configuration Manager and select `Environment > Hosts`.
3. Right-click `Hosts` and select `New > Host` from the shortcut menu that appears.
4. On the dialog box that opens, enter the host name of a computer on which you are installing a WFM server.

Note: Host names must be lowercase. They are case sensitive.

5. Enter the host computer's operating system and version and its IP address. Accept the default port number. Make sure that the `State Enabled` check box is selected.
6. Click `Apply`.

Repeat the process for all computers that are to run a WFM server.

End of procedure

Create Your WFM Database

If you are updating from WFM 7.x to WFM 8.1, you do not need to create a new database. Simply update your current database as described on page 215.

If you are installing WFM for the first time or migrating from version 6.x, you must create a new database.

Note: If you are migrating from WFM 6.x, see the "Workforce Management Migration Procedures" chapter in the *Genesys Migration Guide* for how to transfer your data from your current database to the new one.

Your database should:

- Be of an appropriate size.
- Allow room for expansion.
- Be configured to be case insensitive.

The user who accesses the database must have the following privileges:

- If the platform is MS SQL:
  - database-owner (DBO)
- If the platform is Oracle:
  - GRANT CREATE SESSION TO <user name>
  - GRANT CREATE TABLE TO <user name>
  - GRANT CREATE VIEW TO <user name>
  - GRANT CREATE PROCEDURE TO <user name>
  - GRANT CREATE SEQUENCE TO <user name>
  - GRANT CREATE TRIGGER TO <user name>
  - GRANT CREATE TYPE TO <user name>
  - GRANT UNLIMITED TABLESPACE TO <user name>

  Note: The privileges listed above must be assigned to Oracle database owners to ensure WFM applications are fully functional when the WFM database runs on an Oracle platform.

- If the platform is DB2:
  - Connect to database

- Create tables
- Create packages
- Register routines to execute in database manager's process
- Database administrator authority
- Create schemas implicitly
- Access to the load utility
- Create external routines
- Connect to quiesced database

Notes: A DB2 database requires specific configuration, which is described in the section "New Database Configuration" on page 210.

For an Oracle database, the database server name that the client application uses to access the database is actually an alias. If you use different database aliases on the various client computers, you cannot use the same Database Access Point (DAP) for data from each client.

The procedure required to create your WFM Database varies, depending upon which database type you are using. A qualified database administrator should perform this procedure.

In order for the Configuration Utility to work properly, you must set Microsoft SQL and Oracle database management systems to be case-insensitive.

Create a Database Access Point

Many of the WFM `Application` objects require a connection to a Database Access Point (DAP), which specifies the name and location of the WFM Database.

Procedure: Creating a Database Access Point

Purpose: To enable the Configuration Utility, the Database Utility, and WFM Server to specify the DAP on their `Application` object `Connections` tab.

Prerequisites

- You must know the name of your new WFM Database, its location, its type, and the login name and password for a user with DBO privileges.

Start of procedure

1. In Configuration Manager, open `Environment` and then right-click `Applications`.
2. Select `New Application` from the shortcut menu that appears.
3. Choose your DAP `Application` template from the `Templates` list and then click `OK`.
4. Enter a unique DAP name on the `General` tab.

Note: You do *not* need to select a DB Server. WFM does not use DB Server to access its database.

5. On the `Server Info` tab, enter any valid host name and port number. WFM does not use them, but you cannot save the `DAP Application` object unless these fields are filled in.
6. Enter the appropriate information on the remaining `Application` object tabs. For assistance with this step, see "Configuring Database Access Points" in the *Framework 8.1 DB Server User's Guide*.
7. Click `OK` to save the new `Application` object.

End of procedure

Requirements for 8.1x Installations Using an Oracle Database

- The latest Oracle Client 11 with Oracle NET and Oracle Provider for OLE DB.
- 64-bit WFM servers require the 64-bit Oracle Client.
- WFM Database Utility and/or WFM Configuration Utility are 32-bit application and therefore 32-bit Oracle Client need to be installed on the host(s) that are running those components.

Notes:

- Do not install 64-bit WFM Data Aggregator and WFM Server on the same machine as 32-bit WFM Database Utility, because they require different Oracle Clients.
- Regardless of the version of Oracle Database Server used, Genesys recommends that you use Oracle Client version 11.2 or later on all WFM hosts.
- To install all required components, use the Oracle Client or Oracle ODAC installation packages.

Procedure:
Installing the Oracle Client with Oracle NET and Oracle Provider for OLE Database

Start of procedure

1. Uninstall all Oracle Client software that is currently installed. Use the Oracle Deinstal Tool and steps described in:
   Oracle« Database Client Installation Guide. Removing Oracle Database Client Software.
2. Download latest Oracle Client 11g complete installation package with appropriate bit version:
   - Oracle ODAC 11g 32-bit
   - Oracle ODAC 11g 64-bit
3. During Oracle Client installation, you can use any type of installation. Recommended types are Administrator or Runtime installation types which will install all required components. The installation type Instant Client will need an additional Oracle Provider for OLE DB installation, found in Oracle ODAC. The installation type Custom will require you to manually select the Oracle NET and Oracle Provider for OLE DB.
4. Connect Oracle Database Client to an Oracle Database. Refer to: Oracle Database Client Post installation Tasks.

End of procedure

Procedure:
Installing Oracle ODAC with Oracle Provider for OLE DB and Oracle Instant Client

Start of procedure

1. Uninstall all Oracle Client software that is currently installed. Use the Oracle Deinstall Tool and steps described in:

Oracle« Database Client Installation Guide. Removing Oracle Database Client Software.

2. Download the latest Oracle ODAC 11g installation package with the appropriate bit version:
   - Oracle ODAC 11g 32-bit
   - Oracle ODAC 11g 64-bit
3. During the Oracle ODAC installation, select Oracle Provider for OLE DB and Oracle Instant Client components.

4. Connect Oracle Database Client to an Oracle Database. Refer to: `Oracle Database Client Post installation Tasks`.

End of procedure

Import the WFM Templates

Procedure: Importing WFM Application Templates

Purpose: To enable WFM installation., which requires the current Application templates.

Start of procedure

1. In Configuration Manager, select `Environment > Application Templates.`
2. Right-click `Application Templates` and select `Import Application Template` from the shortcut menu.

   A dialog box opens that enables you to browse to the `Application` templates on your Workforce Management release disk.
3. Select a template and then click `Open.` These are the template names:
   - `WFM_Builder.apd`
   - `WFM_Client.apd`
     (used for both the Database Utility and the Configuration Utility)
   - `WFM_Data_Aggregator.apd`
   - `WFM_Daemon_Genesys_Server.apd`
   - `WFM_Server.apd`
   - `WFM_Web.apd`

   Note: Beginning with release 7.6, these template names no longer contain a version number.

4. If you want to, enter a name for the template in the `Name` text box on the `General` tab.

   Note: Do not make any other changes to the template. When you create `Application` objects using the imported templates, you configure them as explained in the following sections.

5. Click `OK` to save the template.

6. Repeat Steps 1–5 to import all of the Application templates.

End of procedure

Next Steps

- Configure new Application objects based on the imported Application templates, as described in the various sections that follow.

Import the WFM Solution Template

Procedure: Importing WFM Solution Template

Purpose: To enable the WFM Configuration Wizards., which require the current Solution template.

Start of procedure

1. In Configuration Manager, select Environment > Solutions.
2. Right-click Solutions and select Import Solution Template from the shortcut menu.

   A dialog box opens that enables you to browse to the solution template on your Workforce Management release disk.
3. Select the template and then click Open. The template name is WFM_Solution_3rd_Party.sd.
4. Enter a name for the template in the Name text box on the General tab, if desired.

Note: Do not make any other changes to the template. When you run the WFM Configuration Wizard, it configures the solution for you.

5. Click OK to save the template.

End of procedure

Next Steps

- Link to next procedure. Optional for Phase 1.

Install and Run the Configuration Wizards

The Workforce Management Configuration Wizards guide you through the process of creating the `Application` objects for the WFM components. It is run from the Genesys Wizard Manager.

You can also create and configure the component `Application` objects manually. For instructions, see "Manually Create and Configure the Applications" on page 100.

Note: All users must manually configure the `Options` tab. For a list of the options on the `Options` tab, with default settings and descriptions, see Chapter 5, "Configuring the Options Tabs," on page 123.

You must install the wizards before you can run them. See Installing WFM Configuration Wizards.

Procedure: Installing WFM Configuration Wizards

Purpose: To enable running the wizards.

Start of procedure

1. Open the root directory or navigate to the `configuration_wizard` directory on the Workforce Management release disk.
2. Double-click `Setup.exe`.

   The `Welcome` window opens.

   Note: If you have already installed the Wizards, the window offers a `Remove` option.

3. Click `Next`. The `Choose Solution Destination` window opens, displaying a default directory, for example:
   `C:\Program Files\Common Files\GCTI\CFG Wizards 8.1`.
4. Click `Default` to accept the default directory, or click `Browse` to select a different directory.
5. Click `Next`.
   The `Ready to Install` window opens.
6. Click Install to start the installation process.
   A progress bar appears as the Wizard files are copied.

7. Click `Finish` to exit the setup after all files have been copied.

End of procedure

Running the Configuration Wizards

This section describes how to start the Configuration Wizards and use them to create WFM `Application` objects. To start the Wizatds, see Starting the WFM Configuration Wizards.

Procedure: Starting the WFM Configuration Wizards

Purpose: To start the WFM Configuration Wizards

Start of procedure

1. Select `Start > Programs > Genesys Solutions > Workforce Management > Workforce Management Configuration Wizards > Start Wizard Manager`. Then, click the `log into the Configuration Layer` link.
2. Enter the login information for your Configuration Server in the `LogIn` window that appears.
3. From the list of solutions at the left side of the Main Genesys Wizard Manager window, click `Workforce Management`.
4. Click the `Deploy Workforce Management` link that appears in the right-hand pane of the `Set Up Your Solutions` window.

   The Workforce Management Wizard `Welcome` window opens.

   Note: If you already have a WFM solution set up, it appears instead of the `Deploy Workforce Management` link. You can edit your existing solution by clicking `Properties` or delete it and configure a new one.

5. Click `Next`. The `General` window opens.
6. Enter a name for your WFM solution and select a Solution Control Server. This is the Solution Control Server that Management Layer uses to start, stop, and monitor your WFM solution.
7. Click `Next`.

End of procedure

Next Steps

If you have already created any `WFM Server Application` objects, they are listed in this window. At this point you can:

- Select an already-created `Application` object and click `Next` to proceed to the next wizard.
- Select an already-created `Application` object and then click `Properties` to edit it before proceeding.
- Click `Add` to create a new `Application` object.

The WFM Server Wizard

Clicking the `Add` button opens the `Browse for Application (WFM Server)` window, which shows the contents of your Configuration Manager `Applications` folder. See Creating an WFM Server Application object.

Procedure:
Creating an WFM Server Application object

Purpose: To create a `WFM Server Application` object.

Start of procedure

1. To create your `WFM Server Application` object click the `New Application` icon. It is the left-most icon at the top of the window and looks like this:

   

   The WFM Server Wizard `Welcome` window opens.
2. Click Next. The `WFM Server Name` window opens.
3. Enter a name for your WFM Server `Application` object, and then click `Next`. The `Server Info` window opens.
4. Select or adjust the host name and port number of the computer where you want to install this application. Then click `Next`.

   Note: This is the information for the computer where WFM Server will run, not the host and port for the Configuration Server computer.

5. On the `Installation Package` window, specify the Source and Destination directories for copying the Installation Package, and then click Next.
6. On the Installation Ready window, click `Next`.
7. On the `Connections` window, select from the drop-down list or browse to the DAP `Application` object you created previously. See "Create a Database Access Point" on page 83 for this procedure.

Notes: The `Connections` window also asks for the WFM Builder Application option. This procedure assumes that you have not yet created this `Application` object. If you already have created, select the object here.

If you do not have a WFM Builder Application object, leave the Connections field empty for now. You will add connections to this Application object later. See "Edit the WFM Server Connections" on page 96 for instructions.

8. Click `Next` to open the `Log Configuration` window. You can click Run Log Wizard to customize your log settings or click `Next` to accept the default log settings.

Note: You can change these settings at any point by using the Wizard to edit your WFM Server `Application` object or by editing the Log section on the Options tab of the WFM Server `Application` object. Procedures for editing Options tab settings are described in Chapter 5.

9. Click `Finish` to close the WFM Server Wizard. The `Application` object appears in your `Configuration Manager Applications` folder.
10. Select your new `WFM Server Application` object and click `OK`.

    The new `Application` object now appears in the `Solution Components` list.
11. Click `Next` to continue.

End of procedure

Configure Multiple WFM Servers

If you are planning to schedule for multiple sites served by multiple WFM Servers, you must configure the correct connections. See Configuring multiple WFM Server Application objects.

Procedure:
Configuring multiple WFM Server Application objects

Purpose: To configure multiple WFM Server `Applicaitons` for multi-site environments.

Start of procedure

1. Configure a `WFM Server Application` object for each WFM Server and install the WFM Servers as instructed in this section and in Installing WFM Server, page 106. Decide which of the WFM Servers will act as the main WFM Server and which are to be configured as subordinate.
2. Open the main `WFM Server Application` object's `Connections` tab and add all the subordinate WFM Servers.
3. When your entire installation is complete, open the WFM Configuration Utility and specify which WFM Server is associated with each site using the `Site Properties` window.
4. Start all the WFM Servers. Assuming that the objects in the WFM Configuration Utility are fully configured, you should be able to use WFM Web for Supervisors to create schedules for activities on all sites specified in any `WFM Server Application` object.

End of procedure

The WFM Data Aggregator Wizard

The WFM Solution Wizard now looks for a `Data Aggregator Application` object. If you have already created any `WFM Data Aggregator Application` objects, they are listed in this window. At this point you can:

- Select an already-created `Application` object and click `Next` to proceed to the next wizard.
- Select an already-created `Application` object and then click `Properties` to edit it before proceeding.
- Click `Add` to create a new `Application` object.

Clicking the `Add` button opens the `Browse for Application (WFM Data Aggregator)` window, which shows the contents of your Configuration Manager `Applications` folder. See Creating a WFM Data Aggregator Application object.

Procedure: Creating a WFM Data Aggregator Application object

Purpose: To create a `WFM Data Aggregator Application` object

Start of procedure

1. To create your `WFM Data Aggregator Application` object, click the `New Application` icon. It is the left-most icon at the top of the window and looks like this: 

The WFM Data Aggregator Wizard opens.

2. Click Next. The `WFM Data Aggregator Name` window opens.
3. Enter a name for your `WFM Data Aggregator Application` object, and then click `Next`. The `Server Info` window opens.
4. Select or adjust the host name and port number for the computer where you want to install this application.

> **Note:** This is the information for the computer where WFM Data Aggregator will run, not the host and port for the Configuration Server computer.

5. Select a backup WFM Data Aggregator if you are planning to use a redundant architecture such as `Hot-Standby` or `Warm-Standby`. If you have not yet created another `Data Aggregator Application` object, skip this step. You can add a connection to the backup WFM Data Aggregator after you create its `Application` object. To do so, edit the `Application` object from the `Solution Components` list in the WFM Solution Wizard.
6. Click `Next` to continue.
7. On the `Installation Package` window, select the source and destination directories for copying the Installation Package, and then click `Next`.
8. On the `Installation Ready` page, click `Next`.
9. On the `Connections` window, select from the drop-down list or browse to your `WFM Server Application` object, the `DAP Application object` you created previously (see "Create a Database Access Point" on page 83 for this procedure), and your `Stat Server Application` object.
10. Click `Add WFM Statistics` to have the Wizard add preconfigured WFM-specific statistics to your Stat Server.

> **Note:** See "Configuring Stat Server Statistics" on page 175 for a list of all the preconfigured statistics that the Wizard adds if you select this option and explanations of how to configure these statistics manually, if necessary.

11. Click `Next` to open the `Log Configuration` window. You can click `Run Log Wizard` to customize your log settings or click `Next` to accept the default log settings.

> **Note:** You can change these settings at any point by using the Wizard to edit your `WFM Data Aggregator Application` object or by editing the `Log` section on the `Options` tab of the `WFM Data Aggregator Application` object. Procedures for editing `Options` tab settings are described in Chapter 5.

12. Click Finish to close the WFM Data Aggregator Wizard. The Application object appears in the Browse for Application (WFM Builder) window.
13. Select your new WFM Data Aggregator Application object and click OK.

    The new Application object now appears in the Solution Components list.
14. Click Next. The Solution Components window opens.

End of procedure

The WFM Daemon Wizard

Use the WFM Daemon Wizard to create an WFM Builder Application object. See Creating a WFM Daemon Application object.

Procedure: Creating a WFM Daemon Application object

Purpose: To create a WFM Daemon Application object:

Start of procedure

1. Click Add.

   The Component Types window appears. It lists the components for which you can create an Application object.
2. Select the WFM Daemon radio button and click OK.
3. Click the New Application icon ( ), which is the left-most icon in the row at the top of the Browse for Application (WFM Daemon) window.

   The WFM Daemon Wizard Welcome window opens.
4. Click Next. The WFM Daemon Name window opens.
5. Enter a name for your WFM Daemon Application object, and then click Next. The Server Info window opens.
6. Select or adjust the host name and port number for the computer where you want this application installed.

   Note: This is the information for the computer where WFM Daemon will run, not the host and port for the Configuration Server computer.

7. On the Installation Package window, select the source and destination directories for copying the Installation Package, and then click Next.
8. On the Installation Ready page, click Next.
9. On the Connections window, select your WFM Server Application object from the drop-down list, or browse to it, and then click Next.

10. On the `Log Configuration` window, click `Run Log Wizard` to customize your log settings, or click `Next` to accept the default log settings.

> **Note:** You can change these settings at any point by using the Wizard to edit your WFM Daemon Application object, or by editing the `Log` section on the `Options` tab of the WFM Daemon Application object. Procedures for editing `Options` tab settings are described in Chapter 5, "Configuring the Options Tabs," on page 123.

11. Click `Finish` to close the WFM Daemon Wizard.
    The Application object appears in the `Browse for Application (WFM Daemon)` window.
12. Select your new WFM Daemon Application object and click `OK`.
    The new Application object appears in the `Solution Components` list.

    The WFM Solution Wizard now indicates:

    `The following components will be part of your solution. If you need to set up client applications for your solution, click Next. To complete this wizard, click Finish.`

> **Note:** For information on setting up WFM Daemon, see page 101.

End of procedure

The WFM Builder Wizard

Use the WFM Builder Wizard to create an WFM Builder `Application` object. See Creating a WFM Builder Application object.

Procedure: Creating a WFM Builder Application object

Purpose: To create a `WFM Builder Application` object:

Start of procedure

1. Click `Add`.

   The `Component Types` window appears. It lists components for which you can create an `Application` object.
2. Select the `WFM Builder` radio button and then click `OK`.
3. Click the `New Application` icon ( ), which is the left-most icon in the row at the top of the `Browse for Application (WFM Builder)` window.

   The WFM Builder Wizard opens.

4. Click `Next`. The `WFM Builder Name` window opens.
5. Enter a name for your `WFM Builder Application` object, and then click `Next`. The `Server Info` window opens.
6. Select or adjust the host name and port number for the computer where you want this application installed.

> **Note:** This is the information for computer where WFM Builder will run, not the host and port for the Configuration Server computer.

7. On the `Connections` window, select from the drop-down list or browse to your `WFM Server Application` object, and then click `Next`.
8. Click `Next` to open the `Log Configuration` window. You can click `Run Log Wizard` to customize your log settings or click `Next` to accept the default log settings.

> **Note:** You can change these settings at any point by using the Wizard to edit your `WFM Builder Application` object or by editing the `Log` section on the `Options` tab of the `WFM Builder Application` object. Procedures for editing `Options` tab settings are described in Chapter 5.

9. Click `Finish` to close the WFM Builder Wizard. The `Application` object appears in the `Browse for Application (WFM Builder)` window.
10. Select your new `WFM Builder Application` object and click `OK`.

    The new `Application` object now appears in the `Solution Components` list.
11. Click `Next` to continue.

End of procedure

Edit the WFM Server Connections

If the WFM Builder `Application` object was not indicated when you created your WFM Server `Application` object (because the object did not exist or had not been specified), add the connections to this component now. See Adding Connections in the WFM Server Application object.

> **Warning!** If you omit this procedure, Workforce Management will not function correctly.

Procedure: Adding Connections in the WFM Server Application object

Purpose: To add a connection to WFM Builder in the WFM Server Application object.

Start of procedure

1. Select your WFM Server Application object from the Solution Components list and then click Properties.

   The Properties dialog box of the WFM Server Application object opens.
2. Click the Connections tab. Enter or browse to your WFM Builder Application object. After you have specified the WFM Builder Application object, click OK.

   The Application objects are now configured for the four solution components in the Solution Components list.

You must now create Application objects for the client components:

- WFM Configuration Utility/WFM Database Utility—See "The WFM Client Application Wizard (Configuration Utility and Database Utility)" on page 97.
- WFM Web—See "The WFM Web Wizard" on page 98.

3. To begin client Application object configuration, click Next.

End of procedure

The WFM Client Application Wizard (Configuration Utility and Database Utility)

The Configuration Utility and the Database Utility use the same Application object. To create it, Start at the WFM Solution Wizard WFM Client window. See Creating the Configuration Utility Application object.

Procedure: Creating the Configuration Utility Application object

Purpose: To create an Application object for the Configuration Database Utilities.

Start of procedure

1. Click New.

2. Click the New Application icon ( ).
   The WFM Client Application Wizard Welcome window opens.
3. Click Next. The WFM Application Name window opens.
4. Enter a name for your WFM Client Application object, and then click Next. The Installation Package window opens.
5. Select or adjust the source and destination directories for copying the Installation Package, and then click Next.
6. On the Installation Ready window, click Next.
7. On the Connections window, select a DAP Application object from the drop-down list, or browse to it, and then click Next.
8. On the Log Configuration window, click Run Log Wizard to customize your log settings, or click Next to accept the default log settings.

   Note: You can change these settings at any point by using the Wizard to edit your WFM Client Application object or by editing the Log section on the Options tab of the WFM Client Application object. Procedures for editing Options tab settings are described in Chapter 5.

9. Click Finish to close the WFM Client Application Wizard. The new Application object appears in your Configuration Manager Applications folder.
10. Select your new WFM Client Application object and then click OK.

    The new Application object now appears in the Solution Components list.
11. Click Next to continue.

Note: Genesys recommends that you add a connection to WFM Server. To do so, open the WFM Client Application object after you finish the sequence of Configuration Wizards and add a connection to WFM Server on the Connections tab.

End of procedure

The WFM Web Wizard

To create the WFM Web Client application object, start at the WFM Solution Wizard WFM Web window, which appears after the WFM Application Wizard closes. See Creating the WFM Web Application object.

Procedure: Creating the WFM Web Application object

Purpose: To create the WFM Web Application object.

Start of procedure

1. Click New.
2. Click the New Application icon ( ). The WFM Web Wizard opens.
3. Click Next to start using the WFM Web Wizard.
4. Enter a name for your WFM Web Application object, and then click Next. The Server Info window opens.
5. Select the host name and port number for the computer where you want this application installed, and then click Next. The Installation Package window opens.
6. Adjust the source and destination directories for copying the Installation Package, and then click Next.
7. On the Installation Ready page, click Next.
8. Select from the drop-down list or browse to your WFM Server Application object, and then click Next.
9. Click Next.
10. On the Log Configuration window, click Run Log Wizard to customize your log settings, or click Next to accept the default log settings.

    Note: You can change these settings at any point by using the Wizard to edit your WFM Web Application object or by editing the Log section on the Options tab of the WFM Web Application object. Procedures for editing Options tab settings are described in Chapter 5.

11. Click Finish to close the WFM Web Wizard. The new Application object appears in your Configuration Manager Applications folder.
12. Select your new WFM Web Application object and then click OK.

    The new Application object now appears in the Solution Components list.
13. Click Next to continue.

This step completes the WFM Solution Wizard.

14. Click `Finish` to close the wizard.

    Your new WFM Solution appears on the Genesys Wizard Manager `Workforce Management` window.

End of procedure

Manually Create and Configure the Applications

If you are familiar with Configuration Manager, you may choose to create and configure the component `Application` objects manually rather than using the wizards. See

Procedure: Creating Application objects manually

Purpose: To create WFM `Application` objects manually (not using the configuration wizards).

Start of procedure

1. In Configuration Manager, open the `Environment > Applications` folder.
2. Right-click in the folder and select `New Application` from the shortcut menu that appears.
3. Browse to and select the appropriate application template from those you previously imported. If necessary, see "Import the WFM Templates" on page 86 for instructions.
4. Enter the appropriate information in each tab of the `Application` object. If you need guidance, check the description for that component in "Install and Run the Configuration Wizards" on page 88.

End of procedure

Note: The information on most of these tabs is familiar to regular users of Configuration Manager. Users must ensure the settings are correct on the `Connections` tab of each `Application` object. See Table 1 on page 57 for the complete set of required connections.

Users must manually configure the `Options` tab settings. For a list of the `Options` tab options, with default settings and descriptions, see Chapter 5.

WFM Daemon Setup

For information on this component, see “Notifications” on page 36.

To successfully run WFM Daemon, you must set the correct SMTP server host and port. Depending on your configuration, you may also need to set the user name and password. For information on setting these options, see “Options Tab for WFM Daemon”, “SMTP Section” on page 172.

To support automatic report creation, perform these configurations using Configuration Manager:

- In the WFM Web application, set the Reports section variable `ServerURL`. See “Install WFM Web as Report Server” on page 116.
- In the WFM Web application, set the Reports section variable `PathToAutoGeneratedReports` to the network path for storing generated reports. See “PathToAutoGeneratedReports” on page 166.
- In the WFM Daemon application, add a connection to the WFM Web application that you installed as the report server in “Install WFM Web as Report Server” on page 116.

For notifications to work successfully:

- Each agent and supervisor must have the proper e-mail set. As described in *Configuration Utility Help*, e-mail addresses are initially defined in Configuration Manager as part of the `Person` object. Once e-mail addresses exist in the Configuration Database, you have the option of importing them into the WFM Database.
- The supplied SMTP server must be configured accept e-mails for those addresses.
- Before anything can be sent, you must first configure notifications in WFM Web for Supervisors, `Configuration` module, as described in *Supervisors Help*.
- A Supervisor’s ability to receive notifications depends on their security settings (see “User Security Settings” on page 24). As described in *Workforce Management 8.1 Configuration Utility Help*, supervisors must be granted rights to receive notifications for each notification type and have access to the agent teams for which they want to receive notifications.

Manually Create the WFM Solution Object

If you are using Management Layer, you must create the `WFM Solution` object and add the necessary components. If you have not yet imported the solution template and created the solution `Application` object, see “Import the WFM Solution Template” on page 87.

Procedure:
Creating and configure a Solution object

Purpose: To create and configure the WFM Solution object:

Start of procedure

1. Double-click the Workforce Management solution to open its `Properties` dialog box.
2. On the `Components` tab, add the servers that Workforce Management needs to run (see Table 3 on page 102).

Note: The `Components Definition` tab displays the preset component types that the solution connects with. The actual connections are configured on the `Components` tab, but you can use the `Components Definition` tab as a guide to correct settings.

- `Application` is the name of the application that the Workforce Management solution runs.
- `Optional` is the requirement status. `False` means that the application must run successfully for WFM to run. `True` means that the application is optional for WFM to run.
- `Startup Priority` is the order in which to start the servers.

Note: You cannot revise `Startup Priority` after you have configured it.

3. Click `OK`.

Table 3: Definitions Tab Settings for the Workforce Management Solution Components

Application	Optional	Startup Priority
Message Server(s)	True	1
WFM Server	False	2
WFM Data Aggregator	False	3
WFM Builder	False	3
WFM Daemon	True	3

End of procedure

Manually Change Configuration Server Host and Port

When you run the Configuration Wizards, you enter Configuration Server host and port information for the servers. However, you may need to change this information after installing WFM. To update this information manually, you must change the information.

Note: Editing a `startServer.bat` file is effective only if the server is started by using the `.bat` file. If you start the server manually from the control panel, or if it is started automatically as a Windows service, you must unregister the server and then re-register it.

If you start the server using Solution Control Interface, you must change the settings for the server in the server's application object using Configuration Manager.

You can do so by:

- Editing the `startServer.bat` file for each affected server.
- Unregistering the servers and then reregistering them using the updated host, port, and application name information.

This section describes both methods.

The `startServer.bat` files for each server are located in the same directory as the executable for that server.

Procedure:
Editing the startServer.bat files

Purpose: To edit the WFM `startServer. bat` files.

Start of procedure

To edit the `startServer.bat` files:

1. Stop the server.
2. Open the `startServer.bat` file in a text editor, such as WordPad.
3. Change the host and port information.
4. Save the edited file.
5. Restart the server.

End of procedure

You can also change the host and port information for the servers by unregistering them as services and then reregistering them using the new host and port.

Procedure:
Changing the Server host and port information

Purpose: To change the host and port for a server:

Start of procedure

1. Execute the following command from the command line to unregister the installed service.

   `<server .exe filename> -remove`

   For example, `WFMServer.exe -remove`

2. Register the service with new host and port information.

   `<server .exe filename> -install -host "<hostname>" -port "<portnumber>" -app <applicationname>`

   For example, `WFMServer.exe -install -host “Siamese” -port 4000 -app WFMServer_76`

End of procedure

Install and Run the WFM Database Utility

The WFM Database Utility configures the database you created (see “Create Your WFM Database” on page 82) to receive WFM data. If you are migrating from a previous version of Genesys WFM, the WFM Database Utility also transfers your existing data into the new database.

Note: If you are migrating, see the “Workforce Management Migration Procedures” chapter in the *Genesys Migration Guide* for instructions. The procedures in this *Administrator’s Guide* assume that this is a new installation and do not describe steps necessary for migration.

Procedure:
Installing the WFM Database Utility

Purpose: To install the WFM Database Utility:

Start of procedure

1. Check that Microsoft .NET Framework Version 1.1 or higher is installed (see the *Genesys Supported Operating Environment Reference Manual*).
2. Navigate to the `solution_specific\WFMDatabaseUtility\windows` directory on your Workforce Management release disk.
3. Double-click `Setup.exe`.

   The Database Utility Installation Wizard opens.
4. Click `Next` to start using the Database Utility Installation Wizard.
5. Select the directory into which you want the WFM Database Utility installed and then click `Next`.
6. On the `Ready to Install` window, click `Install`.

   A progress bar shows the setup status.
7. Click `Finish` to close the Installation Wizard.

Note: You must restart your computer before you can use the WFM Database Utility.

End of procedure

Running the WFM Database Utility

When you start the 8.1 WFM Database Utility for the first time, the available options depend on whether the WFM Database Utility finds a 7.x database. If you have only a blank database, you can choose one of three actions:

- `Restore Database from .MDB File`—Use this option to restore your database from a backup file. Restoring creates a database with the same version number as the database you backed up and restores your data from the backup file to the new database.

  Note: In some cases, after restoring your database, you must run the WFM Database Utility again and select `Update Database` to update your database to the latest 8.1 version.

- `Create Database`—Use this option to create your 8.1 database if this is your first WFM installation.
- `Migrate Database`—Use this option to migrate data from a release 6.x database.

If you have been running WFM 7.x, select `Update Database`, which updates the database to the latest version.

Note: You must configure your database to be case insensitive.

Install the WFM Components

Before you begin, determine whether to install more than one component on a single machine, and, if so, which components should be installed together.

Note: See Chapter 3, for some general deployment guidelines and recommendations. See the *Genesys Hardware Sizing Guide* for more extensive recommendations.

By default, all the servers are installed as Windows Services. For instructions on using Windows services, see your Windows Help file.

This section contains detailed step-by-step instructions for these procedures:

- Installing WFM Server
- Installing WFM Builder
- Installing WFM Data Aggregator
- Installing WFM Configuration Utility
- Installing WFM Web
- Install WFM Daemon

Procedure:
Installing WFM Server

Start of procedure

1. Navigate to the `solution_specific\WFMServer\windows` directory on your Workforce Management release disk.
2. Double-click `Setup.exe`. This opens the WFM Server Installation Wizard.
3. Click `Next` to begin using the Wizard.
4. Enter your Configuration Server host name, port number, user name, and password. Then click `Next`.
5. A list of WFM Server Application objects appears. Select the correct one and then click `Next`. The properties for each WFM Server Application object appear in the `Application Properties` list when that Application object is selected.

Note: If you are running a Framework 6.x environment, your WFM Server's `Application` type must be `Third Party Server`.

6. Specify the destination directory into which you want WFM Server installed. Then click `Next`.
7. On the `Ready to Install` window, click `Install`.

A progress bar shows the setup status.

8. Select whether to restart your computer now or later and then click `Finish` to close the Installation Wizard.

Note: You must restart your computer before starting WFM Server. However, if you are installing multiple components on one machine, you may install them all before restarting. Please note that it is not possible to install multiple instances of the same component on the same host.

End of procedure

Procedure: Installing WFM Builder

Start of procedure

1. Navigate to the `solution_specific\WFMBuilder\windows` directory on your Workforce Management release disk.
2. Double-click `Setup.exe`. This opens the WFM Builder Installation Wizard.
3. Click `Next` to begin using the Wizard.
4. Enter this information for your Configuration Server: host name, port number, user name, and password. Then click `Next`.
5. A list of WFM Builder Application objects appears. Select the correct one and then click `Next`. The properties for each WFM Builder Application object appear in the `Application Properties` list when that Application object is selected.

Note: If you are running a Framework 6.x environment, your WFM Builder's `Application` type must be `Third Party Server`.

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6. Specify the destination directory into which you want WFM Builder installed. Then click `Next`.
7. On the `Ready to Install` window, click `Install`.

   A progress bar shows the setup status.
8. Click `Finish` to close the Installation Wizard.

End of procedure

Procedure:
Installing WFM Data Aggregator

Start of procedure

Note: A restriction limits the number of clients to about 8 if WFM Data Aggregator and WFM Web are installed on the same computer. For full details, see See "TCP/IP Connection Settings" on page 110.

1. Navigate to the `solution_specific\WFMDataAggregator\windows` directory on your Workforce Management release disk.
2. Double-click `Setup.exe`. This opens the WFM Data Aggregator Installation Wizard.
3. Click `Next` to begin using the Wizard.
4. Enter this information for your Configuration Server: host name, port number, user name, and password. Then click `Next`.
5. A list of WFM Data Aggregator Application objects appears. Select the correct one and then click `Next`. The properties for each WFM Data Aggregator Application object appear in the `Application Properties` list when that Application object is selected.

Note: If you are running a Framework 6.x environment, your WFM Data Aggregator's `Application` type must be `Third Party Server`.

6. Specify the destination directory into which you want WFM Data Aggregator installed. Then click `Next`.
7. On the `Ready to Install` window, click `Install`.

   A progress bar shows the setup status.
8. Select whether to restart your computer now or later and then click `Finish` to close the Installation Wizard.

Note: You must restart your computer before starting WFM Data Aggregator. However, if you are installing multiple components on one machine, you may install them all before restarting. Please note that it is not possible to install multiple instances of the same component on the same host.

End of procedure

Procedure:
Installing WFM Configuration Utility

Start of procedure

1. Navigate to the `solution_specific\WFMConfigurationUtility\windows` directory on your Workforce Management release disk.
2. Double-click `Setup.exe`. This opens the WFM Configuration Utility Installation Wizard.
3. Click `Next` to begin using the Wizard.
4. Specify the destination directory into which you want the WFM Configuration Utility installed. Then click `Next`.
5. On the `Ready to Install` window, click `Install`.

   A progress bar shows the setup status.
6. Click `Finish` to close the Installation Wizard.

End of procedure

Procedure:
Installing WFM Web

Prerequisites

- Requires Framework 7.2 or higher and Java SDK. To learn which version of Java is required, consult the WFM section at the end of the table "Product Prerequisites" in the book *Genesys Supported Operating Environment Reference Manual*.

Start of procedure

1. Install and configure Jakarta Tomcat or IBM WebSphere. For installation and configuration instructions specific to Genesys Workforce Management, see:
   - For Tomcat—"Configure Tomcat for WFM Web" on page 111.
   - For WebSphere—"Configure WebSphere for WFM Web" on page 113.
2. Install the WFM Web application, as described in "Installation Procedures for WFM Web" on page 114.
3. Install a supported browser on each workstation that will access WFM Web.

   For WFM Web for Supervisors, the browser installation must include the appropriate Java plug-in. If this plug-in was not installed with the browser, you can download the plug-in from `http://java.sun.com/j2se/`. To learn which version of Java is required, consult the WFM section at the end of the table "Product Prerequisites" in the book *Genesys Supported Operating Environment Reference Manual*.

Notes: If the computers that will be accessing WFM Web for Supervisors have pop-up blockers installed, they must be configured to allow pop-ups from the WFM Web URL. Otherwise, pop-up blockers prevent WFM Web for Supervisors from opening.

The Java that you install must include the latest time zones update (TZ/Olson database). See `http://java.sun.com/javase/timezones/` for details and use the Java version that is specified there.

4. Check that your browser settings are configured to run WFM Web for Supervisors correctly. See "Browser Security Considerations"
5. Verify that your window resolution has been set to display WFM Web correctly. WFM Web is optimized for a window resolution of at least 1024 x 768. At lower resolutions, some elements (such as table headers) might not display correctly.

End of procedure

Browser Security Considerations

WFM Web uses technical approaches that may be affected by web browser security settings.

- WFM Web uses signed Java applets on Supervisors' workstations.
- On Supervisors' workstations, WFM Web uses Java applets that are run by Sun's Java Plug-in. On Windows operating systems, the Java Plug-in is running as ActiveX, which means that supervisors must have rights to run ActiveX controls.
- WFM Web uses non-encrypted form data in the login page for all users.
- WFM Web relies on active scripting for all users.
- When running WFM Web in an AIX or Solaris operating system environment, if the X Server software is not installed, reports might not be generated or might not be generated correctly. In the case of WFM Web, X Server provides fonts and related functionality.

TCP/IP Connection Settings

In environments with higher loads (more than 100 total supervisors or 50+ supervisors running agent real-time adherence views) you may need to change the default TCP settings on computers running the WFM servers: WFM Web, WFM Data Aggregator, and WFM Server. You can determine whether you need to adjust your settings by monitoring the number of TCP sockets in the

TIMED_WAIT mode. If the number exceeds 2000 on one computer or if WFM Web with servers start to report TCP socket errors, tweak the settings to make TCP release port resources faster.

Note: Genesys has identified this issue on Windows-based machines. Similar changes are probably required for other operating systems. However, Genesys has not determined recommended adjustments to other operating systems.

To resolve this issue, you must make changes to the HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\ section in the registry of the host computers.

- You can find a reference for this registry modification in the Microsoft TCP/IP Implementation Details document for the appropriate operating system at http://www.microsoft.com.

Genesys recommends these values:

- Increase MaxFreeTcbs from 2000 to 9000.
- Increase MaxFreeTWTcbs from 1000 to 8000.
- Increase MaxHashTableSize from 512 to 2048.
- Increase MaxUserPort from 5000 to 65534.
- Reduce TcpTimedWaitDelay from 240 to 60.

Configure Tomcat for WFM Web

After installing WFM Web, you must manually copy the .war file (by default, located in the WFM8\Web directory) to the Tomcat webapps directory.

Note: Tomcat is available for download at http://jakarta.apache.org/tomcat/index.html. There is no charge for this program.

For basic installation and configuration instructions, see the Tomcat documentation, available at the same website as the program.

Warning! Genesys developed and tested supported servlet containers using the default settings as configured for each particular servlet runner during installation time. Any changes in default settings are described in this document. If you use custom settings for servlet containers and experience issues while configuring and/or running WFM Web, Genesys recommends that you evaluate the impact of those custom settings. You may need to re-adjust them in order not to interfere with the operation of WFM Web.

This section lists specific configuration procedures that enable Tomcat to support WFM Web.

Set Environment Variables

When configuring Tomcat, add the variables `JAVA_HOME` and `CATALINA_HOME` to the Windows `Start > Settings > Control Panel > System > Environment > System Variables` list. As the values for these variables, enter the full path to each home directory. `CATALINA_HOME` is the folder in which Tomcat is installed.

JVM Command-Line Settings

Tomcat's default settings are not suitable for production sites that experience moderate or heavy load. To support Web Services, Genesys recommends entering the settings in Table 4 for the Java Virtual Machine (JVM) that runs Tomcat.

Note: You enter Tomcat settings in different ways depending on your Tomcat version and configuration. Please refer to your Tomcat documentation for details.

Table 4: Recommended Tomcat JVM Settings

Setting	Purpose
-Xms256m	Instructs JVM to initially allocate 256 MB of memory for its own needs
-Xmx*n*m	Determines the maximum amount of memory the JVM can allocate for its own needs. For example, `-Xmx256m` would allocate a maximum of 256 MB. If you are experiencing `OutOfMemory` exceptions with Tomcat, increase this setting's *n* parameter to provide Tomcat more memory. Make sure that enough physical memory is available to support the parameter that you choose.
-XX:MaxPermSize =128m	Sets the size of the Permanent Generation, so Tomcat can run properly. `128` is the minimum recommended value.

WFM 8.1 requires settings changes to the Apache Tomcat Properties dialog, accessible by opening the file `C:\Apache\Tomcat6.0\bintomcat6w.exe` (its location on your computer may be different). Select the Java tab.

Table 5: Recommended Minimum Tomcat Java Settings

Item	Recommended Setting
Initial memory pool	256
Maximum memory pool	1024

Configure WebSphere for WFM Web

Note: See warning on page 111, which applies to configuring both Tomcat and WebSphere.

The libraries that WebSphere provides by default for web services are older than, and incompatible with, the libraries that WFM Web requires. If you do not set the `Classloader Mode` option to `PARENT_LAST`, the WebSphere libraries are loaded first, causing WFM Web not to run. After you set `PARENT_LAST`, the WFM Web libraries are loaded first, which enables WFM Web to run correctly.

Note: Configuring the `Classloader Mode` option to `PARENT_LAST` in no way affects other applications running in WebSphere at the same time.

Procedure: Configuring WebSphere

Start of procedure

1. Log in to the WebSphere Administration Console.
2. Navigate to `Applications > Enterprise Applications`.
3. Install the WFM application from the `wfm_war` directory and save it to the master configuration.
4. Locate the newly-installed WFM WebApp and click its link to drill down into the configuration.
5. On the `Configuration` tab, locate the `Related Items` group.

Note: The `Classloader Mode` setting, located on `Configuration` tab, is not the correct place to set the `classloader` option. It will not give desired effect if set only in that tab.

6. Click the `Web Modules` link to open the `WebModuleDeployment` page.

7. Click the `*.war` link to open Web Module configuration properties.
8. Locate the `Classloader Mode` row and change the control value to `PARENT_LAST`.
9. Save the changes.

End of procedure

You can now start the WFM application.

Note: Genesys recommends that you adjust memory and processing thread settings for WebSphere to similar values as specified for Tomcat (see Table 4 on page 112). For the exact location of those settings, consult Websphere documentation

Installation Procedures for WFM Web

You can install WFM Web on either a Windows or a Unix-based platform.

- For instructions on how to install on Unix-based platforms, see "Installing WFM Web on Unix".
- For instructions on how to install on Windows platforms, see "Installing WFM Web on Windows".

Procedure:
Installing WFM Web on Unix

Start of procedure

1. Navigate to the appropriate subdirectory in the `solution_specific\WFMWeb` directory on your Workforce Management release disk. Your choice of subdirectory depends on which platform you are installing WFM Web. The choices are AIX and Solaris.
2. Launch `install.sh`.
3. Enter this information for your Configuration Server: host name, port number, user name, and password.
4. Enter the name of your WFM Web Application object.
5. Specify the destination directory into which you want WFM Web installed.
6. Click `Finish` to close the Installation Wizard.

7. Locate the WFM `.war` file using the Tomcat or WebSphere administrative console. Move it to the appropriate directory for the web server you are using. For example, if you are using Tomcat, deploy the `.war` file in the `webapps` directory. For the location if you are using WebSphere, see your WebSphere documentation.

End of procedure

Procedure: Installing WFM Web on Windows

Start of procedure

1. Navigate to the `windows` subdirectory in the `solution_specific\WFMWeb` directory on your Workforce Management release disk.
2. Double-click `Setup.exe`. This opens the WFM Web Installation Wizard.
3. Click `Next` to begin using the Wizard.
4. Enter this information for your Configuration Server: host name, port number, user name, and password. Then click `Next`.
5. A list of WFM Web Application objects appears. Select the correct one and then click `Next`. The properties for each WFM Web Application object appear in the `Application Properties` list when that Application object is selected.

> **Note:** If you are running a Framework 6.x environment, your WFM Web's Application type must be `Third Party Server`.

6. Specify the destination directory into which you want WFM Web installed. Then click `Next`.
7. On the `Ready to Install` window, click `Install`.
8. A progress bar shows the setup status.
9. Click `Finish` to close the Installation Wizard.
10. Locate the `wfm.war` file using the Tomcat or WebSphere administrative console. Move it to the appropriate directory for the web server you are using. For example, if you are using Tomcat, deploy the `wfm.war` file in the `webapps` directory. For the location if you are using WebSphere, see your WebSphere documentation.

End of procedure

Procedure: Install WFM Web as Report Server

Beginning with release 7.2, Workforce Management does not use the WFM Reports server component found in previous WFM versions to generate reports. Instead, Workforce Management uses the WFM Web component to generate reports.

Note: By default, in addition to functioning as a reports server, WFM Web 8.1 continues to perform all its usual WFM Web functions.

Because report generation has same or greater hardware requirements as other WFM Web functions, Genesys recommends that medium or large sites (as described in the *Genesys Hardware Sizing Guide*) install a separate WFM Web to function as a report server. If upgrading, you can and should use the same hardware previously used for the 7.1 WFM Reports component to set up 8.1 WFM Web as the report server.

Purpose: To install/configure a separate instance of WFM Web as the reports server.

Start of procedure

1. Install WFM Web using the previously described steps (see Installing WFM Web, page 109).
2. In the Configuration Manager, WFM Web `Application` object, set the value for option `ServerURL` in the `Reports` section. For information on this option, see page 167. Enter the complete URL used to installed WFM Web.

   Example: `http://host:port/appname`.

   In this example:

   - The `host` and `port` refer to where the servlet container for WFM Web (the one that will function as the report server) is running.
   - The `appname` is the name used while deploying WFM Web.

   Note: You must be able to use this URL to login to the WFM Web that will function as the report server.

3. In the `Connections` tab of the WFM Web that will perform all the usual WFM Web functions except report generating, include the `Application` name of the WFM Web that will function as the report server.

End of procedure

Procedure:
Install WFM Daemon

For information on this component, see “Notifications” on page 36.

Prerequisites

- Requires Framework 7.2 or higher and Java SDK. To learn which version of Java is required, consult the WFM section at the end of the table “Product Prerequisites” in the book *Genesys Supported Operating Environment Reference Manual*.

Note: The Java to be installed must include the <specifier> time zones update. See `http://java.sun.com/javase/timezones/` for details and use the Java version that is specified there.

Start of procedure

1. Navigate to the `solution_specific\WFMDaemon\windows` directory on your Workforce Management release disk.
2. Double-click `Setup.exe`. This opens the WFM Daemon Installation Wizard.
3. Click `Next` to begin using the Wizard.
4. Enter this information for your Configuration Server: host name, port number, user name, and password. Then click `Next`.
5. A list of WFM Daemon `Application` objects appears. Select the correct one and then click `Next`. The properties for each WFM Daemon `Application` object appear in the `Application Properties` list when that `Application` object is selected.

   Note: If you are using Genesys Configuration Server 7.1 or earlier, then your WFM Daemon’s `Application` type must be `Third Party Server`.

   If you are using Genesys Configuration Server releases later than 7.1 but earlier than7.5, then your WFM Daemon’s `Application` type must be `Genesys Generic Server`.

   If you are using Genesys Configuration Server 7.5 or later, then your WFM Daemon’s `Application` type must be `WFM Daemon`.

6. Specify the destination directory into which you want WFM Daemon installed. Then click `Next`.
7. On the `Ready to Install` window, click `Install`.
8. A progress bar shows the setup status.

9. Select whether to restart your computer now or later and then click `Finish` to close the Installation Wizard.

End of procedure

Note: You must restart your computer before starting WFM Daemon. However, if you are installing multiple components on one machine, you may install them all before restarting. Please note that it is not possible to install multiple instances of the same component on the same host.

Configuring Multiple WFM Builder Applications

If multiple WFM Builders are connected to the WFM Server, you can configure WFM Server to select the Builder with the shortest queue.

Go to the Configuration > User Security > *User_name* > Modules tab and select `None` (the default) from the drop-down list box `WFM Builder`. The result: For each supervisor request to build a schedule, WFM Web asks WFM Server to locate an instance of WFM Builder. To do so, WFM Web goes to an original locator—although not to the WFM Server in its current session.

WFM Server selects a WFM Builder instance from its Configuration Server application connection list. (WFM Server periodically polls all Builders specified in its connection list, to get information about their current request queue and to make sure the connections remain active.) In response to the request from WFM Web to locate a WFM Builder instance, WFM Server returns the active WFM Builder with the shortest queue.

Selecting a Specific Builder

For each user defined in WFM, you can select a specific WFM Builder (one that is installed on a user's workstation or dedicated to a group of users) that would serve all schedule building requests initiated by that user.

Go to the Configuration > User Security > *User_name* > Modules tab and select an item (*not* the default `None`) from the drop-down list box `WFM Builder`.

However, you do not need to select a specific WFM Builder if you want all users to share the same WFM Builder server. You can specify `None` as described above.

Date/Time Dependencies

The following are the sources of the Date/Time setting for WFM applications:

- In WFM Web Supervisor, the Date/Time and number formats depend on language preference that is configured in the browser being used.
- In WFM Web Agent, the Date/Time format depends on the locale of Web Server and is identical for all agents connected to the same server.
- In WFM Configuration Utility, the Date/Time format depends on the locale of the Configuration Utility workstation.

Uninstall Workforce Management

Procedure:
Uninstall WFM

Start of procedure

1. Stop all components, including any running as Windows Services.
2. Delete WFM from Tomcat if you are using Tomcat. See "Delete WFM Web from Tomcat" for instructions.
3. Delete WFM from WebSphere if you are using WebSphere. See "Delete WFM Web from WebSphere" on page 120 and your WebSphere documentation for instructions.
4. Use `Add/Remove Programs` to uninstall the WFM components from a Windows platform. See "Using Add/Remove Programs" on page 121 for instructions.
5. If you are using a Unix-based platform, delete all files in the relevant folders.

End of procedure

Delete WFM Web from Tomcat

Procedure: Delete WFM Web from Tomcat

Start of procedure

1. Open the `<CATALINA_HOME>\webapps` directory (see "Set Environment Variables" on page 112).
2. Delete the WFM `.war` file and the WFM directory from the `webapps` folder.
3. Delete the folder `$CATALINA_BASE\work\Catalina\localhost\wfm`

End of procedure

Notes:

- Genesys strongly recommends using Tomcat Manager to correctly deploy/undeploy WFM Web.
- Uninstalling WFM Web does not remove the `.war` file or the WFM directory from the `webapps` folder. Genesys recommends that you remove the `.war` file and WFM directory prior to reinstalling or updating WFM Web.
- If you reinstall or update WFM Web, before clients can access the software, you must remove the old file and replace the `.war` file with the new version of the file.
  The default file name is `wfm.war` and the default directory name is `wfm`.
- If you reinstall WFM Web without first manually deleting these files, the files are not updated. WFM Web will not run if you install a later version of WFM Web over an earlier one without first deleting these files.

Delete WFM Web from WebSphere

Delete WFM Web using your WebSphere Administrative Console. For the procedure, see your WebSphere documentation.

Note: After completing the uninstall, you can then deploy a new version of WFM Web, again using the WebSphere Administrative Console to do so.

Procedure: Using Add/Remove Programs

Purpose: If you are running a Windows platform, you can use `Add/Remove Programs` to uninstall WFM components.

Start of procedure

1. Select `Start > Settings > Control Panel`. Open `Add/Remove Software`.
2. Scroll through the list of programs to locate the one you intend to uninstall.
3. Click `Change/Remove`.
4. Follow the prompts in the UninstallShield Wizard that opens.

End of procedure

Next Steps Although you may not be prompted to restart your computer after removing a WFM component, it is a good idea.

Genesys

Chapter

5 Configuring the Options Tabs

When you initially create and configure your component Application objects, either manually or using the Configuration Wizards, the Options tab is created with default settings.

To customize your applications, open the Application objects in Configuration Manager and adjust the settings as desired, using the descriptions in this chapter for guidance.

This chapter includes the following sections:

Note: Perform the complete set of configuration and installation procedures as described in Chapter 4, before configuring the Options tab settings for the various applications.

Overview

The settings you can configure on the Options tab control various features, such as logging, font styles and sizes for some applications, security settings such as whether to show agent salary information, whether to use reason codes, and many others. In many cases, the default setting may be the most appropriate for your environment. However, Genesys recommends that you review the available options to determine where customization might benefit your enterprise.

Note: When the Valid Values for an option are listed as `true` or `false`, you can also enter alternate values to achieve the same result. You can also enter the value `true` as `yes` or `1`, and you can also enter the value `false` as `no` or `0`.

Create New Sections and Options

In some cases, sections and options documented here are not included in the shipped version of the templates. Many users will not need these sections or options but if you do, create them using these steps:

Procedure: Creating a new section

Purpose: To add a new section, which will contain at least one option, to the WFM database.

Prerequisites

- The WFM software application template and database must allow this section.

Start of procedure

1. On the `Options` tab, click the `New` icon or right-click in an empty area and select `New`.

   The `Add Section` dialog box appears.
2. Enter the appropriate section name.
3. Click `OK`.
4. Save your work.

The new section is now ready for creating new options.

End of procedure

Procedure:
Creating a new option

Purpose: To add a new option to the WFM database.

Prerequisites

- The WFM software application template and database must allow this option.

Start of procedure

1. On the appropriate section pane, click the `New` icon or right-click in an empty spot and select `New`.

   The `Edit Option` dialog box appears.
2. Enter the option name and the value for the new option.
3. Click `OK`.
4. Save your work.
5. Perform the actions (if any) that are required to activate the option.

End of procedure

Annex Tab Settings for WFM Server

From the `Annex` tab you can modify the default WFM Server configuration settings. The tab contains seven sections. The options in each of these sections are described below.

security Section

Warning! Do *not* capitalize "security"!

require-authentication

Type: Optional
Default Value: `true`
Valid Value: `true, false`
Dependencies: None

This option specifies whether authentication is (or is not) required for third-party connections to WFM Server. The default value `true` is in effect if this option is not defined.

Note: Prior to release 8.1, the WFM API allowed third-party clients to connect to WFM using the system account without authentication. Now, this behavior is disabled by default and all third-party connections require proper user/password authentication.

Options Tab Settings for WFM Server

From the `Options` tab you can modify the default WFM Server configuration settings. The tab contains seven sections. The options in each of these sections are described below.

Client Section

CfgServerRequestTimeout

Type: Mandatory
Default Value: `15`
Valid Value: Any positive integer
Dependencies: None

Specifies the number of seconds to wait for a response from Configuration Server before timing out. This key is used when requesting the list of objects from Configuration Server for synchronization purposes. The value should be increased in configurations with a high number of objects or slow network connections.

SOAPTimeout

Type: Mandatory
Default Value: `60`
Valid Value: Any positive integer
Dependencies: None

Specifies the number of seconds to wait for the response from WFM Server before timing out.

ConfigService Section

MaxCacheSize

Type: Optional
Default Value: No default value
Valid Value: Any positive integer
Dependencies: None

The maximum size, in MB, of the Configuration cache.

MinCacheSize

Type: Optional
Default Value: No default value
Valid Value: Any positive integer
Dependencies: None

The minimum size, in MB, of the Configuration cache. The cache is preloaded up to the minimum size.

CacheLifespan

Type: Optional
Default Value: No default value (`null` value means the size is unlimited)
Valid Value: Any positive integer
Dependencies: None

The amount of time, in hours, that data remains in the Configuration cache without being accessed. After this duration, the data is dropped from the cache.

CachePreloadTimeout

Type: Optional
Default Value: No default value (`null` value means `120 minutes`)
Valid Value: Any positive integer
Dependencies: None

The time, in minutes, for preloading data in the cache. Data is preloaded up to the amount specified in MinCacheSize.

CalendarService Section

AdjustCarryOverByBonus

Type: Optional
Default Value: `false`
Valid Values: `true`, `false`
Dependencies: None

This option introduces an optional way to handle a bonus assignment that does not have a specified end date as a balance adjustment, which is incorporated into carried over hours during the next carry over.

When set to `true`, all assigned bonus time that does not have a specified end date is carried over to the next configured carry-over date. The final number of carried-over hours remains subject to maximum carry-over hours constraint. The bonus expires after the carry-over date. Used hours are updated as they were before.

AutoPublishTimeOffToSchedule

Type: Optional
Default Value: `0`

Valid Values: `0`, `1`, `2`
Dependencies: None

Enables, disables and configures automatic publishing of granted time off to an agent's existing schedule. The following settings specify WFM's response when an agent requests time off:
`0` - Feature is off.
`1` - Feature is on; a part-day time-off cannot overlap exceptions.
`2` - Feature is on; a part-day time-off deletes overlapped exceptions.

CalendarOverScheduleData

Type: Optional
Default Value: `0`
Valid Values: `0`, `1`, `2, 3`
Dependencies: None

This option enables the resolution of conflicts between granted / preferred time-off items and schedule data. Previously, when schedule data overlapped calendar data, unscheduled time off items were not considered when WFM Server checked agent time-off limits and balances.
`0` – Disables the resolution functionality (default value).
`1` – Enables resolution between granted calendar time-off items and overlapping schedule data.
`2` – Adds resolution of preferred time-off items to value `1` functionality.
`3` – These requests are counted against an agent's time-off balance and limits:

- All requests with the status `granted/not scheduled`.
- Only wait-listed requests with the status `preferred/not scheduled`.

DetermineFullDayTimeOffStartEndPaidHours

Type: Optional
Default Value: `false`
Valid Values: `true, false`
Dependencies: None
If set to true when a user adds a Full-Day Time Off with the Start/End times not specified, WFM Server resolves the Start/End times.

MaxAuditReports

Type: Optional
Default Value: None
Valid Values: Any positive integer
Dependencies: None
Specifies how many audit reports can be built at one time. Recommended value: 1. If you request a greater number than is specified, the additional reports go into a queue.

HideMessagesForNotWorkingAgents

Type: Optional
Default Value: `false`
Valid Value: `true, false`
Dependencies: None

Specifies whether to prevent WFM Web from displaying error messages when Calendar items are set for agents who have been terminated or have not yet been hired, set this value to `true.` If you want to view error messages when Calendar items are set for agents who have been terminated or have not yet been hired, set this option to `false.`

Note: This section and option are not included in the template by default. You must create them yourself. See “Create New Sections and Options” on page 124 for instructions.

PreventTimeOffNoAvailability

Type: Optional
Default Value: `0`
Valid Values: `0`, `1`, `2`
Dependencies: None

Turns on an additional check for already-configured days of days off when an agent requests time off.

When this option is on:

- If an agent requests a new time-off that overlaps an existing day-off, that agent receives an error and the time-off is not inserted into the calendar.
- The supervisor receives a warning, which is possible to override.

`0`—The option is off.
`1`—Prevents an agent from requesting time off for weekdays, when the agent has no Contract availability.
`2`—Same as described for the value `1`, except weekdays when Contract non-availability is overwritten by an open granted availability interval. Also applies to dates with granted no-availability preferences and granted day-off preferences and to days when an agent has a rotating day-off according to his or her assigned rotating schedule.

WaitlistTimeout

Type: Optional
Default Value: `60`
Valid Values: Any positive integer (`-1`=off)

Specifies the interval, in minutes, between process runs that handle waitlisted Calendar items.

ForecastService Section

ForecastTimestep

Type: Optional
Default Value: `15`
Valid Values: `15`, `30`, `60` (Expert Average Engine)
OR 15, 60 (Universal Modeling Engine)
Dependencies: None

Specifies the step used in the Expert Average. If the step is `60`, then all values (that is, four values, each representing a 15-minute timestep value) in the 60-minute interval will be filled with the same predicted value.

MaxScenarioCacheSize

Type: Optional
Default Value: No default value (`null` value means the size is unlimited)
Valid Value: Any positive integer
Dependencies: None

The maximum size of the Forecast Scenario cache expressed in MB.

ServiceLevelMethod

Type: Optional
Default Value: `0`
Valid Value: `0, 1`
Dependencies: None

Specifies whether Service Level should be calculated from the number of interactions distributed (as in Workforce Management 6.5) or from the number of interactions offered, which takes abandoned interactions into account. The default value, `0,` indicates that Service Level is calculated based on the number of interactions distributed. To include abandoned interactions, set the value to `1`.

Note: This option is not included in the template by default. You must create it yourself. Create this option if you want to include abandoned interactions (to set the value to `1`). If you do not create this option, WFM functions as though you set the value to `0`. See "Create New Sections and Options" on page 124 for how to create this option.

PerformanceService Section

MaxActivityDays

Type: Optional
Default Value: `25,000`
Valid Value: Any positive integer

Dependencies: None

This option controls the maximum cost of performance-related and forecast-related data that can be returned by WFM Server. It prevents very large requests from overloading WFM Server. The value represents Activity Days. For example, a request for 50 activities over a 31-day period would require 1550 Activity Days.

If the request requirement exceeds the MaxActivityDays limit, then the server returns this message:

```
Specified date range is too long for selected target. Please
select different target or a shorter date range.
```

The default value is based on a typical customer configuration. You may need to adjust it, depending on your installed hardware, user work pattern, or if the server is too slow or short of memory when handling certain requests.

NoCallsServiceLevel

Type: Optional
Default Value: `0`
Valid Values: `0, 100`
Dependencies: None

Specifies whether the `Performance` window shows service level as `0%` or `100%` when there are no incoming interactions.

Note: This section and option are not included in the template by default. You must create them yourself. See "Create New Sections and Options" on page 124 for instructions.

RecalculateForecastStaffing

Valid Value: boolean (`yes`, `no`, `true`, `false`, `y`, `n`, `0`, `1`)
Default Value: `false`

- When `true`, Server recalculates deferred activity forecasted staffing based on the schedule, if there is one.
- When `false`, staffing is returned as saved in the WFM database.

Identity Section

ApplicationType

Type: Mandatory in a Framework 6.x environment. Optional in a Framework 7.x environment.
Default Value: `WFMServer`
Valid Value: `WFMServer`
Dependencies: None

Used only if you are using an application of the type `ThirdPartyServer`. If so, this option specifies which Workforce Management component this application is for.

Log Section

verbose

Type: Mandatory
Default Value: `all`
Valid Values: `all, trace, standard, none, yes (= all), no (= none)`
Dependencies: None

Filters output of log messages based on their assigned priority. `All` enables output of all messages to the log file. `Trace` enables informational and error messages and disables debug messages. `Standard` enables error messages only and disables informational and debug messages. `None` disables all messages.

buffering

Type: Mandatory
Default Value: `false`
Valid Values: `true, false`
Dependencies: None

Turns system file buffering on (`yes`) or off (`false`).

segment

Type: Mandatory
Default Value: `false`
Valid Values: `false, <number>, <number>KB, <number>MB, <number>Hr`
Dependencies: None

Sets the maximum size (in KB, MB, or hours) of the log file segment, after which a new segment is created. The default size is in KB. The number cannot be less than `100 KB` or less than one hour. `No` indicates no segmentation of the log file.

expire

Type: Mandatory
Default Value: `false`
Valid Values: `false, <number>, <number> file, <number> day`
Dependencies: None

Sets the `Expiration` mode for old segments. The number to be stored cannot be less than 1 file or 1 day or more than 100 files or 100 days. `No` indicates that files do not expire.

messagefile

Type: Mandatory

Default Value: `wfmserver.lms`
Valid Value: `wfmserver.lms`
Dependencies: None

Sets the name of the file that stores application-specific log messages. The only valid value is `wfmserver.lms`.

standard

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of the `Standard` level are to be sent to the listed outputs. For centralized logging, use `network`. You can use a local file name or `stdout` as well as `network`.

trace

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of the `Trace` level are to be sent to the listed outputs. For centralized logging, use `network`. You can use a local file name or `stdout` as well as `network`.

debug

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of the `Debug` level are to be sent to the listed outputs. Do not use `network` unless requested by Genesys Professional Services because it generates extremely heavy message loads that can degrade system performance.

all

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of all levels, `Standard, Trace, and Debug`, are to be sent to the listed outputs. Do not use `network` unless requested by Genesys Professional Services because it generates extremely heavy message loads that can degrade system performance.

ScheduleService Section

MaxAuditReports

Type: Optional
Default Value: None
Valid Values: Any positive integer
Dependencies: None
Specifies how many audit reports can be built at one time. Recommended value: 1. If you request a greater number than is specified, the additional reports go into a queue.

SplitCoverage

Type: Optional
Default Value: `true` or `1`
Valid Values: `true` or `1`, `false` or `0`
Dependencies: `SplitMode` and `SplitMS`

Specifies whether schedule coverage should be reported in fractional units in views and reports which include this metric. The possible values are:

- `false`—Split coverage is not reported in fractional units, and the `SplitMode` option is ignored. For example, the agent is covering one activity per timestep.
- `true`—Split coverage is reported in fractional units, and the `SplitMode` option is applied. For example, if an agent is scheduled to cover three activities during a 15-minute interval, he will count 0.33 toward the coverage of each activity.

> **Note:** The agent's split coverage might not be always 0.33. It could be 0.2, 0.8, or any other percentage, depending on the requirement, but the sum is always equal to 1.

SplitMode

Type: Optional
Default Value: `0`
Valid Values: `0`, `1`, `2`
Dependencies: `SplitCoverage` and `SplitMS`

This option is in affect only when the `SplitCoverage` option is set to `true`. The three possible values and their characteristics are as follows:

- `0`—The coverage split is calculated when the schedule is built or modified, and is stored along with the schedule. This is the fastest mode apart from `SplitCoverage= false`. This means that the coverage split does not change if you change the activity forecast staffing requirement after the schedule is built. (You would have to rebuild the schedule to have any effect on the coverage split.) Fractional coverage is not available for legacy schedules.

Note: The term *legacy schedule* refers to a schedule that was built with an older version of WFM in which split coverage was not yet implemented or one that was released before the split coverage functionality was introduced.

- 1—The coverage split is calculated when the schedule is built, and is stored along with the schedule. This option is most like `SplitMode=0`. However, if you have a *legacy schedule* or a schedule created with `SplitCoverage=false` and there is no coverage split stored within the schedule, the split is recalculated dynamically for that schedule only. Fractional coverage is calculated dynamically for legacy schedules.
- 2—The coverage split is always calculated dynamically for all new and legacy schedules. If you change the activity forecast staffing requirement after the schedule is built, the coverage split is adjusted dynamically. This mode should not be used in production environments unless it is suggested by Genesys, because it could have severe performance impact on WFM Server operations

Note: Genesys recommends `SplitMode=0` in most environments (in which there are no legacy schedules that require editing with split coverage considerations).

SplitMS

Type: Optional
Default Value: `false`
Valid Values: `true`, `false`
Dependencies: `SplitMode` and `SplitCoverage`. If SplitCoverage is false then SplitMS is ignored.

Enables and disables multi-skill splitting of schedule coverage. When this option is set to `true` in the WFM Web Application, the coverage split is dynamically adjusted to maximize multi-skill performance gain. It works on top of the obtained coverage, based on either `SplitMode=0` or `SplitMode=2`.

AutoCleanupTimeout

Type: Optional
Default Value: `0` (disabled)
Valid Values: Any positive integer (minutes) or `0` (zero) (default; disables the option)

Dependencies: None

This option enables WFM Server to perform automatic schedule cleanup for terminated agents, and specifies the time interval, in minutes, at which it does this. For example, setting the value to `60` specifies that WFM Server should automatically clean up the schedules of terminated agents every 60 minutes. Setting the value to `0` disables automatic schedule cleanup by WFM Server.

Special Handling for Terminated Agents

- The schedules of terminated agents will be deleted from the Master Schedule *only* for dates that occur on or after the agents' termination dates.
- Also, each running WFM Server will clean up terminated agent schedules only for those sites that are assigned to this particular server under `Organization > Sites > Properties` in the Configuration Utility. If the server has no specific sites assigned to it, it will clean up all sites when automatic cleanup is enabled.

MaxCacheSize

Type: Optional
Default Value: No default value
Valid Value: Any positive integer
Dependencies: None

Specifies the maximum size, in MB, of the Schedule cache.

MinCacheSize

Type: Optional
Default Value: No default value
Valid Value: Any positive integer
Dependencies: None

Specifies the minimum size, in MB, of the Schedule cache. The cache is preloaded up to the minimum size.

MaxScenarioCacheSize

Type: Optional
Default Value: No default value
Valid Value: Any positive integer
Dependencies: None

Specifies the maximum size, in MB, of the Schedule Scenario cache.

CachePreloadDayChunks

Type: Optional
Default Value: No default value (`null` value means `14 days`)
Valid Value: Any positive integer
Dependencies: MinCacheSize

Specifies the chunk of days to load when performing a schedule cache preload.

CachePreloadMaxDays

Type: Optional
Default Value: No default value (`null` value means `365 days`)
Valid Value: Any positive integer
Dependencies: MinCacheSize

Specifies the number of days to preload starting from the current date. The preload stops if the `MinCacheSize` is reached.

CachePreloadTimeout

Type: Optional
Default Value: No default value (`null` value means `180 minutes`)
Valid Value: Any positive integer
Dependencies: None

The time, in minutes, for preloading data in the cache. Data is preloaded up to the amount specified in MinCacheSize.

CacheLifespan

Type: Optional
Default Value: No default value (`null` value means the size is unlimited)
Valid Value: Any positive integer
Dependencies: None

The amount of time, in hours, that data remains in the Schedule cache without being accessed. After this duration, the data is dropped from the cache.

Server Section

MaxThreadPoolSize

Type: Mandatory
Default Value: `80`
Valid Value: Any positive integer
Dependencies: None

This option specifies the maximum number of threads in the thread pool.

MinThreadPoolSize

Type: Mandatory
Default Value: `8`
Valid Value: Any positive integer
Dependencies: None

This option specifies the minimum number of threads in the thread pool.

Proxy

Type: Optional
Default Value: No default value
Valid Value: `<proxyservername>:<port>`
Dependencies: None

This option specifies a proxy server.

SessionTimeout

Type: Mandatory
Default Value: `10`
Valid Value: Any positive integer
Dependencies: None

This option specifies the timeout, in minutes, for any client session with this WFM Server.

ThreadPoolDownsizeTimeout

Type: Mandatory
Default Value: `15m`
Valid Value: Any positive integer.
Dependencies: None

This option specifies how long a thread stays idle before it is removed from the thread pool. Follow the number with `s` to indicate seconds or `m` to indicate minutes. By default, the value is in minutes.

ThreadPoolUpsizeTimeout

Type: Mandatory
Default Value: `10s`
Valid Value: Any positive integer
Dependencies: None

This option specifies how long a request stays in queue before the thread pool size is increased. Follow the number with `s` to indicate seconds or `m` to indicate minutes. By default, the value is in seconds.

VirtualDirectory

Type: Not applicable
Default Value: No default value
Valid Value: Not applicable
Dependencies: None

For future use.

Options Tab Settings for WFM Builder

From the `Options` tab you can modify the default WFM Builder configuration settings. The tab contains four sections. The options in each of these sections are described below.

Client Section

CfgServerRequestTimeout

Type: Mandatory
Default Value: `15`
Valid Value: Any positive integer
Dependencies: None

Specifies the number of seconds to wait for a response from Configuration Server before timing out. This key is used when requesting the list of objects from Configuration Server for synchronization purposes. The value should be increased in configurations with a high number of objects or slow network connections.

SOAPTimeout

Type: Mandatory
Default Value: `120`
Valid Value: Any positive integer
Dependencies: None

The SOAP connection timeout, in seconds.

Identity Section

ApplicationType

Type: Mandatory in a Framework 6.x environment. Optional in a Framework 7.x environment.
Default Value: `WFMBuilder`
Valid Value: `WFMBuilder`
Dependencies: None

Used only if you are using an application of the type `ThirdPartyServer`. If so, this option specifies which Workforce Management component this application is for.

Log Section

verbose

Type: Mandatory

Default Value: `all`
Valid Values: `all, trace, standard, none, yes (= all), no (= none)`
Dependencies: None

Filters output of log messages based on their assigned priority. `All` enables output of all messages to the log file. `Trace` enables informational and error messages and disables debug messages. `Standard` enables error messages only and disables informational and debug messages. `None` disables all messages.

buffering

Type: Mandatory
Default Value: `no`
Valid Values: `yes, no`
Dependencies: None

Turns system file buffering on (`yes`) or off (`no`).

segment

Type: Mandatory
Default Value: `no`
Valid Values: `no, <number>, <number>KB, <number>MB, <number>Hr`
Dependencies: None

Sets the maximum size (in KB, MB, or hours) of the log file segment, after which a new segment is created. The default size is in KB. The number cannot be less than `100 KB` or less than one hour. `No` indicates no segmentation of the log file.

expire

Type: Mandatory
Default Value: `no`
Valid Values: `no, <number>, <number> file, <number> day`
Dependencies: None

Sets the `Expiration` mode for old segments. The number to be stored cannot be less than 1 file or 1 day or more than 100 files or 100 days. `No` indicates that files do not expire.

messagefile

Type: Mandatory
Default Value: `wfmbuilder.lms`
Valid Value: `wfmbuilder.lms`
Dependencies: None

Sets the name of the file that stores application-specific log messages. The only valid value is `wfmbuilder.lms`.

standard

Type: Mandatory

Default Value: stdout
Valid Values (log output types): stdout, stderr, syslog, network, <filename>
Dependencies: None

Specifies that log events of the Standard level are to be sent to the listed outputs. For centralized logging, use network. You can use a local file name or stdout as well as network.

trace

Type: Mandatory
Default Value: stdout
Valid Values (log output types): stdout, stderr, syslog, network, <filename>
Dependencies: None

Specifies that log events of the Trace level are to be sent to the listed outputs. For centralized logging, use network. You can use a local file name or stdout as well as network.

debug

Type: Mandatory
Default Value: stdout
Valid Values (log output types): stdout, stderr, syslog, network, <filename>
Dependencies: None

Specifies that log events of the Debug level are to be sent to the listed outputs. Do not use network unless requested by Genesys Professional Services because it generates extremely heavy message loads that can degrade system performance.

all

Type: Mandatory
Default Value: stdout
Valid Values (log output types): stdout, stderr, syslog, network, <filename>
Dependencies: None

Specifies that log events of all levels, Standard, Trace, and Debug, are to be sent to the listed outputs. Do not use network unless requested by Genesys Professional Services because it generates extremely heavy message loads that can degrade system performance.

x-ScheduleBuilderProgressTrace

Type: Optional
Default Value: No default value
Valid Values: true, false

Dependencies: None

This option enables or disables reporting of schedule progress in the log file.

x-ScheduleBuilderTrace

Type: Optional
Default Value: No default value
Valid Values: `true, false`
Dependencies: "x-ScheduleLogPath"

Indicates that WFM Builder should write scheduling data, output data, and messages to the Schedule log file. To use this option, you must specify a Schedule log path. One log file is created for every schedule build. For Schedule debugging only.

x-ScheduleLogPath

Type: Optional
Default Value: No default value
Valid Value: *Path to the Schedule log directory.*
Dependencies: None

For Schedule debugging only. Indicates where WFM Builder should write the file containing Schedule log data and messages.

x-ScheduleMaxLogs

Type: Optional
Default Value: No default value
Valid Values: `1-1000`
Dependencies: "x-ScheduleLogPath"

Specifies the maximum number of Schedule log files (or pairs, if `x-SwordTrace` is also set to `yes`) to keep in the folder specified in the `x-ScheduleLogPath` option. If you reach the maximum number of files, WFM Builder deletes files as necessary to stay within the limit, starting with the oldest file.

x-SwordTrace

Type: Optional
Default Value: No default value
Valid Values: `yes, no`
Dependencies: "x-ScheduleLogPath"

Indicates that scheduling algorithm output messages should be written to the Schedule log. For Schedule debugging only.

Options Section

MaxSchedulingThreadPoolSize

Type: Optional

Default Value: `0`
Valid Values: `0, 1,` <the number of CPU cores available to the process>
Dependencies: None

This option limits the maximum number of CPU cores that are used by WFM Builder when scheduling multi-site schedule scenarios. If the value is missing or is set to anything less than 1, then WFM Builder uses the maximum number of CPU cores for scheduling.

Note: The number of CPU cores that WFM Builder might use depends upon the number of sites that are in the schedule scenario. Builder can schedule a multi-site scenario, using a separate CPU core for each site. If there are ten sites in the schedule scenario, then Builder can use ten CPU cores for scheduling.

MultiSiteActivitiesEnabled

Type: Optional
Default Value: `false`
Valid Values: `true, false`
Dependencies: None

Use this option when multi-site activities are configured, to specify that Builder will use multi-site staffing requirements when building multi-site schedule scenarios.

`True` - Use the staffing requirements of multi-site activities.

`False` - Use the staffing requirements of related-site activities.

NameOrder

Type: Mandatory
Default Value: `1`
Valid Values: `1, 2, 3`
Dependencies: None

Determines how names are presented in warning messages.

`1` - first name is presented first.

`2` - last name is presented first.

`3` - last name is presented first and is separated from first name with a comma.

PreserveMarkedTime

Type: Optional
Default Value: `false`
Valid Values: `true, false`
Dependencies: None

`True` - Agent days that have marked time will be excluded from intra-day reoptimization.

`False` (or empty) - does *not* exclude Agent days that have marked time from intra-day reoptimization.

Special100ShiftCheck

Type: Optional
Default Value: `false`
Valid Values: `true, false`
Dependencies: None

`True` sets the Builder shift limit to 100 shifts.

`False` (or empty) sets the Builder shift limit to 500 shifts.

Note: Error 43 appears if your configuration violates the current shift limit.

Options Tab Settings for WFM Data Aggregator

From the `Options` tab you can modify the default WFM Data Aggregator configuration settings. The tab contains four sections. The options in each of these sections are described below.

Client Section

CfgServerRequestTimeout

Type: Mandatory
Default Value: `10`
Valid Values: Any positive integer
Dependencies: None

Specifies the number of seconds to wait for a response from Configuration Server before timing out. This key is used when requesting the list of objects from Configuration Server for synchronization purposes. The value should be increased in configurations with a high number of objects or slow network connections.

SOAPTimeout

Type: Mandatory
Default Value: `90`
Valid Value: Any positive integer
Dependencies: None

The SOAP connection timeout, in seconds.

Identity Section

ApplicationType

Type: Mandatory in a Framework 6.x environment. Optional in a Framework 7.x environment.
Default Value: `WFMDataAggregator`
Valid Value: `WFMDataAggregator`
Dependencies: None

Used only if you are using an application of the type `ThirdPartyServer`. If so, this option specifies which Workforce Management component this application is for.

Log Section

verbose

Type: Mandatory
Default Value: `all`
Valid Values: `all, trace, standard, none, yes (= all), no (= none)`
Dependencies: None

Filters output of log messages based on their assigned priority. `All` enables output of all messages to the log file. `Trace` enables informational and error messages and disables debug messages. `Standard` enables error messages only and disables informational and debug messages. `None` disables all messages.

buffering

Type: Mandatory
Default Value: `no`
Valid Values: `yes, no`
Dependencies: None

Turns system file buffering on (`yes`) or off (`no`).

segment

Type: Mandatory
Default Value: `no`
Valid Values: `no, <number>, <number>KB, <number>MB, <number>Hr`
Dependencies: None

Sets the maximum size (in KB, MB, or hours) of the log file segment, after which a new segment is created. The default size is in KB. The number cannot be less than `100 KB` or less than one hour. `No` indicates no segmentation of the log file.

expire

Type: Mandatory

Default Value: no
Valid Values: no, <number>, <number> file, <number> day
Dependencies: None

Sets the Expiration mode for old segments. The number to be stored cannot be less than 1 file or 1 day or more than 100 files or 100 days. No indicates that files do not expire.

messagefile

Type: Mandatory
Default Value: wfmdataaggregator.lms
Valid Value: wfmdataaggregator.lms
Dependencies: None

Sets the name of the file that stores application-specific log messages. The only valid value is wfmdataaggregator.lms.

standard

Type: Mandatory
Default Value: stdout
Valid Values (log output types): stdout, stderr, syslog, network, <filename>
Dependencies: None

Specifies that log events of the Standard level are to be sent to the listed outputs. For centralized logging, use network. You can use a local file name or stdout as well as network.

trace

Type: Mandatory
Default Value: stdout
Valid Values (log output types): stdout, stderr, syslog, network, <filename>
Dependencies: None

Specifies that log events of the Trace level are to be sent to the listed outputs. For centralized logging, use network. You can use a local file name or stdout as well as network.

debug

Type: Mandatory
Default Value: stdout
Valid Values (log output types): stdout, stderr, syslog, network, <filename>
Dependencies: None

Specifies that log events of the Debug level are to be sent to the listed outputs. Do not use network unless requested by Genesys Professional Services because it generates extremely heavy message loads that can degrade system performance.

all

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of all levels, `Standard, Trace, and Debug`, are to be sent to the listed outputs. Do not use `network` unless requested by Genesys Professional Services because it generates extremely heavy message loads that can degrade system performance.

x-DBWriterTrace

Type: Optional
Default Value: No default value
Valid Values: `yes, no`
Dependencies: None

When set to `yes` (or `true` or `1`), this option enables an additional logging option that is used by Data Aggregator to record how a statistic's records are being stored in the database.

x-LogAgentEventTrace

Type: Optional
Default Value: No default value
Valid Values: `yes, no`
Dependencies: None

Indicates whether Data Aggregator should write agent event data to a log file. Used for debugging only.

x-LogConfigServerConnectionTrace

Type: Optional
Default Value: No default value
Valid Values: `yes, no`
Dependencies: None

Indicates whether Data Aggregator should write Configuration Server connection data to a log file. Used for debugging only.

x-LogConfigServerTrace

Type: Optional
Default Value: No default value
Valid Values: `yes, no`
Dependencies: None

Indicates whether Data Aggregator should write Configuration Server process data to a log file. Used for debugging only.

x-LogSynchronizationTrace

Type: Optional
Default Value: No default value
Valid Values: `yes, no`
Dependencies: None

Indicates whether Data Aggregator should write Configuration Server synchronization data to a log file. Used for debugging only.

x-LogWFMServerTrace

Type: Optional
Default Value: No default value
Valid Values: `yes, no`
Dependencies: None

Indicates whether Data Aggregator should write WFM Server process data to a log file. Used for debugging only.

Options Section

AcceptZeroSkillLevel

Type: Optional
Default Value: `false`
Valid Value: `true` or `false`
Dependencies: None

Set to `true` to enable WFM Data Aggregator's ability to set an agent skill level to `0`.

Set to `false` to disable WFM Data Aggregator's ability to set an agent skill level to `0`.

DBDumpFile

Type: Optional
Default Value: No default value
Valid Value: Any valid file name
Dependencies: None

Specifies a file to which WFM Data Aggregator writes its current data if it loses its connection to the database. When Data Aggregator is restarted or the connection to the database is restored, it locates the dump file, retrieves the data, writes it to the database, and then deletes the dump file. If you do not specify a file name, the file is `DBdump.dat` located in `\\...\Workforce Management\Data Aggregator`.

HandleTimeWriteBack

Type: Optional
Default Value: No default value
Valid Value: 1-12
Dependencies: None

Allows you to add average handling time (AHT) to a prior timestep if no calls were handled in the current timestep. This option prevents WFM Data Aggregator from setting AHT to zero for timesteps in which agents performed after call/contact work (ACW) for calls that had occurred in a prior timestep.

If this key is present and has an integer value between 1 and 12, WFM Data Aggregator searches for a prior timestep in which at least one call was handled. If it finds such a timestep, it updates that timestep's statistics to incorporate ACW performed in the current timestep.

This key's value determines the number of timesteps that WFM Data Aggregator searches back. Therefore, the ACW must occur within 12 timesteps, or 3 hours, after the call's completion. A value of 0 (zero) disables this option.

Note: Some calls are brief enough to be considered short-abandoned calls, but they begin and end in different timesteps and thus require special handling to avoid skewing Call Center data. WFM Data Aggregator can identify a call like this because the timestep where it ends has an associated HandleTime statistic but no HandleVolume statistic.

WFM Data Aggregator uses the value of the HandleTimeWriteBack option when searching for the beginning of a short-abandoned call like this, to adjust the prior timestep where that call began. See the topic "Configuration > Activities > Statistics Configuration for Activities" in Configuration Utility help.

ReasonCodeKeyName

Type: Optional
Default Value: ReasonCode
Valid Value: Any valid reason-code key name
Dependencies: None

Specifies the reason (aux)-code key used in the enterprise. It is not necessary to configure this option if you do not use reason codes.

Data Aggregator can process reason codes that come from hard and/or soft phones. To receive reason codes from hard phones, or in a mixed hard/soft phone environment, the Data Aggregator application's ReasonCodeKeyName option in Configuration Manager should be set to ReasonCode.

Note: You can only use reason codes from hard phones if you are using Stat Server 7.x.

ReasonCodeWaitTime

Type: Optional
Default Value: `15`
Valid Value: `2-600`
Dependencies: None

Necessary only if you are using a pre-6.5 release of Stat Server and are using reason codes. It specifies how long, in seconds, Data Aggregator delays processing information during a timestep while waiting for reason code information. This parameter is useful when Stat Server and/or the network are busy enough to delay reason code data.

ScheduleLookAheadMinutes

Type: Optional
Default Value: No default value
Valid Value: `0-1440`
Dependencies: None

Specifies how many additional minutes of agent schedules should be loaded from WFM Server for adherence calculations. Should be used only in environment where agent schedules and configuration are updated infrequently.

SynchronizeUnassignedAgents

Type: Optional
Default Value: `true` or `yes`
Valid Value: `true` or `yes`, `false` or `no`
Dependencies: None

Indicates whether WFM Data Aggregator should synchronize agents who are not assigned to any site. If more than one WFM Data Aggregator is configured to perform synchronization on the same database, then Genesys recommends that you set this option to `yes` for only one WFM Data Aggregator.

Options Tab Settings for WFM Client

From the `Options` tab you can modify the default WFM Configuration Utility and WFM Database Utility configuration settings.

Note: This `Application` object is used both by the WFM Configuration Utility and the WFM Database Utility.

The tab contains two sections. The options in each of these sections are described below. If you choose to use a user-created option, you can create an `OptionalSettings` section. See "OptionalSettings Section" on page 155 for instructions.

Log Section

all

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of all levels, `Standard, Trace, and Debug`, are to be sent to the listed outputs. Do not use `network` unless requested by Genesys Professional Services because it generates extremely heavy message loads that can degrade system performance.

buffering

Type: Mandatory
Default Value: `no`
Valid Values: `yes, no`
Dependencies: None

Turns system file buffering on (`yes`) or off (`no`).

CSynchFile

Type: Optional
Default Value: No default value
Valid Value: Any file name and path used for Windows
Dependencies: None

Provides the file name used to output the progress of synchronization. As described in *Workforce Management 8.1 Configuration Utility Help,* you can synchronize the content of the WFM Database with that of the Configuration Database.

debug

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of the `Debug` level are to be sent to the listed outputs. Do not use `network` unless requested by Genesys Professional Services because it generates extremely heavy message loads that can degrade system performance.

expire

Type: Mandatory
Default Value: `no`

Valid Values: `no, <number>, <number> file, <number> day`
Dependencies: None

Sets the `Expiration` mode for old segments. The number to be stored cannot be less than 1 file or 1 day or more than 100 files or 100 days. `No` indicates that files do not expire.

messagefile

Type: Mandatory
Default Value: No default value
Valid Value: Any character string
Dependencies: None

Sets the name of the file that stores application-specific log messages.

segment

Type: Mandatory
Default Value: `no`
Valid Values: `no, <number>, <number>KB, <number>MB, <number>Hr`
Dependencies: None

Sets the maximum size (in KB, MB, or hours) of the log file segment, after which a new segment is created. The default size is in KB. The number cannot be less than `100 KB` or less than one hour. `No` indicates no segmentation of the log file.

standard

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of the `Standard` level are to be sent to the listed outputs. For centralized logging, use `network.` You can use a local file name or `stdout` as well as `network`.

trace

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of the `Trace` level are to be sent to the listed outputs. For centralized logging, use `network`. You can use a local file name or `stdout` as well as `network.`

verbose

Type: Mandatory
Default Value: `all`
Valid Values: `all, trace, standard, none, yes (= all), no (= none)`
Dependencies: None

Filters output of log messages based on their assigned priority. `All` enables output of all messages to the log file. `Trace` enables informational and error messages and disables debug messages. `Standard` enables error messages only and disables informational and debug messages. `None` disables all messages.

Options Section

AllowLessUpdates

Type: Optional
Default Value: `0`
Valid Value: `0, 1`
Dependencies: None

Controls whether the `Update Database to Version` drop-down text box appears in the WFM Database Utility after you choose to update your database. In normal use, you would only update to the latest database version. However, in some circumstances, you might need to choose to update to a database version other than the most recent one. In this case, you need to use the `Update Database to Version` drop-down text box.

To have the WFM Database Utility display the `Update Database to Version` drop-down text box, set this value to `1`. To remove this drop-down text box from the WFM Database Utility interface, set this option to `0`.

AllowMigratePerformance

Type: Optional
Default Value: `0`
Valid Values: `0, 1`
Dependencies: None

Specifies whether to enable the `Performance Data Migration` option in the WFM Database Utility wizard. To enable it, set this option to `1`. This means that you can choose to migrate performance data from your 6.5 database to your new WFM 7.x database.

HelpFile

Type: Mandatory
Default Value: `wm_config-help.chm`
Valid Value: `wm_config-help.chm`
Dependencies: None

Specifies the name of *Workforce Management Configuration Utility Help*.

HideTerminatedAgents

Type: Optional
Default Value: `false`
Valid Value: `true, false`
Dependencies: None

If set to `true`, shows only currently-working agents. Excludes from view agents whose termination date has passed. If you want to view terminated agents and those whose hire date is in the future, set this option to `false`.

NameOrder

Type: Optional
Default Value: `1`
Valid Values: `1, 2, 3`
Dependencies: None

Enables you to set the way the WFM Configuration Utility presents agent names in the `Object` pane tree view.

The possible values are:

`1`—First name is presented first.

`2`—Last name is presented first.

`3`—Last name is presented first and is separated from first name with comma.

CommandTimeout

Note: This option applies to WFM 7.1.1 releases only. WFM 7.1.0, 7.1.2, 7.2, 7.6 and greater do not require this option.

Type: Optional
Default Value: `7200`
Valid Values: `positive integers`
Dependencies: None

Specifies the timeout, in seconds, after which the WFM Database Utility disconnects from the database during a database update. For an average-sized database, 600 seconds is sufficient to perform a full update. For unusually large databases, you will need to set this value higher.

LocalTimezones

Type: Optional
Default Value: `false`
Valid Values: `true, false`
Dependencies: None

This option specifies the time configuration that Configuration Utility assumes for each time zone affected during synchronization: GMT or local time. Choose the value that matches the values in Configuration Utility's Time Zone settings Daylight Saving time information dialog: they reflect either a GMT offset, or local time.

- `false`—WFM Configuration Utility will assume GMT time zone settings for each time zone affected during synchronization.
- `true`—WFM Configuration Utility will assume local time zone settings for each time zone affected during synchronization.

Note: To apply the new setting: open Configuration Utility, delete the current timezone configuration, and run Synchronization.

Client Section

CfgServerRequestTimeout

Type: Mandatory
Default Value: `15`
Valid Values: Any positive integer
Dependencies: None

Specifies the number of seconds to wait for a response from Configuration Server before timing out. This key is used when requesting the list of objects from Configuration Server for synchronization purposes. The value should be increased in configurations with a high number of objects or slow network connections.

SOAPTimeout

Type: Mandatory
Default Value: `60`
Valid Value: Any positive integer
Dependencies: None

The number of seconds to wait for the response from WFM Server before timing out.

OptionalSettings Section

Note: This section is optional. You must create this section if you need a different font or a larger font size on the labels and text boxes in the WFM Configuration Utility. This option is intended particularly for users of the Chinese, Korean, and Japanese localized versions of the application.

See "Create New Sections and Options" on page 124 for how to create the new section and its new options.

FontSize

Type: Optional
Default Value: 8 pt.
Valid Values: 8, 9, or 10 pt.
Dependencies: None

Intended for users of the Chinese, Korean, or Japanese version of the WFM Configuration Utility. It enables you to adjust the point size of the typeface to accommodate the 9 pt. default size of these characters.

Font

Type: Optional
Default Value: No default value
Valid Value: Any valid font name
Dependencies: None

Specifies the font used in the WFM Configuration Utility and/or the WFM Database Utility interfaces. Either or both of the Utilities could point to the Application object you are configuring.

Options Tab Settings for WFM Web

From the Options tab you can modify the default WFM Web configuration settings. The tab contains six sections. The options in each of these sections are described below.

Adherence Section

RefreshTime

Type: Mandatory
Default Value: 10
Valid Value: Any positive integer
Dependencies: None

Specifies the amount of time, in seconds, between updates to the real-time agent adherence data displayed in WFM Web.

AgentBidding Section

AllowBidding

Type: Mandatory
Default Value: true
Valid Value: true or false
Dependencies: None

Enables agent bidding as part of Schedule Bidding. See WFM Web Supervisor help for details.

AgentPreferences Section

AllowPreferences

Type: Mandatory
Default Value: `true`
Valid Value: `true` or `false`
Dependencies: None
Controls whether or not Preferences will appear in the agent part.

AgentSchedule Section

AccessLevel

Type: Optional
Default Value: `2`
Valid Values: `1`, `2`, `3`
Dependencies: None

This option controls which filtering options appear in the Other Schedules view and how much data an agent can see. (The option `People I work with` is always present.) Enter a valid value to specify which other options are available:

`1` - My Team

`2` - My Team and My Site

`3` - My Team, My Site and My Business Unit

AllowAccessToOthersSchedule

Type: Optional
Default Value: `true`
Valid Values: `true`, `false`
Dependencies: None

If set to `true,` agents can see other agents' schedules in the `Other Schedule` tab of the WFM Web for Agents `Schedule` view.

AllowAccessToCarpools

Type: Optional
Default Value: `false`
Valid Values: `true`, `false`
Dependencies: None

If set to `true,` agents can access Shared Transportation functionality—in the WFM Web for Agents `My Schedule` tab Sidebar, and other locations.

If set to `false` or absent from the configuration, all carpool functionality is disabled for this installation of WFM 8.1.

Notes: Shared Transportation functionality for Supervisors is not enabled or disabled by using this configuration option. See Configuration Utility > Configuration > User Security.

"Carpools" and "carpooling" are common words in the United States for shared transportation, but they do not describe busses and other forms of shared transportation.

AllowInsertExceptions

Type: Optional
Default Value: `false`
Valid Values: `true`, `false`
Dependencies: None

If set to `true,` agents can access the `Add Exception` button—and the underlying functionality—in the WFM Web for Agents `My Schedule` tab.

CommitAgentInsertedExceptions

Type: Optional
Default Value: `false`
Valid Values: `true`, `false`
Dependencies: Enabled only if `AllowInsertExceptions` is set to `true`

If set to true, exceptions inserted by an agent are committed to the schedule or inserted pending approval by a supervisor.

AgentTimeOff Section

AllowEnterFullDayStartEnd

Type: Optional
Default Value: `true`
Valid Values: `true`, `false`
Dependencies: None

Set this option to `false` to disable an agent's ability to specify the start and end of a full-day time off. Omit this option or set it to `true` to enable that ability.

AllowEnterPaidTime

Type: Optional
Default Value: `false`
Valid Values: `true`, `false`
Dependencies: None

Controls whether an Agent can specify a the number of paid hours to deduct, when creating or editing a full-day time-off request in the `Time Off Request` view.

AllowTimeOffPlanner

Type: Mandatory
Default Value: `true`
Valid Value: `true` or `false`
Dependencies: None

Controls whether or not the time off planner will appear in the agent part.

AllowWaitList

Type: Mandatory
Default Value: `true`
Valid Values: `true`, `false`
Dependencies: None

Controls whether the `Wait-List` check box—and the option that it represents—will appear in the `Inserting New Time Off Items` dialog box when an Agent is requesting time off.

Note: Even when this option is set to `false`, a supervisor may wait-list a time-off request when adding or editing the item through the WFM Calendar. However, if the agent subsequently edits such a wait-listed time-off item, the status changes, and the item is no longer wait-listed.

SeparateStartEndForEachDay

Type: Optional
Default Value: `false`
Valid Values: `true`, `false`
Dependencies: None

If this option is set to `true`, an agent can define a separate (and different) start and end times for each full day in a new time-off request that spans multiple days. If this option is omitted or set to `false`, an agent can define only identical start and end times for all full days in a new time-off request that spans multiple days.

AgentTrading Section

AllowNoComments

Type: Optional
Default Value: `false`
Valid Value: `true, false`
Dependencies: None

If set to `true`, agents do not have the ability to enter comments while working with trades.

AllowAccessToOthersSchedule

Type: Mandatory
Default Value: `true`
Valid Value: `true, false`
Dependencies: AllowScheduleTrading

If set to `true`, agents can see other agents' schedules in the `Schedule` tab of the WFM Web for Agents `Trading` view.

AllowScheduleTrading

Type: Mandatory
Default Value: `true`
Valid Value: `true, false`
Dependencies: None

If set to `true`, trading functionality is enabled for agents. If set to `false`, trading functionality is disabled and `Trading` is not available in the WFM Web for Agents menu.

TradeOnlyInsideTeam

Type: Mandatory
Default Value: `true`
Valid Value: `true, false`
Dependencies: AllowScheduleTrading, AllowAccessToOthersSchedule

Controls what kind of schedules that an agent can see. If set to `true`, agents see schedules only of other agents who are in the same team. If set to `false`, agents see schedules of all agents who belong to the same site.

Client Section

SOAPTimeout

Type: Mandatory
Default Value: `60`
Valid Value: Any positive integer
Dependencies: None

Specifies the number of seconds to wait for the response from WFM Server before timing out.

Identity Section

ApplicationType

Type: Mandatory in a Framework 6.x environment. Optional in a Framework 7.x environment.
Default Value: `WFMWeb`
Valid Value: `WFMWeb`
Dependencies: None

Used only if you are using an application of the type `ThirdPartyServer`. If so, this option specifies which Workforce Management component this application is for.

Log Section

all

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of all levels, `Standard, Trace, and Debug`, are to be sent to the listed outputs. Do not use `network` unless requested by Genesys Professional Services because it generates extremely heavy message loads that can degrade system performance.

buffering

Type: Mandatory
Default Value: `no`
Valid Values: `yes, no`
Dependencies: None

Turns system file buffering on (`yes`) or off (`no`).

debug

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of the `Debug` level are to be sent to the listed outputs. Do not use `network` unless requested by Genesys Professional Services because it generates extremely heavy message loads that can degrade system performance.

expire

Type: Mandatory
Default Value: `no`
Valid Values: `no, <number>, <number> file, <number> day`
Dependencies: None

Sets the `Expiration` mode for old segments. The number to be stored cannot be less than 1 file or 1 day or more than 100 files or 100 days. `No` indicates that files do not expire.

segment

Type: Mandatory
Default Value: `no`
Valid Values: `no, <number>, <number>KB, <number>MB, <number>Hr`
Dependencies: None

Sets the maximum size (in KB, MB, or hours) of the log file segment, after which a new segment is created. The default size is in KB. The number cannot be less than `100 KB` or less than one hour. `No` indicates no segmentation of the log file.

standard

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of the `Standard` level are to be sent to the listed outputs. For centralized logging, use `network`. You can use a local file name or `stdout` as well as `network`.

trace

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of the `Trace` level are to be sent to the listed outputs. For centralized logging, use `network`. You can use a local file name or `stdout` as well as `network`.

verbose

Type: Mandatory
Default Value: `stdout`
Valid Values: `all, trace, stdout, none, yes (= all), no (= none)`
Dependencies: None

Filters output of log messages based on their assigned priority. `All` enables output of all messages to the log file. `Trace` enables informational and error messages and disables debug messages. `Standard` enables error messages only and disables informational and debug messages. `None` disables all messages.

Options Section

CustomActivities

Type: Optional
Default Value: `none`
Valid Value: a `text string up to 255 characters`
Dependencies: Setting for `ShowAllActivities` must be `false`.

This option controls the display of the selected agent in the Main, Schedule Details and Printing views).

When enabled, the custom value is displayed against the agents schedule rather than any of the activities they have been scheduled for. This value can be null where nothing would be displayed in the agent web.

If the value of the `ShowAllActivities` option is `true`, then this option has no effect; WFM Web displays a list of all activities for which the agent has skills.

If the value of the `ShowAllActivities` option is `false`, then the value of this option replaces the list of all activities for which the agent has skills.

- If this option is not defined or its value is empty (no text), then WFM Web displays a list of all activities for which the agent is scheduled.
- If the value of this option is a text string, then WFM Web displays that text string.

HideNames

Type: Mandatory
Default Value: `false`
Valid Value: `true, false`
Dependencies: None

Specifies whether agent names are displayed in `Adherence` views.

HideTerminatedAgents

Type: Optional
Default Value: `false`
Valid Value: `true, false`
Dependencies: None

Specifies whether WFM Web should exclude agents whose termination date has passed. To exclude these agents, set this value to `true`. If you want to view terminated agents, set this option to `false`.

NameOrder

Type: Mandatory
Default Value: `1`
Valid Value: `1, 2, 3`
Dependencies: None

Determines how WFM Web presents agent names.

`1` - first name is presented first.

`2` - last name is presented first.

`3` - last name is presented first and is separated from first name with a comma.

NoPerformanceInSchedule

Type: Mandatory
Default Value: `false`
Valid Value: `true` or `false`
Dependencies: None

This option controls whether or not target selection and performance data retrieval is automatic in the schedule intra-day view. It can be useful in improving the WFM performance in some situations.

If `false` (the default), target selection and performance data retrieval is automatic.

If `true`, the user must explicitly select a target for performance data, or no performance data is retrieved.

OpenHoursCellColor

Type: Optional
Default Value: `FFCC00` (hot yellow)
Valid Value: Any standard hex code value for a color. For example, `D3D3D3` is light gray.
Dependencies: None

Use this option to change the color of the background in the opening hours cells of Forecast views. The default value applies if you omit this option.

PageCharSet

Type: Optional
Default Value: No default value
Valid Value: Any standard character set value. For example, enter `x-sjis` for the Japanese character set.
Dependencies: None

Specifies the character set that every page in WFM Web employs. If empty, no character set is specified.

ShowAllActivities

Type: Optional

Default Value: `false`
Valid Values: `true, false`
Dependencies: None

Specifies how the `Daily Schedule` window is displayed in WFM Web for Agents. Select `false` to have only the agent's scheduled activities displayed. Select `true` to create a display containing all possible activities for that agent, whether scheduled or not.

See the option "CustomActivities" on page 163 for related functionality.

Table 6: How ShowAllActivities setting affects CustomActivities

Statistic	Definition
`true`	any value
`false`	empty
`false`	text

Reports Section

Charset

Type: Optional
Default Value: No default value
Valid Values: Any standard code page value. For example, enter `cp1257` for a Baltic code page.
Dependencies: None

Specifies the code page to be used for fonts in generated reports. If empty, code page `1252, Latin 1`, is used.

Font

Type: Optional
Default Value: No default value
Valid Value: Any font name that exists on the computer used to generate reports.
Dependencies: None

Specifies the font name to be used in on the computer used to generated WFM reports.

x-FontPath

Type: Optional

Default Value: No default value

Valid Value: Physical path

Dependencies: None

Physical directory path where the font resides (as specified above in `Reports/Font`).

OwnerCaption

Type: Mandatory
Default Value: No default value
Valid Value: Any string
Dependencies: None

Provides the default value for the report header. You can change this value in the `Header` field on the first window of any Report Wizard.

OwnerVisible

Type: Mandatory
Default Value: `false`
Valid Value: `true, false`
Dependencies: None

Provides the default value for the `Show Header` check box in the first page of all Report Wizards.

PageLimit

Type: Optional
Default Value: `0`
Valid Value: `0` and up
Dependencies: None

Specifies the maximum number of pages a normal report can contain. If this number is exceeded, report generation is cancelled. Values less than `2` specify *no limit.*

PageLimitForCSV

Type: Optional
Default Value: `0`
Valid Value: `0` and up
Dependencies: None

Specifies the maximum number of pages that a CSV-friendly report can contain. If this number is exceeded, report generation is cancelled. Values less than `2` specify *no limit.*

PathToAutoGeneratedReports

Type: Mandatory
Default Value: `None`
Valid Value: *a valid and accessible network path*
Dependencies: None

Specifies the network path for storing generated reports. If this value is not set, then generated reports are lost (not stored at all).

RevertDiffCalculation

Type: Mandatory
Default Value: `0` or `false` or `no`
Valid Value: `0` or `false` or `no`, `1` or `true` or `yes`
Dependencies: None

By default, the Difference column in the Contact Center Performance and Workforce Performance reports is calculated as the Scheduled or Forecasted value minus the Actual value. Set this option to `1` (true) if you want the Difference column to be calculated as the Actual value minus the Scheduled or Forecasted value.

ServerURL

Type: Optional
Default Value: No default value
Valid Value: URL
Dependencies: None

URL for the location of the WFM Web used as the reports server. For more information, see “Install WFM Web as Report Server” on page 116.

ShowActualHeadcount

Type: Mandatory
Default Value: `false`
Valid Values: `true`, `false`

This option applies to the Contact Center Performance Report and the Workforce Performance Report.
If the value is set to `false`, the report displays the Actual Number of Agents that were collected by Data Aggregator in the `wm_agents_in` (logged in agents) option.
If the value is set to `true`, the report displays the Actual Headcount, which is `wm_agent_minutes` option value divided by 15. (For example, if 1 agent is logged in but works only 14 minutes per timestep, the headcount would equal 0.93.)
Dependencies: None

Note: For CCPR, this condition is executed only for Actual data; for Planning Data `EPerfInfoItems.PERF_ITEM_SCH_HEADCOUNT` is always shown as Number of Agents.

ShowSSGonFirstPageOnly

Type: Optional

Default Value: `false`

Valid Value: `true`, `false`
Dependencies: None

Set this option to `true` to disable repetition of the Selected Schedule State Groups and Schedule States section on each page of all reports. Instead, the report will display the complete list once, and then never repeat it.

Options Tab for WFM Daemon

From the `Options` tab you can modify the default WFM Daemon configuration settings (see "Notifications" on page 36). The tab contains four sections. The options in each section are described below.

Log Section

all

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of all levels, `Standard, Trace, and Debug`, are to be sent to the listed outputs. Do not use `network` unless requested by Genesys Professional Services because it generates extremely heavy message loads that can degrade system performance.

buffering

Type: Mandatory
Default Value: `no`
Valid Values: `yes, no`
Dependencies: None

Turns system file buffering on (`yes`) or off (`no`).

debug

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of the `Debug` level are to be sent to the listed outputs. Do not use `network` unless requested by Genesys Professional Services because it generates extremely heavy message loads that can degrade system performance.

expire

Type: Mandatory

Default Value: `no`
Valid Values: `no, <number>, <number> file, <number> day`
Dependencies: None

Sets the `Expiration` mode for old segments. The number to be stored cannot be less than 1 file or 1 day or more than 100 files or 100 days. `No` indicates that files do not expire.

segment

Type: Mandatory
Default Value: `no`
Valid Values: `no, <number>, <number>KB, <number>MB, <number>Hr`
Dependencies: None

Sets the maximum size (in KB, MB, or hours) of the log file segment, after which a new segment is created. The default size is in KB. The number cannot be less than `100 KB` or less than one hour. `No` indicates no segmentation of the log file.

standard

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of the `Standard` level are to be sent to the listed outputs. For centralized logging, use `network`. You can use a local file name or `stdout` as well as `network`.

trace

Type: Mandatory
Default Value: `stdout`
Valid Values (log output types): `stdout, stderr, syslog, network, <filename>`
Dependencies: None

Specifies that log events of the `Trace` level are to be sent to the listed outputs. For centralized logging, use `network`. You can use a local file name or `stdout` as well as `network`.

verbose

Type: Mandatory
Default Value: `all`
Valid Values: `all, trace, standard, none, yes (= all), no (= none)`
Dependencies: None

Filters output of log messages based on their assigned priority. `All` enables output of all messages to the log file. `Trace` enables informational and error messages and disables debug messages. `Standard` enables error messages only and disables informational and debug messages. `None` disables all messages.

Options Section

CharSet

Type: Optional
Default Value: No default value
Valid Values: Any standard character set value. For example, enter `x-sjis` for the Japanese character set.
Dependencies: None
Specifies the character set of notification messages sent. Must be specified if messages contain specific locale characters and they are not presented correctly in the received message.

NameOrder

Type: Mandatory
Default Value: `1`
Valid Values: `1, 2, 3`
Dependencies: None

Specifies first and last name order when sending e-mail notifications.

`1` - first name is presented first.

`2` - last name is presented first.

`3` - last name is presented first and is separated from first name with a comma.

pollTimer

Type: Mandatory
Default Value: `1`
Valid Value: Any positive integer
Dependencies: None

Specifies how often WFM Daemon must verify for data updates, value specified in minutes.

ReportGenerationTimeout

Type: Optional
Default Value: `120`
Valid Value: `1-1440`
Dependencies: None

Specifies the time (in minutes) after which a scheduled report task will be terminated, whether or not report is finished. Use this option to control how long scheduled report tasks can run.

TrackAhead

Type: Mandatory
Default Value: `0`
Valid Value: Any integer, positive or negative
Dependencies: TrackBack. If you specify zero in both options, then Daemon tracks any data changes without date range limitations. If only one of them is 0, then Daemon treats it as an indicator of the current day.

This option specifies how many days in advance of the current date that WFM Daemon should request data from WFM Server, counting from the current date. Relevant for any type of notification (see "Notifications" on page 36). The value specified is in days, and can be a negative number to specify the past or a positive number to specify the future.

TrackBack

Type: Mandatory
Default Value: `0`
Valid Values: Any integer, positive or negative
Dependencies: TrackAhead. If you specify zero for both options, then Daemon tracks any data changes without date range limitations. If only one of them is 0, then Daemon treats it as an indicator of the current day.

Specifies how many days back from the current date that WFM Daemon should request data from WFM Server, counting from the current date. Relevant for any type of notification (see "Notifications" on page 36). The value specified is in days, and can be a negative number to specify the past or a positive number to specify the future.

Identity Section

ApplicationType

Type: Mandatory in a Framework 6.x environment. Optional in a Framework 7.x environment.
Default Value: `WFMDaemon`
Valid Value: `WFMDaemon`
Dependencies: None

Identifies WFM Daemon application.

Client Section

SOAPTimeout

Type: Mandatory
Default Value: `60`
Valid Values: Any positive integer
Dependencies: None

Connection timeout, in seconds, to WFM Server.

SMTP Section

AnonymousAccess

Type: Optional
Default Value: `false`
Valid Values: `true` or `false`
Dependencies: None

Set to `true` to enable WFM Daemon's ability to send anonymous e-mails.

Set to `false` to disable WFM Daemon's ability to send anonymous e-mails.

fromAddress

Type: Optional
Default Value: No default value
Valid Values: Any valid e-mail address
Dependencies: None

FROM e-mail address presented to users receiving notifications.

Host

Type: Mandatory
Default Value: No default value
Valid Values: Not applicable
Dependencies: None

Host name of machine where SMTP server is located.

Password

Type: Optional
Default Value: No default value
Valid Values: Any valid password
Dependencies: None

Password for connection to SMTP server. Needs to be specified only if SMTP server requires connection authorization.

Port

Type: Mandatory
Default Value: `25`
Valid Values: Any positive integer
Dependencies: None

Port of SMTP server.

User

Type: Optional

Default Value: No default value
Valid Values: Any valid username
Dependencies: None

Username for connection to SMTP server. Needs to be specified only if SMTP server requires connection authorization.

WFM Options Removed

This section lists the WFM options that no longer supported by WFM and have been removed.

Data Aggregator Options Tab

AgentEventsFromInterface

This option removed in WFM 8.1.1 release.

Chapter

6 Recommended Statistics Settings

This chapter includes the following sections:

Configuring Stat Server Statistics

You configure the Stat Server statistics that WFM Data Aggregator tracks and records using the WFM Configuration Utility. Therefore, you must configure certain Stat Server settings required by WFM before launching the WFM Configuration Utility and completing the WFM Data Aggregator configuration.

If you use the WFM Data Aggregator Configuration Wizard (instead of performing a manual installation and configuration) and you select the Wizard's Add WFM Statistics option, the Wizard completes all the necessary Stat Server configuration. In this case, the statistics have the variant names (starting with WFM) listed in parentheses in the `Statistic Name` rows of the Stat Server Statistics Settings tables beginning on page 183.

Note: The Wizard only adds the "voice" statistics described in tables 6-12, not the Genesys eServices (Multimedia) statistics. You must configure most eServices statistics manually in Stat Server. See details in tables 13-27.

In addition, you must locate or configure in Configuration Manager the necessary Stat Server statistics for tracking WFM activities, so they will be available when configuring WFM Data Aggregator statistics in the WFM Configuration Utility.

Warning! You must restart Stat Server after configuration changes.

You must configure two parameters in Stat Server: `TimeProfile` and `TimeRange`.

TimeProfile

WFM Data Aggregator uses `TimeProfile` to order statistics for WFM activities from Stat Server based on a specific interval of time. This time interval is configured in Stat Server as `TimeProfile`.

Note: If you use the WFM Data Aggregator Configuration Wizard instead of performing a manual installation and configuration, and select the Wizard's `Add WFM Statistics` option, the Wizard completes all the necessary time profile configuration. In this case, the time profiles have these variant names (starting with WFM):

```
WFMProfile,Growing=0:00+0:15
WFMTimeProfile,Growing=0:00+0:15
```

To configure the time profile, check the `TimeProfiles` section on the `Options` tab of the `Stat Server Application` object. If it doesn't exist, create this section.

After locating or creating this section, add the options:

- `WFMProfile,Growing=0:00+0:15`
- `TimeProfileName,Growing=0:00+0:15`

`TimeProfileName` indicates the name of the time profile to be used. The `0:15` indicates that the request statistics are based on 15-minute intervals.

Note: A 15-minute interval is the only timestep currently supported.

TimeRange

WFM Data Aggregator uses `TimeRange` to request that the service-factor statistics be calculated based on the specified time interval. Usually, service factor is calculated as "*X*% of calls answered in *Y* seconds." The "*Y* seconds" must be configured as the `TimeRange` parameter. After you configure the time range, Stat Server uses it by default and returns the value for any service-factor statistic as "*X*% of calls answered in [*TimeRange*] seconds." To configure the time range, check for the `TimeRanges` section of the `Stat Server Application` object. If it doesn't exist, create this section.

Note: If you use the WFM Data Aggregator Configuration Wizard instead of performing a manual installation and configuration, and select the Wizard's `Add WFM Statistics` option, the Wizard creates the necessary time range configuration. In this case, the time ranges have these variant names (starting with WFM):

```
WFMTimeRange10=0-10
WFMTimeRange15=0-15
WFMTimeRange20=0-20
WFMTimeRange30=0-30
WFMTimeRange60=0-60
WFMTimeRange90=0-90
```

After locating or creating this section, add these options:

- `TimeRange10=0-10`
- `TimeRange15=0-15`
- `TimeRange20=0-20`
- `TimeRange30=0-30`
- `TimeRange60=0-60`
- `TimeRange90=0-90`

In this case, `10, 15, 20`, and so on, represent the "`Y seconds`" portion of the service factor calculation described above.

You can configure multiple time ranges for multiple service-level goals. A Customer Service goal of 80 percent of calls answered in 30 seconds and a Corporate Customer Service goal of 90 percent of calls answered in 10 seconds is configured as follows:

- `CustTimeRange '0-30'`
- `CorpTimeRange '0-10'`

After you configure `TimeRange`, use this option when configuring the Stat Server request in the WFM Configuration Utility.

Warning! After restarting Stat Server, be certain that during initialization the `TimeProfile` and `TimeRange` statistics proceed successfully. See the Stat Server documentation for more details.

Procedure: Locating Preconfigured Stat Server Statistics in Configuration Manager

Purpose: To locate preconfigured Stat Server statistics.

Start of procedure

1. Click the plus sign (+) next to `Environment` in the Configuration Manager tree view.
2. Click `Applications`.
3. The list of available `Applications` appears in the right-hand pane of the window.
4. Double-click the `Stat Server Application` object.
5. A `Properties` window containing several tabs appears.
6. Click the `Options` tab.
7. The preset statistics are listed on the `Options` tab.
8. Scroll through the list to determine which statistics that are listed in this chapter are available, and which you will need to create.

End of procedure

Next Steps

- Execute the procedure, "Creating New Stat Server Statistics" on page 178 for each "missing" statistic.
- Execute the procedure, "Entering Settings for New Statistics" on page 179 for each new statistic.

Procedure:
Creating New Stat Server Statistics

Purpose: To create new stat server statistics.

Prerequisites

- The statistics that WFM requires are not in the preset list.

Start of procedure

1. Click the `Create New Section/Option` icon on the Stat Server `Option` tab.

   The `Add Statistic` window appears.
2. Enter a statistic name from the Stat Server Statistics Settings tables beginning on page 183.
3. Click `OK`.

   The new statistic appears in the `Option` tab `Statistics` list.

End of procedure

Note: Certain Genesys eServices (Multimedia) statistics will require additional configuration. See details in tables 13-27.

Next Steps

- Execute the procedure, "Entering Settings for New Statistics" on page 179.

Procedure: Entering Settings for New Statistics

Purpose: To configure the new statistics just created.

After you create new statistics, you must configure each to attach the correct properties to each. You can create one or more separate requests for each activity.

For example, if an activity named `CustomerCare` is handled by two different queues, the interaction volume can be obtained by creating a separate request to Stat Server for the `TotalNumberCallsInbound` statistic for each queue. WFM Data Aggregator automatically sums these results to calculate the total number of `CustomerCare` interactions.

Warning! Stat Server statistics are used to collect historical data. It is critical that the statistic requests be configured correctly.

Prerequisites

- Execute the procedure, "Creating New Stat Server Statistics" on page 178.

Start of procedure

1. Double-click a new statistic.

   A blank `Properties` window appears.
2. Right-click in the blank area of the `Properties` window and select `New` from the shortcut menu.

   The `Edit Option` dialog box opens. You must enter four option names and values for each new statistic.
3. Enter an option name from Table 7, "Recommended Stat Server Statistics," on page 180 in the `Option Name` box.
4. Enter the corresponding option value in the `Option Value` box.

   Note: Enter the option values exactly as given in the table.

5. Click `OK`. The new settings appear in the `Properties` window.

6. Repeat Steps 1–5 until you have defined properties for all four options.
7. Click `OK` after entering all the required properties.
8. Click the `Create New Section/Options` icon again to create the next statistic.
9. Continue the procedure until you have created all the recommended statistics.
10. Click `OK`.

End of procedure

If you need more information about Stat Server statistics, see the Stat Server documentation.

If you need more information about Stat Server statistics, see the Stat Server documentation.You can copy-and-paste a generic set of these recommended statistics, in Appendix F, “Recommended Statistics in Copy-and-Paste Format,” on page 359.

Table 7: Recommended Stat Server Statistics

WFM Statistic	Statistic Name	Option Name	Option Value	Comments
Interaction Volume	TotalNumberCallsEntered (or WFMTotalNumberCallsEntered, if you used the WFM Data Aggregator Configuration Wizard to configure Stat Server)	Objects	`Queue, RoutePoint, GroupQueues`	Predefined. Collects the number of interactions that enter the object.
		Category	TotalNumber	
		MainMask	CallEntered	
		Subject	DNAction	
Abandonment Volume	TotalNumberCallsAband (or WFMTotalNumberCallsAband)	Objects	`Queue, RoutePoint, GroupQueues`	Predefined. Collects the number of interactions abandoned while waiting in the object.
		Category	TotalNumber	
		MainMask	CallAbandoned	
		Subject	DNAction	

Table 7: Recommended Stat Server Statistics (Continued)

WFM Statistic	Statistic Name	Option Name	Option Value	Comments
	TotalNumberShortAbandons	Objects	Queue, RoutePoint, GroupQueues	
		Category	TotalNumberInTimeRange	
		MainMask	CallAbandoned, CallAbandonedFromRinging	
		Subject	DNAction	
Quality of Service	ServiceFactor1 (or WFMServiceFactor1)	Objects	Queue, RoutePoint, GroupQueues	Predefined. You must configure a time range to use this statistic. Reports the percentage of interactions answered by agents within the time range. Calculated as interactions answered divided by total interactions (answered + abandoned).
		Category	ServiceFactor1	
		MainMask	CallAnswered, CallAbandoned, CallAbandonedFromRinging	
		Subject	DNAction	
	TotalNumberCallsDistrib (or WFMTotalNumberCallsDistrib)	Objects	Queue, RoutePoint, GroupQueues	Predefined. Reports the number of interactions distributed to other objects from the specified object.
		Category	TotalNumber	
		MainMask	CallDistributed	
		Subject	DNAction	

Table 7: Recommended Stat Server Statistics (Continued)

WFM Statistic	Statistic Name	Option Name	Option Value	Comments
	AverTimeBeforeAnswering (or WFMAverTimeBeforeAnswering)	Objects	`Queue, RoutePoint, GroupQueues`	Not predefined. Reports the average time an interaction range before being answered. Calculated as a ratio of total wait time for interactions to be answered divided by the number answered. Only interactions answered during the current time interval are counted.
		Category	AverageTime	
		MainMask	CallAnswered	
		RelMask	CallAnswered	
		Subject	DNAction	
Handle Time	TotalHandleTime (or WFMTotalHandleTime)	Objects	`Agent, Place, GroupAgents, GroupPlaces`	Predefined. Reports the total time an agent spent handling inbound or outbound interactions and doing offline work.
		Category	TotalAdjustedTime	
		MainMask	CallInbound, CallOutbound, OfflineWorkType1	
		Subject	DNAction	
	TotalNumberCallsHandled (or WFMTotalNumberCallsHandled)	Objects	`Agent, Place, GroupAgents, GroupPlaces`	Not predefined. Reports the number of inbound and outbound interactions that ended during a specific timestep.
		Category	TotalNumber	
		MainMask	CallInbound, CallOutbound	
		Subject	DNAction	

You can copy-and-paste a generic set of these recommended statistics, in Appendix F, “Recommended Statistics in Copy-and-Paste Format,” on page 359.

Configuring Statistics for Voice Interactions

You can copy-and-paste a generic set of these recommended statistics, in Appendix F, "Recommended Statistics in Copy-and-Paste Format," on page 359.

Table 8: Interaction Volume

Item	Description

Statistic Name	`TotalNumberCallsEntered`
	or
	`WFMTotalNumberCallsEntered`
	(if you used the WFM Data Aggregator Configuration Wizard to configure Stat Server)

Statistic Configuration Option / Value pairs	`Objects = Queue, RoutePoint, GroupQueues`
	`Category = TotalNumber`
	`MainMask = CallEntered`
	`Subject = DNAction`

Comments	Predefined. Collects the number of interactions that enter the object.

Table 9: Abandonment Volume

Item	Description

Statistic Name	`TotalNumberCallsAband`
	or
	`WFMTotalNumberCallsAband`

Statistic Configuration Option / Value pairs	`Objects = Queue, RoutePoint, GroupQueues`
	`Category = TotalNumber`
	`MainMask = CallAbandoned`
	`Subject = DNAction`

Comments	Predefined. Collects the number of interactions abandoned while waiting in the object.

Table 10: Short Abandonment Volume

Item	Description
Statistic Name	`TotalNumberShortAbandons`

Statistic Configuration Option / Value pairs	`Objects = Queue, RoutePoint, GroupQueues`
	`Category = TotalNumberInTimeRange`
	`MainMask = CallAbandoned, CallAbandonedFromRinging`
	`Subject = DNAction`

Comments	Predefined. Collects the number of interactions abandoned within a configurable time period—typically a few seconds—while waiting in the object. Short Abandons are usually considered to be wrong numbers or similar, and are typically excluded when computing statistics.

Quality of Service

Table 11: Distributed Interactions

Item	Description

Statistic Name	`TotalNumberCallsDistrib`
	or
	`WFMTotalNumberCallsDistrib`

Statistic Configuration Option / Value pairs	`Objects = Queue, RoutePoint, GroupQueues`
	`Category = TotalNumber`
	`MainMask = CallDistributed`
	`Subject = DNAction`

Comments	Predefined. Reports the number of interactions distributed to other objects from the specified object.

Table 12: Service Factor

Item	Description

Statistic Name	`ServiceFactor1`
	or
	`WFMServiceFactor1`

Statistic Configuration Option / Value pairs	`Objects = Queue, RoutePoint, GroupQueues`
	`Category = ServiceFactor1`
	`MainMask = CallAnswered, CallAbandoned, CallAbandonedFromRinging`
	`Subject = DNAction`

Comments	Predefined. You must configure a time range to use this statistic. Reports the percentage of interactions answered by agents within the time range. Calculated as interactions answered divided by total interactions (answered + abandoned).

Table 13: Average Speed of Answer

Item	Description

Statistic Name	`AverTimeBeforeAnswering`
	or
	`WFMAverTimeBeforeAnswering`

Statistic Configuration Option / Value pairs	`Objects = Queue, RoutePoint, GroupQueues`
	`Category = AverageTime`
	`MainMask = CallAnswered`
	`RelMask = CallAnswered`
	`Subject = DNAction`

Comments	Not predefined. Reports the average time an interaction rang before being answered. Calculated as a ratio of total wait time for interactions to be answered divided by the number answered. Only interactions answered during the current time interval are counted.

Handle Time

Table 14: Total Handle Time

Item	Description

Statistic Name	`TotalHandleTime`
	or
	`WFMTotalHandleTime`

Statistic Configuration Option / Value pairs	`Objects = Agent, Place, GroupAgents, GroupPlaces`
	`Category = TotalAdjustedTime`
	`MainMask = CallInbound, CallOutbound, OfflineWorkType1`
	`Subject = DNAction`

Comments	Predefined. Reports the total time an agent spent handling inbound or outbound interactions and doing offline work.

Table 15: Interactions Handled

Item	Description

Statistic Name	`TotalNumberCallsHandled`
	or
	`WFMTotalNumberCallsHandled`

Statistic Configuration Option / Value pairs	`Objects = Agent, Place, GroupAgents, GroupPlaces`
	`Category = TotalNumber`
	`MainMask = CallInbound, CallOutbound`
	`Subject = DNAction`

Comments	Not predefined. Reports the number of inbound and outbound interactions that ended during a specific timestep.

Configuring Statistics for Genesys eServices (Multimedia) Interactions

These recommendations only describe how to configure statistics based on Interaction Queues.

You can copy-and-paste a generic set of these recommended statistics, in Appendix F, "Recommended Statistics in Copy-and-Paste Format," on page 359.

Note: Using statistics for Genesys eServices interactions routed through Virtual Queues is not currently supported.

Genesys eServices (Multimedia) Statistics for Chat Interactions

Table 16: Interaction Volume

Item	Description
WFM Statistic Object Type	Interaction queue
ConfigServer Object Type	Script
Statistic Name	`<name is user-definable>`

Statistic Configuration Option / Value pairs	`AggregationType = Total`
	`Category = JavaCategory`
	`Description = The total number of interactions of the specified media type that entered this staging area during the specified period.`
	`JavaSubCategory = eServiceInteractionStat.jar:OMQ Total Entered`
	`MediaType = chat`
	`Objects = StagingArea`

Statistic created by	Must be configured manually.

Table 17: Abandonment Volume

Item	Description
WFM statistic object type	Interaction Queue
ConfigServer object type	Script
Statistic name	`Chat_Total_Abandoned_From_Queue`

Table 17: Abandonment Volume (Continued)

Item	Description

Statistic Configuration Option / Value pairs	`AggregationType = Total`
	`Category = JavaCategory`
	`Description = Total number of e-mail interactions abandoned.`
	`JavaSubCategory = eServiceInteractionStat.jar:OMQ Total Abandoned`
	`MediaType = chat`
	`Objects = StagingArea`

Statistic created by	Must be configured manually.

Quality of Service

Table 18: Average Speed of Answer

Item	Description
WFM statistic object type	Interaction Queue
ConfigServer object type	Script
Statistic name	`<name is user-definable>`

Statistic Configuration Option / Value pairs	`AggregationType = Total`
	`Category = JavaCategory`
	`JavaSubCategory = eServiceInteractionStat.jar:OMQ Average Waiting Time`
	`MediaType = chat`
	`Objects = StagingArea`

Statistic created by	Must be configured manually.

Table 19: Distributed Interactions

Item	Description
WFM statistic object type	Interaction Queue
ConfigServer object type	Script
Statistic name	`<name is user-definable>`

Statistic Configuration Option / Value pairs	`AggregationTime = Total`
	`Category = JavaCategory`
	`JavaSubCategory = eServiceInteractionStat.jar:OMQ Total Distributed`
	`MediaType = chat`
	`Objects = StagingArea`

Statistic created by	Must be configured manually.

Handle Time

Table 20: Total Handle Time

Item	Description
WFM statistic object type	`GroupAgents, GroupPlaces`
ConfigServer object type	`GroupAgents, GroupPlaces`
Statistic name	`Interactions_Processing_Time`

Statistic Configuration Option / Value pairs	`Category = TotalTime`
	`Description = The total amount of time that this resource spent handling interactions during the specified period.`
	`MainMask = InteractionHandling`
	`Objects = Agent, GroupAgents, GroupPlaces, Place`
	`Subject = AgentStatus`

Statistic created by	Genesys eServices (Multimedia) Wizard
Filter	`<name is user-definable>`

Table 20: Total Handle Time (Continued)

Item	Description
Filter configuration	`MediaType=chat & PairExists("Queue",X)`
Filter created by	Must be configured manually. `X` is the name of the interaction queue

Table 21: Interactions Handled

Item	Description
WFM statistic object type	`GroupAgents, GroupPlaces`
ConfigServer object type	`GroupAgents, GroupPlaces`
Statistic name	`Interactions_Processed`

Statistic Configuration Option / Value pairs	`Category = TotalNumber`
	`Description = The total number of interactions that were handled by this resource during the specified period.`
	`MainMask = InteractionHandling`
	`Objects = Agent, GroupAgents, GroupPlaces, Place`
	`Subject = Action`

Statistic created by	Genesys eServices (Multimedia) Wizard
Filter	`<name is user-definable>`
Filter configuration	`MediaType=chat & PairExists("Queue",X)`
Filter created by	Must be configured manually. `X` is the name of the interaction queue.

Genesys eServices (Multimedia) Statistics for E-mail Interactions

You can copy-and-paste a generic set of these recommended statistics, in Appendix F, “Recommended Statistics in Copy-and-Paste Format,” on page 359.

Table 22: Interaction Volume

Item	Description
WFM statistic object type	Interaction queue
ConfigServer object type	Script
Statistic name	`IxnQueue_Email_Entered`

Statistic Configuration Option / Value pairs	`AggregationType = Total`
	`Category = JavaCategory`
	`Description = Total number of e-mail interactions that entered the queue.`
	`JavaSubCategory=eServiceInteractionStat.jar:EQR Total Entered`
	`Objects = StagingArea`

Statistic created by	Genesys eServices (Multimedia) wizard

Handle Time

Table 23: Total Handle Time

Item	Description
WFM statistic object type	`GroupAgents, GroupPlaces`
ConfigServer object type	`GroupAgents, GroupPlaces`
Statistic name	`Interactions_Processing_Time`

Statistic configuration	`Category = TotalTime`
	`Description=The total amount of time that this resource spent handling interactions during the specified period.`
	`MainMask=InteractionHandling`
	`Objects=Agent, GroupAgents, GroupPlaces, Place`
	`Subject=AgentStatus`

Statistic created by	Genesys eServices (Multimedia) Wizard

Table 23: Total Handle Time (Continued)

Item	Description
Filter	`<name is user-definable>`
Filter configuration	`MediaType = E-mail & PairExists("Queue",X)`
Filter created by	Must be configured manually. `X` is the name of the interaction queue

Table 24: Interactions Handled

Item	Description
WFM statistic object type	`GroupAgents, GroupPlaces`
ConfigServer object type	`GroupAgents, GroupPlaces`
Statistic name	`Interactions_Processed`

Statistic Configuration Option / Value pairs	`Category = TotalNumber`
	`Description = The total number of interactions that were handled by this resource during the specified period.`
	`MainMask = InteractionHandling`
	`Objects = Agent, GroupAgents, GroupPlaces, Place`
	`Subject = Action`

Statistic created by	Genesys eServices (Multimedia) Wizard
Filter	`<name is user-definable>`
Filter configuration	`MediaType = E-mail & PairExists("Queue",X)`
Filter created by	Must be configured manually. `X` is the name of the interaction queue.

Backlog

Table 25: E-mails

Item	Description

Statistic Name	`EmailsWaitingInQueue`
	or
	`WFMEmailsWaitingInQueue`

Statistic Configuration Option / Value pairs	`Objects = StagingArea`
	`Category = JavaCategory`
	`AggregationType = Current`
	`JavaSubCategory = eServiceInteractionStat.jar:OMQ Current Waiting Processing`
	`MediaType = email`

Comments	Number of email interactions that have been submitted to a Queue and are currently awaiting processing.

Genesys eServices (Multimedia) Statistics for intelligent Workload Distribution Interactions

You can copy-and-paste a generic set of these recommended statistics, in Appendix F, "Recommended Statistics in Copy-and-Paste Format," on page 359.

Table 26: Interaction Volume

Item	Description
ConfigServer object type	Script
Statistic name	`<name is user-definable>`

Table 26: Interaction Volume (Continued)

Item	Description

Statistic Configuration Option / Value pairs	`AggregationType = Total`
	`Category = JavaCategory`
	`Description = The total number of interactions of the specified media type that entered this staging area during the specified period.`
	`JavaSubCategory = eServiceInteractionStat.jar:OMQ Total Entered`
	`MediaType = MediaX`
	`Objects = StagingArea`

Statistic created by	Must be configured manually. `MediaX` is the Mediatype for corresponding intelligent Workload Distribution (iWD, formerly intelligent Workload Distribution).

Table 27: Abandonment Volume

Item	Description
WFM statistic object type	Interaction Queue
ConfigServer object type	Script
Statistic name	`<name is user-definable>`

Statistic Configuration Option / Value pairs	`AggregationType = Total`
	`Category = JavaCategory`
	`Description = Total number of e-mail interactions abandoned.`
	`JavaSubCategory = eServiceInteractionStat.jar:OMQ Total Abandoned`
	`MediaType = MediaX`
	`Objects = StagingArea`

Statistic created by	Must be configured manually. `MediaX` is the Mediatype for corresponding intelligent Workload Distribution.

Quality of Service

Table 28: Average Speed of Answer

Item	Description
WFM statistic object type	Interaction Queue
ConfigServer object type	Script
Statistic name	`<name is user-definable>`

Statistic Configuration Option / Value pairs	`AggregationType = Total`
	`Category = JavaCategory`
	`JavaSubCategory = eServiceInteractionStat.jar:OMQ Average Waiting Time`
	`MediaType = MediaX`
	`Objects = StagingArea`

Statistic created by	Must be configured manually. `MediaX` is the Media type for corresponding intelligent Workload Distribution.

Table 29: Distributed Interactions

Item	Description
WFM statistic object type	Interaction Queue
ConfigServer object type	Script
Statistic name	`<name is user-definable>`

Statistic Configuration Option / Value pairs	`AggregationTime = Total`
	`Category = JavaCategory`
	`JavaSubCategory = eServiceInteractionStat.jar:OMQ Total Distributed MediaType = MediaX`
	`Objects =StagingArea`

Statistic created by	Must be configured manually. `MediaX` is the Media type for corresponding intelligent Workload Distribution.

Handle Time

Table 30: Total Handle Time

Item	Description
WFM statistic object type	`GroupAgents, GroupPlaces`
ConfigServer object type	`GroupAgents, GroupPlaces`
Statistic name	`Interactions_Processing_Time`

Statistic Configuration Option / Value pairs	`Category = TotalTime`
	`Description = The total amount of time that this resource spent handling interactions during the specified period.`
	`MainMask = InteractionHandling`
	`Objects = Agent, GroupAgents, GroupPlaces, Place`
	`Subject = AgentStatus`

Statistic created by	Genesys eServices (Multimedia) Wizard
Filter	`<name is user-definable>`
Filter configuration	`MediaType=chat & PairExists("Queue",X)`
Filter created by	Must be configured manually. `X` is the name of the interaction queue

Table 31: Interactions Handled

Item	Description
WFM statistic object type	`GroupAgents, GroupPlaces`
ConfigServer object type	`GroupAgents, GroupPlaces`
Statistic name	`Interactions_Processed`

Table 31: Interactions Handled (Continued)

Item	Description

Statistic Configuration Option / Value pairs	`Description = The total number of interactions that were handled by this resource during the specified period.`
	`MainMask = InteractionHandling`
	`Objects = Agent, GroupAgents, GroupPlaces, Place`
	`Subject = Action`

Statistic created by	Genesys eServices (Multimedia) Wizard
Filter	`<name is user-definable>`
Filter configuration	`MediaType = chat & PairExists("Queue",X)`
Filter created by	Must be configured manually. `X` is the name of the interaction queue.

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Chapter

7 Starting and Stopping

You can start and stop the WFM servers using Management Layer or you can start and stop all components manually. When using Management Layer, you start WFM Server, WFM Builder, WFM Data Aggregator, and WFM Daemon from Solution Control Interface (SCI).

You must start WFM Web, the WFM Configuration Utility, and the WFM Database Utility manually, even when you are using Management Layer.

Note: When starting WFM, confirm that all servers are running before starting WFM Web, the WFM Configuration Utility, and the WFM Database Utility.

This chapter contains these sections:

Start Workforce Management with SCI

Procedure:
Starting Workforce Management with SCI

Purpose: To start Workforce Management with SCI.

Prerequisites

- You are running the Management Layer.

Start of procedure

1. Start the SCI.
2. Go to the `Solutions` view.
3. Right-click the desired solution and select `Start` from the shortcut menu.
   -or-
   Select the desired solution and choose `Action > Start` on the menu bar.

The command to start WFM is sent to Solution Control Server (SCS), which uses Local Control Agents to activate the WFM solution components in the order established during solution configuration.

SCI reports a successful start of WFM after all solution components display `Running` status within the configured timeout. When all servers are started, the solution status changes from `Stopped` to `Started`.

Note: Because many components are shared by a number of solutions, some WFM components display `Running` status before WFM is started.

SCI reports a successful start of WFM unless a required WFM component could not be started. For more information, see *Framework 8 Solution Control Interface Help*. To view *Help,* open SCI, and click `Help`.

End of procedure

For more information on Management Layer topics, see the *Framework 8 Management Layer User's Guide*.

Start the Workforce Management Servers

There are several ways to start the WFM servers (WFM Server, WFM Builder, WFM Data Aggregator, and WFM Daemon).

Note: By default, the servers are installed on Windows platforms as Windows Services.

Configure the Windows Services

Procedure: Configuring the Windows Services

Purpose: To open and configure each WFM Windows Service.

Note: You can configure a Windows Service to start automatically or manually.

Start of procedure

1. In Windows, select `Start > Programs > Settings > Control Panel > Services`.

   The `Services` window appears. Each Service has status settings showing whether it starts manually or automatically and whether it is currently running.
2. Highlight the service you want to configure and then click `Startup`.
3. Select `automatic` or `manual`.
4. Click `OK`. In the Services window, click `Close`.

The settings are saved.

End of procedure

Manually Start a Windows Service

Procedure: Starting a Windows Service Manually

Purpose: To start a Windows service manually.

Note: If a Windows Service is configured to start automatically, it will start whenever the computer is started. No further action is required.

Prerequisites

- This Windows service is configured to start manually.

Start of procedure

1. In Windows, select `Start > Programs > Settings > Control Panel > Services`.

   The `Services` window appears.
2. Highlight the Service to start.
3. Click `Start`.

End of procedure

Start the Workforce Management Servers Manually

Procedure:
Starting the Workforce Management Servers Manually

Purpose: To start the Workforce Management servers manually.

Start of procedure

1. In Windows, select `Start > Programs > Genesys Solutions > Workforce Management >` <*server name*>.

   The server console window opens and the server begins its initialization routine.
2. If desired, right-click the window title bar to change server display settings.
3. Minimize the window after the server has started.

End of procedure

Start the WFM Configuration Utility

Procedure:
Starting the WFM Configuration Utility

Purpose: To start the WFM Configuration Utility.

Prerequisites

- WFM Servers are running.

Start of procedure

1. In Windows, select `Start > Programs > Genesys Solutions > Workforce Management > Configuration Utility`.

   The `Login` dialog box appears.
2. Enter your user name and password.
3. If this is the first time you are opening the WFM Configuration Utility, click `Details`. Then enter the Configuration Server host name and port number and the name of the WFM Configuration Utility Application object that you configured using Configuration Manager.
4. Choose a module on the `Modules` pane to start using the WFM Configuration Utility.

End of procedure

Note: Click `Help` from any WFM Configuration Utility window to open *Workforce Management Configuration Utility Help.*

Start the WFM Database Utility

Procedure: Starting the WFM Database Utility

Purpose: To start the WFM Database Utility.

Prerequisites

- WFM Servers are running.

Start of procedure

1. In Windows, select `Start > Programs > Genesys Solutions > Workforce Management > Database Utility`.

   The `Login` dialog box appears.
2. Enter your user name and password.

3. If this is the first time you are opening the WFM Database Utility, click `Details`. Then enter the Configuration Server host name and port number and the name of the WFM Database Utility Application object that you configured using Configuration Manager (this is the same as the WFM Configuration Utility Application object).
4. Select the appropriate radio button on the first window to start using the WFM Database Utility.

End of procedure

Note: For more information on using the WFM Database Utility, see Chapter 8.

Start WFM Web

Procedure: Starting WFM Web

Purpose: To start WFM Web.

Prerequisites

- WFM Servers are running.

Start of procedure

1. Start your web server (for example, Tomcat).

   Note: See the documentation for your web server for starting, stopping, and other configuration instructions.

2. Open a web browser.
3. Type or paste the WFM Web URL into the address line of the browser and press the `Enter` key. The `User Login` dialog box appears.

   Note: Contact your system administrator for the URL. The URL is case-sensitive. Follow the capitalization settings exactly.

4. Enter your user name and password.
5. Click `OK`.

Those whose logins identify them as Supervisors will see the WFM Web for Supervisors GUI.
Agents will see the WFM Web for Agents interface.

End of procedure

Stop Workforce Management with SCI

Procedure: Stopping Workforce Management from Inside SCI

Purpose: To stop WFM while running SCI.

Prerequisites

- You are using Management Layer.

Start of procedure

1. Start SCI.
2. Go to the `Solutions` view.
3. Right-click the desired solution and select `Stop` from the shortcut menu.
   or
   Select the desired solution and choose `Action > Stop` on the menu bar.

The command to stop WFM is sent to Solution Control Server, which uses Local Control Agents to shut down the WFM solution components in the order established during solution configuration. When all components and servers are stopped, the solution status changes from `Started` to `Stopped`.

Note: Because many components are shared by a number of solutions, some WFM components display `Running` status after WFM is stopped.

For assistance, see *Framework Solution Control Interface Help*. To view *Help,* open SCI, and click `Help`.

End of procedure

Stop the WFM Configuration Utility

Procedure:
Stopping the WFM Configuration Utility

Purpose: To stop the WFM Configuration Utility.

Start of procedure

1. Select `File > Exit` from the menu.
   or
   Click the `X` button in the upper-right corner of the application window.

End of procedure

Stop the WFM Database Utility

Procedure:
Stopping the WFM Database Utility

Purpose: To stop the WFM Database Utility.

Start of procedure

1. Click the `X` button in the upper-right corner of the application window.
   or
   Click the `Close` button in the main window.

End of procedure

Stop WFM Web

Procedure:
Stopping the WFM Database Utility

Purpose: To log out of WFM Web.

Start of procedure

1. Click `Log off` from any window in WFM Web.

End of procedure

Stop the Workforce Management Servers

You can stop the WFM servers in several ways, depending on whether you are using Management Layer and whether the servers are installed as Windows Services.

Warning! If you terminate a server using the Windows Task Manager, you will lose all data on currently active interactions because Windows does not allow enough time for the servers to save the active data.

Stop the Servers Manually

Procedure: Stopping a Server Manually

Purpose: To terminate a server that is running in a console window rather than as a Service, without using the Windows Task Manager.

Start of procedure

1. Enter `[Ctrl+Break]` or `[Ctrl+C]`.

End of procedure

The method for stopping a server manually depends on whether you installed it as a Windows Service.

If the server is running in a console window rather than as a Service, shut it down using the following method:

Note: You cannot close a server by clicking the `Close` button (`X`) or selecting `File > Close` from the console menu bar. This prevents abnormal shutdown and data loss.

Procedure:
Stopping a Server from a Command Prompt

Note: This procedure does not apply to WFM Daemon.

Purpose: To stop a server's Windows Service from the command prompt.

Start of procedure

1. In Windows, select `Start > Programs > Command Prompt`.
2. Change to the directory in which the server's `.exe` file is located.
3. At the prompt, enter `<servername>.exe -sstop`.

If you are using SCI in the Management Layer:

1. Select the server application.
2. Click `Stop`.

End of procedure

Stop a Server's Windows Service

Procedure:
Stopping a Server's Windows Service

Purpose: To stop a Service from the Services window.

Start of procedure

1. In Windows, select `Start > Programs > Settings > Control Panel > Services` in Windows.
2. Select the appropriate Service.
3. Click `Stop`.
4. Click `Close`.

If you are using SCI in the Management Layer:

1. Select the server application.
2. Click `Stop`.

End of procedure

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Chapter

8 Using the WFM Database Utility

The WFM Database Utility provides a number of database-related functions in a single interface, which are described in these sections:

Overview

Use the Workforce Management Database Utility to:

- Create and configure a new database.
- Migrate data from previous Workforce Management versions to a Workforce Management 8.1 database.
- Update your database to release 8.1.
- Perform other database updates as needed.
- Perform regular maintenance, such as cleanup of obsolete data.

Warning! In order for the Configuration Utility to work properly, you must set Microsoft SQL and Oracle database management systems to be case-insensitive.

Note: The WFM Database Utility and the WFM Configuration Utility use the same `Application` object.

New Database Configuration

If Workforce Management 7.6 (or higher) is your first release of the product, or if you are migrating from release 6.x, then you will be using a new database. The WFM Database Utility populates and configures the new database for you, setting up the necessary tables, views, indexes, and so on. For instructions, see “Install and Run the WFM Database Utility” on page 104.

If you are already using WFM 7.x, simply perform a database update to transition your database to release 8.1. You do not need a new database.

DB2 Configuration Recommendations

These settings are required when you create the WFM database, and will optimize its performance. See “Configuring the DB2 Database” on page 213.

LOGFILSIZ

Default value `LOGFILSIZ = 1000`

Recommended `LOGFILSIZ = 1000`

Update with this Command `UPDATE DATABASE CONFIGURATION FOR db_name USING LOGFILSIZ 1000;`

LOGPRIMARY

Default value `LOGPRIMARY = 3`

Recommended `LOGPRIMARY = 10`

Use this Command `UPDATE DATABASE CONFIGURATION FOR db_name USING LOGPRIMARY 10;`

LOGSECOND

Default value `LOGSECOND = 2`

Recommended `LOGSECOND = 2`

Use this Command `UPDATE DATABASE CONFIGURATION FOR db_name USING LOGSECOND 2;`

STMTHEAP

SQL statement heap (4KB)

The statement heap is used as a work space for the SQL compiler during compilation of an SQL statement. This parameter specifies the size of this work space.

IBM’s description In most cases the default value of this parameter will be acceptable. If you have very large SQL statements and the database manager issues an error (that the statement is too complex) when it attempts to optimize a statement, you should increase the value of this parameter in regular increments (such as 256 or 1024) until the error situation is resolved.

Default value `(STMTHEAP) = 2048`

Recommended `(STMTHEAP) = 65535`

Use this Command `UPDATE DATABASE CONFIGURATION FOR db_name USING STMTHEAP 65535;`

APPLHEAPSZ

SQL statement heap (4KB)

This parameter defines the number of private memory pages available to be used by the database manager on behalf of a specific agent or subagent.

IBM's description Increase the value of this parameter if your applications receive an error indicating that there is not enough storage in the application heap.

Default value `(APPLHEAPSZ) = 256`

Recommended `(APPLHEAPSZ) = 1000`

Use this Command `UPDATE DATABASE CONFIGURATION FOR db_name USING APPLHEAPSZ 1000;`

MON_HEAP_SZ

Database system monitor heap size configuration parameter

IBM's description The amount of memory required for monitoring activity depends on the number of monitoring applications (applications taking snapshots or event monitors), which switches are set, and the level of database activity.

Default value `(MON_HEAP_SZ) = 66`

Recommended `(MON_HEAP_SZ) = 90`

Use this Command `UPDATE DATABASE CONFIGURATION FOR db_name USING MON_HEAP_SZ 90;`

SHEAPTHRES

IBM's description Ideally, you should set this parameter to a reasonable multiple of the largest sortheap parameter you have in your database manager instance. This parameter should be at least two times the largest sortheap defined for any database within the instance.

Default value `SHEAPTHRES  = 16130`

Recommended `SHEAPTHRES = 20000`

Use this Command `UPDATE DATABASE CONFIGURATION FOR db_name USING SHEAPTHRES 20000;`

Buffer Pool

The default buffer pool Page size (4) and other values are too small. Genesys recommends the following settings at the Alter Buffer Pool dialog box:

Table 32: Recommended Buffer Pool Settings for DB2

Setting	Default value	Recommended value
Page Size	4	32
Bufferpool size	1000	60000
Size in 4KB pages	1000	60000

Regular Table Space Create a `Regular` table space using buffer pool with 32KB Page size.

System Temporary table space Create a `System Temporary` table space using buffer pool with 32KB Page size.

User Temporary Table Space Create a `User Temporary` table space using buffer pool with 32KB Page size.

Using the Table Spaces

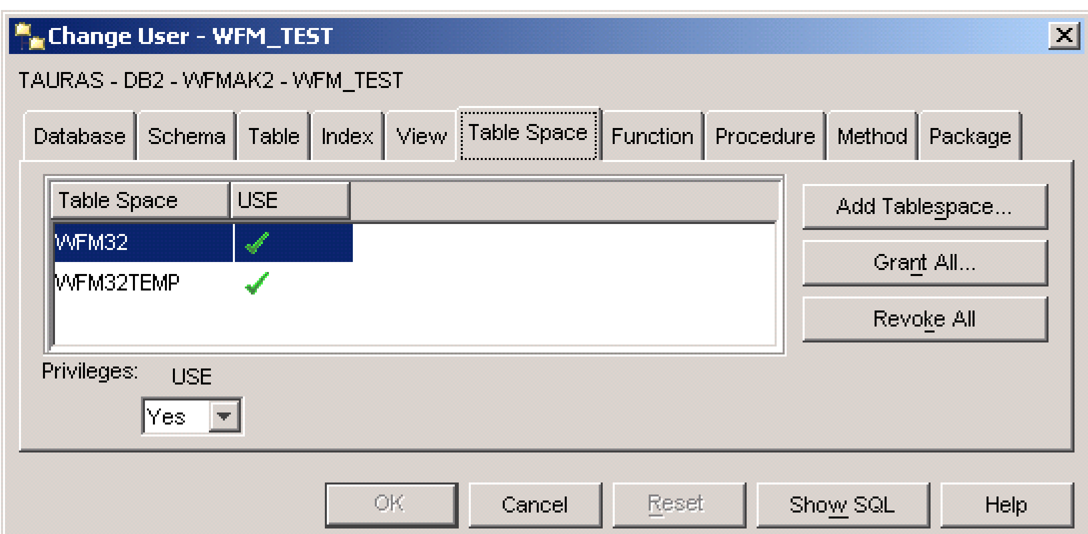

Figure 2: Using newly created table spaces when creating new users

Note: Don't forget to create the same user as your operating system user.

Tuning the Transaction Log Characteristics

Before you enable a database for spatial operations, ensure that you have enough transaction log capacity. The default values for the transaction log configuration parameters do not provide sufficient transaction log capacity if your plans include:

- Enabling a database for spatial operations in a Windows environment
- Using the `ST_import_shape` stored procedure to import from shape files
- Using geocoding with a large commit scope
- Running concurrent transactions

If your plans include any of these uses now or in the future, you need to increase the capacity of your transaction log for the database by increasing one or more of the transaction log configuration parameters. Otherwise, you can use the default characteristics. In this case, proceed to Tuning the application heap size.

Recommendation Refer to the table below for the recommended minimum values for the three transaction log configuration parameters.

Table 33: Recommended minimum values for transaction configuration parameters

Parameter	Description	Default value	Recommended minimum value
`LOGFILSIZ`	Specifies the log file size as a number of 4-KB blocks	`1000`	`1000`
`LOGPRIMARY`	Specifies how many primary log files are to be pre-allocated to the recovery log files	`3`	`10`
`LOGSECOND`	Specifies the number of secondary log files	`2`	`2`

If the capacity of your transaction log is inadequate, the following error message is issued when you try to enable a database for spatial operations: `GSE0010N Not enough log space is available to DB2.`

Procedure:
Configuring the DB2 Database

Purpose: To modify the value of one or more configuration parameters.

Prerequisites

- System administration and installation experience and skill with the associated tools.
- An installed DB2 database.

Start of procedure

1. Find the current value for the `LOGFILSIZ`, `LOGPRIMARY`, and `LOGSECOND` parameters by reviewing the output from the `GET DATABASE CONFIGURATION` command or from the Configure Database window of the DB2 Control Center.
2. Decide whether to change one, two, or three of the values as indicated in the table above.
3. Change each value that you want to modify.

   You can change the values by issuing one or more of the following commands, where `db_name` identifies your database:
   ```
   UPDATE DATABASE CONFIGURATION FOR db_name USING LOGFILSIZ 1000
   UPDATE DATABASE CONFIGURATION FOR db_name USING LOGPRIMARY 10
   UPDATE DATABASE CONFIGURATION FOR db_name USING LOGSECOND 2
   ```
   If the only parameter that you change is LOGSECOND, the change takes effect immediately. In this case, proceed to Tuning the application heap size.
4. If you change the `LOGFILSIZ` or `LOGPRIMARY` parameter, or both:
   a. Disconnect all applications from the database.
   b. If the database was explicitly activated, deactivate the database.

   The changes to the `LOGFILSIZ` or `LOGPRIMARY` parameters, or both, take effect the next time either the database is activated or a connection to the database is established.

Table 34: Parameter Recommendations Comparison

Parameter	Description	Default value	Developer's value	QA value
(LOGFILSIZ)	Log file size (4KB)	1024	10000	10000
(LOGPRIMARY)	Number of primary log files	3	64	128
(LOGSECOND)	Number of secondary log files	0	16	72

End of procedure

Database Migration

Procedure: Migrating Data

Purpose: To migrate data.

Prerequisites

If you are migrating from a previous release, use the WFM Database Utility to transfer your existing data into the new database.

- If you are migrating from release 7.x to 8.1, simply use the `Update Database` feature of the Database Utility.

  Note: To migrate data into an in-use WFM 8.1 database, you must update the database to the latest version required by the WFM Database Utility you are using. To do this, use the `Update Database` feature of the WFM Database Utility.

- If you are migrating from release 6.x to 8.1, you must migrate your 6.5 data to a new 8.1 database, which the migration utility creates for you.

For migration instructions, see the "Workforce Management Migration Procedures" chapter in the *Genesys Migration Guide*.

Note: You can migrate performance data from a WFM 6.5. database to your WFM 8.1 database after you have started using WFM 8.1. This enables you to bring performance data into your database that was collected during the database migration.

Start of procedure

1. Open the WFM Database Utility.
2. Select the `Migrate Performance Data` radio button.
3. Follow the prompts in the Database Migration Wizard that opens.

Warning! If you are migrating from release 6.x to 8.1, and you enabled the `AllowMigratePerformance` option in the `WFM Client Application` object, the Wizard prompts you to transfer performance data from your 6.x database to your new WFM database. When you migrate data after you start using the WFM database, all performance data of the type(s) you select is overwritten by the performance data from the 6.x database.

End of procedure

Update Your WFM 7 Database

From time to time, Genesys issues Maintenance Releases of its products. Some of the Workforce Management updates require database updates. If so, you can perform them using the WFM Database Utility.

Note: If you are migrating from WFM 7.x to 8.1, all you need to do to your database is to update it. You do not need to create a new database.

Do You Need to Update Your Database?

Procedure: Determining if your Database is Up-to-date

Purpose: To determine whether your database is up-to-date.

Start of procedure

1. Open the WFM Database Utility.
2. Check the lower right of the main window to see whether it indicates that your database is up-to-date. The database version number should correspond to the version number of the WFM Database Utility you are running.

End of procedure

Performing Database Updates

Procedure: Performing a Database Update

Purpose: To update a database.

Start of procedure

1. Open the WFM Database Utility.
2. Select the `Database Update` radio button.
3. Click `Next`.
4. If you enabled the `AllowLessUpdates` option in the `WFM Client Application` object, you can choose the database version to which you wish to update from the drop-down list. If not, your database is updated to the latest available version.

   In some cases you may not choose the most recent version, for example if you need to restore from a backup. You must select the same version as the database in the backup file. After restoring, you can then update your database version.

5. Click `Finish`.

The WFM Database Utility runs the appropriate scripts and then displays a message indicating the results of the update.

End of procedure

Database Maintenance

Database Cleanup

Procedure: Performing a Database Cleanup

Purpose: To remove obsolete data from your database.

Start of procedure

1. Open the WFM Database Utility.
2. Select the `Cleanup Database` radio button and then click `Next`.

Note: Your database must be up-to-date to perform a database cleanup.

3. Select a date from the drop-down list. Data up to (but not including) this date will be deleted.
4. In the dialog box that appears, select the items you want to remove.

Warning! Double-check your choices before you click `Finish`. You cannot retrieve deleted data.

5. Click `Finish`.

The WFM Database Utility removes all data up to the date you selected in the Wizard. Data for the selected day is not deleted.

End of procedure

Back Up and Restore Your Database

You can use the WFM Database Utility to back up the data in your Workforce Management database to a local file and then restore it if necessary. The local files are in Microsoft Access format.

Note: An Access 2002 `.MDB` file has a maximum database size of about 2 GB.

Performing a Backup

Procedure: Performing a Backup

Purpose: To back up your data.

Start of procedure

1. Open the WFM Database Utility.
2. Select the `Backup Database to .MDB File` radio button.
3. Specify the file name and location of the file into which data is to be written.
4. Select what type(s) of data to back up. By default, all data types (except `Audit Data`) are selected. You must always back up `Core` data. In addition, you can choose to back up all data (by selecting `Entire Database`) or select from `Audit Data`, `Performance`, `Forecast`, or `Schedule` data.
5. Click `Next`.
6. The next dialog box shows that tables that are to be backed up. Click `Finish` to complete the process or `Back` to change your selections.

The WFM Database Utility performs the backup and presents a results message at the end.

End of procedure

Restoring Your Database

Procedure: Restoring Your Database

Purpose: To restore your data.

Start of procedure

1. Open the WFM Database Utility.
2. Select the `Restore Database from .MDB File` radio button.

3. Specify the file name and location of the file from which data should be retrieved and then click `Next`.
4. Click `Next` to create the database into which files are to be restored.

Note: You do not need to create a database ahead of time. The restore utility creates the correct database version for your data restoration.

5. Select the type(s) of data to restore. By default, all data types *that were backed up in the selected backup file* are selected, and you cannot select data types that were not backed up. You must always restore `Core` data. In addition, you can choose to restore all data (by selecting `Entire Database`) or select from `Audit Data`, `Performance`, `Forecast`, or `Schedule` data.
6. Click `Next`.
7. The next dialog box shows that tables that are to be backed up or restored. Click `Finish` to complete the process or `Back` to change your selections.

Warning! You have the alternative to `Cancel` a database restoration in progress. However, if you do so, your database is corrupted and you must clear up the affected sections or create a new database.

The WFM Database Utility performs the restoration and presents a results message at the end.

End of procedure

Chapter

9

Configuring WFM Server Load Balancing

Use load balancing when you have multiple computers available, and one computer alone cannot handle the work load. This appendix describes the two main methods of load balancing: *Processor* and *Memory*. WFM Server supports both types.

Load Balancing Methods

Processor Balancing

Processor Balancing support is based on assigning a session to the best-qualified processor.

This is the more common type of balancing required—needed when one computer does not have enough processor power to handle a large number of simultaneous users. WFM accomplishes it by balancing WFM Server requests between several different WFM Server instances running on different computers. Each server/computer instance is known as a *location*.

WFM Server's built-in load balancing service is called Locator Service. Every time you open a new user session, Locator Service identifies the location that is best suited to serve the new session. Usually that is the location which is currently handling the fewest requests. From then on, all requests from that particular session are handled exclusively by the assigned location.

Memory Balancing

Memory Balancing support is based on reconfiguring at the site level. As you create multiple WFM Servers, you can assign each to a different site as required.

Here is an example application of Memory Balancing: if your configuration has 50,000 agents, you will likely need more than 2-3GB of RAM (the limit on 32-bit Windows applications). One computer alone does not have enough memory to handle this huge configuration.

In Memory Balancing, as you start each new session, you associate it with a site. The session is then directed to the WFM Server instance that is assigned to that site. This allows different servers to work with different subsets of data—thus reducing the amount of memory needed per server.

Note: You can also create a configuration that uses both types of load balancing.

Load Balancing Configuration

Configuring the Locator Service

Procedure:
Configuring the Locator Service

As noted previously, WFM Server's built-in load balancing service is called Locator Service. Normally, one WFM Server instance is designated as *Locator*. Any client that wants to open a user session with WFM Server must first ask Locator for the URL of the WFM Server that is best suited to serve the new session, from a load-balancing point of view. Usually that is the location which is currently handling the fewest requests. The URL is obtained and the client opens the new session on that server.

Note: All WFM Servers run the Locator Service and any server can act as Locator.

Purpose: To enable load balancing correctly.

Start of procedure

1. Open Configuration Manager.
2. Open the WFM Server application that will be the Locator.

3. Add all other WFM Servers (except the Locator) to the Connections list.
4. Save and close the Locator.
5. Open the WFM Web application.
6. Add the WFM Server that will be the Locator to the Connections list.
7. Save and close the WFM Web application.

End of procedure

Note: Advanced users can add cross-references in the Connections lists between *all* configured WFM Servers, so that any of them could act as Locator. For example, if you are running two instances of WFM Web, you may wish to assign a different WFM Server to each WFM Web instance, to act as Locator—but still have load balancing enabled.

Configuring Processor Balancing

Processor Balancing is the default method.

Procedure:
Configuring Processor Balancing

Purpose: To configure processor balancing.

Prerequisites

- Execute the procedure “Configuring the Locator Service” on page 222.

Start of procedure

1. Open Configuration Manager.
2. Open the Connections list of the WFM Server application that you have designated to act as Locator.
3. Add a reference to each WFM Server that you want to balance.

End of procedure

The result: Locator regularly checks the number of open sessions on the servers that it finds in its Connections list, and then directs new sessions to the server with the least number of open sessions. That way connected users are balanced across the servers.

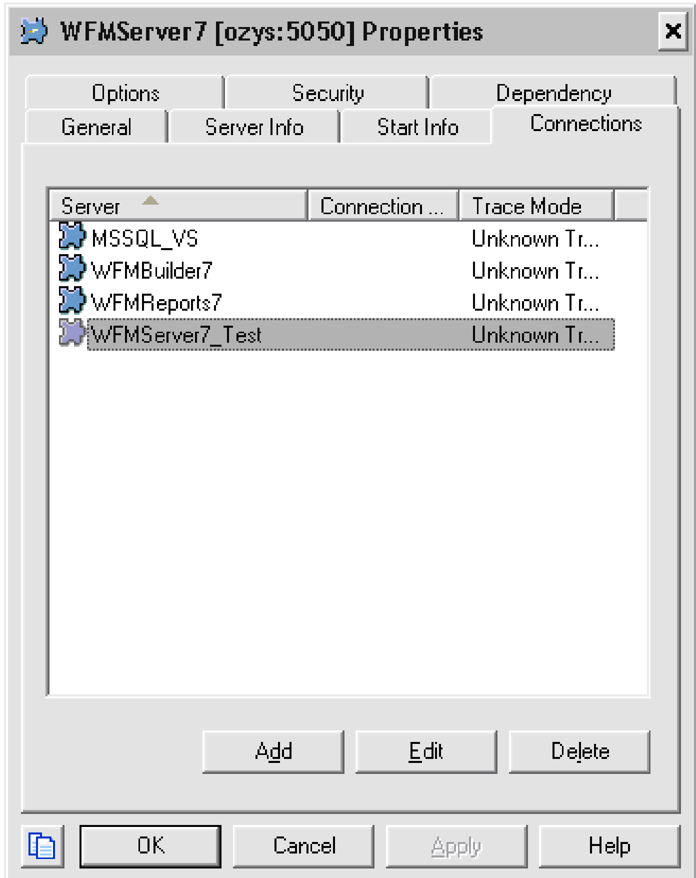

Figure 3: WFM Server Properties dialog

Configuring Memory Balancing

Procedure:
Configuring Memory Balancing

Purpose: To enable Memory Balancing.

Prerequisites

- Execute the procedure "Configuring the Locator Service" on page 222.

You must assign WFM Servers to specific site(s). For each site:

Start of procedure

1. Open WFM Configuration Utility.
2. Go to `Configuration` > `Organization`.

3. Select the `Site Properties` tab and assign a WFM Server to serve that site, by selecting a server from the drop-down list `WFM Server Name` (See Figure 4).

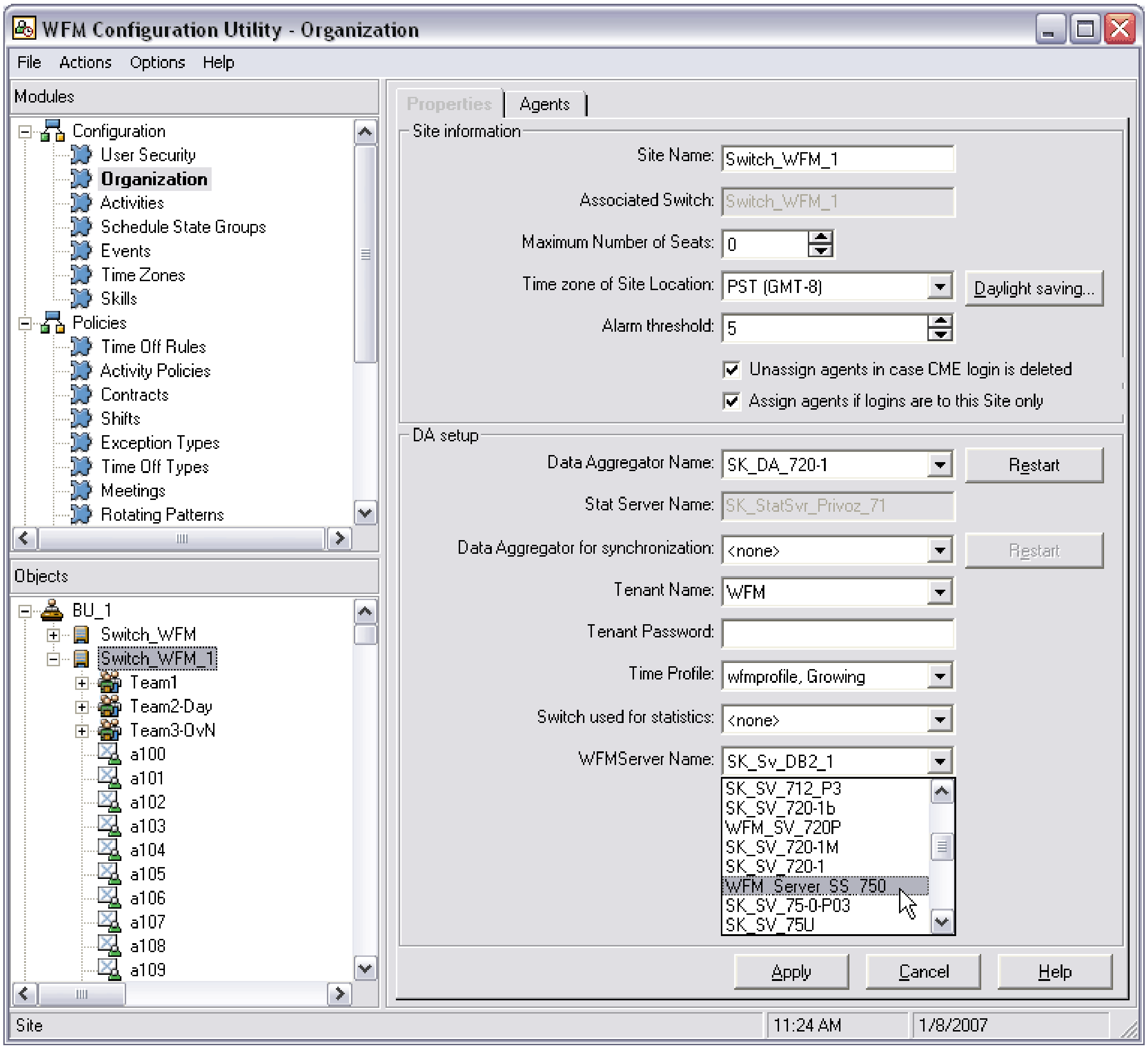

Figure 4: Site Properties tab in the WFM Configuration Utility - Organization dialog

Note: To *disable* Memory Balancing, select `none` in the drop-down list `WFM Server Name` for every site. Otherwise, the Locator will direct sessions to the selected WFM Server, in defiance of Processor Balancing.

4. Open Configuration Manager.

5. Add all WFM Servers to the Connections list of the WFM Server application that you designate to act as Locator.

End of procedure

The result: when you open a new session and identify it with a site, the session is automatically directed to the WFM Server that is assigned to that site.

Chapter

10 Configuring Task Sequences

This chapter presents information on configuring task sequences. It supplements the information found in *Workforce Management 8.1 Configuration Utility Help*. It includes the following sections:

Definitions

Within Genesys Workforce Management, a *task sequence* is a defined period of time during which agents can work only on one task or a specified set of tasks—called an *activity set*. You could also think of a task sequence as an "activity sequence."

Activities

Activities (tasks) are work that is tracked and managed using Genesys Workforce Management. For example, a business might define the following activities in WFM Configuration Utility for product A:

- Answering inbound calls
- Responding to e-mail
- Completing after-call work
- Performing scheduled callbacks
- Participating in chat sessions

These same activities might also be defined for products B and C.

Purpose of Task Sequences

Task sequences enable you to control how much the nature of an agent's work changes during part of a day. You can avoid agents being asked to jump constantly from activity to activity, a situation that can result in agent confusion and fatigue and lower productivity. You do this by configuring task sequences. Once configured, you can assign a task sequence to any compatible shift in the same site.

Creating Task Sequences

You create task sequences in the WFM Configuration Utility, Shifts window, Task Sequence dialog box. The Task Sequence dialog box is also where you will use the information given in this appendix.

In order to give context to the examples presented later on, this section presents a quick overview of task sequence configuration steps.

Procedure: Creating a Task Sequence

Purpose: To open the dialog box for creating a task sequence.

Start of procedure

1. Click `Shifts` on the `Modules` pane in Configuration Utility and then select a shift on the `Objects` pane.
2. Click the `Task Sequences` tab.
3. To create a new task sequence, click `Add`. The `Task Sequence (Add)` dialog box opens (see Figure 5).

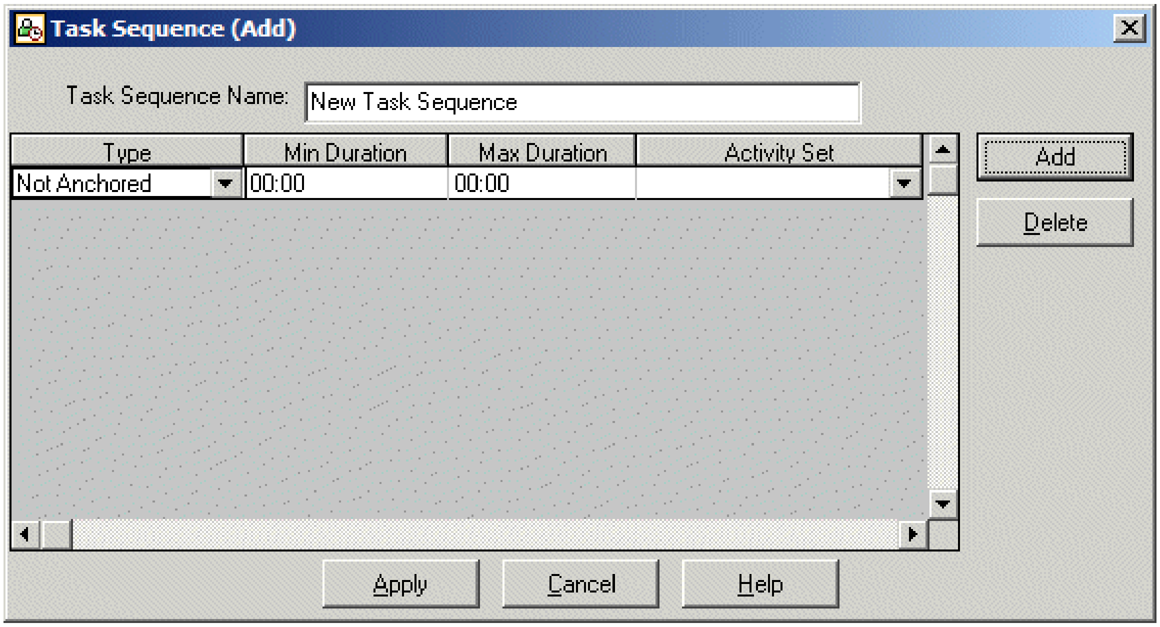

Figure 5: Task Sequence (Add) Dialog Box

4. Enter a task sequence name to replace the default name. The name must be unique within the site.
5. Click `Add` to create a new row in the task sequence list.
6. Before selecting from the `Type` drop-down list, read "How Task Sequences Appear in WFM" on page 230 and review the examples in "Anchoring Task Sequences" on page 231.
7. Once you review the examples, you will understand the various anchoring types. You can then configure the task sequence as described in *Workforce Management 8.1 Configuration Utility Help*. Figure 6 shows the dialog box after configuring a single task.

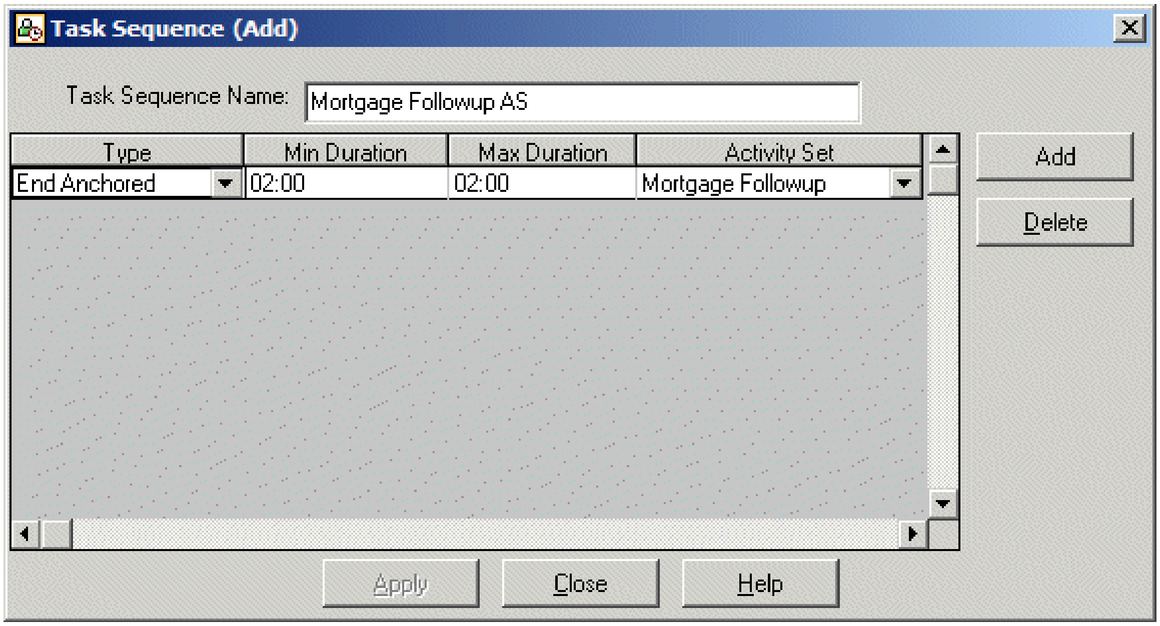

Figure 6: Example Task Sequence

Note: While the above example shows only one task, you can add as many rows as you need to create a sequence of tasks.

8. After fully configuring your task sequence, click `Apply`.

You can now assign a task sequence to any compatible shift in the same site.

End of procedure

How Task Sequences Appear in WFM

Once you configure task sequences and assign them to shifts (which are then assigned to agents), task sequences appear in the Intra-Day and Agent-Extended views. Task sequences appear as yellow areas on the color-coded bar (unless you changed the color in the Configuration module in WFM Web Supervisor), where each type of schedule item is represented by a different color. Figure 7 on page 231 shows an example.

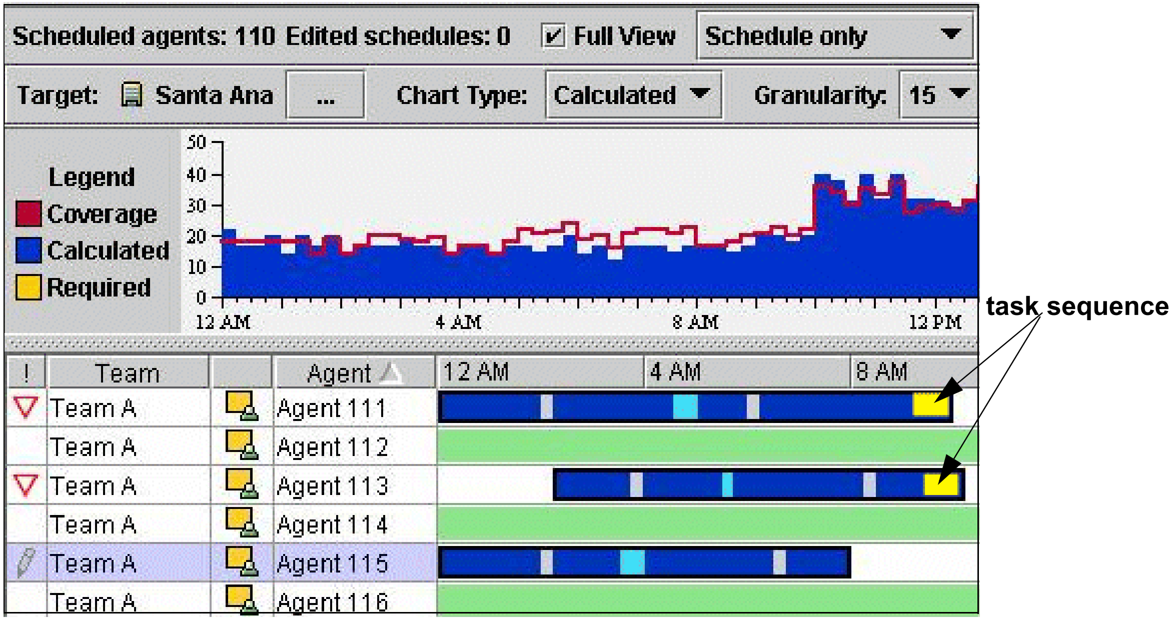

Figure 7: End-Anchored Task in Schedule

In the above example, the task is anchored to the end of the shift, but the `Task Sequence (Add)` dialog box, `Type` drop-down menu (see Figure 6 on page 230) gives various anchoring choices:

- `Not Anchored`
- `Start Anchored`
- `End Anchored`
- `Start/End Anchored`

The anchoring type selected indicates when a task can happen during the day.

Anchoring Task Sequences

This section describes when to use the various anchoring types available from the `Type` drop-down menu in Figure 5 on page 229. Assume that the shift and meals are flexible.

Task A ends the day.

Task Sequence (Add) dialog box (Figure 5 on page 229) configuration: Only Task A is configured. Task Type is `End Anchored` (see Figure 8).

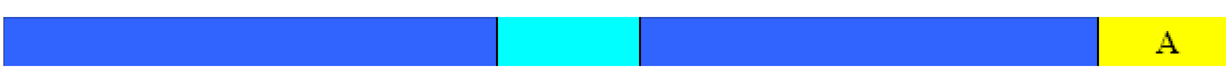

Figure 8: End-Anchored Task

Task A starts the day.

Task Sequence (Add) dialog box configuration: Only Task A is configured. Task Type is `Start Anchored` (see Figure 9).

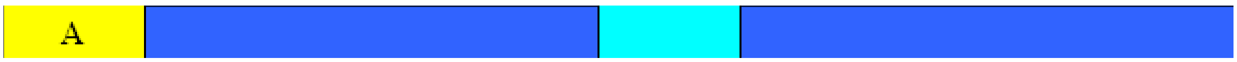

Figure 9: Start Anchored Task

Task A can happen anytime during the day.

Task Sequence (Add) dialog box configuration: Only Task A is configured. Task Type is `Not Anchored` (see Figure 10).

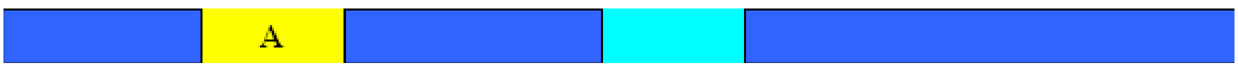

Figure 10: Not Anchored Task

Task A and Task B can happen anytime during the shift.

In this diagram, A is followed by B, but the order does not matter. Task Sequence (Add) dialog box configuration: Two task sequences must be configured:

1. Task A (`Not Anchored`) followed by Task B (`Not Anchored`)
2. Task B (`Not Anchored`) followed by Task A (`Not Anchored`)

See Figure 11.

Figure 11: Not Anchored Task

Task A starts the day; task B can happen anytime during the day.

Task Sequence (Add) dialog box configuration: Task sequence contains Task A `Start Anchored`. Task B is the second task in the sequence. Task B is `Not Anchored` (see Figure 12).

Figure 12: Start Anchored and Not Anchored Tasks

Task A starts the day; task B ends the day.

Task Sequence (Add) dialog box configuration: Task A is Start Anchored. The next task is Task B, which is `End Anchored` (see Figure 13).

Figure 13: Start and End Anchored Tasks

Task A and B can start anytime during the day and are consecutive.

Task Sequence (Add) dialog box configuration: Task A is `End Anchored`. The next task is Task B which is `Start Anchored` (see Figure 14).

Figure 14: End Anchored and Start Anchored

Task A and B start the day and are consecutive.

Task Sequence (Add) dialog box configuration: Task A is `Start/End Anchored`. The next task is B, which is `Start-Anchored` (see Figure 15).

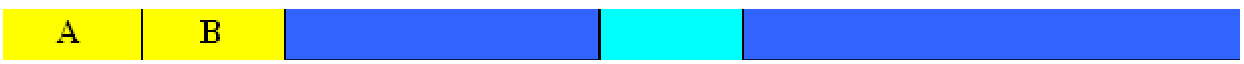

Figure 15: Start/End Anchored and Start Anchored

Task A and B finish the day and are consecutive.

Task Sequence (Add) dialog box configuration: Task A is `End Anchored`. The next task is Task B which is `Start/End Anchored` (see Figure 16).

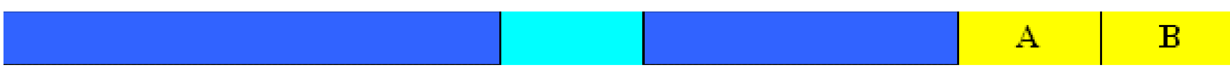

Figure 16: End Anchored and Start/End Anchored

Task A is full-morning (or full-afternoon).

Task Sequence (Add) dialog box Full morning configuration: Task A is `Start Anchored`. Minimum and maximum task duration must be set to fill the entire shift duration before the meal. The Activity Set used for task can be strict in order to prevent the task and meal from overlapping.

Full afternoon configuration: Task A is `End Anchored`. Minimum and maximum task duration must be set to fill the entire shift duration after the meal. The Activity Set used for task can be strict in order to prevent the task and meal from overlapping (see Figure 17).

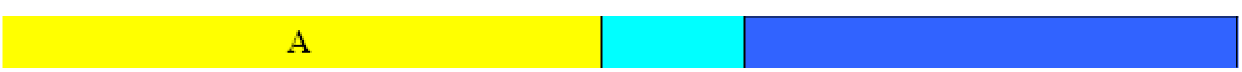

Figure 17: Start Anchored and End Anchored

All work must belong to tasks.

A is full morning. B is full afternoon. The order of the tasks does not matter. Task Sequence (Add) dialog box configuration: Task A is `Start/End Anchored`. Task B is `Start/End Anchored`. (see Figure 18).

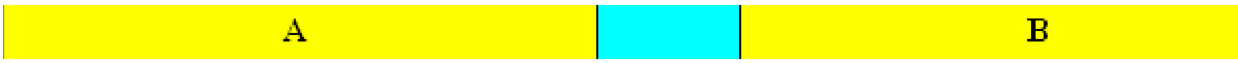

Figure 18: Start/End Anchored, Start/End Anchored

Minimum and maximum durations of tasks must be set to fill the entire shift duration. In this case it is highly recommended to use non-strict Activity Sets. Without such setting the meal cannot be scheduled

All work must belong to tasks. Order does not matter.

The order does not matter, but A, B, C and D must be scheduled once. Possibly, A=C and / or B=D and but you want to insure a succession of tasks. Task Sequence (Add) dialog box configuration: All tasks are set to be `Start/End Anchored`. The order of tasks is ABCD. (see Figure 19).

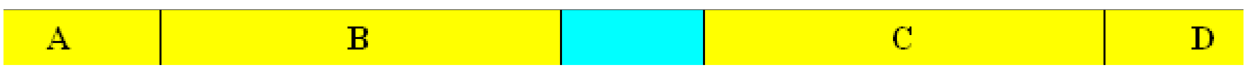

Figure 19: All Start/End Anchored

Either all Activity Sets used by tasks should be non-strict (to allow for the meal) or at least the tasks around the potential meal time must be non-strict.

Task A starts the shift. B is free of constraints. C and D are consecutive.

In this scenario, an anchored meal anchorage would be desirable. Task Sequence (Add) dialog box configuration: Task A is `Start Anchored`. Task B is `Not Anchored`. Task C is `End Anchored`. Task D is `Start Anchored`. Placement of the meal after Task B can not be guaranteed in this case.

Figure 20: Start Anchored, Not Anchored, End Anchored, Start Anchored

Chapter

11 Using E-mail Notifications in WFM

This chapter describes how to use the Notifications module in Workforce Management (WFM) Web for Supervisors to configure e-mail notifications, by site, for the following types of events:

- Schedule trade status changes. This type of notification can be received by both agents and supervisors who are affected by a schedule trade proposal or response.
- Time off request status changes. This type of notification can be received by both agents and supervisors who are affected by a time off request.
- Schedule modifications. This type of notification can be received by the agent who is affected by the schedule change.

This chapter contains the following section:

How to Set Up E-mail Notifications in WFM

The set-up procedure is divided into five separate sections:

- Create and Configure WFM Daemon, page 236
- Configure User Security, page 236
- Add E-mail Addresses to the WFM Database, page 237
- Enable E-mail Synchronization, page 237
- Enable Notifications in Web Supervisor, page 239

Procedure: Setting up E-mail Notifications in WFM

Purpose: To set up e-mail notifications.

Start of procedure

Create and Configure WFM Daemon

1. Open Configuration Manager.
2. Create the WFM Daemon application and install it.
3. Configure the WFM Daemon's connection to the WFM Server application.
4. Configure the SMTP server settings for the WFM Daemon.

   See "Options Tab for WFM Daemon" on page 168 and the help for Framework Configuration Manager, steps 2—end.

Configure User Security

5. Open WFM Configuration Utility and go to the User Security module.
6. For any users or security roles who will be configuring notifications, grant them permission to the `Notifications` section in the Configuration Module.

   See the help for WFM Configuration Utility.

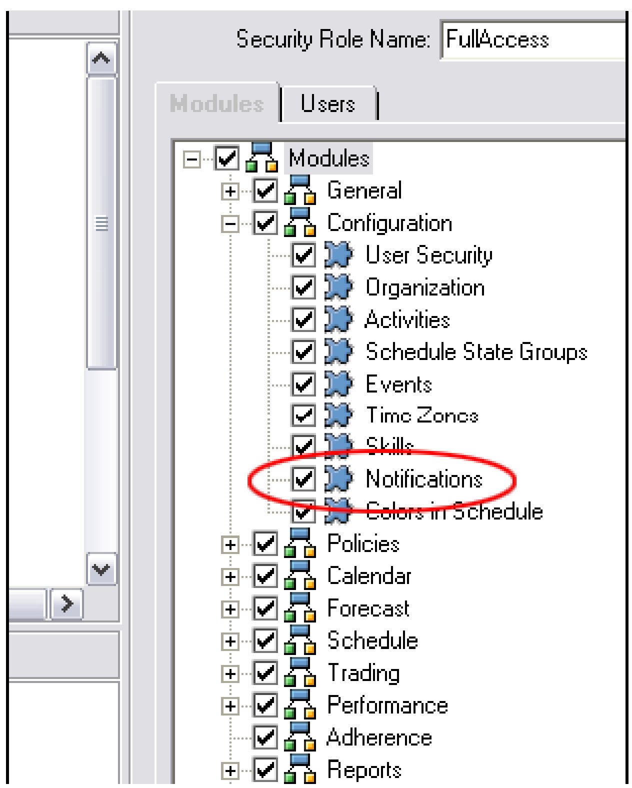

Figure 21: WFM Configuration Utility, Notifications Permission

7. With the WFM Configuration Utility still open, grant security permissions to any users or security roles that you want to receive e-mail notifications.

Notes: Agents do not hold security roles or permissions in WFM.

Supervisors may receive e-mail notifications related to Schedule Trade requests or Time Off requests. You may wish to configure the notifications permission for one or both of these.

See the help for WFM Configuration Utility.

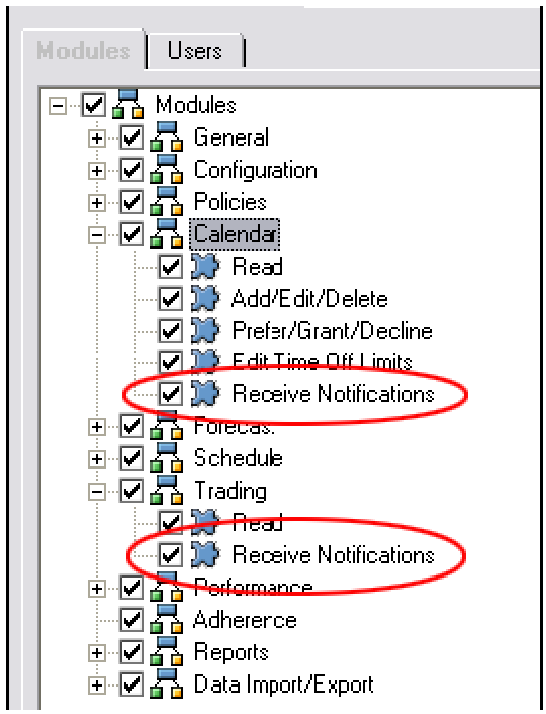

Figure 22: WFM Configuration Utility, Receive Notifications Permissions

Add E-mail Addresses to the WFM Database

To receive notifications, Supervisor and Agent e-mail addresses must be in the WFM Database.

8. Starting with Genesys Framework version 7.1, use Configuration Manager to enter these e-mail addresses into the Supervisor and Agent person objects.

9. Use the WFM Configuration Utility to synchronize the WFM database with the Framework database.

Note: In earlier versions, you can use the WFM Integration API to insert the agent e-mail addresses into WFM.

Enable E-mail Synchronization

10. Open the WFM Configuration Utility.

11. Open the `Options > Global Settings` dialog box.

12. Select the check box `E-Mail Synchronization Enabled`.

    Now e-mail addresses will be synchronized for any agents in the WFM database, the next time synchronization is run. Also, if you have dynamic synchronization configured in WFM, the e-mail addresses for agents will be updated in WFM immediately after they are modified in Configuration Manager.

Warning! Dynamic synchronization does not affect non-agents (such as Supervisors) who have been moved into the WFM Users column of the Security Roles/Users main node. The only way to update the e-mail addresses for non-agents is to perform manual synchronization.

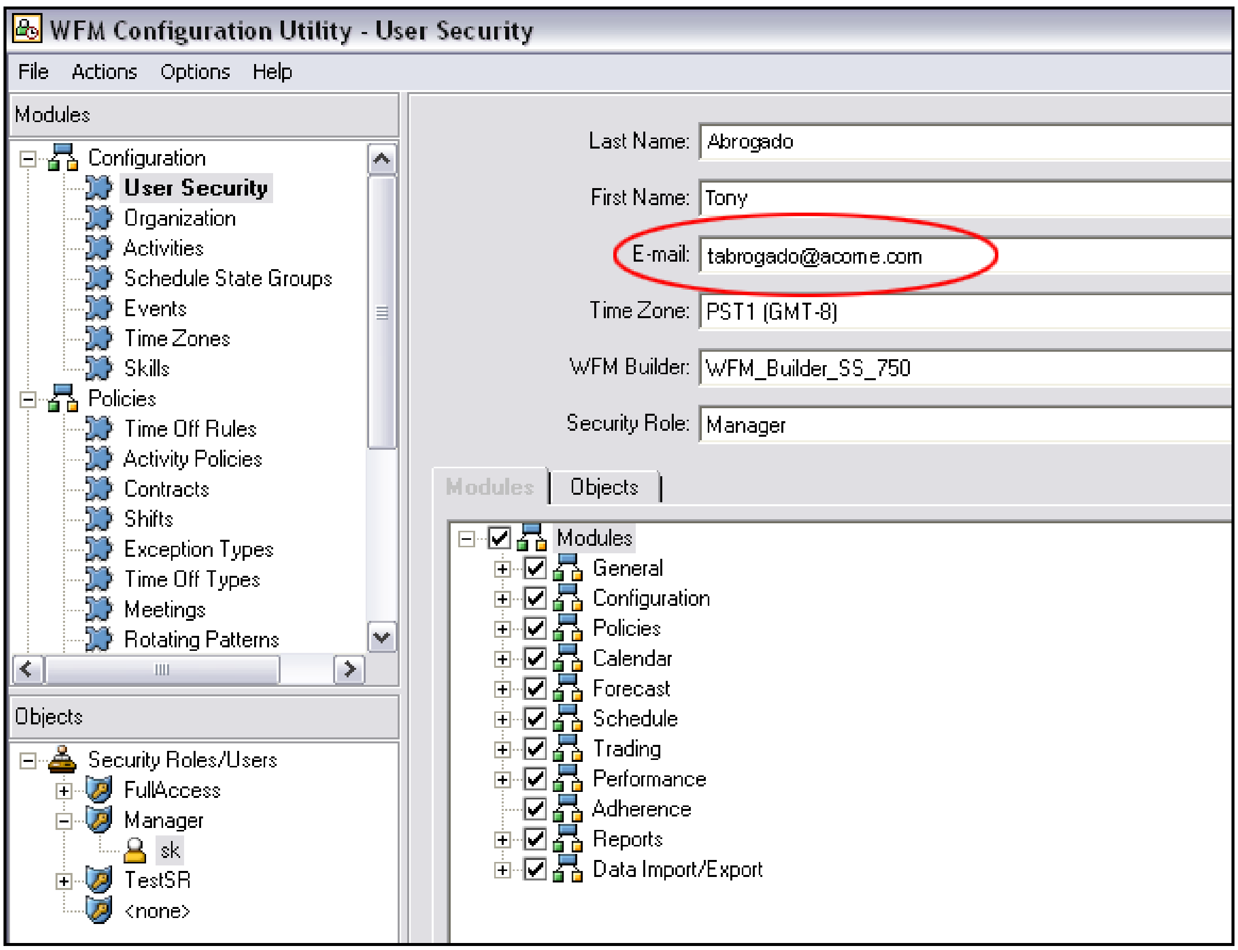

Figure 23: WFM Configuration Utility, Supervisor E-Mail Address

and for agents:

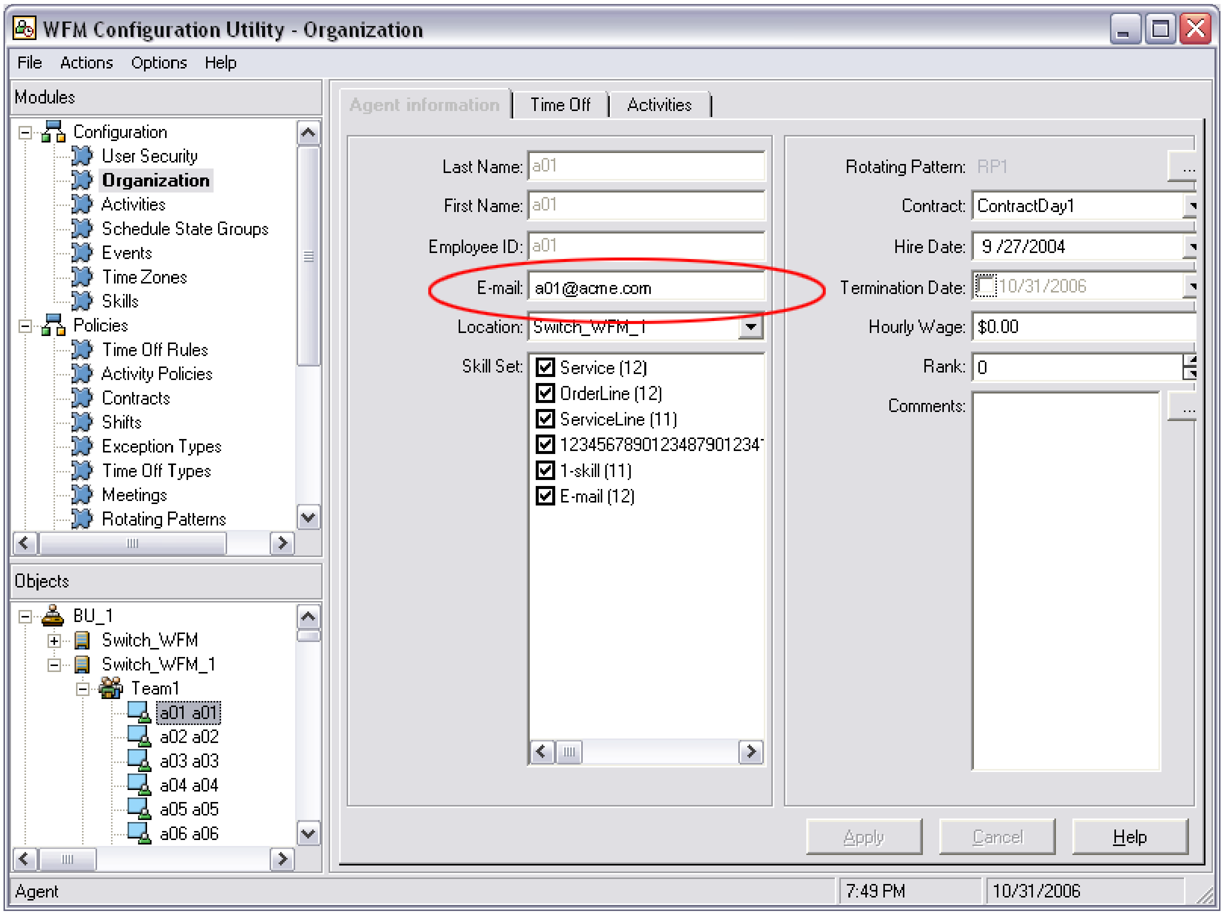

Figure 24: WFM Configuration Utility, Agent E-Mail Address

Enable Notifications in Web Supervisor

13. Open the WFM Web Supervisor application.
14. In the upper portion of the object tree, open the Configuration subsystem and then the Notifications module.

    All three supported e-mail notification types are listed in the lower portion of the object tree.
15. Select each one that you want to enable, and in the right-hand pane in the Targets tab, check the sites for which you want to enable notifications:

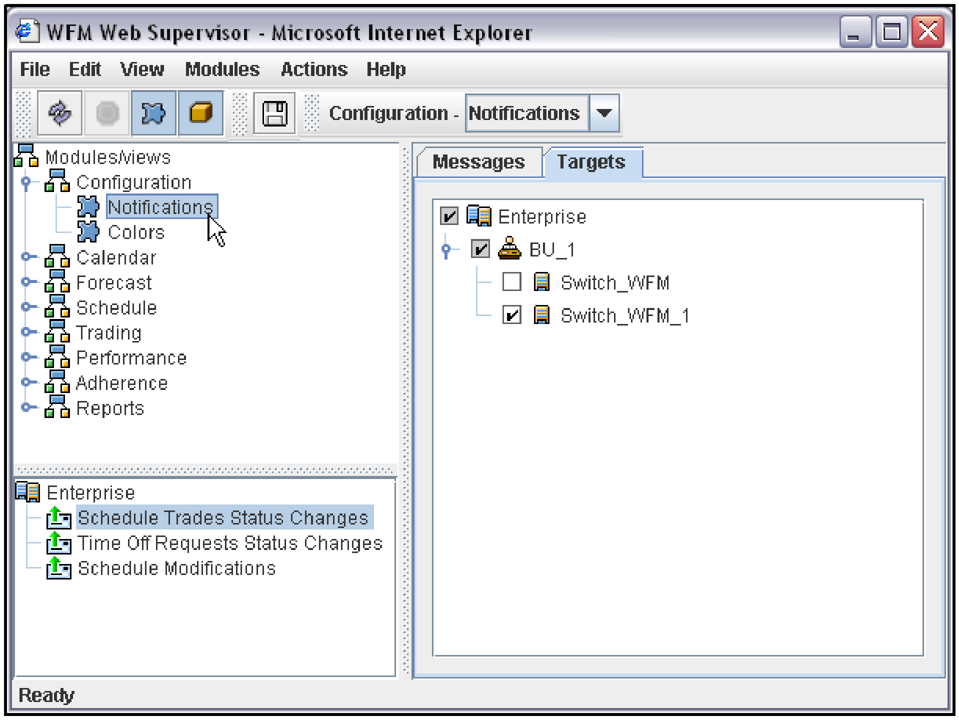

Figure 25: WFM Web Supervisor, with Notifications Selected

16. Use the Messages tab to configure the e-mail Subject and Message for all e-mail notifications of this type. You can change the text or keep the default.

If the WFM Daemon is running and properly connected to a running SMTP server, you can now use the feature. (You can check WFM Daemon's status in the Windows Services Control Panel or through Solution Control Interface)

For additional information, including descriptions of the rules that generate notifications, see "Notifications" on page 36.

End of procedure

Chapter

12

Scheduling Breaks and Meals

This chapter describes how to use Workforce Management (WFM) to schedule meals and breaks in conjunction with Exceptions.

This chapter contains the following sections:

Pre-planned Breaks and Meals

Workforce Management enables you to pre-plan the breaks and meals (called *shift items*) that will be scheduled during a particular shift. You can define several parameters for these shift items, such as the *time window* during which they should be scheduled and whether they are paid or unpaid.

For example, if you set up a shift called `8-Hour Full-Time`, as part of the shift item configuration, you have specified that there should be a 15- minute paid break in the shift. The `Min Length from Shift Start` parameter is set to `2:00` (2 hours) and the `Max Length from Shift Start` is set to `4:00`.

Additionally, your shift item configuration specifies that there should be an unpaid meal in the middle of the shift, with both the `Min Time Before This Meal` and `Min Time After This Meal` set to `3:00`.

You have configured a rotating pattern for a particular agent that specifies that the agent should work the "8 Hour Full-Time" shift every day, starting at 8:00 a.m.

Due to the shift item configuration, when WFM builds a schedule scenario that includes this agent, it will try to schedule the break and meal in the following time windows:

- It will try to schedule the break in the time window between 10:00 a.m. and 12:00 p.m.
- It will try to schedule the meal in the time window between 11:00 a.m. and 1:30 p.m.

Sometimes the configured time windows for breaks and/or meals will conflict with planned exceptions, such as meetings, training sessions, or administrative time, that have been entered through the WFM Calendar. In those cases, the behavior of the Scheduler will vary depending on the particular type of shift item and its properties:

Default Behavior of the Scheduler

When Unpaid Breaks Conflict with Exceptions

When the time window of an unpaid break is covered by a planned exception, the Scheduler will “relax” the constraints of the break, in order to schedule it. That is, the time window will be widened in both directions (if possible) so that the break can be scheduled adjacent to the exception—either immediately before the exception or immediately after the exception.

This relaxation of the break constraints occurs because unpaid breaks are considered mandatory by the Scheduler due to their effect on the paid time of the shift.

There will be instances when one or more unpaid break(s) cannot be scheduled, even though they are considered mandatory. For example, if a shift has a paid duration of 8 hours, and there is a granted exception in the Calendar that also has a paid duration of 8 hours, that would not leave any time remaining for the Scheduler to place an unpaid break. As a result, the unpaid break would not be scheduled and a warning would be generated when the scenario is built.

When Paid Breaks Conflict with Exceptions

Unlike unpaid breaks, by default paid breaks are not considered mandatory. Thus, if there is a conflict between a planned exception and a paid break, so that the time window of the paid break is covered by the exception, by default the paid break will not be scheduled when the scenario is built.

When Meals Conflict with Exceptions

Meals are considered a mandatory part of a shift, if the shift has a meal configured. If there is a conflict between a planned exception and a meal, so that the time window of the meal is covered by the planned time for the exception, either one of two things will happen when the scenario is built:

- WFM will look for, and find, another shift that is compatible with the agent's contract which allows the exception to be scheduled, or
- When WFM resolves the conflicting items in the Calendar (prior to the schedule being built), it will decline the exception unless it can find another shift that is compatible with the agent's contract that allows the exception to be scheduled. In that case, the exception will not be scheduled and a warning will be generated.

Changing the Behavior of the Scheduler

Starting with WFM 7.6, new configuration options are available that can change the default behavior of the Scheduler when breaks and/or meal time windows conflict with planned exceptions. These options are:

- Paid Breaks are Mandatory, page 243
- Suppress Break-Related Warnings, page 244
- Allow Breaks and Meals During Exception, page 245
- Other Considerations When Changing Scheduler Behavior, page 245

Paid Breaks are Mandatory

This is an optional setting that controls whether a paid break will be scheduled even when the time window of the break is covered by an exception. As described above, this is always the behavior of the Scheduler with unpaid breaks. But if this setting is turned on, the same behavior will occur with paid breaks; if the time window of the paid break is covered by an exception, the paid break will be scheduled adjacent to the exception—either immediately before the exception or immediately after it. Of course there still may be times when some breaks cannot be scheduled, even if this setting is turned on, because there is not enough room in the shift to accommodate the exception and all the configured breaks. In this case, a warning will be generated when the scenario is built. Here are some examples when WFM would not be able to schedule a break (paid or unpaid), regardless of whether the user defines this as being mandatory or not:

Example 1

There is a shift with an 8-hour duration but which is 7.5 paid hours. The user grants a paid exception that is 7.5 hours, right in the middle of the shift, leaving

15 minutes on either side of the exception in which to schedule any breaks. If there is a 30-minute unpaid break to schedule, it cannot be scheduled unless the user wishes to allow breaks to be scheduled “during the exception” (see below for more information about that optional setting).

Example 2

There is an 8-hour shift from 8:00 a.m. to 4:00 p.m. The configuration of Break 1 (15-min) allows the break to be scheduled in a time window between 9:00 A.M -10:30 a.m. The configuration of Break 2 (15-min) allows the break to be scheduled within a time window between 2:00 p.m. - 4:00 p.m. The user grants an exception in the Calendar from 8:00 a.m. - 3:45 p.m. Unless the user wishes to allow break(s) to be scheduled “during the exception,” one of the breaks cannot be scheduled because there are only 15 minutes within the shift that is not already covered by the exception, and two 15-minute breaks to schedule.

Example 3

There is an 8-hour shift from 8:00 a.m. - 4:00 p.m. The user grants an exception in the Calendar from 8:00 a.m. - 11:45 a.m. and another exception from 12:00 p.m. - 4:00 p.m. This leaves only 15 minutes between the two exceptions in which to schedule any breaks. Unless the user wishes to allow break(s) to be scheduled “during the exception,” it is likely that one or more breaks would not be scheduled.

Example 4

Assume a shift from 8:00 a.m. - 1:00 p.m., one exception from 8:30 a.m. - 11:30 a.m., and two 1-hour breaks (the first one with configured window from 9:00 a.m. - 11:00 a.m., and the second one from 12:00 p.m. - 1:00 p.m.). Because the exception covers the first break, the break should be placed after the exception (because there is no room before it), from 11:30 a.m. - 12:30 p.m. Because of the scheduling of the first break, there is no room for the second break at all (but not because of the exception). In this case, one of the breaks would not be scheduled.

Suppress Break-Related Warnings

This is an optional setting to control whether schedule warnings that describe issues with break scheduling will be hidden from the user. If you are scheduling a lot of long exceptions that you know will make it impossible for the Scheduler to fit in most of the breaks you have configured, you may want to check this setting so that the break-related warnings are suppressed. This will let you focus on the other schedule warnings that you will want to resolve.

Allow Breaks and Meals During Exception

For each Exception Type, this setting may be turned on. If this option is configured, then if a planned exception of this type is being scheduled and it covers the time window of a break, the Scheduler will try to schedule the break during the exception, preserving the original configured time window. It may not always be possible for the Scheduler to accomplish this, so if it cannot schedule one or more breaks during the exception, it will next try to schedule them adjacent to the exception. This setting will always affect the scheduling of unpaid breaks. This setting will only affect the scheduling of paid breaks if paid break scheduling is configured as mandatory.

This setting also controls whether the Scheduler will try to schedule meals during an exception, in cases when the configured time window of the meal is covered by the exception. However, if the Scheduler is unable to schedule the meal during the exception for some reason, it will not be scheduled adjacent to the exception as it will try to do with breaks.

It is important to note that when the user configures an exception type such that break(s) and meal(s) *could be* scheduled during the exception, it does not mean that all of these shift items *will be* scheduled during the exception. For example, the user has configured a 15-minute break with a 5-minute start step. The break configuration permits the break to be scheduled somewhere between 8:45 a.m. and 10:15 a.m. There is an exception from 9:00 a.m. - 10:00 a.m. The break could be scheduled in many possible places, including:

```
8:45 a.m. - 9:00 a.m.
9:00 a.m. - 9:15 a.m.
9:05 a.m. - 9:20 a.m.
9:10 a.m. - 9:25 a.m.
. . .
9:45 a.m. - 10:00 a.m.
```

Also note that although the absolute start and end times of the exception shall not be changed, it is possible that, for example, the start of the exception could be covered by a break (e.g. both the break and the exception start at the same time)

Other Considerations When Changing Scheduler Behavior

When there is no conflict between an exception and some break(s), but yet the exception makes it impossible for WFM to schedule the breaks according to all of their configured constraints, WFM will continue its default software behavior, which is to relax the break constraints so that they can be scheduled.

Example: There is a 15-minute break that could be scheduled between 9:00 a.m. - 1:00 p.m., and a second 15-minute break that could be scheduled between 10:00 a.m. - 2:00 p.m. The user has configured that the minimum distance between these breaks must be 3 hours. The user has granted an exception that goes from 11:00 a.m. - 3:00 p.m. It is impossible to meet the minimum distance constraint and also schedule these two breaks within their configured time windows. Therefore, it is possible that, in order to meet the minimum distance constraint, WFM would relax the break constraints and one break would be scheduled prior to the exception, and the other break would be scheduled after the exception.

As described above, when relaxing break constraints to accommodate planned exceptions, WFM will attempt to schedule the break immediately adjacent to the exception. However, it is not always possible to do this, and thus sometimes there will be a small duration of activity work scheduled between the break and the exception.

Example 1

The user has granted an exception from 12:00 p.m. - 1:05 p.m., and the configured time window for a particular 15-minute break specifies that the break must be scheduled somewhere between 1:15 p.m. - 2:15 p.m. It's possible that, based on schedule coverage, WFM will place that break at 1:15 p.m., leaving just 10 minutes of activity work in between the exception and the break.

Example 2

The user has granted an exception from 12:00 p.m. - 2:00 p.m., and the configured time window for a particular 15-minute break specifies that the break must be scheduled somewhere between 1:00 p.m. - 2:16 p.m. WFM would only have between 2:00 p.m. - 2:16 p.m. in which to schedule the break. It's possible that it would schedule the break from 2:01 p.m. - 2:16 p.m., leaving 1 minute of work between the exception and the break.

Also note that the features described in this section only address partial-day exceptions, not full-day exceptions. Therefore, if the user needs to schedule a working or non-working exception that covers a worker's entire shift, then they should consider using a full-day exception type.

Example 3

The user wants to grant an exception (type: meeting) after the Schedule has been built. In the Calendar, the user creates the Calendar Item and rebuilds the schedule. The meeting is reflected in the updated schedule and in some cases takes place during a paid break/meal or is adjacent to it.

Note: If the user attempts to schedule the meeting via the Meeting Planner (after the schedule has been built), then the meeting will *not* be scheduled, nor will the warning messages be suppressed (assuming that the system is configured in this way).

Hierarchy of constraints

If breaks cannot be scheduled according to all of their configured constraints, then WFM will try to satisfy the constraints in the following order:

1. Time window
2. Start step & start offset
3. Minimum distance between shift items
4. Maximum distance between shift items

Chapter

13 Localizing WFM

Genesys localizes (translates) Workforce Management (WFM) into a number of languages. Contact your Genesys sales representative to inquire about specific localized versions.

You can use one of two methods to localize WFM 8.1 components. If Genesys localizes into your language, you can use the Genesys-provided localization software to localize WFM Daemon, Server, Builder, Data Aggregator, and Web. Otherwise, you can use a self-localization method to localize WFM Web Supervisor and Agent.

The two localization methods are described in the following sections:

Using Genesys Localization Software

This section describes how to localize your WFM 8.1.1 and later deployment by using the Genesys localization software. If you are deploying WFM 8.1.0, contact a Genesys representative to obtain localized software.

Starting in release 8.1.1, WFM uses Language Packs (LP) to provide localized resources for the end user. The Language Pack is a separate IP, which is installed over the component IP. It contains only localized resources, which replace the resources in the original product IP. The Language Pack contains resources for a single language, so every language requires a separate LP. If you are installing more than one LP, you must install them one at a time. Only one Language Pack can be used over one component IP at one time.

WFM has LPs for the following components:

- WFM Web
- WFM Daemon
- WFM Server

- WFM Data Aggregator
- WFM Builder

WFM Configuration Utility does not have an LP. It requires the full localized product IP to be deployed, just as it did prior to release 8.1.1.

Context Information in Localization Kits

WFM localization kits now include context information. The kits contain resources for translation that appear in the product. The information about how the resource is used by the product, can be taken used to improve translation. In addition, context information simplifies verification testing, because the tester then knows where to look for the effects of translated content.

User and System Account Locales on Windows

The WFM server (Server, Builder, and Data Aggregator) services choose the installed Language Pack according to the locale. It uses the exact language match or, if it is unavailable, the Language Pack for the same *language group*.

WFM servers checks the user or system account locale of the operating system on which it is running. By default it is either the *user account* (Windows 2003) or *system account* (Windows 2008). To adjust the user and system account settings, see the procedures "Adjusting the User Account Locale (Windows 2003)" on page 254 and "Adjusting the System Account Locale (Windows 2008)" on page 251.

After checking the locale, WFM servers attempt to load a Language Pack whose language (or *language group*) matches this locale. For example, if the user account locale or system account locale is French (Canada) and the French (Canada) Language Pack is not installed, then the French (France) Language Pack is used. If the process is run as a service (which is usually the case), then the system account locale must be adjusted.

Important Information About Changing Locales on Windows With Java Applications

An incompatibility was detected when WFM Web and Daemon applications are running on Windows operating systems with Java 7 relating to the rules that govern locale settings. (See the vendor web site www.oracle.com, article #4700857.)

Changes to the WFM local settings are made in different locations, depending which Java version you are using. In Java 7, the Display language settings determine the locale settings. In Java 6, the Regional Settings dialog in Control Panel determine the locale settings.

Also, if you are installing WFM on Windows versions earlier than Windows Vista—for example, Windows 2003 or Windows XP—you cannot set the display language, because the these OSs always use the language that is selected during installation meaning, the local settings cannot be changed.

You can use one of two workarounds to set a different locale setting for WFM applications:

1. Select the appropriate Display language that contains the locale settings you want to use.
2. If the first workaround cannot be done, complete one or both of following steps:
   a. Revert Java 7 to Java 6 behavior—Set the `-Dsun.locale.formatasdefault` Java 7 option to `true` and then, set the locale settings in the Regional Settings in Control Panel to the locale you want to use.
   b. On any version of Java—Explicitly override the locale setting for the JVM by changing the `-Duser.language`, `-Duser.region`, `-Duser.country` Java options.

Procedure: Adjusting the System Account Locale (Windows 2008)

Purpose: To adjust the system account locale on the WFM server (Server, Builder, and Data Aggregator) to match the language in a specific Language Pack.

Summary

Complete this procedure on the host before you install any WFM Language Pack on a Window 2008 host.

Start of procedure

1. On the host, go to `Control Panel > Regional and Language Options`.
2. On the `Formats` tab, in the `Formats` section, select the language/region that matches the Language Pack you will be installing later and click `Apply`. (See Figure 26.)

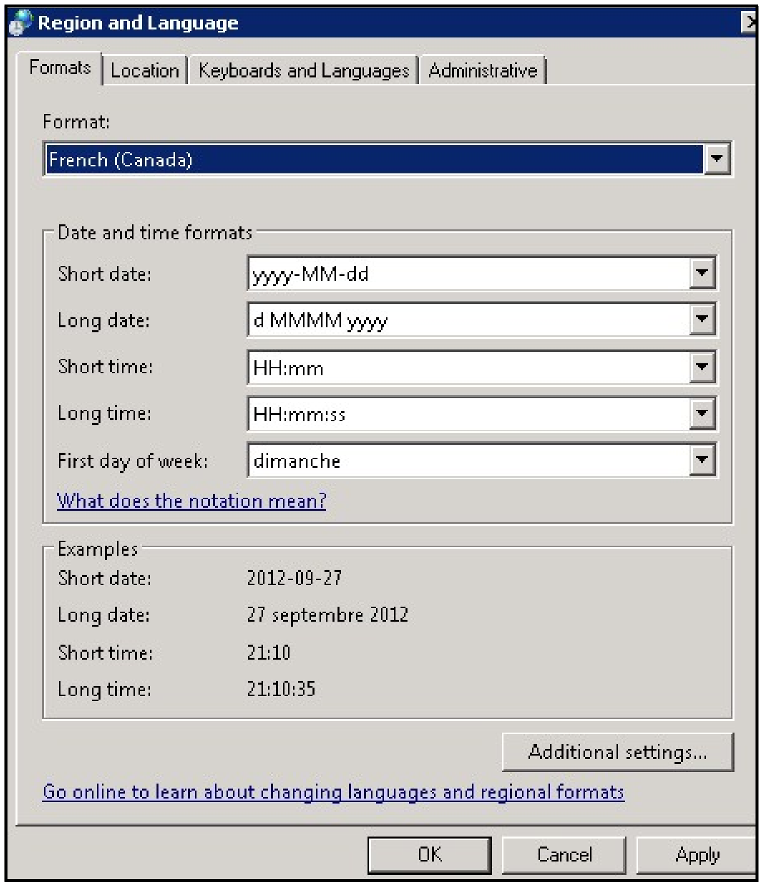

Figure 26: Formats—Region and Language Settings (Windows 2008)

3. On the `Administrative` tab, click `Copy Settings...` (See Figure 27.)

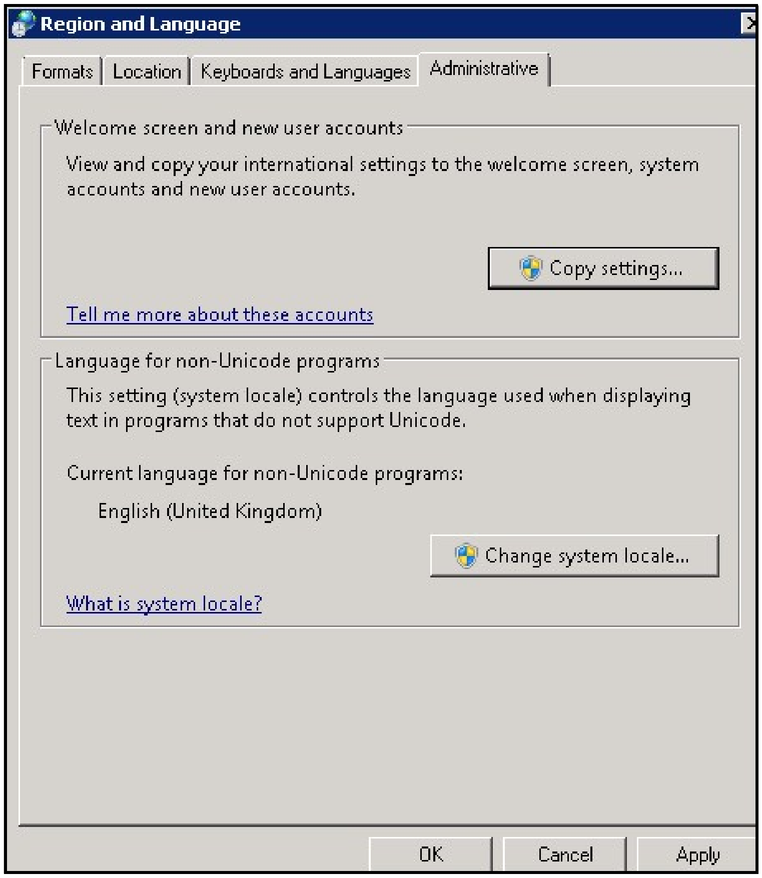

Figure 27: Administrative—Region and Language Settings (Windows 2008)

4. In the `Copy your current settings to:` section, check the `Welcome screen and system accounts` checkbox. (See Figure 28.)

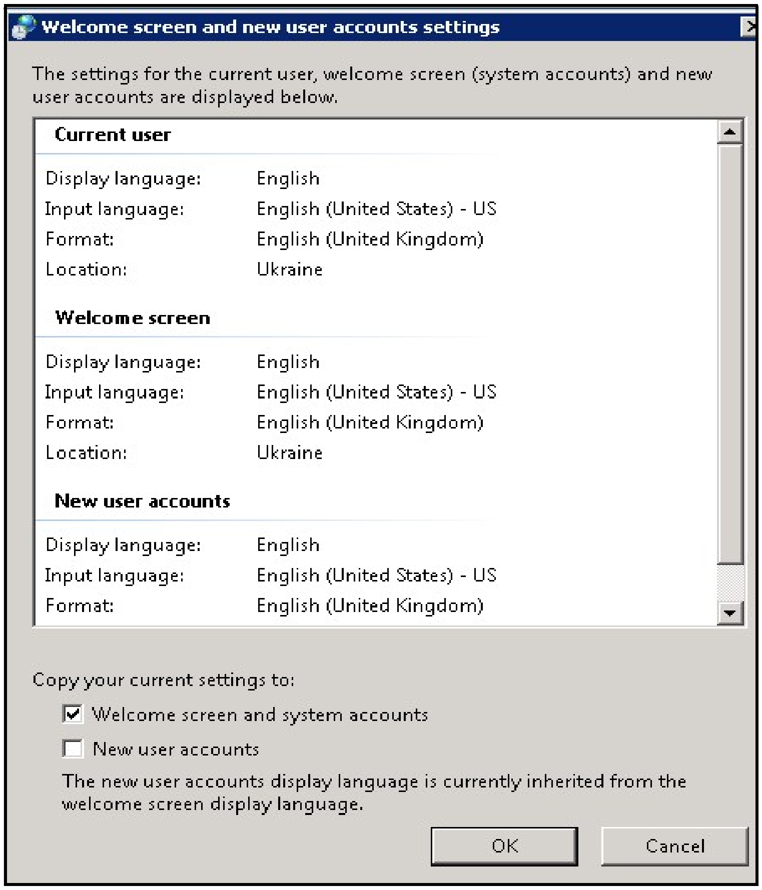

Figure 28: Welcome—Region and Language Settings (Windows 2008)

5. To save the settings, click `OK` and/or `Apply` on each tab before closing.
6. Reboot the system.

End of procedure

Procedure: Adjusting the User Account Locale (Windows 2003)

Purpose: To adjust the user account locale on the WFM server (Server, Builder, and Data Aggregator) to match the language in a specific Language Pack.

Summary

Complete this procedure before you install any WFM Language Pack on a Window 2003 host.

Start of procedure

1. On WFM server host, go to `Control Panel > Regional and Language`.
2. On the `Regional Option` tab, in the `Standards and formats` section, select the language/region that matches the Language Pack you will be installing later. (See Figure 29.)

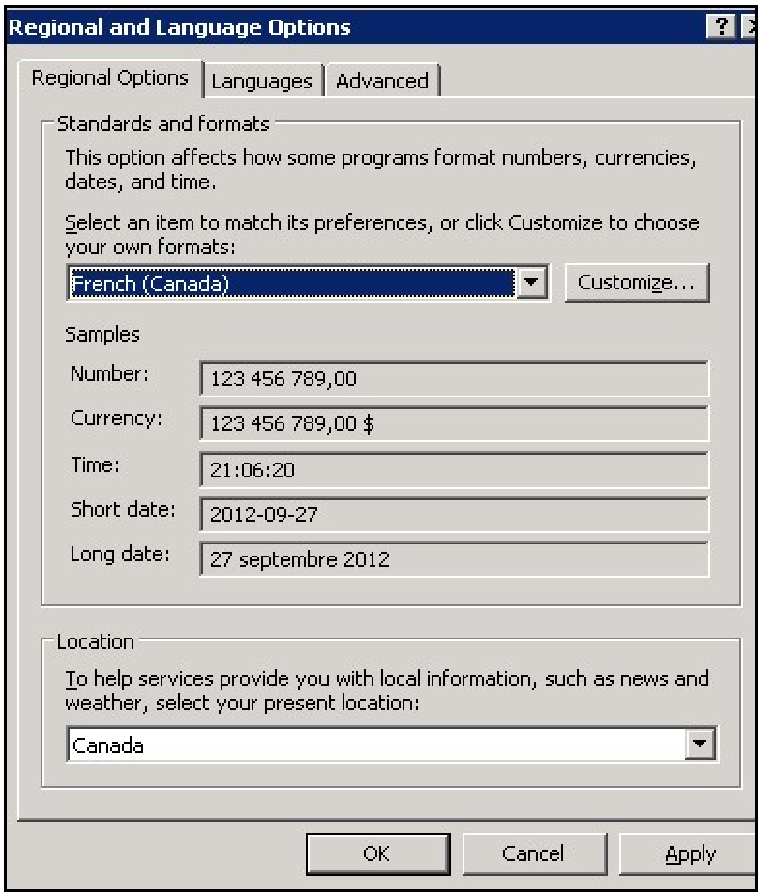

Figure 29: Regional Options—Regional and Language Settings (Windows 2003)

3. On the `Advanced` tab, copy the regional settings to local system or default account, by adding a check mark to the `Default user account settings` checkbox. (See Figure 30.)

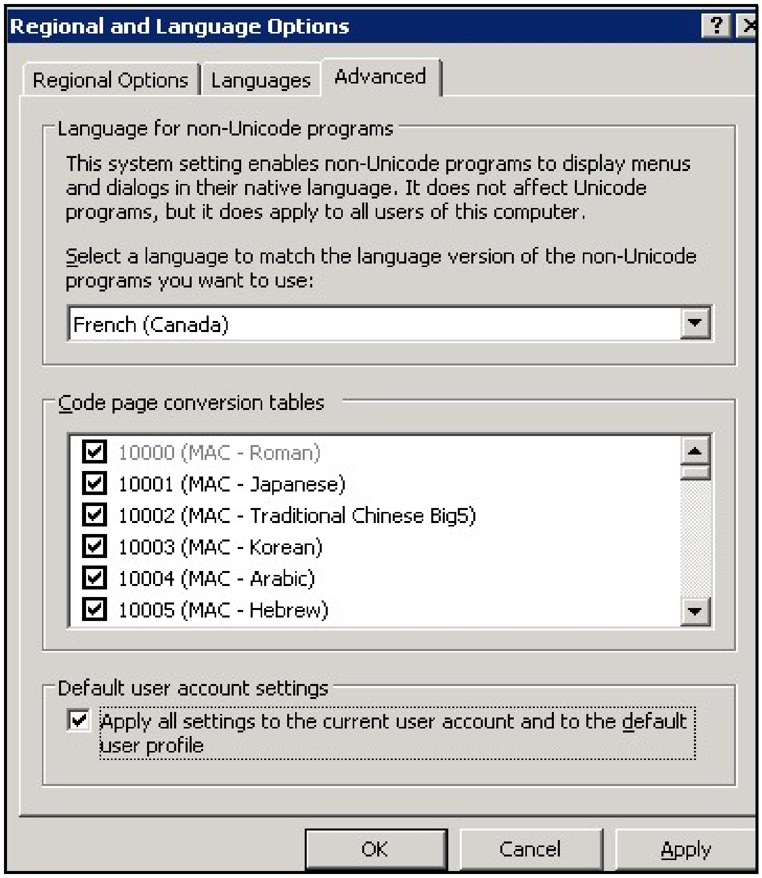

Figure 30: Advanced—Regional and Language Settings (Windows 2003)

4. To save the settings, click `Apply` and `OK`.
5. Reboot the system.

End of procedure

Next Steps

- Verify that the correct locale is configured for the Local System account. See

Procedure: Verifying the Locale for the Local System Account in the Windows Registry

Purpose: To verify that the correct locale is configured for the Local System account.

Prerequisites

- The system account locale or user account locale is adjusted to match the language in the installed LP. See Procedure: Adjusting the System Account Locale (Windows 2008), on page 251 or Procedure: Adjusting the User Account Locale (Windows 2003), on page 254.

Start of procedure

1. On the WFM server (Server, Builder, and Data Aggregator), in the Windows Registry Editor, open the following hive:
   `"HKEY_USERS\.DEFAULT\Control Panel\International"`
2. Check the following locale-related keys (see Figure 31):
   - `Locale`
   - `sCountry`
   - `sLanguage`

   To interpret any specific locale ID, see the Microsoft article, Locale IDs Assigned by Microsoft.

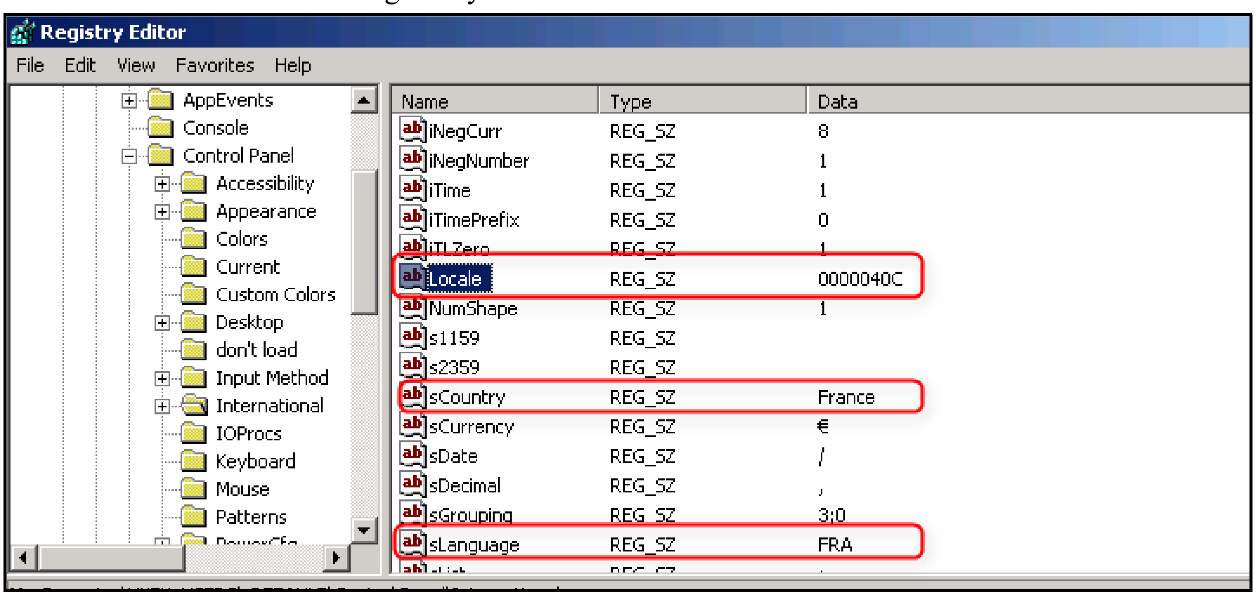

Figure 31: Verify Locale in the Windows Registry

3. Close the Registry Editor.

End of procedure

Changing the Date Format in WFM E-mail Notifications

The WFM Daemon service, which uses operating system account locale to provide the date format, dictates the format for WFM e-mail notifications. By default, WFM Daemon is installed under the system account and therefore, it uses the system user (or *default* user) locale.

You can change the date format in e-mail notification sent by WFM Daemon by changing the locale settings for the system user account and set the language (country) to match the desired date format.

If changing the system account locale is not an option (for example, if other services are using the locale settings), you can instruct WFM Daemon to override the service user account locale settings. See Procedure: Overriding the Date Format in E-mail Notifications Sent by WFM Daemon.

Procedure: Overriding the Date Format in E-mail Notifications Sent by WFM Daemon

Purpose: To change the date format in e-mail notifications by overriding the WFM Daemon service user account locale settings.

Start of procedure

1. Verify the WFM Daemon service name. (By default, it is `WFMDaemon`.)
2. Stop the WFM Daemon service.
3. Open the Windows Registry Editor and navigate to the following registry key:

   ```
   HKEY_LOCAL_MACHINE\SOFTWARE\Apache Software Foundation\Procrun
   2.0\<WFM Daemon service name>\Parameters\Java
   ```

   Where: `<WFM Daemon service name>` is the name of the WFM Daemon service. For example, the default key path is:

   ```
   HKEY_LOCAL_MACHINE\SOFTWARE\Apache Software Foundation\Procrun
   2.0\WFMDaemon\Parameters\Java
   ```

4. Open the `Option` value and add the Java language, region, and country options using the following syntax (see Figure 32 on page 259):
5. ```
   -Duser.language=fr
   -Duser.region=CA
   -Duser.country=CA
   ```
   ```

6. Press `Enter` to add a new line.

Note: You must add a new line after the last option, otherwise it is not parsed.

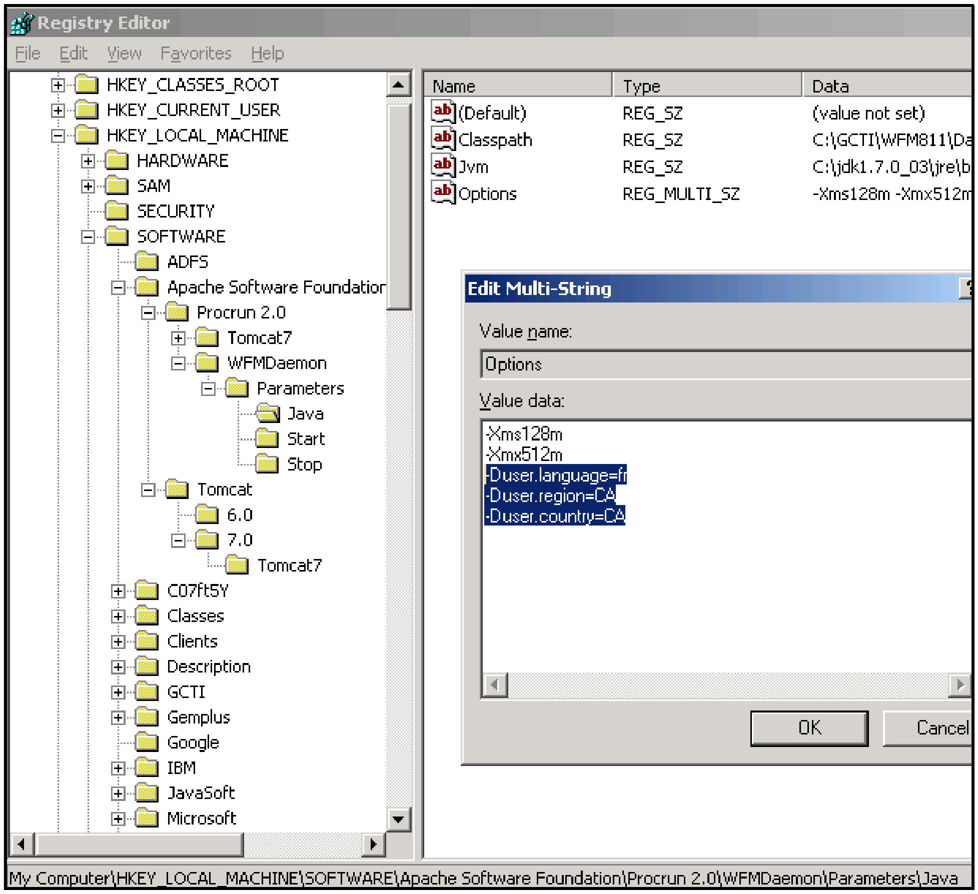

Figure 32: Windows Registry Editor - Changing the Date/Time Format

7. Click `OK` to apply the changes, and close the Registry Editor.
8. Start the WFM Daemon process and check the e-mail notifications date format.

End of procedure

Adjusting the WFM Web Application to Display Weekday in the Correct Language

To correctly display the weekday in certain language character sets, you must modify a configuration option in the WFM Web Application. In the Application properties, on the `Options` tab, in the `Options` section, the `PageCharSet` option value must be set to a specific code page.

For example, to correctly display the weekday in the French language, the setting must be: `PageCharSet = windows-1252`

Configuring the Date/Time Format and Language Preference in the WFM Web Interfaces

Sometimes the date and time format in the WFM Web Applications have a different format than the required company standard. This section contains information about the date and time formats and includes procedures that describes how to change the format in each WFM Web Interface.

Generally date and time format in the Web Applications are determined by the operating system's locale settings. For example, the Language (Country) locale is read from the operating system and the Java Runtime Environment (JRE) sets the appropriate date and time format accordingly.

However, some WFM Web Application interface date and time formats are determined by locale settings on other hosts..

Note: The JRE does not take into consideration any custom formatting on the Windows platform. It simply reads the Language (Country) format from the locale settings and sets date and time format accordingly. For example, if the date and time format is English (Canada), the time format is always AM/PM whether the Windows settings have been customized or not, because that is the default for this country.

Therefore, to use the 24h time format in the WFM Web Applications, you must select the relevant language (country) for which the 24h format is the default. For the English language, it could be either English (United Kingdom) or English (Ireland).

The date and time format for each of the three WFM Web Application interfaces—Supervisor, Agent, and Reports— is determined by the language preference that is configured in the browser that is being used.

Web Supervisor

The WFM Web Supervisor interface date and time format is determined by the language preference that is configured in the browser that is being used. This enables each supervisor to choose the date and time format for their own workstation. See Procedure: Changing the Preferred Language Settings in the Web Browser.

To configure the date and time format for WFM Web Supervisor on a Windows host, complete Steps 1 and 2 in the Procedure: Adjusting the User Account Locale (Windows 2003), on page 254.

Procedure: Changing the Preferred Language Settings in the Web Browser

Purpose: To change the preferred language settings in the web browser.

Note: This procedure describes the steps to change the language settings in Internet Explorer. However, language preference settings might be in different locations for each vendor's browser, and even different versions of the browser. For information about how to change the settings in the browser you are using, Genesys recommends you check the vendor's web site or Help.

Start of procedure

1. In Internet Explorer, go to `Tools` > `Internet Options`.
2. In the Internet Options dialog, on the General tab click `Languages`.
3. In the Language Preferences dialog, click `Add`.
4. In the Add Language dialog, select the language you want to use and click `OK`.

   Note: Ensure it is the first language in the list. If there is more than one language in the list, highlight your selection and then click `Move Up` until your language preference is at the top of the list.

5. Click `OK` twice to save the settings and close the Internet Options dialog.

End of procedure

Web Agent

The WFM Web Agent interface date and time format is determined by the Web Server host and Server service user account locale. This enables a unified Web Agent view of the date and time format for all agents.

There are two ways to change the date and time format in the WFM Web Agent interface:

1. Change Web Server (Tomcat) service operating system user account locale. By default, the Tomcat service is installed under the Local System account (or `default` account) like most of the services.

- To change the date and time format in the Web Agent interface on Windows, see in the Procedure: Adjusting the System Account Locale (Windows 2008), on page 251 or Procedure: Adjusting the User Account Locale (Windows 2003), on page 254.
- To change the date and time format in the Web Agent interface on Solaris, see the Procedure: Changing the Date and Time Format in the WFM Web Agent Interface (Solaris), on page 262.

2. Set Tomcat JVM locale options to override operating system user account locale. If, for any reason, you cannot change the locale settings for the System Local account to change the Java date and time format, you can override the locale settings for only the Tomcat environment, by using the `-Duser.language` and `-Duser.country` Java options
   - To configure these options on Windows, see the Procedure: Overriding the User Account Locale by Setting the Tomcat JVM Locale Options (Windows), on page 263.
   - To configure these options on Solaris, see the Procedure: Overriding the User Account Locale by Setting the Tomcat JVM Locale Options (Solaris), on page 264.

Procedure: Changing the Date and Time Format in the WFM Web Agent Interface (Solaris)

Purpose: To change the date and time format in the Web Agent interface to match the LP language.

Summary

In Solaris, the Java Virtual Machine (JVM) obtains the default locale from the current user environment.

Start of procedure

1. To determine the current locale setting, type `locale` at the command prompt.
2. To set change locale, set the `LANG` environment variable. For example:

```
:> export LANG=en_GB
```

3. To verify that the locale is changed, type `locale` at the command prompt again. The following output is displayed.

```
:>locale
LANG=en_GB
LC_CTYPE="en_GB"
LC_NUMERIC="en_GB"
LC_TIME="en_GB"
LC_COLLATE="en_GB"
LC_MONETARY="en_GB"
LC_MESSAGES="en_GB"
LC_ALL=
```

4. Restart Tomcat.

End of procedure

For more information about Solaris locale values and how to change them, see the Sun Solaris documentation on the vendor web site.

Procedure:
Overriding the User Account Locale by Setting the Tomcat JVM Locale Options (Windows)

Purpose: To override the user account locale by using Tomcat JVM locale options on Windows.

Start of procedure

1. Open the `Apache Tomcat Properties` window.
1. Select the `Java` tab.
2. To set the locale settings for the Tomcat JVM, in the `Java Options` text box, add the `-Duser.language` and `-Duser.country` (or `-Duser.region`) options (see Figure 33 on page 264).

   For example:

   - To have English weekday names and `UK` date format `dd/mm/yy @HH:MM`, add:

     ```
     -Duser.language=en
     -Duser.region=GB
     -Duser.country=GB
     ```

   - To have English weekday names and `US` date format `mm/dd/yy @hh:mm AM/PM`, add:

     ```
     -Duser.language=en
     -Duser.region=US
     -Duser.country=US
     ```

- To have French weekday names and `CA` date format `yy-mm-dd @HH:MM`, add:
  `-Duser.language=fr`
  `-Duser.region=CA`
  `-Duser.country=CA`

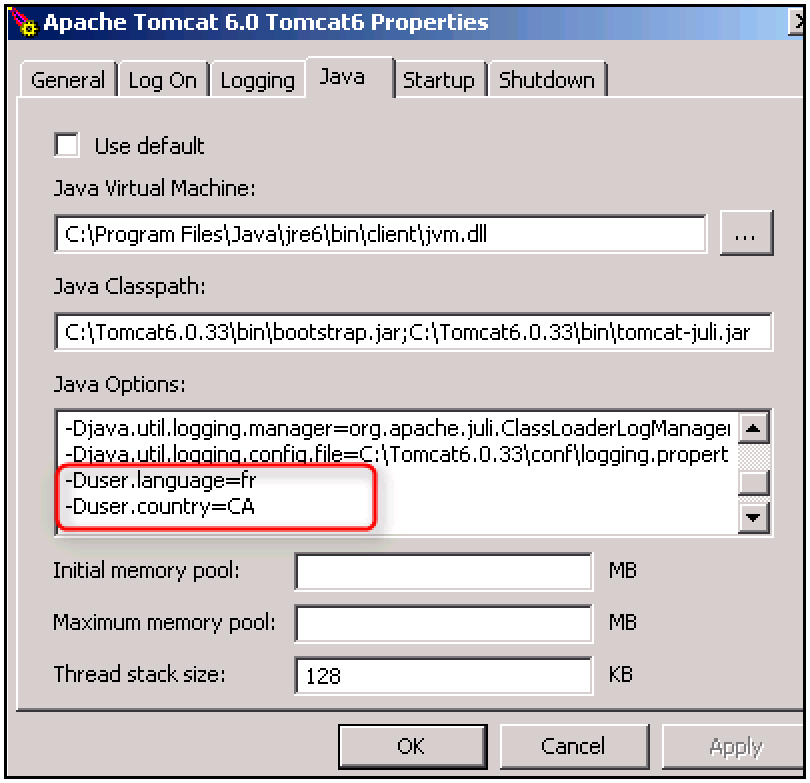

Figure 33: Java Options--Apache Tomcat Properties

3. Restart Tomcat.

End of procedure

Procedure: Overriding the User Account Locale by Setting the Tomcat JVM Locale Options (Solaris)

Purpose: To override the user account locale by using Tomcat JVM locale options on Solaris.

Start of procedure

1. In the JRE, update the `JAVA_OPTS` environment variable with the `-Duser.language`, `-Duser.region`, and `-Duser.country` options.

   For example, the options string might look like the following string:

   ```
   JAVA_OPTS="$CATALINA_OPTS -server -Xms128m -Xmx256m
   -Djava.awt.headless=true -Duser.language=en -Duser.region=GB
   -Duser.country=GB"
   ```

   Note: The options in the example might be different in an actual Java environment. These options were used as an example only.

2. Restart Tomcat.

End of procedure

Web Reports

The WFM Web Reports date and time format is determined by the Web Server host or Web Server service user account locale that is executing Reports. If there is one WFM Web instance or several Web instances, without a dedicated WFM Web for the Reports instance, the date and time format is taken from the Web Server host that is hosting WFM Web. If there is a dedicated WFM Web for the Reports instance, the Reports date and time format is obtained from the Web Server host for the Reports or Web Server service user account locale.

To change the date and time format for Reports, complete the same procedures as those used for WFM Web Agent on the WFM Web for Reports host or Tomcat instance. See “Web Agent” on page 261. If it is the same instance as WFM Web Agent, the settings will affect both the Web Agent and Web Reports date and time formats.

Installing the Language Packs

This section contains procedures that describe how to install the Language Packs for each of the WFM components

Procedure:
Installing the WFM Web Language Pack

Purpose: To localize WFM Web by installing the Web Language Pack.

- The WFM Web IP is installed on the host.

Start of procedure

1. Start the WFM Web Language Pack IP for the language you are installing and follow the steps in the Installation Wizard.
2. If WFM Web is already deployed in the servlet container, undeploy it using the servlet container specific instructions.

> **Note:** It is important that you undeploy WFM Web from the servlet container, but do not uninstall it from system.

3. Deploy the WFM Web `wfm.war` file that was updated by the Language Pack IP, by using the servlet container specific instructions.

   WFM Web uses localized resources from the Language Pack.

End of procedure

Procedure: Installing the WFM Daemon Language Pack

Purpose: To localize WFM Daemon by installing the Daemon Language Pack.

Prerequisites

- The WFM Daemon IP is installed on the host.

Start of procedure

1. Stop the WFM Daemon process.
2. Start the WFM Daemon Language Pack IP for the language you are installing and follow the steps in the Installation Wizard.
3. Start the WFM Daemon process.

   The WFM Daemon uses localized resources from the Language Pack.

End of procedure

Procedure: Installing the WFM Server, Builder, or Data Aggregator Language Pack

Purpose: To localize WFM Server, Builder, or Data Aggregator by installing the associated Language Pack.

Prerequisites

- The WFM Server, Builder, or Data Aggregator IP is installed on the host.
- The user account locale is adjusted to match the Language Pack that is being installed. (See Procedure: Adjusting the User Account Locale (Windows 2003), on page 254 or Procedure: Adjusting the System Account Locale (Windows 2008), on page 251.)

Start of procedure

1. Stop the WFM Server, Builder, or Data Aggregator process.
2. Start the WFM Server, Builder, or Data Aggregator Language Pack for the language you are installing and follow the steps in the Installation Wizard.
3. Start the WFM Server, Builder, or Data Aggregator process.

End of procedure

Using Self-Localization

You can localize the GUIs for WFM Web Supervisor and WFM Web Agent without having to obtain localized software from Genesys. This enables Genesys partners and customers to deploy translated versions of these user interfaces, when Genesys does not provide localized versions of WFM.

The Agent and Supervisor components of WFM each draw the text of their GUIs from a properties file, which you can modify. You can translate the text in these files and thus localize WFM to any language that you wish.

Perform this localization carefully, by making backups that you can use to undo mistakes and by using text that has the precise meaning of the words and phrases that you are translating. Genesys assumes no responsibility for work performed by anyone, other than a Genesys employee.

Note: Self-localization does not affect all text in WFM Web. The text of some messages (such as the resolution of Calendar items, Schedule Build Validation messages, and others) does not reside in the `wfm.war` properties files, and are therefore, not localized.

Summary

Procedure: Localizing WFM (process summary)

Purpose: These steps summarize the localization process.

Start of procedure

1. Extract the properties files from inside `wfm.war`.
2. Localize the properties files.
3. Create the file `wfm-localization.jar`, including inside translated resources from step #2.
4. Sign the `wfm-localization.jar` file from step #3.
5. Update `wfm.war` with the signed `wfm-localization.jar` from step #4.
6. Deploy the new `wfm.war` on the web application server.

End of procedure

First Localization

You must follow a specific procedure when you localize WFM for the first time. That procedure is here: The Initial Process, page 272.

All Subsequent Localizations

The procedure to follow when you are planning to install a WFM Web patch, and you have already localized WFM, is here: The Steps Next Time, page 274.

Tools

Use these tools to localize your installation of WFM:

Table 35: Localization Tools

Tool	Description
localization.bat	Use this batch file to extract the properties file from (and update then back into) `wfm.war`. See “Using localization.bat” on page 270.
wfm.war	This Web ARchive file contains the WFM properties files `agent.properties` and `supervisor.properties`.
agent.properties	Edit the text inside this properties file, to localize the WFM Agent web GUI.
agent800.properties	Edit the text inside this properties file, to localize parts of the WFM Agent web GUI.
supervisor.properties	Edit the text inside this properties file, to localize the WFM Supervisor web GUI.

Table 35: Localization Tools (Continued)

Tool	Description
wfm-localization.jar	Archive containing translated resources
Text editor	Use a non-formatting text editor (such as Notepad or Wordpad) to edit the properties files.
Windows system tools	Use the appropriate system tools to stop and restart the web application server, and to copy the localized `wfm.war` to its appropriate location.
Web Application Server	This appendix uses `Tomcat` as the default device that enables access to WFM, but depending on your configuration and version of WFM, it could instead be `WebSphere`.

Cautions

Back up `wfm.war` before you make your changes. You may need to replace the modified file if your changes have unexpected results.

Back up the properties files before you make your changes, for the same reason that you back up `wfm.war`.

Back up `wfm.war`, as well as the properties files, *after* you make your changes too. When you install a WFM Web patch, you also install a new (non-localized) wfm.war file. The backup allows you to restore your changes accurately and with a minimum of effort.

With that backup, you can restore your changes accurately and with a minimum of effort after installing a WFM Web patch, which includes a new (non-localized) wfm.war file.

Wait for the extraction and updating processes to finish; they do not display status.

Due to changes in the Java security model, localized resources must be placed into signed wfm-localization.jar. See `http://docs.oracle.com/javase/6/docs/technotes/guides/jweb/mixed_code.html`, The localizer is responsible for obtaining a certificate and for signing the file `wfm-localization.jar`.

Requirements

- JDK (the Java Development Kit, same version as required by WFM Web) must be located in the path `JAVA_HOME`.
- Certificate to sign Java code.

Using localization.bat

The batch file `localization.bat` is installed in the same directory where WFM Web was initially installed. Use `localization.bat` to:

- Extract the properties files `agent.properties` and `supervisor.properties` from `wfm.war`.
- Update `wfm.war` by reinserting the two WFM properties files.

Run `localization.bat` from the Windows command line interface. For example, enter:

`C:\Program Files\GCTI\WFM76\Web>localization -h`

...to display this help message, which summarizes all functionality:

```
USAGE: localization -{xuci} [wfm-war-file] OR -{eh}
        [-a OR -a8 [agent-properties-file]] [-s [supervisor-properties-file]]
 ---------------------------------------------------------------------------
 Options:
    -x       extract properties from WFM war
    -u       update WFM war with new properties
    -c       create WFM localization jar archive
    -i       insert WFM localization jar in the war archive
    -a       define path to agent properties file
    -a8      define path to agent800 properties file
    -s       define path to supervisor properties file
    -e       show examples
    -h, /?   show this message
 ---------------------------------------------------------------------------
 Parameters:
    [wfm-war-file]                path to WFM war
    [agent-properties-file]       path to agent properties file
    [supervisor-properties-file] path to supervisor properties file
 ---------------------------------------------------------------------------
 Additional Info:
    If you not define the file name the default name will be used.
    For war it is 'wfm.war' in current folder.
    For agent it is 'agent.properties' in current folder.
    For agent800 it is 'agent800.properties' in current folder.
    For supervisor it is 'supervisor.properties' in current folder.
 ---------------------------------------------------------------------------
 CAUTION: Please backup the original properties to the safe place
          already after extraction.
          You may use them for restoring if something goes wrong.
 ---------------------------------------------------------------------------
```

Applying the Options

This section describes how to use the options, and provides examples.

Specifying the Defaults

Each file used by `localization.bat` has a default name and a default location. To use these defaults, enter the command line in its simplest format:

`localization -x`

This command line applies all the defaults:

- The web archive is named `wfm.war` and is located in the current directory.
- The properties files that are extracted from `wfm.war` are named `agent.properties` and `supervisor.properties` and are saved to the current directory.

`localization -u`

Do not use this option; it has been replaced by options `-c` and `-i`

`localization -c`

This option creates the file `wfm-localization.jar` from localized resources, making it available for signing.

`localization -i`

This option inserts the file `wfm-localization.jar` into `wfm.war`. Be certain that `wfm-localization.jar` is signed before inserting or the problems described in http://docs.oracle.com/javase/6/docs/technotes/guides/jweb/mixed_code.html will appear when you try to run WFM Web supervisor.

Specifying Directories

You can specify absolute paths or relative paths to the directories that hold the files. Here are some examples:

`localization -x "C:\Program Files\GCTI\WFM76\Web\wfm.war"`

`wfm.war` is in the absolute directory `C:\Program Files\GCTI\WFM76\Web\`. You can specify absolute directories for the properties files, too:

```
localization -u -a "\Program Files\GCTI\WFM76\Web\propfiles\agent.properties"
localization -x -s "\Program Files\GCTI\WFM76\Web\propfiles\supervisor.properties"
```

`localization -x "..\safe\wfm.war"`

`wfm.war` is in the directory `\safe\`, whose position is relative to the current directory (they share the same parent directory). You can specify relative directories for the properties files, too:

```
localization -x -a "..\propfiles\agent.properties"
localization -u -s "..\propfiles\supervisor.properties"
```

Specifying Filenames

You can specify different filenames for any of the files. Here are some examples:

`localization -u "wfmLOCALIZED.war"`

The web archive is named `wfmLOCALIZED.war`. You can specify names for the properties files, too:

```
localization -x -a "agentORIGINAL.txt"
localization -u -s "supervisorREVISED.txt"
```

Combining Options

You can of course combine any or all of these options. This example occupies a single command line, and has been wrapped in arbitrary places for readability:

```
localization -u "C:\Program Files\GCTI\WFM76\Web\wfmLOCALIZED.war"
   -a "C:\Program Files\GCTI\WFM76\Web\propfiles\agentORIGINAL.txt"
   -s "..\propfiles\supervisorREVISED.txt"
```

Help

To see usage examples, enter this command line:

```
localization -e
```

The Initial Process

When you localize the text in your WFM web archive, you are modifying the program's software—the messages, menus and other elements of the screen display. By doing this yourself, you must accept responsibility for any possible errors you may make, and ensure that you can recover from any possible errors.

- Accept responsibility by following these instructions closely. Do not take shortcuts.
- Ensure error recovery by backing up your files before and after every change.

Procedure: Localize WFM the First Time

Purpose: To localize WFM the first time.

Start of procedure

Prepare

1. Make a backup copy of the existing `wfm.war` file and save it in a safe place (in a different directory, with a different name, or both). The `wfm.war` file is an important WFM software component, and you may need to replace a broken version.

   You must make a backup of `wfm.war` before *and after* you make changes so that you can update the new, non-localized `wfm.war` file that arrives with any new patches that are released.

Note: In a worst-case scenario, you can always reinstall WFM Web from the original software release disk or FTP download that you received from Genesys.

Extract

2. Extract the Properties files `supervisor.properties` and `agent.properties`. from `wfm.war`. Use the software tool `localization.bat`.
   Click `Start>run` to open a command window. Then enter:

   `localization -x`

   ...where `-x` extracts the properties files. See "Using localization.bat" on page 270 for ways to specify file locations and names.

3. Make a backup copy of the properties files *before* you change them, and rename them with a descriptive name (for example, `agent.properties.english.v8.1.000.10`) and then store them in a safe place. You will need these in the future to compare with newer properties files when software updates to WFM Web are released.

Localize

4. Using a text editor, update the two properties files by changing the English text strings to the language you wish.

   To help identify the text strings in context, you may wish to run WFM in another window while you do this work.

5. Make a backup copy of these localized properties files, rename them with a descriptive name (for example, `agent.properties.czech.v8.1.000.10`) and then store them in a safe place.

Update

6. Create `wfm-localization.jar`.

   Use the option `localization -c`.

7. Sign `wfm-localization.jar`

   Use Java's utility `keytool`, which is documented here: `http://docs.oracle.com/javase/6/docs/technotes/tools/solaris/keytool.html`.

8. Update `wfm.war`.

   Use the option `localization -i`.

Deploy

To deploy `wfm.war` to the WFM Web Server:

9. Stop Tomcat.

10. Copy the edited war `wfm.war` and then paste it into the Tomcat folder.
11. Restart Tomcat.

End of procedure

The Steps Next Time

In the future, if there is an update version of WFM Web that you need to deploy (for example, a patch or software update), perform these steps:

Procedure: Localizing WFM each Subsequent Time

Purpose: To localize WFM each subsequent time.

Prerequisites

- You must have localized WFM at least once before. See "Localize WFM the First Time" on page 272.

Start of procedure

1. **Extract** (see Extract, page 273)
   Use the `localization.bat` file to extract the two properties files (one for the WFM Web Agent GUI and one for the WFM Web Supervisor GUI) from the wfm.war file.
2. **Compare**
   Use `windiff` or a text editor that provides comparison capabilities, to compare the new versions of the properties files with the original ones. This will identify any new or changed strings that require localization.
3. **Localize** (see Localize, page 273)
   Using the text editor, update the two localized properties files that you created in step 3 above, adding in any new string resources in the appropriate place. Make a new backup copy of the properties files; if you make a mistake, you will have the backup you created in step 4, to work from.
4. **Update** (see Update, page 273)
   Create and sign the file `wfm-localization.jar` and update the file `wfm.war`. using the same tools as described on page 273.
5. **Deploy** (see Deploy, page 273)
   Deploy the updated `wfm.war` file on the Web application server. See instructions for deleting the war file from Tomcat.

End of procedure

Genesys

Chapter

14 Troubleshooting

This troubleshooting chapter is divided into the following sections:

It presents solutions for common problems. It covers: architectural issues, such as the configuration of the WFM components and connections between them.

- Configuration conflicts in WFM that result in forecasting and scheduling errors.
- When to use log files for error tracking.

Note: If, after working through the suggestions in this chapter, your configuration appears to be correct, but WFM still does not function properly, contact Genesys Technical Support for further assistance.chitectural Issues: Components and Connections

Architectural Issues: Components and Connections

Issues addressed in this section can also affect WFM Web functionality such as forecasting and scheduling. Be sure to review all possible sources of errors during your troubleshooting process.

This section covers the following situations:

Expired Digital Signature or Security Certificates

Even if you set up Genesys (or Sun) as a trusted publisher in your browser, you may see a message such as these:

```
The digital signature was generated with a trusted certificate but has
expired or is not yet valid.

The security certificate has expired or is not yet valid.
```

As a common practice, Genesys renews its certificates once a year. Sun does not provide certificate renewal for javahelp, so it's expired in year of 2004.

Here is how to respond to that warning message:

- During your first access of WFM Web, check the `always trust` option in both warning messages. This will mark certificates as trusted and the user will not ever see these warnings again.
- Import the certificates to the Java plug-in manually for each new user. Certificates for import could be exported from any workstation where WFM Web has been already accessed and certificates where confirmed with the `always trust` option check.

An applet that is signed with a certificate that has expired is still safe to download or use ...as long as the applet was signed when the certificate issued by the CA (Certificate Authority) was still valid, then the applet is valid according to the specification for signing Java applets. Also, according to the specification, it is the responsibility of the JVM to warn the user if an applet has been modified after it was digitally signed with a certificate issued by a CA.

As long as the JVM does not return an error stating that the applet has been modified since it was signed, the applet is still valid and safe to run.

Blank Screen When Attempt to Access WFM Web

If you are using Tomcat, the issue may be that you don't have Sun's JDK software installed, but just the JRE. Tomcat 5.0.x requires the JDK. If you look at the Tomcat logs, you should see an error saying that java compiler was not found. If you don't want to install the JDK, then the other option is to use Tomcat 5.5.x, which only requires the JRE.

Unable to Connect to Data Source

If you cannot connect to your database, verify the following:

- That the correct versions of MDAC and Jet are installed on your computer. See "Determine the MDAC Version".
- You have added the Database Access Point (DAP) on the `Connections` tab of the Application object of the component you are using.
- You have configured the DAP correctly.
- Your database is set to be case insensitive.

Determine the MDAC Version

Microsoft supplies a free diagnostic program, MDAC Configuration Checker, that scans your computer to establish whether you are running the correct version of MDAC. You can download the program from the Microsoft web site. See *Genesys Supported Operating Environment Reference Manual* for the current MDAC requirements.

"DA Server Not Found" Error

Data Aggregator is not running. Start it manually, under Windows Services.

"Host Not Found" Error

The host names you configure in Configuration Manager must be lowercase. They are case sensitive.

- Rename the host and try the procedure again.

WFM Data Aggregator Does Not Start

When a host computer on which WFM Data Aggregator is running as a Windows Service is shut down and restarted, WFM Data Aggregator leaves an open connection to Configuration Server. This causes WFM Data Aggregator to fail to start after rebooting. In particular, Service Manager indicates `Starting` status for the WFM Data Aggregator service for a long time after you try to start it.

Procedure:
Closing an incorrect connection between WFM Data Aggregator and Configuration Server

Purpose: To enable WFM Data Aggregator to restart.

Start of procedure

1. In Configuration Manager, rename the WFM Data Aggregator Application object, and then click `OK` to close the `Properties` window.
2. Reopen the `Properties` window and change the Application object name back to the original and then click `OK` again. Doing this clears the connection.

End of procedure

After this, WFM Data Aggregator should immediately connect to Configuration Server. To prevent this problem, stop the WFM Data Aggregator Service using the `Services` window before shutting down and/or rebooting the host computer.

If WFM Data Aggregator fails to start, it writes a message to the `daerror.log` file, which is located in the WFM Data Aggregator working directory. Use this log file to diagnose the problem that prevented WFM Data Aggregator from starting correctly.

WFM Web Does Not Open

Pop-up blockers interfere with WFM Web for Supervisors operation. If you are running a pop-up blocker on your computer, disable it before trying to open WFM Web for Supervisors.

Applets Do Not Load in WFM Web

WFM Web uses Java Server pages (JSPs) to create its dynamic web pages. To use WFM Web, your browser must have Java support. If the necessary plug-in was not installed with the browser, you can download the plug-in from `http://java.sun.com/j2se/`. To learn which version of Java is required, consult the WFM section at the end of the table "Product Prerequisites" in the book *Genesys Supported Operating Environment Reference Manual*.

On Supervisors' workstations, WFM Web uses Java applets that are run by Sun's Java Plug-in. On Windows operating systems the Java Plug-in is running as ActiveX, which means that supervisors must have rights to run ActiveX controls.

Cannot Log In to WFM Web

The ConfigServer.properties file may be configured incorrectly. This could happen if you installed WFM Web without being connected to Configuration Server or if you manually entered incorrect values when you were configuring the WFM Web Application object.

Procedure: Correct ConfigServer.properties Configuration

Purpose: To correct an incorrect configuration of the ConfigServer.properties file.

Start of procedure

1. Remove the incorrectly configured application from the servlet runner.
2. Reinstall WFM Web, providing correct values during the installation.
3. Deploy the newly installed application.
4. If reinstalling WFM Web does not resolve the issue, check that you have entered the correct URL for WFM Web.
    - The URL is case sensitive.
    - Do not include login.asp or login.jsp in the URL. The URL should simply point to the application virtual directory.

End of procedure

"WFM Server Cannot be Reached" Error

There are two different issues that may be responsible for this error message. If you receive this message sporadically, you may have too few TCP sockets (see "Scenario 1"). If it occurs every time you open WFM Web, it is probably because it is not correctly configuration (see "Scenario 2").

Scenario 1

This error message may occur because there are too few TCP sockets for the number of WFM Web for Supervisors connections you are trying to establish. To improve performance:

- Install WFM Web on a separate computer.
- Increase the refresh rate from the default value (2 seconds) to 5 seconds. This should increase the number of supervisors able simultaneously to access Adherence views by approximately 100 percent.

Scenario 2

You may have specified the wrong application type when you installed WFM Web. If so, uninstall and reinstall WFM Web, entering the correct values in the Installation Wizard screens.

- If you are running WFM in a Framework 6.x environment, the WFM Web application type must be `ThirdPartyServer`.
- If you are running in a 7.x environment, the application type should be `WFM Web`.

The Agent Weekly Preference View Does Not Display 24-Hour Graphical Data

Note: Applies to UNIX environments only.

If your Unix server does not have an X Server installed or you have not set the `DISPLAY` environment variable, the WFM Web `Agent Weekly Preferences` window is presented without 24-hour graphical information.

For non-Windows environments (such as Unix and Linux), you must have X or some form of X (X11 Server or X Windows server) running and point the DISPLAY environment variable to the machine running X.

Synchronization with the Configuration Database Takes an Unreasonably Long Time

If you are using Microsoft SQL, to reduce synchronization time, make sure that the database `AutoShrink` feature is turned on.

Timeout Error During Database Update

Note: This applies to the WFM 7.1.1 release only.

Set the `CommandTimeout` option in the `WFM Client Application` object to a higher number. The default value is `600 seconds`, which is sufficient for most databases. If you are running an update on a large database, set the value to `1200 seconds` or higher.

Note: If you received a timeout error message when you initially tried to update your database, you may receive a number of error messages when you rerun the database update. Error messages that indicate that a column or field was already created simply indicate that the object was created during the first, incomplete database update attempt. You can safely ignore these errors.

However, other error messages may indicate issues that must be resolved before your database will work properly.

Unacceptably Slow Response from WFM Configuration Utility

If your WFM Configuration Utility is not located on the same LAN as the WFM Database, you may see very long response times when the WFM Configuration Utility updates database information.

If you experience this issue, Genesys recommends that you deploy the WFM Configuration Utility over Citrix or Windows Terminal Services.

This issue should not affect users on the same LAN as the WFM Database.

Workforce Management Configuration Issues

The following is a list of potential problems that might occur when you are using WFM Web. Because connection faults and other situations covered in the preceding section can cause some of these errors, review all possible solutions during your troubleshooting process.

This section covers the following:

Performance Shows No Intraday Statistics

If the WFM Web Performance subsystem does not display statistics for Interaction Volume, Average Handling Time, Service Level, and other key intraday statistics, verify that:

- WFM Data Aggregator has initialized successfully; has made successful connections to Configuration Server, Stat Server, and the WFM database; and has been running for 30 minutes.
- A schedule has been published for the current time interval.
- The correct Stat Server name appears in the `Site Properties` window in the `Configuration > Organization` module of the WFM Configuration Utility.
- The necessary statistics are configured in the `Statistics` window in `Configuration > Activities` module of the WFM Configuration Utility.
- Time zones are configured correctly for the business unit or site.
- The statistics are monitoring the correct Genesys objects, such as queues, routing points, and so on.
- The `TimeProfile` parameter is correctly configured in Stat Server.

Headings Do Not Match Columns in Exported Reports

When you export the reports, select the `MS Excel Tabular` option.

Real-Time Agent Adherence Is Not Working Correctly

If the `Real-Time Agent Adherence` window is empty, then verify that:

- A schedule has been published for the current time interval.
- You have associated the correct WFM Data Aggregator name with the site that contains the agents you are looking at in the WFM Configuration Utility.
- You have configured a connection to the appropriate Stat Server in the WFM Data Aggregator Application object.
- Your WFM Data Aggregator Application object specifies a connection to your WFM Server on the `Connections` tab.
- T-Server, Stat Server, and WFM Data Aggregator are running properly.
- Stat Server is configured to connect to the appropriate T-Server.

Note: If no agent names are visible in the `Real-Time Agent Adherence` window, publish a schedule for the current day.

Agents Are Not Being Scheduled

Verify that:

- The agents' hire dates are not the same as the current date and come before the start of the schedule period.
- The agents are associated with a Contract that can be scheduled.
- The agents' Contract is not associated with shifts that are incorrectly configured, preventing the agents in that Contract from being given any shifts.
- The agents have skills configured.
- The agents have skills that qualify for at least one of the activities you are scheduling.

Calculation of Average Handling Time Based on TotalTime Statistics

Average Handling Time (AHT) is calculated by taking the total duration of all interactions that are completed during a timestep, divided by the total number of interactions handled during that timestep.

In cases where Total Handle Time is collected for an interval but no interactions have been handled in that interval, WFM can optionally associate the Handle Time with the previous interval. To enable this option, use the `"HandleTimeWriteBack"` configuration key.

Cannot Find Agents or Sites

Verify that:

- WFM is synchronized with Configuration Manager.
- The WFM user experiencing this issue has permissions to view the site, agents, and logins for the missing sites and/or agents.

Errors or Warnings When Creating a Schedule

In most cases, when schedule results are not as expected, a configuration error is the cause. With a valid configuration, you rarely see errors.

If the configuration settings lead to a disparity between the staffing requirements and the actual schedule, the `Schedule Validation` window records the problems. Sometimes it indicates which parameters you must change to correct the disparity.

When schedule validation warnings appear, it is essential to begin narrowing down the scope of the scheduling problem by isolating a single agent, team, contract, shift, or other object until the problematic configuration point is identified and resolved. The most frequent causes of schedule errors and warnings include:

- Incompatibility between day-off constraints and constraints set for weekly hours or schedule planning period hours.
- Incorrectly configured meal and shifts constraints.
- Exceptions inconsistent with contract or rotating pattern constraints.

If you are unsure how to troubleshoot the schedule results or are reluctant to change WFM configuration data, contact Genesys Technical Support.

Data on Active Interactions Disappears

If you close WFM Data Aggregator using the Windows NT Task Manager, you will lose all data on currently active interactions because Windows NT does not allow enough time for WFM Data Aggregator to save the active data.

Forecast Appears Inaccurate

Verify that:

- The statistics being used to collect data for each activity are appropriate.
- The Genesys objects (queues, routing points, and so on) used to monitor statistics are appropriate.
- The Genesys objects are not combining data for interactions that should be associated with different activities. For example, if multiple interaction types are coming through a single routing point, then attached data must be used to filter statistics by interaction type.
- There is no historical data with `null` values in the WFM historical data table `wm_perf_activities.wm_callvol`. You can verify this by exporting the historical data to a local file using the WFM Configuration Utility.
- You have a sufficient quantity of historical data for the forecasting method you are using. The Expert Average Engine requires one full week of historical data and the Universal Modeling Engine requires at least one year of historical data.

Schedules Are Highly Over- or Understaffed

Verify that:

- The schedule was built after a forecast was published.
- There is sufficient flexibility in the working hours constraints for the agents' weekly and schedule-planning periods, configured in the `Contracts` module.
- There is sufficient flexibility in the working days constraints.

- There is sufficient flexibility in the weekend day-off rules for the schedule-planning period.
- The agents' contract availability is flexible enough to cover the open hours for the desired activities.
- Team constraints are not enabled or are configured with enough flexibility to adequately cover the entire day's interaction volumes.
- All shifts have valid configurations.
- All scheduled agents have received the correct number of weekly and/or schedule-planning period hours. If they haven't, this indicates a configuration error.

WFM Configuration Utility Error Messages

- `Database Access Point is not found!`

  Verify that your DAP is selected on the `Connections` tab of the `WFM Configuration Utility Application` object.
- `Too many Database Access Points are specified!`

  Verify that only one DAP is selected on the `Connections` tab of the `WFM Configuration Utility Application` object.
- `Server does not exist or access denied.`

  Verify that the correct database server name is entered in the `DBMS Name` field of the `DAP Application` object's `DB Info` section.
- `Could not resolve service name.`

  Verify that the correct database server type is selected in the `DBMS Type` field of the `DAP Application` object's `DB Info` section.
- `Cannot open database requested in login <database name>. Login fails.`

  Verify that the correct database name is entered in the `Database Name` field of the `DAP Application` object's `DB Info` section.
- `Login failed for user <user name>.`

  Verify that the correct user name is entered in the `User Name` field of the `DAP Application` object's `DB Info` section.

Log Files

WFM log files are intended to be used for diagnosis of configuration and program errors. They should not be used in normal day-to-day operation because they slow WFM performance.

If you contact Genesys Technical Support for assistance with WFM, you might be instructed to turn on logging and attempt to re-create the problem. The logs can provide Technical Support with important information on the nature of the malfunction.

Each component of WFM uses its own log file. For information on configuring logs, see the `Log` option information for each component's `Options` tab.

By default, the WFM log files are stored in `\\<Workforce Management directory>\Logs`.

You can view WFM log files with any ASCII viewer, such as Notepad.

If WFM Data Aggregator fails to start, it writes a message to the `daerror.log` file, which is located in the WFM Data Aggregator working directory. Use this log file to diagnose the problem that prevented WFM Data Aggregator from starting correctly.

Appendix

A List of Terms

Many important terms are used throughout the Workforce Management (WFM) application and documentation. This appendix lists these terms and their definitions in alphabetical order.

A

Abandonment Percentage

The percentage of interactions in which the customer ends the interaction before an agent begins handling it. You can set a value for this service objective in the `Forecast` module's Staffing Build Wizard in WFM Web.

Accrual Rule

See Time-Off Rule.

Activities Groups

Activities Groups are lists that you create. They contain more than one activity, but can be manipulated like a single activity, to avoid repetitive tasks such as configuring a dozen activities for the same agent.

Activity

WFM database objects that represent contact center tasks in which agents can be engaged. You can track and manage these activities through the WFM Web Forecast, Schedule, and Performance modules. You can schedule up to 100 `Activity` objects simultaneously for each site, depending on your specific needs.

There are three types of activities: *immediate work, deferred work,* and *fixed-staff work*. These were formerly called *phone activity, multimedia activity,* and *exclusive activity,* respectively.

See also Multi-Site Activity and Activities Groups.

Activity Set

An activity or group of activities that you can assign to multi-skilled agents for a specified period of time. During that time, the agents can work on no other activities. If the Activity Set was created with `strict checked` selected, then Scheduler cannot schedule meals at times that would interrupt the activity set.

Adherence

A WFM function that enables you to view agent real-time adherence. After you have created the forecast and schedule, adherence shows how closely the actual agent behavior matches (complies with) the schedule. You can configure the length of time that an agent can deviate from the schedule and continue to comply with it. *See also* Performance.

Agent

A database object imported from the Configuration Database that represents a contact center employee. In the WFM Configuration Utility, you can assign `Agent` objects a number of additional properties that pertain specifically to the WFM environment.

Agent State

See Schedule State Group.

Agents Logged In

See Working Agents.

Alert

A Performance module function indicating that administrator action may be necessary. For example, too many calls are being abandoned, or too few agents are logged in.

The `Alert` function uses Master Forecast and Master Schedule data as a baseline for performance levels. The alert appears when current performance statistics deviate from the forecasted or scheduled levels by an amount that you specify.

Alternative Break

Not used in WFM 7.0 or later.

Alternative Time Zone

See User Time Zone.

Application Template

An object in Configuration Manager that contains the default configuration information for an application. WFM requires the following application templates: `WFM Client` (for the WFM Configuration Utility and the WFM Database Utility), `WFM Server`, `WFM Data Aggregator`, `WFM Web`, `WFM Builder`, and `WFM Daemon`. Application templates are used only in Configuration Manager, when installing applications.

Aux Code

See Reason Code.

Availability

A contract parameter that indicates the time period during which an agent is prepared to work. Shifts should fall within the availability period.

Agents can also make personal availability preferences. These personal preferences, if granted, override the agent's contract availability settings.

Availability Pattern

A one-week set of preferred availability, with start times and durations specified for each day. Each agent creates his or her own availability by using WFM Web for Agents.

Availability Preference

A Preference that enables an agent to request specific hours during which they are available to work for single or multiple days. Supervisors grant or decline availability preferences for the whole request period or day-by-day. If they are not granted, availability preferences are treated similarly to shift and day-off preferences. If they are granted, they override the agent's `Contract` availability settings.

Average Handling Time

Also known as AHT. The average amount of time it takes incoming interactions to be distributed to agents. You can configure this statistic in the Configuration Utility to include noninteraction time, such as `After-Call Work`, as a part of the AHT.

Average Speed of Answer

Also known as ASA. The average amount of time agents take to respond to incoming interactions. WFM uses this statistic to calculate staffing forecasts, and as a basis for contact center performance values.

Average Time to Abandonment

Also known as ATA. The average amount of time that callers wait in the queue before abandonment. The calculation considers only the calls that are abandoned.

B

Backup/Restore Utility

See WFM Database Utility.

Bonus Time-Off Hours

Extra time off that is assigned to an agent in addition to regularly accrued or awarded time off. Bonus time off is included in time-off hours carried over, if the allowable number of hours carried over is large enough to accommodate it. You configure time-off rules by using the Time-Off Rules module in the WFM Configuration Utility.

Break

A short rest period during an agent's scheduled work time. Breaks can be paid or unpaid.

Budget

An estimated budget based on working hours and the hourly rate of the contact center staffing forecast. The budget is calculated in the staffing forecast, using an average of the number of working hours and the average hourly wage for each contract, multiplied by the number of agents of each contract type. The budget is also displayed in the `Schedule Summary` view as the estimated cost of a schedule.

Business Unit

A database object that represents activities performed at multiple sites. You create business units in the WFM Configuration Utility and assign already existing sites to them. A site can belong to only one business unit. Formerly called *virtual PABX, virtual switch,* or *virtual contact center.*

Business Unit Staffing

The total staffing requirements for a business unit. Staffing requirements are different for each activity within the business unit. A staffing requirement forecast may be calculated at the business unit level and then split to the individual sites that handle the activities. Or, you can build staffing requirement forecasts separately for each site included within the business unit.

The approach that you take will depend on the type of routing used within the business unit.

C

Calculated Staffing

A staffing forecast based on an interaction volume/AHT forecast, using service-objective criteria that you specify while building the staffing forecast.

Calendar

A WFM feature located in WFM Web for Supervisors that enables supervisors with appropriate security access to view, add, modify, and delete availability, exceptions, working hours, shifts, and time off for a site, team, or agent. You can view and modify preference statuses by using the Calendar. You also set time-off limits in the Calendar module. Formerly called *Planner*.

Calendar Item

Each shift, exception, preference, and so on that appears on the Calendar. You can add and edit Calendar items and, when appropriate, change their status.

Calendar Logic

The hierarchical ranking of exceptions, preferences, shifts, working hours, time off, and availability used in the Calendar and by Scheduler. This ranking indicates to Scheduler which items must be incorporated and, among those that can be either incorporated or denied, which should be allotted first. Granted items are incorporated into schedules; Preferred items might be incorporated, depending on other scheduling constraints. The hierarchy determines which item takes priority when more than one is entered for the same agent at the same time.

Call Volume

See Interaction Volume.

Carry-Over

A date that you define, on which a specified number of each agent's total time-off hours (unused time-off hours plus any bonus time-off hours) are transferred forward to the new year. You must set the number of hours that can be transferred for each agent. *See also* Time-Off Rule.

Comments

Information about agents, workload forecasts, staffing forecasts, and schedules that you enter in special dialog boxes within WFM Web.

Compliance

See Adherence.

Configuration Component

A set of objects created in Configuration Manager and the WFM Configuration Utility that defines some aspect of the WFM environment.

Configuration Manager

A Genesys Framework tool that you use to set up the database environment during installation of any Genesys product, release 6 or later. You use Configuration Manager to configure WFM application settings, and connections between WFM and other Genesys components, such as Stat Server and Configuration Server.

Consistency Check

An automatic assessment for some user-entered settings that enables WFM to identify some incompatible constraints. For example, WFM checks part-day exceptions to determine whether they are valid or invalid, and it checks contract working hour and working day settings for internal consistency.

Contact Center

See Site.

Contract

Describes categories of employees for scheduling and tracking purposes—for example, full-time, part-time, seasonal, contractor, salaried, and commissioned. Contract parameters include working hours, settings for required days off, and profile agent configuration. Formerly called *employment type*.

D

Data Aggregator

See WFM Data Aggregator.

Daylight Saving Information

Time offsets that you configure to ensure that WFM takes daylight saving time into account when creating forecasts, schedules, adherence and performance monitoring, and reports. Formerly called *PABX time offset information*.

E

Employee

See Agent.

Employment Type

See Contract.

Error

See Schedule Validation Error.

Event

A specific instance when a factor is in effect. You define an event by specifying the appropriate factor and the dates when it will affect site operations. Examples of events include advertising campaigns, catalog mailings, and holidays that affect interaction volume. You do not have to specify events for forecasting, but events provide a useful tool for fine-tuning an interaction volume forecast. *See also* Factor.

Exception

Any time during an agent's schedule when the agent is not performing activity work. Examples of exceptions include long lunches, meetings, training, and child care. *See also* Exception Type.

Exception Type

A category, that you define, of time off or nonactivity work that affects scheduling. Exception types are created to fit the business rules for a site. Exception types include information on compensation, whether the exception is a working or nonworking exception, and whether the exception type should be used when scheduling meetings. See also Exception.

Exclusivity Set

See Activity Set.

Expert Average Engine

A forecasting method that uses statistical analysis of historical data to produce day-of-week, weekly, and (if sufficient historical data exists) yearly trend patterns. At least one full week of historical data is required in order to use the Expert Average Engine; at least six weeks is recommended for high-quality daily and weekly results. The impact of events, such as marketing campaigns, is applied directly to the forecast day-of-week and weekly curves. For this reason, this engine is best suited to sites with fairly stable interaction patterns.

Exporting

Enables you to save forecast and historical data to files that you specify. You perform exports by using the `Import/Export Data` module in the WFM Configuration Utility. *See also* Importing.

Extracting

Enables you to extract the forecast and schedule information in the Master Forecast and in the Master Schedule in the Workforce Management database to scenarios that you specify. You extract data by using the `Publish Forecast` or `Publish Schedule` functions in WFM Web. *See also* Master Forecast and Master Schedule.

F

Factor

Anything that is expected to affect the interaction volume for particular activities, and therefore staff and schedule requirements. For example, a special promotion or a new advertising campaign may require additional staff. WFM takes such factors into consideration as it forecasts agent requirements and creates schedules. Events are built based on factors. *See also* Event.

Filter

An option for changing the view settings of a WFM Web for Supervisors window.

Forecast

A prediction of interaction volume and average handling time for a future period, based on historical information for similar periods. If sufficient historical data is unavailable, WFM creates forecasts from templates or numbers that you enter.

Historical data is collected automatically from Stat Server for all types of transactions by using computer-telephony integration (CTI), an event-based technology, rather than automatic call distribution (ACD) sampled data. This makes it possible to forecast for any media type.

Full-Time Equivalent

Also known as an FTE. An abstract term used to quantify a forecast and budget in tangible, human terms. For information about how WFM calculates an FTE, see “Endnote 1” on page 330.

H

Headcount

The number of agents scheduled for a certain timestep. For more information, see "Number of Agents – Scheduled" on page 324.

Historical Data

Records of previous contact center performance stored in the WFM database. You can import historical data that was collected prior to installation of WFM if it is in the form of comma-delimited text files (CSV format). Large amounts of reliable historical data are the most accurate basis for forecasting.

Hot Standby

A high-availability architecture that includes a second WFM Data Aggregator server that is initialized and ready to take over if the primary server terminates unexpectedly. The second server is synchronized with the first, so there is no loss of data during the transition.

I

Importing

Enables you to apply previously collected historical data to new forecasts by using the `Import/Export Data` module in the WFM Configuration Utility to import the historical data. Importing historical data is usually part of the initial WFM configuration. Afterward, WFM Data Aggregator collects historical data automatically as it runs, or, if you prefer, you can import historical data manually on a regular basis. *See also* Exporting.

Indirectly Occupied Time

The percentage of time that agents are scheduled for work but are not directly interacting with customers. For example, agents might be starting their computers, or they might be away from their desks.

Interaction Volume

The number of interactions per a specific unit, such as timestep, day, month, and so on. Interactions may include not only calls, but also e-mail, faxes, Web-based chats, and so on.

Intra-Day Schedule

A section of the Schedule module that displays the schedule for the selected day(s).

Intra-Day Views

Schedule and performance information displayed in WFM Web.

The Schedule `Intra-Day` windows show agent schedules for the current day and enable you to make immediate adjustments to the schedule when necessary—for example, moving or cancelling breaks during an unexpectedly busy period.

Through graphs and tables, the Performance `Intra-Day` window displays the current day's actual versus scheduled status.

L

Log Files

Files that contain information about what a component does and how it is performing. You (or Genesys Technical Support) can use log files for error tracking. Each WFM component uses its own log file, which is usually stored in the `Workforce\Logs` directory. If you are using the Framework Management Layer, you can send status information for WFM Server, WFM Builder, WFM Daemon, and WFM Data Aggregator to the `Centralized Logging` console.

Long Period

See Schedule Planning Period.

M

Marked Time

A period that you have indicated in one of the Schedule Intra-Day views as belonging to one of the marked-time types configured in the WFM Configuration Utility Marked Time module. You can configure as many marked-time types as you want.

Marked time is extremely flexible. It can be used to distinguish any period that you want to view and report on as belonging to a specific category. For example, you might use marked time to indicate overtime hours, so that you can view them in the Schedule Marked Time Report or the Schedule Marked Time Totals Report.

Master Forecast

A forecast published to the WFM database that is available to any authorized user at any time. If you want, you can extract forecast data from the Master Forecast to a scenario of your choosing. *See also* Extracting.

Master Schedule

A schedule published to the WFM database that is available to any authorized user at any time. If you want, you can extract schedule data from the Master Schedule to a scenario of your choosing. You must have data published to the Master Forecast for a particular time range in order to build useful schedule scenarios. Otherwise, the Scheduler will have no target staffing requirements against which to build the schedule. *See also* Extracting.

Maximum Occupancy

The maximum percentage of time that an agent is working while logged in. This is a service objective that can be specified when building a staffing forecast.

Meal

A specific break period during an agent's scheduled work time, usually paid.

Meeting

An exception type that you configure using the Meeting Planner or the Meeting Scheduler. Scheduler sets the time for meetings after you specify all attendees and meeting parameters (possible dates and time, recurrence rules, and so on). The scheduling algorithm finds the optimum time to schedule the meeting while it builds agent schedules, and it adds a `Meeting` exception to each attendee's schedule. You can also manually assign meetings to agents at any time.

Modules Pane

A section of the WFM Web for Supervisors and WFM Configuration Utility interfaces. You use this pane to select the module that you want to use on the working pane of the interface. The modules that are available depend on your security permissions. *See also* User Security.

Multi-Site Activity

A collection of activities performed at multiple physical sites. Multi-site activities enable you to view several local activities as one WFM object. The performance information is split among the sites that perform the activity. You can build interaction volume forecasts, staffing forecasts, and view contact center performance for multi-site activities. Formerly called *virtual activity. See also* Activity and Multi-Site Activity Forecast.

Multi-Site Activity Forecast

A forecast for an activity that is composed of various single-site activities at multiple local sites. Creating forecasts for multi-site activities is slightly different than for single-site activities. Because multi-site activities are split among different sites, you must also split the forecast interaction volume and staffing requirements. Formerly call *virtual forecast*. *See also* Multi-Site Activity.

Multi-Skilled Agent

An agent who is qualified to work on multiple activities, and who may therefore be performing various different types of work during a shift. Multi-skilled agents can greatly increase contact center efficiency. However, if multi-skilled agents are receiving too many interaction types to handle productively, you can control the types of activities they do during set parts of the day, using task sequences. *See also* Task Sequence.

Multi-Skilled Equivalent (MSE)

A WFM calculation of the number of agents required in order to handle the forecast workload, which includes and accounts for agents who have multiple skills. An agent can be scheduled to work only part of a time interval, and only the fraction of the time period during which she works is counted—and the value for staffing is expressed as a fraction.

The Multi-Skilled forecasting algorithm takes into account how many agents (with their various skill sets) could be available to work on each Activity, as well as how the occupancy of an average agent would be divided among this Activity and the other Activities on which the agent could work.

When building a schedule, WFM can optionally create the staffing forecast in MSEs while taking into account those agents for whom the schedule is being built, as well as those agents for whom schedules have already been built.

N

Number of Agents

The headcount scheduled for a certain timestep. Also known as *Agents in Seats*. For more information, see “Number of Agents – Scheduled” on page 324.

O

Objects Pane

A section of the WFM Web for Supervisors and WFM Configuration Utility interfaces. You use this pane to select the specific object or objects to configure, or about which to view data, on the working pane of the interface. The objects that are available for selection on the `Objects` pane vary, depending on your selection on the `Modules` pane and your security permissions. *See also* Modules Pane and User Security.

Optimization

The degree to which a schedule precisely correlates staffing levels with staffing requirements. Optimization is always a goal, but you can set it to be a higher or lower priority, depending on how many agent preferences should be fulfilled. Configuring optimization allows a balance between agent satisfaction levels and workload demands.

Overlap Template

A type of forecast template that you can use to replace historical data in a forecast. For example, if you have no historical data for a certain time period, apply an overlap template to fill in the gap.

Overstaffing

More agents have been scheduled than are required for the workload.

Overtime

Hours worked over and above the standard working hours. You configure overtime rules in WFM Web for Supervisor in the `Schedule > Master Schedule > Overtime Requirements` module.

P

PABX

See Site.

Paid Hours

The total number of hours that an agent works, including meals and paid breaks. This number may not correspond to the total number of hours the agent spends at work, because it does not include unpaid time, such as unpaid breaks.

Pending Schedule Changes

Changes to the Master Schedule or a schedule scenario made by a user who does not have the `Approve Changes` security permission enabled. Pending changes are visible only to the user who created them, and to the qualified user who reviews them and decides whether they should be included in the official version of the schedule.

Performance

A measure of the extent to which actual site indicators, such as average speed of answer, service level, interaction volume, and so on, correspond with the forecast and scheduled values. You can track performance by using the `Performance` module in WFM Web for Supervisors.

Planned Overhead

The percentage of time that agents are *not* handling interactions or performing direct contact center work. For example, an agent might be taking a break, participating in a training session, or meeting with peers or supervisors.

Formerly named Working Overhead.

Planner

See Calendar.

Planner Logic

See Calendar Logic.

Policies Object

A configuration object that defines a rule governing the work schedules of agents. `Policies` objects include agent work times, break times, available shifts, and any other constraints that affect scheduling, whether set by the company, labor unions, country or local laws, or any other source. You define these policies as WFM objects by using the WFM Configuration Utility. WFM then considers them when making forecasts and creating schedules.

Preference Fulfillment

The percentage of schedule variations requested by agents, such as days off, specific shift times, and availability, that were assigned in the schedule. Because having preferences scheduled is important for agent satisfaction, WFM enables specified levels of preference fulfillment to be included in the schedule building process. You can also set priorities for which agents' preferences are most likely to be fulfilled, based on rank, seniority, or both.

Preferences

Agent requests for particular shifts, days off, availability, and time off.

Profile

An agent type that you define, composed of a contract plus a skill set, or based on an actual agent. Scheduler uses profiles to create a type of generic schedule called a *Profile Schedule* to which you can then assign actual agents. *See also* Profile Schedule and Scheduling, Profile-B based.

Profile Schedule

A schedule created using profiles. You can create a schedule by using only profiles, or by using a combination of profiles and actual agents. You can assign to profile schedule slots agents who are not already incorporated into the schedule as real agents.

Publishing

Publishing saves a forecast scenario to the database, which means that you can use the forecast to create agent schedules. A published forecast is available to any authorized user at any time. This forecast is called the `Master Forecast`.

Publishing a schedule saves schedule scenario data to the `Master Schedule` in the WFM database. Until you publish a schedule, it is not available for tracking in the `Adherence` and `Performance` modules.

Q

Quality of Service

One or more statistics that WFM uses to compare the actual values with the service objectives projected in the schedule for each activity. This includes statistics that track service level and average speed of answer. It is used for immediate activities.

R

Real-Time Agent Adherence

A WFM feature that shows monitors how well agents are complying with their schedules.

Reason Code

Information entered by an agent that supplements real-time agent states. A reason helps define the precise nature of the agent state to which it is attached. In order to use reasons, you must have either a switch that supports the inclusion of reason codes with Genesys TEvents or a custom agent desktop that adds reason codes. Formerly called *aux code*.

Report Viewer

A WFM module that displays all information contained in reports, prints the reports, or exports them to files in various formats.

Required Staffing

Staffing requirements that you set, in contrast to those established by WFM. You can set these requirements well in advance for hiring and budgeting purposes, and then compare these requirements to the staffing forecast generated using historical data or templates. Use of required staffing is optional. You can enter required staffing information in the `Staffing Intraday` window or load it from the appropriate template. You can also copy it from calculated staffing forecast data.

Rescheduling

The process of rebuilding a schedule after the schedule has been modified.

Rotating Pattern

A set of weekly schedule patterns that you can have Scheduler assign to agents. The weekly pattern can include a combination of shifts, days off, specified working hours, and availability periods. For example, you can define a weekly pattern called `Weekends Off` (`WOff`) and one called Monday and `Tuesday Off` (`MTOff`), and then create a rotating pattern consisting of a 4-week sequence of three `WOff` shifts followed by one `MTOff` shift. This ability to create rotating shift sequences permits enormous scheduling control.

Rotating Schedule

See Rotating Pattern.

S

Schedule

An arrangement of shifts, breaks, meals, exceptions, and so on, based on the predicted workload and the available agent pool. WFM builds schedules that are optimized within the site’s business constraints. Constraints include available people with required skills, service-objective requirements, employment contracts, business policies, and agent preferences. An optimized schedule ensures the least-possible overstaffing while still meeting service objectives.

Schedule Coverage

How well a schedule covers the forecasted staffing requirements.

Schedule Planning Period

A period of time that you set, from two to six weeks or a calendar month, which Scheduler then uses when assigning working hours and required days off. The schedule planning period enables supervisors to ensure that agents receive the number of hours and days off specified in their contracts. WFM runs a consistency check to identify cases in which the settings for weekly working hours are inconsistent with those assigned for the schedule planning period.

Note: Although the consistency checks are designed to eliminate as many inconsistencies as possible, some configuration discrepancies may not appear until after you build a schedule.

See also Consistency Check.

Schedule Server

A component that no longer exists in Genesys WFM 7.0 and later. *See* WFM Builder.

Schedule State Group

A collection of schedule states that is linked to a site. Schedule State Group configuration is very important in order to correctly track adherence. You can include the following schedule states in schedule state groups: breaks, meals, exception types, and activities configured for the site, `Day Off`, `Time Off`, and `No Activity`. You associate each schedule state group with one or more Genesys events, such as `CallRinging` or `WaitForNextCall`, and you can also include an additional reason code (formerly an aux code) that further identifies what the agent is doing. *See also* Reason Code.

Schedule Summary

Both a view and a report in WFM that display a schedule's service objectives, interaction volume, average handling time, budget, and number of agents.

Schedule Validation Error

A scheduling problem severe enough to terminate the schedule building process. Errors are usually caused by incorrect configuration information, but some are more serious and must be reported to Genesys Technical Support. For a complete list of errors, see the "Schedule Validation Errors" topic in *WFM Web for Supervisors Help*. *See also* Validation.

Schedule Validation Warning

A warning issued during scheduling. The scheduling algorithm ignores the encountered problem and goes on. When the scheduling process generates (and stacks) too many warnings, memory management problems can yield unrecoverable errors. *See also* Validation.

Scheduling, Profile-Based

A scheduling method that enables the creation of blank schedules—that is, schedules that are constructed from empty shift slots rather than by assigning actual agents to the specific shifts. Agents are assigned to the schedule slots after the schedule is built. Using blank schedules, you can construct schedules before hiring employees, or have agents bid on desirable schedule slots. *See also* Profile Schedule and Profile.

Security Access

Limitations for certain users on access to information about some sites or objects. You configure security settings in the `User Security` module in the WFM Configuration Utility. You can customize user security so that only sites and objects for which the user has security authorization appear in WFM tree views. *See also* User Security.

Service Level

A customer service goal that you define as the percentage of interactions handled within a time limit. `Service Level` is one of the service objectives that you can set when building a staffing forecast. WFM will receive actual Service Level statistics from Stat Server, and several views and reports within WFM allow you to compare actual vs. forecasted and scheduled Service Levels.

Service Objective

The customer service goals that you set for `Service Level, Occupancy, Average Speed of Answer, Abandonment%`, and so on. You set values for these goals in the Forecast Staffing Build Wizard in WFM Web for Supervisors. *See also* Service Level, Maximum Occupancy, Average Speed of Answer (ASA), and Abandonment Percentage.

Shift

The possible work times at a site. Shifts are defined by time of day, duration, days of the week, and so on. For example, you might have first, second, swing, night, front-of-week, or back-of-week shifts.

Single-Skill Equivalent (SSE)

A WFM calculation of the number of agents required in order to handle the forecast workload, with the assumption that each agent has only one skill. Because multi-skilled agents are more efficient than single-skilled agents, WFM factors in an efficiency constant to reflect accurately the equivalence between single-skill equivalents and the actual agents who are being scheduled. *See also* Multi-Skilled Equivalent.

Site

The locations associated with an enterprise. Sites *may* correspond to switches in Configuration Manager. Users must have appropriate security access to view and make changes for sites. You can associate multiple sites to form a business unit. Formerly called *contact center* or *location*. *See also* Business Unit.

Site Rule

Defines a site-specific parameter. You can set the `Minimum Duration Between the End of the Day and Start of Next Working Day`, `Maximum Start Time Difference for Members of the Same Team`, and `Schedule Planning Period Type` parameters on the `Contracts General` tab.

Skill

A work-related expertise, such as `Billing` or `Spanish`. Each work activity in WFM has a set of one or more skills and skill levels associated with it, and an agent must possess those skills in order to be scheduled to work on that activity. You define skills in Configuration Manager, and they become available in WFM after you synchronize the WFM database with the Configuration Database in the WFM Configuration Utility. Skill updates appear in WFM immediately, through automatic synchronization that WFM Data Aggregator performs. If a skill is required for an activity, all agents scheduled for that activity must have that skill.

Soft Restart

A feature that enables WFM Data Aggregator to accommodate configuration changes without requiring a restart.

Split Interaction Volume

Division of the interaction volume forecast for a multi-site activity among the single-site activities that make up the multi-site activity. If several single-site activities are open, WFM splits the volume by using the ratio of the number of agents available to work each single-site activity, as determined by their skill-sets, whether they are multi-skilled, and their availability at a given timestep. You lose coverage for the predicted interaction volume if none of the single-site activities is open during a particular timestep when the multi-site activity is open and has a forecast interaction volume. *See also* Multi-Site Activity and Multi-Site Activity Forecast.

Split Staffing

A division of staffing from the staffing forecast scenario of a multi-site activity. If a multi-site activity has one or more associated activities, you can use the Staffing Split Wizard to split the result between associated activities after building the calculated and required staffing. This functionality is available only within a forecast scenario. *See* the Forecast > Forecast Scenarios > Staffing Split Wizard topic in *Supervisor Help*.

Staffing

The number of agents with certain skills required in order to meet a certain interaction volume at a certain time.

Statistic

WFM Data Aggregator collects, from Stat Server, information about statistics that are specific to WFM, such as `Interaction Volume`, `Handle Time`, and `Quality of Service`. Use these statistics to assess contact center performance and agent-adherence levels, as well as to build historical data for future forecasting.

Suitability

The extent to which a schedule minimizes occasions when the number of agents working is greater (overstaffed) or less (understaffed) than the number necessary to handle the actual workload.

Swapping

A feature that enables contact center managers to go into a published schedule and manually exchange agent schedule assignments. This feature enables customized preference fulfillment in cases where an agent with less seniority or a lower rank has had a preference granted in place of a more senior or highly ranked agent.

Synchronization Constraint

A WFM parameter that you can set to ensure that an agent starts each workday at the same time for a specified number of weeks, or for an entire schedule period. This feature enables more fixed, predictable schedules. Synchronization includes a `Flexibility` option, which allows Scheduler to vary the schedule start and end times within a specified range. Allowing some flexibility optimizes schedules.

Synchronization with Configuration Manager

A process that brings the data in the WFM database into correspondence with the data in the Configuration Database. Synchronization enables changes made to agent, site, users (supervisors or managers), time zone, or skill information in Configuration Manager to appear in WFM. You can use the WFM Configuration Utility to manually perform a complete synchronization or to synchronize only certain object types. In addition, WFM Data Aggregator automatically updates certain agent information and agent skills settings without the need for manual synchronization.

T

Task

An activity that is selected as part of a task sequence. *See also* Task Sequence.

Task Sequence

A defined period of time during which agents can work only on a specified set of tasks (called an activity set). Task sequences enable you to control how much the nature of an agent's work changes during part of a day. You can prevent agents from being asked to jump constantly from activity to activity, a situation that can result in agent confusion and fatigue, and lower productivity. You configure task sequences for shifts. After a task sequence is configured, you can assign it to any compatible shift in the same site. *See also* Activity Set.

Team

A group of agents that is defined to suit scheduling and business requirements. You can organize teams by agent skill sets, schedule, sales targets, achievements, geographies, or any other factor—for example, tax-exempt bond fund specialists, e-mail agents, Christmas sales drive, and platinum customer care. An agent can belong to only one team.

Template

A set of data that you configure as a basis for forecasting, typically for sites that have little or no historical activity, or those with historical data that is incomplete because of outages. Template types include: `Interaction Volume`, `Average Handling Time`, `Service Level`, `Interaction Volume Data Overlap`, `Planned Overhead`, `Indirectly Occupied Time`, `Maximum Occupancy`, and `AHT Overlap`. Use the `Staffing` template to set intra-day staffing requirements.

Threshold

The amount of time before an agent is supposed to enter a particular schedule state; or, after the schedule state ends, the amount of time that the agent can be in that state and still be considered to be adhering to the schedule. For example, suppose that an agent is scheduled to start a shift at 12:00 PM, and the `Start Before` threshold is set to `5 minutes`. If the agent starts the shift at 11:54 AM, which is beyond the 5-minute threshold, this appears on the adherence reports as a nonadherent event.

Time Off

Formerly called *vacation* and of only one type. Now, you can configure multiple types, with different parameters and different time-off rules. In WFM Web for Agents, agents use the `Time Off` module to view, request, and remove time off. *See also* Time-Off Type, Time-Off Limit, and Time-Off Rule.

Time-Off Limit

A feature located in the `Calendar` module of WFM Web for Supervisors. Use it to set the maximum number of agents in each category (`Activity, Team,` and `Site`) who may have time off during a particular timestep. You can set only one time-off limit for each time-off type. Formerly called *vacation limit*.

Time-Off Rule

Parameters that define the accumulation of accrued time off, the allocation of awarded time off, when and how many time-off hours can be carried over from year to year, the granting of time-off requests, and so on. You create these rules and associate them with agents in the `Time-Off Rules` module of the WFM Configuration Utility. Formerly called *accrual rule*.

Time-Off Type

A module in the WFM Configuration Utility that you use to create the different time-off types that you want to assign to agents and track using reports. You can configure one or more time-off rules for each time-off type. *See also* Time-Off Rule.

TimeProfile

A Stat Server parameter that WFM Data Aggregator uses to order statistics for WFM activities based on a specific interval of time. This time interval is configured in Stat Server as the `TimeProfile` parameter.

TimeRange

A Stat Server parameter that WFM Data Aggregator uses to request that service-level statistics be calculated based on the specified time interval. Usually, service level is calculated as `X% of calls answered in Y seconds`. The Y seconds must be configured as the `TimeRange` parameter.

Trading

Enables agents with compatible schedules to trade them. Agents can do this by using the WFM Web for Agents interface. Supervisors can view, approve, and decline trades by using the WFM Web for Supervisors interface. Agents can propose trades to all agents with compatible schedules, or they can send trade invitations only to specific individuals. Agent trades that fulfill all constraints are automatically accepted, reducing the time needed for supervisors to review trades.

Tree View

The lower-left pane (the Objects pane) of the WFM Configuration Utility and WFM Web interfaces contains a tree structure that displays some objects. The top level in the hierarchy represents the enterprise, and under this level you will see objects associated with whichever module is selected on the `Modules` pane, which is located above the `Objects` pane.

U

Understaffing

Fewer agents have been scheduled than are required for the workload.

Universal Modeling Engine

A forecasting method that uses a complex algorithm to identify trends and patterns in historical data, and then creates a forecast based on these trends and patterns. The Universal Modeling Engine requires more than one year's worth of historical data. The engine is configured to disregard days in the historical data that contain special events if no such events occur during the forecast period. This eliminates some misleading "noise" from the forecasts. If an event occurs in the forecast, the impact is extracted from historical data and applied to the baseline forecast. The Universal Modeling Engine is best suited to sites with a large quantity of high-quality historical data.

Unplanned Overhead

The percentage of agents who are being paid, but who are not working. For example, an agent may be on time off, out sick, or on a company-sponsored holiday. You can provide an estimate for unplanned overhead when building a staffing forecast, and then compare this to the actual unplanned overhead in the Actual Overheads Report. The unplanned overhead percentage is also used as part of the Estimated Budget calculation.

Note that unplanned overhead percentages do not affect the staffing requirement forecast.

Formerly named Nonworking Overhead.

User Security

A module in the WFM Configuration Utility that you use to set security access limitations for all nonagent users. You can limit access to specific sites, teams, activities, and so on. In some cases, you can configure some users to have view-only access to WFM objects, and others to have full access. You can also grant permission to edit the schedule without having the changes incorporated into the official version of the schedule. *See also* Security Access, Pending Schedule Changes, and Modules Pane.

User Time Zone

A time zone other than the local one. You can choose to have the timesteps in the Performance `Intra-Day` and `Graphs` windows labeled with the time in the user time zone. You do this by selecting the `User Time Zone` button on the `Actions` toolbar or selecting `User Time Zone` from the `Actions` menu.

For example, suppose that your local contact center is in Pacific time, and the current time is 1:00 PM. Furthermore, suppose that the user time zone is eastern standard time, and the current time is 4:00 PM. If you select `User Time Zone`, the labels for the current timestep in the Performance `Intra-Day` and `Graphs` windows change to 4:00 PM. The performance data does *not* change.

Additionally, reports that you view after selecting `User Time Zone` display timesteps that correspond to the time at which the events reported on happened in the user time zone.

Formerly called *alternative time zone*.

V

Vacation

See Time Off.

Validation

The process that Scheduler uses to check schedule settings against various constraints, such as activity open hours and agent availability, when you build a schedule. If there are inconsistencies that might cause the schedule you have configured to be unworkable, Scheduler generates warnings or errors.

If there are only warnings, Scheduler builds the schedule and displays the warnings in the `Schedule Validation` window. These short warnings indicate what you should do to correct the problem. For a list of schedule validation warnings, with explanations of their meanings, see the "Schedule Validation" topic in *Supervisors Help. See also* Schedule Validation Warning.

More serious inconsistencies result in schedule errors, which prevent Scheduler from publishing the schedule at all. For a list of schedule validation errors, with explanations of their meanings, see the "Schedule Validation" topic in *Supervisors Help. See also* Schedule Validation Error.

Version

Information about the release number and database version of the instance of the WFM Configuration Utility, WFM Database Utility, or WFM Web you are running. To see this information, click `About` on the main toolbar in any of these applications. The `About` window displays the program release number, database version, database update status, data source, and user name. If the WFM database has not been updated and therefore is not compatible with the current release of WFM, the `Database Update` field in the Configuration Utility About window appears in red.

Virtual Activity

See Multi-Site Activity.

Virtual Agent

Not used in Workforce Management 7.1 and later.

Virtual Contact Center

See Business Unit.

Virtual Forecast

See Multi-Site Activity Forecast.
See also Split Interaction Volume.

Virtual Switch

See Business Unit.

Virtual Team

Not used in Workforce Management 7.1 and later.

Virtual Workforce

Not used in Workforce Management 7.1 and later. *See* Business Unit Staffing.

W

Warning

See Schedule Validation Warning.

Weekly Pattern

A sequence of days configured to be part of a rotating pattern. Weekly pattern settings include days off, shifts, start times, and paid hours.

WFM Builder

A WFM server that builds the WFM schedules. This functionality was formerly provided by Schedule Server.

WFM Configuration Utility

A WFM application that you can use to configure enterprise objects such as `Agents`, `Activities`, and `Rotating Patterns`; Policies objects such as working hours, activity open hours, and time-off rules; and user security settings; and that you can use to import and export historical data. This functionality was formerly provided in the Workforce Manager application.

WFM Data Aggregator

A WFM server that collects data for each activity, such as the number of interactions or the average handling time. The data is compared to planned values in the `Adherence` and `Performance` modules.

WFM Database Utility

A utility that includes various database-related functionality, including database creation, backup/restore, updating, and maintenance. The backup feature copies all of the WFM database tables into a local file in Microsoft Access database (`.MDB`) format. The restore feature saves the data from the `.MDB` file to the WFM database.

WFM Reports Server

A WFM server dedicated to creating the WFM reports. Starting with Workforce Management 7.2, a separate WFM Web application is used as the dedicated reports server. In pre 7.2 releases, WFM contained a WFM Reports Server component.

WFM Server

A server that manages all the requests from the WFM Web application—for example, retrieving agent schedules upon request and providing them to WFM Web. WFM Server manages the requests and responses from WFM Web applications, from the WFM database, and from all the other WFM components (such as WFM Builder).

WFM Server also writes to the WFM database any changes made in the `WFM Web Schedule` window.

WFM Web

The WFM component that enables agents and supervisors to harness the power and convenience of the Web to access and use WFM. WFM Web makes real-time and past performance data available whenever it is needed. WFM Web has two parts: Supervisor and Agent.

Supervisors can use WFM Web to create forecasts, create and monitor schedules, make schedule changes, view and approve or deny schedule trade requests, view contact center performance, monitor real-time agent adherence, and view reports.

Agents can use WFM Web to check scheduled activities and working hours; communicate preferred shift, working hours, and time-off requests to administrators; and make schedule trades with other agents.

What-If Scenario

A feature within the `WFM Web Per`formance module that you can use to create a model of intra-day contact center performance under different conditions that you configure. With the What-If Scenario feature, you can modify several performance values and then recalculate the service-objective impact based on the modified data. For example, you can use a what-if scenario to assess the potential impact of a change in site staff attendance, or the effect of a higher call volume on service objectives.

Workforce

See Staffing.

Workforce Access Group

Not used in Workforce Management 7.1 and later. *See* User Security.

Working Agents

Those agents who are logged in.

Appendix

B

Metrics

This appendix describes metrics for:

Note: A *period* in these metrics refers to the specific granularity of the report being run. For *Intra-day* granularity a period is 15 minutes; for *Daily* granularity a period is 1 day; and so on.

Schedule Summary View and Report

Number of Agents

Number of Agents is also called *Headcount* or *Agents in Seats*. If an agent is multi-skilled and is scheduled for more than one activity for a given period, he will actually count as 1 headcount for *each* of the activities for which he is scheduled. Thus, in comparison with Coverage, Headcount can *double count* an agent if he is multi-skilled and is scheduled for more than one activity during a particular period.

For example, if an agent is scheduled for two activities in a particular 15-minute timestep, he might count as 0.5 towards the Coverage of each of those activities, but he would count as 1 Headcount towards each of those activities. Unlike Coverage, where an agent could count towards partial coverage if he's scheduled for something other than activity work for part of a 15-minute timestep, for Headcount it is *all or nothing*. This means that as long as an agent is scheduled for at least 1 minute of work on an activity during a given 15-minute timestep, he will count as 1 Headcount towards that activity.

How the Total / Average is Calculated

The value for Headcount in the totals/averages row at the top of this view (or bottom of the report) is a simple average of all the values for all the timesteps of the selected time period (which can be: Intra-day, Daily, *n*Weeks, or Monthly).

Service Level – Scheduled

The Service Level that you should achieve on this activity, with the number of agents currently scheduled for this activity. Due to agent rounding, this value may differ from the original service level objective that was stated when the staffing forecast was built.

For example, WFM may forecast a staffing requirement of 12 agents to meet a service level objective of 80% of interactions answered within 20 seconds. But a Service Level Percentage Forecast may report a higher number, such as 83.48%. This is because 12 was the minimum number of agents required to meet the 80% service level objective but, with that number of agents, the contact center can be expected to achieve a slightly better service level than 80%. With one less agent (11 agents), the contact center would not be expected to achieve the 80% service level.

How the Total / Average is Calculated

A weighted average, calculated across the open hours:

AVG SL Scheduled = S (*Scheduled* SL_i * *Forecasted* IV_i) / S (*Forecasted* IV_i)

Where:

Scheduled SL_i= Calculated Service Level based on the number of scheduled agents for $timestep_i$

Forecasted IV_i= Forecasted Interaction Volume for $timestep_i$

$timestep_i$= timestep number over the open hours

Service Level – Forecasted

The Service Level Percentage objective that you should be able to achieve when staffing with the number of agents from the staffing forecast (a.k.a. “Budget – Difference”).

How the Total / Average is Calculated

A weighted average, weighted by Forecasted IV:

AVG SL Forecasted = Σ *(Forecasted* SL_i * *Forecasted* IV_i) / Σ (*Forecasted* IV_i)

Where:

Forecasted SL_i= Forecasted Service Level for $timestep_i$

Forecasted IV_i= Forecasted Interaction Volume for $timestep_i$

$timestep_i$= timestep number over the open hours

Service Level – Difference

"Service Level – Scheduled" minus "Service Level – Forecasted".

Interaction Volume – Scheduled

The number of interactions that can be handled based on the schedule coverage. Calculated by using the *inverse* of the WFM's staffing forecast algorithm.

WFM uses a *modified Erlang* algorithm to derive Calculated Staffing based on the IV, the AHT, and service objectives stated when building the forecast. Therefore, to calculate the scheduled interaction volume, WFM uses that formula *in reverse*.

How the Total / Average is Calculated

The sum is across the entire report time range.

Interaction Volume – Forecasted

The interaction volume taken from the Master Forecast.

How the Total / Average is Calculated

The sum across the entire report time range.

Interaction Volume – Difference

"Interaction Volume – Scheduled" minus "Interaction Volume – Forecasted".

AHT – Scheduled

The Average Handling Time (AHT) per interaction that you should achieve, based on the schedule coverage. Calculated by using the *inverse* of the WFM's staffing forecast algorithm.

WFM uses a *modified Erlang* algorithm to derive Calculated Staffing, based on the IV, AHT, and service objectives stated when building the forecast. Therefore, to calculated the scheduled AHT, it uses that formula *in reverse*.

How the Total / Average is Calculated

A weighted average, weighted by Forecasted IV:

$$\text{AVG AHT Scheduled} = \Sigma\,(\textit{Scheduled AHT}_i * \textit{Forecasted IV}_i) \,/\, \Sigma\,(\textit{Forecasted IV}_i)$$

Where:

$\textit{Scheduled AHT}_i$= Scheduled Average Handling Time for $\textit{timestep}_i$
$\textit{Forecasted IV}_i$= Forecasted Interaction Volume for $\textit{timestep}_i$
$\textit{timestep}_i$= timestep number over the open hours

AHT – Forecasted

Average Handling Time of interactions, taken from the Master Forecast.

How the Total / Average is Calculated

A weighted average, weighted by Forecasted IV:

$$\text{AVG AHT Forecasted} = \Sigma\,(\textit{Forecasted AHT}_i * \textit{Forecasted IV}_i) \,/\, \Sigma\,(\textit{Forecasted IV}_i)$$

Where:

$\textit{Forecasted AHT}_i$= Forecasted Average Handling Time for $\textit{timestep}_i$
$\textit{Forecasted IV}_i$= Forecasted Interaction Volume for $\textit{timestep}_i$
$\textit{timestep}_i$= timestep number over the open hours

AHT – Difference

"AHT – Scheduled" minus "AHT – Forecasted".

Budget – Scheduled

The budget for this schedule based on the number of agents from the "Coverage – Scheduled" column. The calculation is based on a full-time equivalent's hourly wage, as well as on the Planned Overhead % and

Unplanned Overhead % (which were specified when the staffing forecast was built).

For a 15-minute timestep, the formula is:

(Coverage/4)*((100/(100-Planned Overhead))*
(100/100-Unplanned Overhead)* Hourly Wage)

The unit of measure is in whatever monetary unit was used when the "Hourly Wage" was specified while building the forecast.

How the Total / Average is Calculated

This figure is in the sum across the entire report time range.

Budget – Forecasted

The budget for the schedule based on the number of agents from the "Staffing – Calculated" column, based on a full-time equivalent's hourly wage, as well as the Planned Overhead % and Unplanned Overhead % (specified when the staffing forecast was built).

For a 15-minute timestep, the formula is:

(Staffing/4)*((100/(100-Planned Overhead))*
(100/100-Unplanned Overhead)* Hourly Wage)

The unit of measure is in whatever monetary unit was used when the "Hourly Wage" was specified when building the forecast.

How the Total / Average is Calculated

This figure is in the sum across the entire report time range.

Budget – Difference

"Budget – Scheduled" minus "Budget – Forecasted".

Staffing – Calculated

A value taken directly from the staffing forecast, for the particular timestep.

How the Total / Average is Calculated

The value in the column footer is calculated based on the same approach as what is described for "Coverage – Scheduled".

Staffing – Required

A value taken directly from the staffing forecast, for the particular timestep. It will be populated only if you put some values in the optional *Required Staffing* column in your staffing forecast.

How the Total / Average is Calculated

The value in the column footer is calculated based on the same approach as what is described for "Coverage – Scheduled".

Difference – Calculated

"Coverage – Scheduled" minus "Staffing – Calculated".

How the Total / Average is Calculated

The value in the column footer is calculated based on the same approach as what is described for "Coverage – Scheduled".

Difference – Required

"Coverage – Scheduled" minus "Staffing – Required".

Coverage – Scheduled

The actual amount of time that an agent should count towards coverage of the work in this time period. If an agent is multi-skilled and is scheduled for multiple activities during a given period, he may count fractionally towards the coverage of each activity (for example, as 0.5 toward each of two activities for which he's scheduled).

If an agent has something other than activity work scheduled for part of a period, that will be subtracted from the amount of time he's counted towards the coverage of that activity work. For example, an agent who is scheduled for an activity for a given 15-minute timestep but has a break for the first 5 minutes of that timestep, would count as 0.67 towards the coverage of that activity for that period.

How the Total / Average is Calculated

This figure is in FTEs. For the calculation, see "Endnote 1" on page 330.

The value in the totals/averages row at the top of this view (or bottom of the report) is calculated as follows:

1. WFM calculates the sum of the agents which are covering this activity within each timestep during the day.
2. The value calculated in step 1 is multiplied by 15 minutes in order to get the total time of activity work.
3. The value calculated in step 2 is divided by the value set for `Paid Hours a Day`, which was entered while building staffing forecast for this activity

Coverage – Published

The original values from the "Coverage – Scheduled" column the last time a schedule scenario was published to the Master Schedule.

How the Total / Average is Calculated

The value in the column footer is calculated based on the same approach as what is described for "Coverage – Scheduled".

Coverage – Difference

"Coverage – Scheduled" minus "Coverage – Published".

ASA – Scheduled

The Average Speed of Answer that you should achieve on this activity, with the number of agents currently scheduled for this activity.

The `totals/average` row for ASA Scheduled reports a weighted average, calculated across the open hours and weighted by Forecasted IV (exactly as for "Service Level – Scheduled"):

AVG ASA Scheduled = S ($\mathit{Scheduled\ ASA}_i$ * $\mathit{Forecasted\ IV}_i$) / S ($\mathit{Forecasted\ IV}_i$)

Where:

$\mathit{Scheduled\ ASA}_i$= Calculated Average Speed of Answer based on the number of scheduled agents for $\mathit{timestep}_i$

$\mathit{Forecasted\ IV}_i$= Forecasted Interaction Volume for $\mathit{timestep}_i$

$\mathit{timestep}_i$= timestep number over the open hours

ASA – Forecasted

The totals/average row for ASA Forecasted reports a weighted average, calculated across the open hours and weighted by Forecasted IV (exactly like for "Service Level – Forecasted"):

A weighted average, weighted by Forecasted IV

AVG ASA Forecasted = *S* ($\mathit{Forecasted\ ASA}_i$ * $\mathit{Forecasted\ IV}_i$) / S ($\mathit{Forecasted\ IV}_i$)

Where:

Forecasted ASA_i= Calculated Average Speed of Answer based on the number of scheduled agents for $timestep_i$

Forecasted IV_i= Forecasted Interaction Volume for $timestep_i$

$timestep_i$= timestep number over the open hours

ASA – Difference

"ASA – Scheduled" minus "ASA – Forecasted".

Occupancy – Scheduled

The Occupancy that you *should achieve* on this activity, with the number of agents currently scheduled.

How the Total / Average is Calculated

The `totals/average` row for Occupancy reports a weighted average, calculated across the open hours and weighted by Forecasted IV (exactly as for "Service Level – Scheduled"):

A weighted average, calculated across the open hours and weighted by Forecasted IV:

AVG Occupancy Scheduled = S (*Scheduled* Occ_i * *Forecasted* IV_i) / S (*Forecasted* IV_i)

Where:

Scheduled Occ_i= Calculated Occupancy based on the number of scheduled agents for $timestep_i$

Forecasted IV_i= Forecasted Interaction Volume for $timestep_i$

$timestep_i$= timestep number over the open hours

Occupancy – Forecasted

The Occupancy objective that you *should be able to achieve* when staffing with the number of agents from the staffing forecast ("Staffing – Calculated").

How the Total / Average is Calculated

The `totals/average` row for Occupancy reports a weighted average, calculated across the open hours and weighted by Forecasted IV (exactly as for "Service Level – Forecasted"):

A weighted average, weighted by Forecasted IV:

AVG Occupancy Forecasted = S ($Forecasted\ Occ_i$ * $Forecasted\ IV_i$) / S ($Forecasted\ IV_i$)

Where:

$Forecasted\ Occ_i$= Forecasted Occupancy for $timestep_i$

$Forecasted\ IV_i$= Forecasted Interaction Volume for $timestep_i$

$timestep_i$= timestep number over the open hours

Occupancy – Difference

"Occupancy – Scheduled" minus "Occupancy – Forecasted".

Contact Center Performance Report

Note: The *Difference* calculation is controlled by the WFM Web Application option `RevertDiffCalculation` in Framework's Configuration Manager.
`false` (default): *Scheduled* or *Forecasted* minus *Actual*
`true`: *Actual* minus *Scheduled* or *Forecasted*

This document will use the default value.

Coverage – Scheduled

The actual amount of time that an agent should count toward coverage of the work in this time period. If an agent is multi-skilled and is scheduled for multiple activities during a given period, he may count fractional amounts of time toward the coverage of each activity (for example, 0.5 toward each of two activities for which he is scheduled).

If an agent has something other than activity work scheduled for part of a period, that will be subtracted from the amount of time counted toward the coverage of that activity work. For example, an agent who is scheduled for an activity for a given 15-minute timestep, but who has a break for the first five minutes of that timestep, would count as 0.67 toward the coverage of that activity for that period.

How the Total / Average Is Calculated

This figure is in FTEs. For the calculation, see "Endnote 1" on page 330.

The value in the totals/averages row at the top of this view (or at the bottom of the report) is calculated as follows:

1. WFM calculates the sum of the agents who are covering this activity within each timestep during the day.
2. The value calculated in Step 1 is multiplied by 15 minutes in order to get the total time of activity work.
3. The value calculated in Step 2 is divided by the value set for `Paid Hours a Day`, which was entered while building the staffing forecast for this activity

Coverage – Optimal

The coverage that would have been required in order to meet the original service objectives, based on the actual IV and AHT.

Coverage – Difference

"Coverage – Optimal" minus "Coverage – Scheduled".

Coverage – Percentage

$$\frac{\text{“Coverage – Optimal”}}{\text{“Coverage – Optimal” minus “Coverage – Scheduled”}}$$

in concept: *Optimal / (Optimal - Scheduled)*

Number of Agents – Scheduled

The number of agents scheduled for this period, also known as *headcount*.

How the Total / Average is Calculated

A simple average across the entire report time range. Thus, even if activity is only open for a portion of the day, if this report were run for a intra-day period, the average would be calculated over 96 timesteps.

Number of Agents – Actual

The number of agents who were actually logged in during this period, also known as *headcount*.

How the Total / Average is Calculated

A simple average of the number of time steps when agents were logged in.

Σ ($Agents_i$) / Number of time steps

Where $Agents_i$ is the number of agents logged in (as reported by Stat Server) during $timestep_i$

Number of Agents – Difference

"Number of Agents – Scheduled" minus "Number of Agents – Actual".

Number of Agents – Percentage of Difference

$$\frac{(\text{"Number of Agents – Scheduled" minus "Number of Agents – Actual"})}{\text{"Number of Agents – Scheduled"}}$$

in concept: *(Scheduled - Actual) / Scheduled*

Interaction Volume – Forecasted

The number of interactions forecasted for this period (taken directly from the Master Forecast).

How the Total / Average is Calculated

This Sum is spread across the entire report time range.

Interaction Volume – Actual

The number of interactions actually received. The exact nature of this metric will depend on what Stat Server statistic is configured for Interaction Volume. For example, for voice interactions, normally this is based on Number of Calls Entered.

How the Total / Average is Calculated

The sum is of Interaction Volume for each time step within the report time range.

$\Sigma\ (IV_i)$

Where:

IV_i is the Interaction Volume recorded by Stat Server during $timestep_i$

Interaction Volume – Difference

"Interaction Volume – Forecasted" minus "Interaction Volume – Actual".

Interaction Volume – %

$$\frac{(\text{“Interaction Volume – Forecasted” minus “Interaction Volume – Actual”})}{\text{“Interaction Volume – Forecasted”}}$$

in concept: *(Forecasted - Actual) / Forecasted*

AHT – Forecasted

Forecasted Average Handling Time for this period (taken directly from the Master Forecast)

How the Total / Average is Calculated

A weighted average, weighted by Forecasted IV:

AVG AHT Forecasted = Σ ($Forecasted\ AHT_i$ * $Forecasted\ IV_i$) / Σ ($Forecasted\ IV_i$)

Where:

$Forecasted\ AHT_i$= Forecasted Average Handling Time for $timestep_i$
$Forecasted\ IV_i$= Forecasted Interaction Volume for $timestep_i$
$timestep_i$= timestep number over the open hours

AHT – Actual

Actual Average Handling Time for calls handled during this period. This metric is based on what Stat Server statistics are configured for Total Handle Time and Number of Calls Handled.

How the Total / Average is Calculated

A weighted average, weighted by Number of Calls Handled:

Σ (AHT_i * $CallsHandled_i$) / Σ ($CallsHandled_i$)

Where:

AHT_i= AHT recorded by Stat Server for $timestep_i$
$CallsHandled_i$= Number of interactions handled during timestep_i as recorded by Stat Server.

AHT – Difference

“AHT – Forecasted” minus “AHT – Actual”.

AHT – %

$$\frac{(\text{“AHT – Forecasted” minus “AHT – Actual”})}{\text{“AHT – Forecasted”}}$$

in concept: *(Forecasted - Actual) / Forecasted*

Service Level – Scheduled

The Service Level that was scheduled to be achieved, based on the scheduled number of agents.

How the Total / Average is Calculated

A weighted average, weighted by Forecasted IV:

AVG SL Scheduled = Σ (*Scheduled* SL_i * *Forecasted* IV_i) / Σ (*Forecasted* IV_i)

Where:

Scheduled SL_i= Calculated Service Level based on the number of scheduled agents for $timestep_i$

Forecasted IV_i= Forecasted Interaction Volume for $timestep_i$

$timestep_i$= timestep number over the open hours

Service Level – Actual

The Service Level that was actually achieved. This metric is based on what Stat Server statistics are configured for Service Factor, Number of Calls Distributed, Average Speed of Answer, and Time Range.

How the Total / Average is Calculated

A weighted average, weighted by Number of Calls Distributed:

Σ (SF_i * *CallsDistributedi*) / Σ ($CallsDistributed_i$)

Where:

SF_i= Service Factor recorded by Stat Server for $timestep_i$

$CallsDistributed_i$= Number of calls distributed during $timestep_i$ as recorded by Stat Server. (This value does not appear in the report but is recorded by Stat Server. For more details, see Endnote 2.)

ASA – Scheduled

The Average Speed of Answer that was scheduled to be achieved, based on the scheduled number of agents. Calculated by using the *inverse* of the WFM's staffing forecast algorithm.

WFM uses a *modified Erlang* algorithm to derive Calculated Staffing, based on the IV, AHT, and service objectives such as ASA that were stated when building the forecast. Therefore, to calculated the Scheduled ASA it uses that formula *in reverse*.

How the Total / Average is Calculated

A weighted average, weighted by Forecasted IV:

AVG ASA Scheduled = Σ ($Scheduled\ ASA_i$ * $Forecasted\ IV_i$) / Σ ($Forecasted\ IV_i$)

Where:

$Scheduled\ ASA_i$= Calculated ASA based on the number of scheduled agents for $timestep_i$

$Forecasted\ IV_i$= Forecasted Interaction Volume for $timestep_i$

$timestep_i$= timestep number over the open hours

ASA – Actual

The Average Speed of Answer that was actually achieved. This metric is based on what Stat Server statistics are configured for ASA.

How the Total / Average is Calculated

A weighted average, weighted by Number of Calls Distributed:

Σ (ASA_i x $CallsDistributed_i$) / Σ ($CallsDistributed_i$)

Where:

ASA_i= Average Speed of Answer for $timestep_i$ as recorded by Stat Server

$CallsDistributed_i$= Number of calls distributed during $timestep_i$ as recorded by Stat Server

Abandons Factor – Scheduled

The expected number of abandoned interactions based on the scheduled number of agents. Calculated by using the *inverse* of the WFM's staffing forecast algorithm.

WFM uses a *modified Erlang* algorithm to derive Calculated Staffing, based on the IV, AHT, and service objectives such as Abandonment percentage that were stated when building the forecast. Therefore, to calculate the Scheduled Abandons, WFM uses that formula *in reverse*.

How the Total / Average is Calculated

A weighted average, weighted by Forecasted IV:

AVG AF Scheduled = Σ ($Scheduled\ AF_i$ * $Forecasted\ IV_i$) / Σ ($Forecasted\ IV_i$)

Where:

$Scheduled\ AF_i$= Calculated Abandon Factor based on the number of scheduled agents for $timestep_i$

$Forecasted\ IV_i$= Forecasted Interaction Volume for $timestep_i$

$timestep_i$= timestep number over the open hours

Abandons Factor – Actual

The actual number of abandoned interactions during a specific period. Based on which Stat Server statistics are configured for Abandoned Interactions.

How the Total / Average is Calculated

A weighted average, weighted by Number of Calls Distributed:

Σ ($Abandons_i$ * $CallsDistributed_i$) / Σ ($CallsDistributed_i$)

Where:

$Abandons_i$= Number of calls abandoned during $timestep_i$ as recorded by Stat Server

$CallsDistributed_i$= Number of calls distributed during $timestep_i$, as recorded by Stat Server

Agent Adherence Report

% Adherence Per Day

The percentage of the day during which the agent was adherent to his or her scheduled state.

How the Percentage is Calculated

100 - ((NC+UNC)*100/(ST+UNC))

Where:

NC= Noncompliant time
UNC= Noncompliant time outside of scheduled time
ST= Scheduled time

Endnotes

Endnote 1

The Formula for FTEs

$$FTEs = \sum_{i=1}^{n} (staffing_i \div stepsHr \div paidHrs_i \times (100 \div (100 - pOverhead_i)))$$

Where:

n= Number of time steps in a day (96)
i= Current time step
$staffing$= Calculated staffing requirement
$stepsHr$= Time steps in one hour (4)
$paidHrs$= Paid Hours in a Day as specified in staffing forecast
$pOverhead$= Planned Overhead percentage as specified in staffing forecast

Endnote 2

The Total/Average value of Service Level in the Contact Center Performance report is calculated as a weighted average, where for the weight coefficient we use `TotalNumberCallsDistributed`.

That is, for an Activity when we define the Quality of Service Statistic type in the WFM Configuration Utility, we are required to specify three statistics:

1. Service Factor
2. Distributed Interactions
3. Average Speed of Answer

(plus two time ranges required for Service Factor statistic calculation)

The Number of Distributed Interactions statistic (or `TotalNumberCallsDistributed`) plays the role of the weight coefficient in order to calculate the weighted average value of Service Level per:

Timestep — If we calculate Service Level for the same activity several objects (for example, across some Queues) this gives us the possibility to get an accurate result rather then a simple average.

Day — A weighted average gives a very accurate result in comparison with simple average.

So the calculation of Total Service Level per day is done by the formula:

SUM (SL(i) x TNCD(i))
Service Level Total =
SUM (TNCD(i))

Where:

i= 1 ... 96 (intra-day 15 minute timesteps from 00:00 through 23:45)
SL(*i*)= Service Level value for the timestep (*i*)
TNCD(*i*)= TotalNumberCallsDistributed value for the timestep (*i*)

Here is a simple example of the calculation, using this data:

Table 36: Calculation Example

Timestep	SL	TNCD	TNCDxSL
10:45 AM	60.00	20	1200
11:00 AM	90.00	1	90
11:15 AM	20.00	150	3000
11:30 AM	65.00	35	2275

If we assume that during the day we have only 4 timesteps of historical data, our Total Service Level will be:

60x20 + 90x1 + 20x150 + 65x356565
SL weighted = = = 31.87
20+1+150+35206

Here an example of calculating a simple average:

SL simple average = $\frac{60+90+20+65}{4}$ = 58.7

This example shows that a timestep with Service Level=90 where only one call has been processed should have minimal impact on the overall Service Level for the day, in comparison with a timestep where SL=20 and 150 calls have been processed. This is the reason the calculation is done in this way.

The user won't be able to see `TotalNumberCallsDistributed` in the report, as this value is stored in the WFM database for internal purposes only (in the table `WM_perf_activities` in the field `WM_distrib_calls`, for each activity and for each timestep).

Also keep in mind that `TotalNumberCallsDistributed` is not the same as Interaction Volume, since in general Interaction Volume is configured as `TotalNumberCallsEntered (Answered + Abandoned)`, while `TotalNumberCallsDistributed` is the number of calls which are being distributed from the Queue.

Appendix

C

Multi Forecasting Primer

This appendix describes the Genesys approach to multi-site forecasting in a networked contact center, where some call types and activities are distributed to agents working across multiple sites. It also describes the Genesys approach to multi-skill forecasting, where agents with multiple skills can increase the center's efficiency by performing multiple tasks within a single timestep.

This appendix contains the following sections:

Multi-Site Forecasting

Beginning with release 7.2, a contact center analyst can use Genesys WFM to model a networked contact center, where some call types and activities are distributed to agents working across multiple sites. To model a multi-site environment, follow these steps/guidelines:

Set Up Multi-Site Activities

These multi-site activities are work activities that are handled at the site (child) level, and in the object tree they appear higher in the hierarchy.

Determine the Total Demand

To configure Multi-Site Forecasting (MSF) properly, you need data to inform your choices. To gather that data, you can configure WFM to collect:

- Historical Interaction Volume (IV) and Average Handle Times (AHT) for multi-site activities
- Historical average handle times at the child level

Once you build a volume forecast at the multi-site activity level and understand the total demand for this call type across all sites, you can configure MSF for two scenarios:

Option A: Contact centers that do a percentage allocation across their sites

To configure for this scenario, perform these steps:

1. Split the volume of the multi-site activity to the site level.
2. Build staffing forecasts at the site level for each child activity.

Option B: Virtual contact centers that do routing based on resource availability, open hours, etc.

To configure for this scenario, perform these steps:

1. Split the volume of the multi-site activity to the site level.
2. Build a staffing forecast at the multi-site activity level. (See Figure 34.)
3. Split the staffing forecast to each child activity.

Note: The volume split is the required first step, so that the staffing splitting algorithm understands the demand at each site.

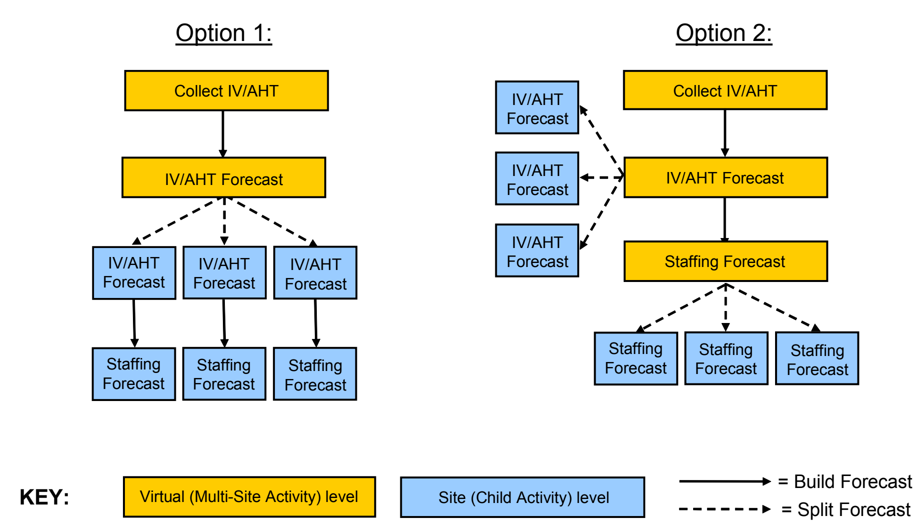

Figure 34: Comparing two multi-site scenarios

Volume Splitting

In a multi-site enterprise, when you split the volume of multi-site activity interaction to the child sites, you must decide which Average Handling Time (AHT) to use:

- AHT collected at the multi-site activity level
- AHT collected at the child activity level

To inform your decision, determine if there is a measurable difference in AHT at the various sites in the enterprise. For example, if one site consists of many less-skilled agents (perhaps they are new to their jobs), you may expect to see a longer AHT at this site for some activities. In this case, you would do well to use the child AHT rather than the multi-site AHT.

Once the volume is split to the child sites, decide if you want to:

- Build staffing forecasts for each activity, at the site level
- Build staffing forecast at the multi-site activity level and *then* split that forecast to the site level

Note that when WFM splits the interaction volume to the child sites, the forecast splitting algorithm considers:

- Agent skills
- Contract availability
- Activity open hours
- Time zones
- Agent hire/termination dates
- Granted, pre-planned items from the WFM Calendar (days off, time off, shifts, working hours, availability, exceptions, and rotating patterns)

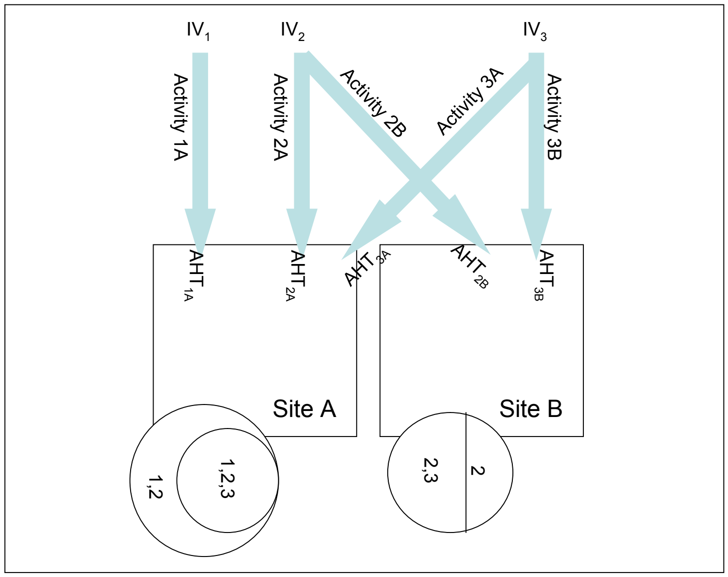

Figure 35: Model of the contact center environment that WFM uses when splitting volumes from the multi-site activity level to the site (child) activity level.

Key to Figure 35

IV—Interaction Volume at the multi-site activity level. There is a separate IV for each of three MSAs (1, 2, 3)**rows**—The distribution of the activity work from the multi-site activity level to the site level.

1, 2, 3—These numbers represent MSAs.

AHT$_{\text{subscript}}$—Average Handle Time. When each MSA is split to the site level, there is a separate set of AHT values for each activity/site combination. As described above, this is an option. The user may also choose to use the AHT collected at the multi-site level, in which case, for example, AHT$_{3A}$ and AHT$_{3B}$ would be equivalent.

Circles—The agent pool at each site. At site A, there are two sets of agents. One set of agents has skills that qualify them to work on activities 1 and 2. The other set of agents has skills that qualify them to work on MSAs 1, 2, and 3. At site B, there are also two sets of agents. One set can only work on activity 2, and the other set can work on either MSA 2 or 3.

Figure 35 Explained

As the activity work is distributed from the multi-site level to the site level, WFM must estimate (for each timestep) the percentage of time that an agent will be handling each type of activity for which she is skilled. In some cases, there is only one choice.

For MSA 1: No agents at site B are skilled to handle that activity. Thus, all the workload must be distributed to site A.

For MSA 3: Agents at both site A and site B who can handle this activity. But the diagram shows other factors to consider in distributing activity 3 work:

- Not *every* agent at every site can handle activity 3.
- Some of the agents who can handle activity 3 can also handle other activities.

Therefore, when WFM estimates for each agent how much of each timestep should be allocated to a certain type of work, WFM will consider:

- the demand for the activity
- the number of agents who can handle that activity across all sites
- the work allocation of these other agents

Volume Splitting Using Percentages

You can specify a percentage to allocate volumes from a multi-site activity to each Child (site) activity or apply a template. The interval can be the entire forecast scenario, weekday, or timestep.

For more information about this feature, see the Supervisor help topic `Forecast > Forecast Scenarios > Volume Split Wizard`.

Staffing Splitting

As described above in Scenario B, for virtual contact centers, you can build a staffing forecast at the multi-site activity level and then split that staffing forecast across the child activities. This allows the enterprise to more accurately model a virtual routing environment where there is an efficiency gain in the way that calls are handled. WFM recalculates service objectives at this multi-site level and makes these calculations available in the Performance and Schedule views, and in reports.

When building the staffing forecast at the MSA level, you may specify the indirectly occupied time (IOT) and service objectives.

However, you cannot specify the hourly wage or paid hours a day when building the MSA staffing forecast. Instead, you specify those values during the splitting process, when you split the calculated staffing from the MSA level to the child activity level.

Notes: Before you split the staffing forecast from the MSA level to the child activity level, you must first split the volume forecast so that the staffing splitting algorithm knows the resource demand at each site.

The staffing splitting wizard gives you the option to consider the AHT values of the child activities. You can use it to better estimate how to distribute staffing requirements across child activities.

Although the staffing splitting wizard splits calculated staffing by default, it offers you the option to split required staffing.

Once the staffing split is accomplished, you can view results data for calculated staffing (and optionally, required staffing) at the child activity level. You can examine this data at the MSA level or as the sum or weighted average of the child activities, in these views:

- Schedule Coverage
- Intra-day Schedule
- Schedule Summary
- Performance views

You can manipulate the MSA staffing results in the same way that you can manipulate child activity staffing. Forecast graphs are also available for MSA staffing.

Multi-Skill Forecasting

A multi-skilled contact center presents an opportunity for increased productivity.

An agent might be idle in a single-skill environment because she cannot answer calls that are queuing for an activity/skill which she may posses—but a skill that the schedule prevents her from using.

In a multi-skilled environment, she can use her additional skills to answer those calls.

Note: A *high-load environment* does not present much opportunity for increased efficiency, because the agents have very little idle time. But in an *overstaffed environment*, agents have more idle time and can use their multiple skills to increase efficiency.

How WFM Supports Multi-Skilled Agents

A multi-skilled agent is qualified to work on multiple activities, and therefore may perform different types of work during a shift.

In a multi-skill environment, an agent may be available for multiple activities during any timestep. That agent can be scheduled to work for an activity for only part of a time interval, and only the fraction of the time period during which she or he works is counted.

Because of this, the value for staffing can be expressed as a fraction. For example, consider this 15-minute timestep:

An agent is scheduled to work on Activity A for 10 minutes and for 5 minutes on Activity B. She is counted as 2/3 (or .667) of an agent for Activity A, and as 1/3 (or .333) of an agent for Activity B.

Enabling Multi-Skill Support

To enable Multi-Skill Support, follow these steps:

1. Open Configuration Manager.
2. Open the WFM Server application.
3. From the Options tab, open the section `ScheduleService`.
4. Create a new option named `SplitMS` and give it the value `true`.

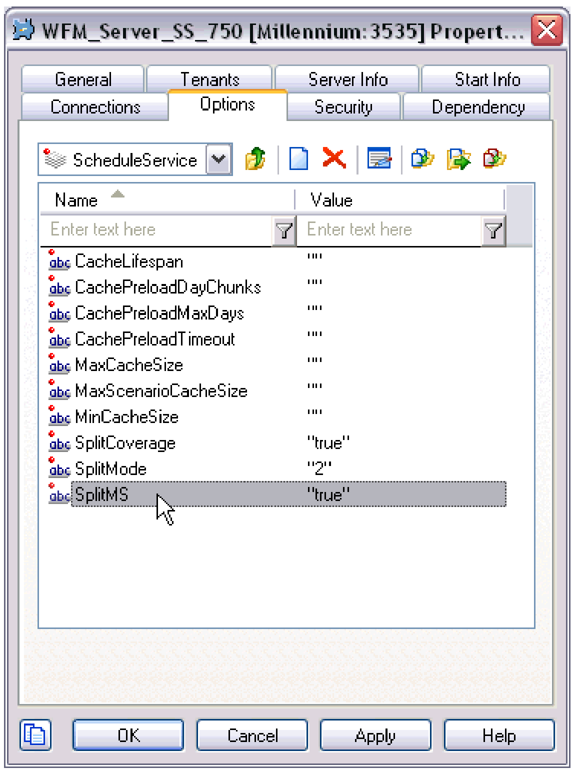

Figure 36: Enable Multi-Skill Support

Calculating Multi-Skill Equivalents

Consider this comparison of Single Skill Equivalents (SSE) to Multi-Skill Equivalents (MSE):

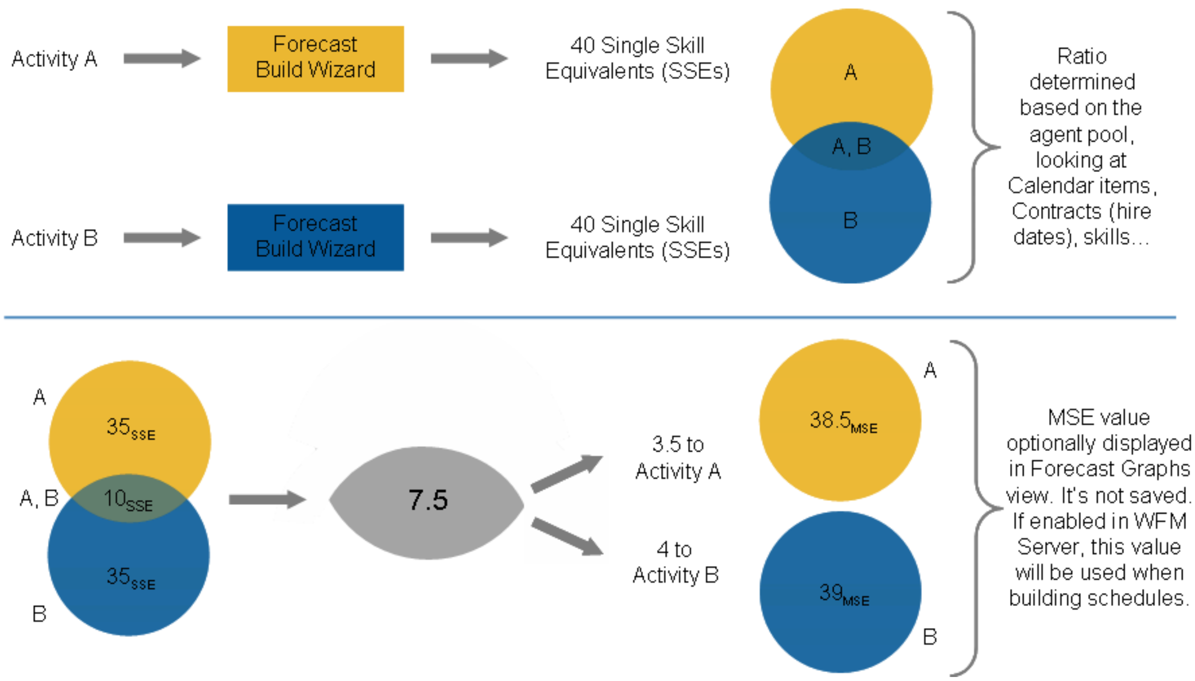

Figure 37: Comparing Multi-Skill Equivalents and Single-Skill Equivalents

The Multi-Skilled forecasting algorithm takes into account how many agents (with their various skill sets) could be available to work on each Activity, as well as how the occupancy of an average agent would be divided among this Activity and the other Activities on which the agent could work.

When building a schedule, WFM can optionally use the staffing forecast in Multi-Skilled Equivalents (MSEs) while taking into account agents that the schedule is being built for, as well as agents for whom schedules have already been built.

If the MSE option is set, in the Performance views/reports and Schedule views/reports, coverage for an Activity will be based on MSEs, calculated from actual agent schedules.

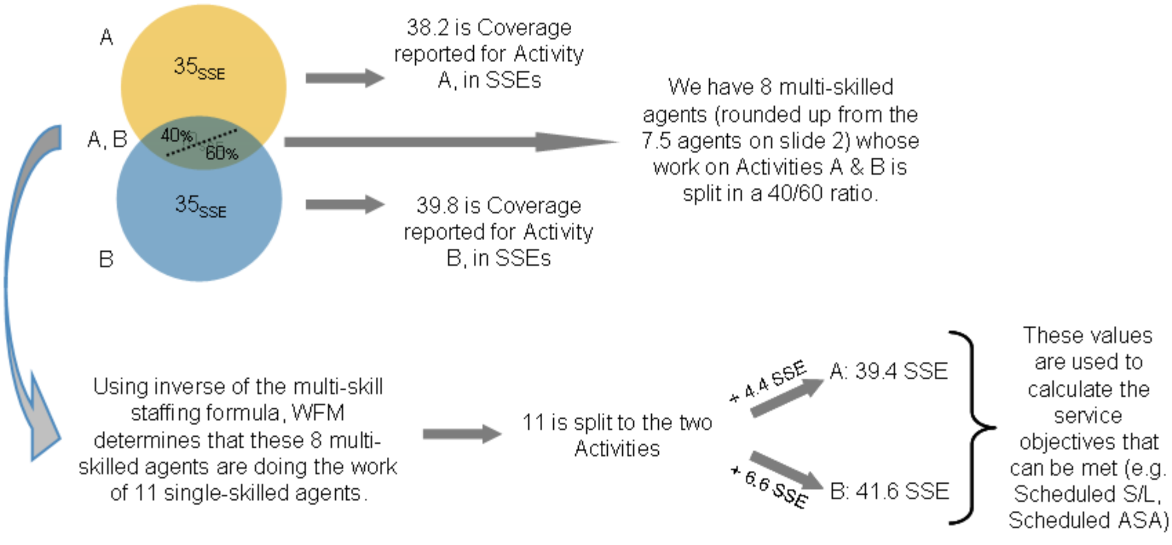

Figure 38: Multi-Skill Gains

Appendix

D

Time Off Primer

Use the information in this appendix in conjunction with the details about Time Off which are in the WFM Web Supervisor and WFM Web Agent online help topics concerning time off.

This appendix contains the following sections:

Time Off Types and Time Off Rules

To use the time off features in WFM correctly and efficiently, you must understand the basics. First, you must configure these objects before time off can be used:

- Time off types
- Time off rules

Time Off Types may be the simpler of the two objects, because each time off type is simply a container. You add time off to, or remove time off from, each container. You can create and arbitrarily name an unlimited number of Time Off Types.

You create time off types for each individual site. You can use time off to track anything that your Agents request, or maintain a balance of, on a regular basis. This includes time off types such as vacation, personal time off, flexible time off, paid sick days, floating holidays, and more.

Time off Rules are each associated with a specific Time Off Type. The rules define:

- the rate at which time off is accumulated for an Agent how and when an Agent can request to use that time off
- whether a request to use time off must be manually approved, or can be auto-approved by the WFM system

Note: Because time-off types are configured on a per site basis, if an agent has outstanding time-off requests and is moved to a different site, the requests are hidden because WFM tracks them only at the old site. The only exception to this is the default time-off type Vacation. Because Vacation is a default time off type considered valid for all sites in the system, time-off requests for it are retained in the system even after the agent moves from site-to-site. Additionally, note that WFM recalculates the agent's time-off balance(s) when the agent moves from one site to another, based on the change in time-off rules. Beginning with release 7.2, moving an Agent to a different site no longer affects the agent's time-off status. Before release 7.1.2, time off types were configured per-site, and an Agent who was moved to a different site would lose any outstanding time off requests.

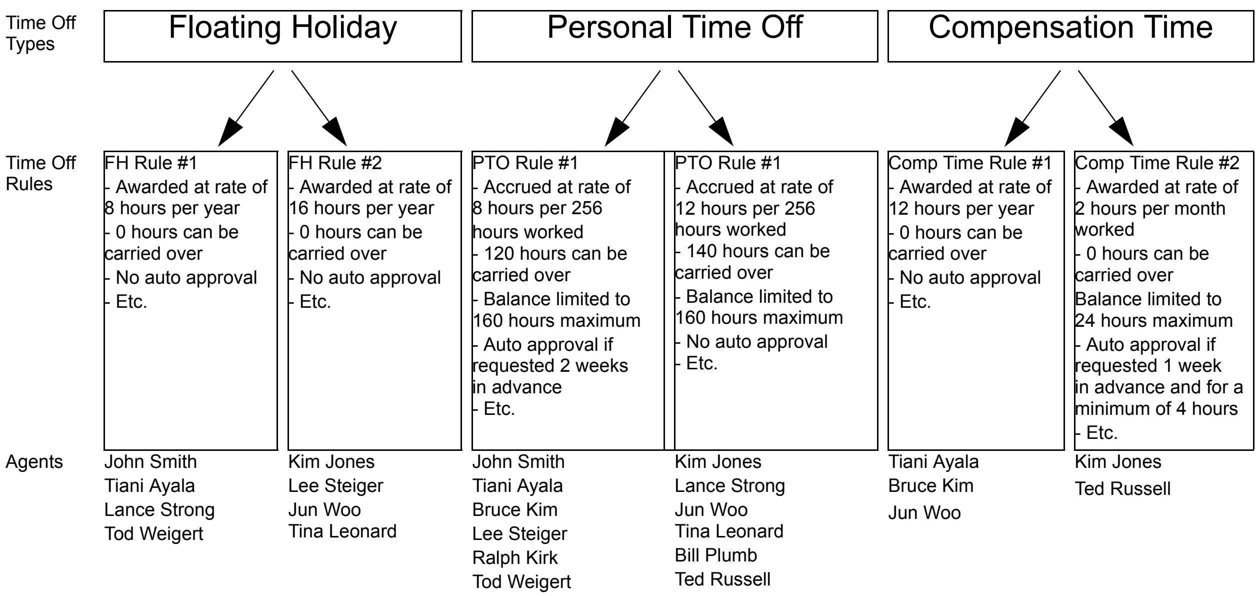

Figure 39: Relationship between Time Off Types, Time Off Rules, and the Agents assigned to them

Notes on Figure 39

- Agents are assigned to time off rules, not directly to time off types.
- The association of time off rules to time off types is many-to-one. This is because for a single time-off type (for example, personal time off), different agents may be given this type of time off at different rates—perhaps based on seniority. For example, you may want their requests for

paid sick days from a certain type of agent to be auto-granted by the system, but for another type of agent you may want the same requests to be manually reviewed.

- When you create a time off rule, you define whether it is a rule of the type award (a fixed number of hours) or accrual (a number of hours that accumulates during the year). In Figure 40, all Floating Holiday time off is *awarded* and all Personal Time Off is *accrued*. Compensation Time can be either awarded or accrued, depending on an Agent's assigned time off rule.

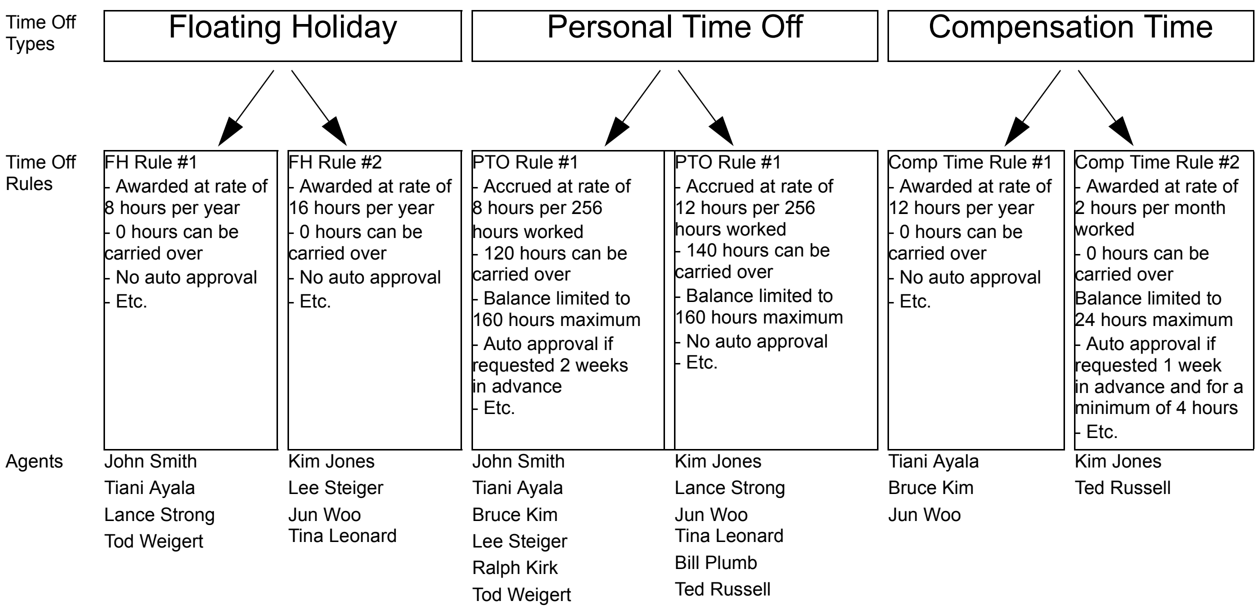

Figure 40: Awarded vs. Accrued Time Off

Notes on Figure 40

- An Agent can be assigned to many time off rules. Example:
  Jun Woo has three time off rules assigned to him. One rule defines how he will be awarded a Floating Holiday each year and when he can use that time off. The second rule defines the rate at which he will accrue Personal Time Off, how much balance he can have, and when he can use it. The third rule defines how he will be awarded Compensation Time each year.
- Not all Agents need to be assigned to a rule for each time off type. Example:
  John Smith has a Floating Holiday award rule and a Personal Time Off accrual rule. However, he has no time off rule defining how he can accrue or be awarded Compensation Time. Therefore, he will have no balance of this time off type and will not be able to request it.

Exceptions Used as Time Off

When you configure an exception type in WFM Configuration Utility, you can use the option `Exception is used as time off` to designate the exception as time off. This is a legacy feature from earlier versions of WFM, which supported only one type of time off. Because WFM now supports an unlimited number of time off types, and Agents and Supervisors may request both full-day and partial-day time off, Genesys recommends that you *do not* use exceptions to represent time off.

When Time-Off Types No Longer Apply

A combo box in the upper-left corner of an agent's Time Off Planner displays all the time off types that are configured for that agent's site. Some of these may not relevant for the agent. (Agents are assigned to Time Off Rules, which in turn are associated with Time Off Types.)

Beginning with release 7.6, an agent can create, edit, delete, or recall time off requests only for those types correspond to a Time Off Rule that is assigned to that agent. Therefore, an agent may be able to view Time Off Types corresponding to Time Off Rules are no longer assigned to him or her. The agent can see these "old" Time Off Types, but he or she cannot interact with them. They appear below the `Others` legend in the combo box.

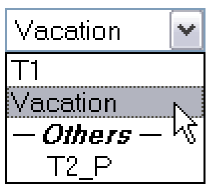

Figure 41: Time Off Types Combo Box

Time Off Types that the agent can use appear above the `Others` legend.

WFM will allow an Agent to select a Time Off type from below the `Others` legend in the combo box; however, the agent will not be able to perform any functions with it (such as requesting time off or viewing his or her time off balance).

Time Off Limits

Before giving your Agents the ability to request time off, you should configure Time Off Limits. To do so, use the Calendar module in WFM Web Supervisor.

If you have the correct permissions, you can configure the maximum number of Agents who can take time off for each 15-minute interval of each calendar day. For example, you could configure that from midnight to 8 a.m. on March 3, 2007, 5 Agents can be allowed to take time off, whereas from 8 a.m. to 4 p.m., only 3 Agents can be take time off. You can set time off limits either for an absolute number of Agents, or for a maximum percentage of Agents. Additionally, you can set time off limits at three levels: Site, Team, and Activity.

Note: You cannot set different time off limits for different time off types. A single set of time off limits governs the total amount of time off of all types that can be granted for a particular time of day, for a particular date.

Time Off Request and Approval Process

There are two different processes for scheduling time off for agents. The process that is used depends on whether the user is planning for a future schedule period (see “Planning for time off in the future” on page 347), or working within a schedule period that has already been published to the Master Schedule (see “Planning for time off for the current schedule period” on page 349).

Planning for time off in the future

For future time periods (schedule days which are not yet published to the Master Schedule), the process works as shown in Figure 42 on page 348.

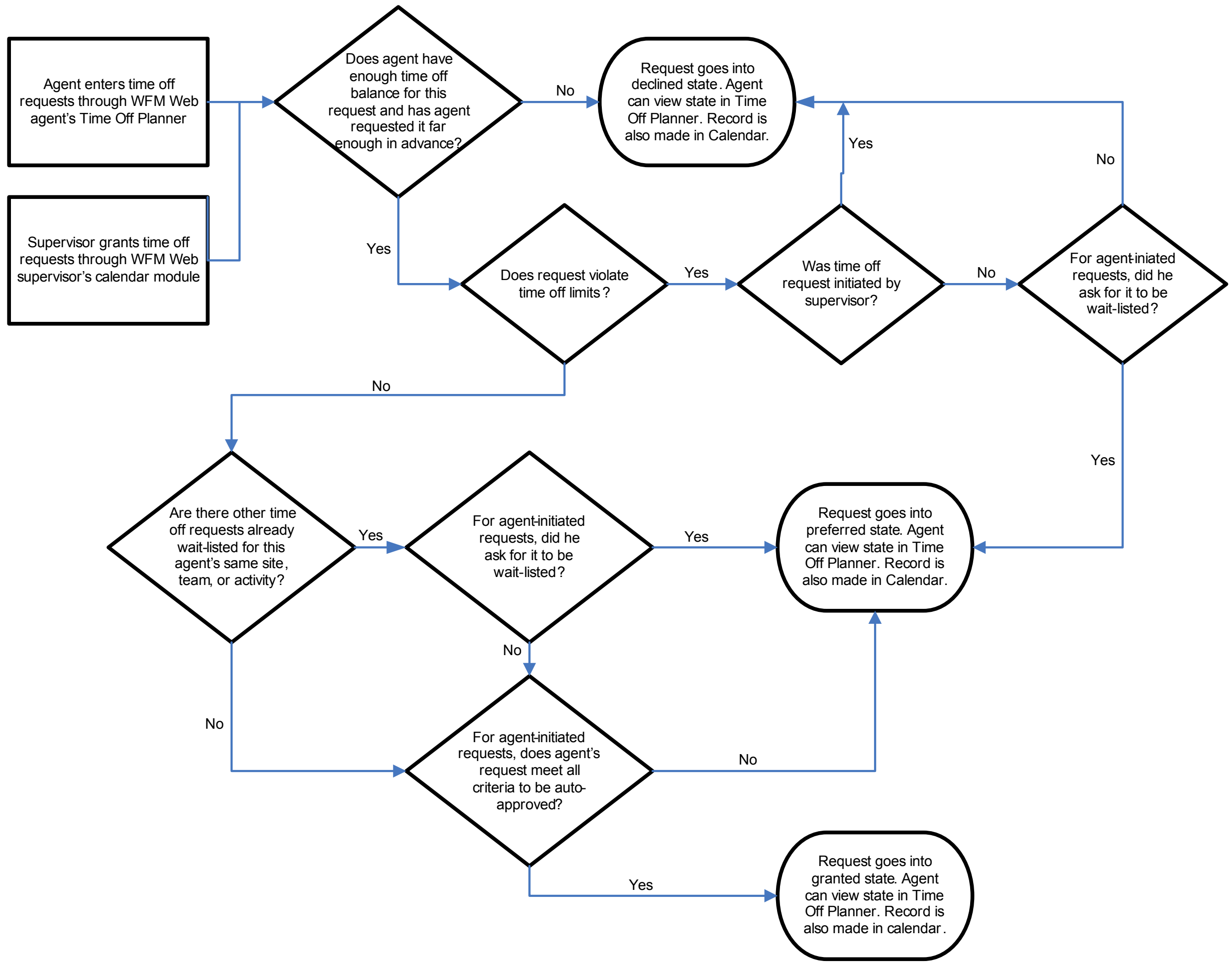

Figure 42: Future Time Periods Process

The Time Off Planner (in the WFM Web Agent application) and the Calendar (in the WFM Web Supervisor application) are really two different ways to input the same information. The Time Off Planner is the Agent's method of entering Calendar items. It allows the Agent to enter time off, but that is all.

The Supervisor's Calendar module has much more power: the Supervisor can enter all types of Calendar items, including shifts, working hours, exceptions, days off, and time off.

Both of these schedule-building input tools have the same result: the time off items are recorded in the WFM Calendar.

Granted Time Off vs. Preferred Time Off

WFM considers only time off items with the status `granted` when building a schedule scenario. It does *not* include time off items with the status `preferred`.

Note: WFM allows a Supervisor to consider Agent preferences when building schedules. These preferences include: day off, availability, and shift preferences; but not time off preferences.

Time Off Items in the Calendar Hierarchy

When you enter multiple types of Calendar items for the same Agent on the same day, WFM uses its internal hierarchy to resolve their status.

Example: Full-Day Time Off vs. Rotating Schedule Day In

An Agent is assigned a Rotating Pattern for the week starting September 17, 2006, and for the date of September 19 his Rotating Pattern assignment states he should be on a *Day In*.

But a Supervisor grants a full-day time off for September 19. Now this Agent has two conflicting Calendar items for the same day: a working day according to the Rotating Pattern assignment, and a full-day time off according to the Calendar.

The Calendar hierarchy specifies that the full-day time off item should be granted and this should cause the rotating pattern assignment for that day should be declined. The statuses are reflected in the Calendar and the Supervisor can read the reasons there.

Some items in the Calendar do have a higher priority that full-day time off items.

Example: Full-Day Exception vs. Full-Day Time Off

A full-day exception is granted for an Agent in the Calendar for the same day as a full-day time off. The Calendar hierarchy specifies that the full-day exception should take priority and the full-day time off item should be declined.

The hierarchy of the WFM Calendar is described in the WFM Web Supervisor online help, in the topic `Calendar Items Overview`.

Using the Calendar to understand the status of time off items

You can view the *Actual Status* of any item in the Calendar; a status of `Granted` or `Preferred` or `Declined` confirms that no schedule has been published for this Agent for this date. In a built and published schedule, the *Actual Status* of an item will be either `Scheduled` or `Not Scheduled`. If a Calendar item was not scheduled, you can view a Reason field which will describe why it was not scheduled (in the Reason column).

Planning for time off for the current schedule period

To enter Agent time off items for days that have already been published to the Master Schedule, use either of these methods:

1. Enter time off directly into the Master Schedule.

Notes: The Agent will see this time off entry in his schedule that he can view in the WFM Web Agent.

The Agent will see a change to his time off balance in the WFM Web Agent Time Off Planner.

The Agent will see that time off for this day is scheduled, when he views his Time Off Planner.

However, no entry for this time off will be made in the WFM Calendar, because the Calendar is a planning tool, and is meant for entering items such as exceptions, time off, days off, etc., that are to be considered when building a schedule scenario.

2. Enter the granted time off request into the WFM Calendar.
3. Click the Update Schedule icon.

WFM has now automatically updated the Master Schedule with the agent's Granted Time Off.

Using the Update Schedule from within the Calendar updates the Master Schedule from the Calendar for the agent's time-off request, which streamlines the review and approval process and eliminates the need to manually rebuild the schedule.

Note: From within the Calendar module, users can update the Master Schedule with a granted Time Off items for any agent on any date for which the agent has a schedule published, and the Time Off request is compatible with the agent's existing schedule.

For more details, see the WFM Web for Supervisor help topics Calendar Items Overview and Update Schedule Options.

Agent Time Off Planner

Agents request time off and see the status of these requests through WFM Web Agent’s Time Off Planner. If you do not want your agents to have access to the Time Off Planner, you can disable this through the `Time Off Planner Enabled` setting. In Configuration Manager, for your WFM Web application object, open `Options` > `AgentTimeOff`, and set the variable `AllowTimeOffPlanner` to `false`.

Time Off balance in Agent's Time Off Planner

The Time Off Planner displays the balances for an Agent's time off, in this way: the Agent selects a time off type and clicks on a date in the yearly planning calendar to view balances for that type, up to that date.

The Agent can also view the types of Time Off hours prior to the selected date: already granted, preferred, declined and scheduled, bonus, advance and carried-over.

When an Agent's Time Off rule is changed, his time off is recalculated based on the new rules.

Some examples:

- If a Time Off rule is assigned to an Agent and you change any of the rule's properties.
- If a Time Off rule is assigned to an Agent and you use the `Time Off` tab under `Configuration>Organization>Agent properties` to change the rule.
- If a Time Off rule is assigned to an Agent and you use the Assignments tab under `Policies>Time Off Rules>Time Off rule properties` to remove the assignment.

In each case, the user is asked to approve the calculation before it is performed.

Warning! Moving to a different site can affect an Agent's time-off balance.

An agent who moves to a different site may appear to lose a portion of her existing time-off balance, because WFM tracks that time off only at the old site. To preserve the time-off hours that the Agent earned at the previous site, her Supervisor must enter these hours as a bonus to the new Agent Rule under the new site. For details, see the "Agent Time Off > Bonus Time Off Hours" topic in *Configuration Utility Help*.

Recalling Time Off Requests

An Agent can recall a time off request that is in preferred or granted status, as long as the time off item has not been scheduled. Use the WFM Web Agent Time Off Planner; see the topic Requesting Time Off.

Once an Agent's time off request has been granted, scheduled, and published to the Master Schedule, the Agent cannot recall the time off.

Only the Supervisor can do that, by manually changing the Agent's schedule for that date, through the Master Schedule. And only the Supervisor can schedule a different activity for the Agent for that date, in lieu of the time off.

Wait Listed Time Off Requests

When an Agent makes a time-off request, he may optionally ask for it to be wait-listed.

(See step 7 in the WFM Web Agent help topic Requesting Time Off: *If you want your request to be wait-listed, click the Wait-list check box.*)

Note: Wait-listing means that if a time-off request is denied because the time off limits have been reached, the request stays in a preferred status in case an opening becomes available. The request could eventually be granted by a supervisor, although this is not guaranteed.

In detail, this means that if the time off request would be declined because the time off limits have already been reached, wait listing gives it a preferred status. If some time off slots become available for certain dates due to cancellations, or if the Supervisor decides to raise the time off limits for a certain date, the Supervisor user can review all of these preferred time off items in the Calendar and grant some of them. There is a field in the Calendar which displays the date and time that the Agent or Supervisor submitted each time off item, to help the supervisor manage the wait list. Agents' time off requests are not pulled automatically from this wait list; these requests must be manually granted by the supervisor.

Viewing the Status of Time Off Requests

Agents can view the status of any time off request, for any calendar date, with some limitations.

If an Agent requests time off for a date on a schedule that is already been published to the Master Schedule:

- This request will not be scheduled.
- The Agent can view the reason it was not scheduled, in the `Reason` column.
- The request, with the same status and reason, will appear in the WFM Calendar, where Supervisors can see it.

However, the Supervisor will not know to look for the request unless the Agent tells him to look for it.

Therefore, if an Agent sees time off requests with status `Not Scheduled` in the Time Off Planner, she should alert her supervisor. The Supervisor can then either:

- Grant the time off through the WFM Calendar and rebuild/republish the Agent's schedule for the affected date(s)

  or
- Manually add the time off to the Master Schedule.

The Time Off Planner gives Agents a limited view into their time off status in the WFM Calendar. Therefore, when a Supervisor adds or deletes time off in the WFM Calendar, he must rebuild and republish the schedule for the affected date(s).

Appendix

E

Overlays Primer

This appendix presents a primer about overlays.

Overlays are events designed to indicate the abnormalities in historical data or anticipated ones in the future. By abnormalities we mean fluctuation of interaction volume or AHT, other than usual seasonal, intra-week and intra-day trends. If events point to the same kind of abnormality, which happened multiple times during the history or can happen in the future, then overlay events can by arranged into overlay groups further called simply as Overlays. The examples of Overlays can be billing, promotion, catalog drop and etc.

This appendix contains the following sections:

Impact of Overlay Events on Prediction Data

The overlay is impacting the prediction data directly, when an event of a particular overlay is situated over prediction interval.

There are two types of overlays based on how the impact on prediction data is calculated

Multiplicative increases (or decreases) every step of a predicted data by a percentage. The percentage is defined by overlay impact distribution multiplied by event "strength." The total of interval affected by event changes.

Overriding re-distributes (but does not change) the volume of an event's interval. The total volume does not change, but it may be moved from one event-step to another.

Multiplicative Overlays

This type of overlay factor has existed in WFM since early versions and was called Factor. Each step (daily or hourly) of prediction data covered by the event is adjusted by a certain percentage, which is also multiplied by event strength.

Overriding Overlays

This was new in the 7.6.1 release.

This type of overlay is designed to keep the predicted total of the affected period and adjust the distribution of the volumes within the period. The events of this overlay type are applied as the last step of prediction. The seasonal components (intraday, daily, yearly) and multiplicative overlays are applied before overriding overlays are calculated.

The overriding overlay distributes the volumes according to the weight (or the percentage) of each event-step (daily or hourly). It adjusts the volume of each event-step, so the event-step receives its part of the total of whole event period according to its weight.

For example overriding overlay has three event-steps with the weights 20, 30, 50. The predicted total of the whole interval is 1000. Then the first event step will get 200, the second 300 and the last one 500. Note that initially predicted total of the event-step is not taken into account while calculating an impact of this overlay type. Weight of event-step determined by overlay itself and the predicted total of the whole interval affected by the event are taken into account.

When the event-step (daily or hourly) is calculated, its total is distributed to 15 min timesteps proportionally to a volume of each timestep before the event was applied. So, intraday or intra-hour pattern is preserved.

The event of overriding overlay type cannot be calculated, when it overlaps with the other event of the same type, even if both belong to different overlays. However, it can overlap with events of multiplicative overlays.

Event impact distribution

There are three ways to determine what is the impact of each event-step:

- By start-end.
- By keeping the whole detailed distribution.
- By calculating every time during the prediction.

These three methods of determining impact distribution are applicable to both overlay types: multiplicative and overriding.

For each overlay it is specified how its impact distribution will be determined and it is applicable to all events of the overlay.

Start-end

The impact distribution of overlay is determined by specified start and end impact values. The impact is gradually changing by the same amount every event step from start value to end value. For example, if starting value is 100 and ending value is 200 hundred and it is daily overlay with a length of 6 days, then the impact on the first day is 100, on the second day is 120, then 140, 160, 180 and 200 on the last day.

Distribution

The overlay saves the impact of each event-step separately. It can be either pre-calculated or entered by the user or mixed.

Always calculating

The impact of overlay is always calculated during the prediction. For successful calculation the historical period should have one or more events of the same overlay. The impact of the overlay will be determined by the prediction algorithm according to a historical data and then it will be used in prediction.

Impact of Overlay Events on Historical Data

Every event under any overlay type may have a flag “ignore historical data”. If such flag is set for an event, then historical data interval data covered by the event will not be taken for calculation of neither volume prediction or impact of overlays (see below).

If an event does not have a flag “ignore historical data” set, then the data covered by the event is considered for prediction.

In 7.6.1 there is no additional processing of historical data affected by the event other than ignoring it or simply using it.

Calculating an Overlay's Impact

The impact of overlay can be determined by analyzing historical data. It is done by prediction algorithm. The algorithm analyzes the period of historical data, which contains one or more events of overlay to be calculated.

Overlays can be pre-calculated before starting volume forecasting or during volume forecasting (see: Event impact distribution). Given the same historical data and using the same method, the results should be identical.

Calculating the Impact of Multiplicative Overlays

Multiplicative overlays are calculated by separating seasonal component (yearly, daily, intraday) from event impact for each event of the overlay in the given historical data. Then the impact is divided by event "strength" and averaged.

When the impact is applied for an event on prediction interval, it is multiplied by the "strength" of that event.

Calculating the Impact of Overriding Overlays

The percentage of each event-step in the total of the whole event period is calculated for each event and then averaged. For example, historical period has two events of daily overlay, which is 3 days long. The days of the first event are 150, 200, 150 (that is 30%. 40%, 30% of the total correspondingly) and the days of the second event are 150, 150, 200. Then the overlay will be calculated as 30%, 35%, 35%.

Appendix

F

Recommended Statistics in Copy-and-Paste Format

This appendix presents four listings of the statistics that are defined in Chapter 6, "Recommended Statistics Settings," on page 175. Use them only as generic starting points for your configuration, making the modifications necessary to function properly within your environment.

These statistics do not include any of the required filters or timeranges; those items are specific to your installation. You should add these filters only if they are missing from the relevant section(s) of your configuration.

This appendix contains the following sections:

Copy-and-Paste Format

All stats in this appendix appear in this format:

```
[WFMTotalNumberCallsEntered]
Category=TotalNumber
MainMask=CallEntered
Description=The total number of interactions
Subject=DNAction
Objects=Queue,RoutePoint,GroupQueues
```

You can amend the text within the square brackets (use underscores rather than spaces) and the description line. For example, you could change the above example to this:

```
[Special_Call_Entered_Stat_4_Steve]
Category=TotalNumber
MainMask=CallEntered
Description=This reflects the number of inbound calls received
through a queue
Subject=DNAction
Objects=Queue,RoutePoint,GroupQueues
```

WFM Multimedia Statistics for E-mail Interactions

```
[WFM_Email_Entered]
AggregationType=Total
Category=JavaCategory
Description=The total number of interactions
JavaSubCategory=eServiceInteractionStat.jar:EQR Total Entered
Objects=StagingArea
[WFM_Email_Handle_Time]
Category=TotalTime
MainMask=InteractionHandling
Description=Total time spent handling interactions
Objects=Agent,GroupAgents,GroupPlaces,Place
Subject=AgentStatus
[WFM_Email_Handled]
Category=TotalNumber
MainMask=InteractionHandling
Description=Total number of interactions handled
Objects=Agent,GroupAgents,GroupPlaces,Place
Subject=DNAction
```

WFM Statistics for Chat Interactions

```
[WFM_Chat_Entered]
AggregationType=Total
Category=JavaCategory
Description=The total number of interactions
JavaSubCategory=eServiceInteractionStat.jar:OMQ Total Entered
Objects=StagingArea
MediaType=chat
[WFM_Chat_Abandoned]
AggregationType=Total
Category=JavaCategory
Description=The total abandoned from queue
JavaSubCategory=eServiceInteractionStat.jar:OMQ Total Abandoned
```

```
Objects=StagingArea
MediaType=chat
[WFM_Chat_Average_Speed_Answer]
AggregationType=Total
Category=JavaCategory
Description=Average time taken to answer
JavaSubCategory=eServiceInteractionStat.jar:OMQ Average Waiting Time
Objects=StagingArea
MediaType=chat
[WFM_Chat_Total_Distributed]
AggregationType=Total
Category=JavaCategory
Description=Total Distributed
JavaSubCategory=eServiceInteractionStat.jar:OMQ Total Distributed
Objects=StagingArea
MediaType=chat
[WFM_Chat_Handle_Time]
Category=TotalTime
MainMask=InteractionHandling
Description=Total time spent handling interactions
Objects=Agent,GroupAgents,GroupPlaces,Place
Subject=AgentStatus
[WFM_Chat_Handled]
Category=TotalNumber
MainMask=InteractionHandling
Description=Total number of interactions handled
Objects=Agent,GroupAgents,GroupPlaces,Place
Subject=DNAction
```

WFM Statistics for intelligent Workload Distribution Interactions

```
[WFM_OMedia_Entered]
AggregationType=Total
Category=JavaCategory
Description=The total number of interactions
JavaSubCategory=eServiceInteractionStat.jar:OMQ Total Entered
Objects=StagingArea
MediaType=MediaX
[WFM_OMedia_Abandoned]
AggregationType=Total
Category=JavaCategory
Description=The total abandoned from queue
JavaSubCategory=eServiceInteractionStat.jar:OMQ Total Abandoned
Objects=StagingArea
MediaType=MediaX
[WFM_OMedia_Average_Speed_Answer]
AggregationType=Total
```

```
Category=JavaCategory
Description=Average time taken to answer
JavaSubCategory=eServiceInteractionStat.jar:OMQ Average Waiting Time
Objects=StagingArea
MediaType=MediaX
[WFM_OMedia_Total_Distributed]
AggregationType=Total
Category=JavaCategory
Description=Total Distributed
JavaSubCategory=eServiceInteractionStat.jar:OMQ Total Distributed
Objects=StagingArea
MediaType=MediaX
[WFM_OMedia_Handle_Time]
Category=TotalTime
MainMask=InteractionHandling
Description=Total time spent handling interactions
Objects=Agent,GroupAgents,GroupPlaces,Place
Subject=AgentStatus
[WFM_OMedia_Handled]
Category=TotalNumber
MainMask=InteractionHandling
Description=Total number of interactions handled
Objects=Agent,GroupAgents,GroupPlaces,Place
Subject=DNAction
```

WFM Statistics for Voice Interactions

```
[WFMTotalNumberCallsEntered]
Category=TotalNumber
MainMask=CallEntered
Subject=DNAction
Objects=Queue,RoutePoint,GroupQueues
[WFMTotalNumberCallsAband]
Category=TotalNumber
MainMask=CallAbandoned, CallAbandonedFromRinging
Subject=DNAction
Objects=Queue,RoutePoint,GroupQueues
[WFMTotalNumberCallsDistrib]
Category=TotalNumber
MainMask=CallDistributed
Subject=DNAction
Objects=Queue,RoutePoint,GroupQueues
[WFMServiceFactor1]
Category=ServiceFactor1
MainMask=CallAnswered,CallAbandoned,CallAbandonedFromRinging
Subject=DNAction
Objects=Queue, RoutePoint, GroupQueues
[WFMAverTimeBeforeAnswering]
Category=AverageTime
```

```
MainMask=CallAnswered
RelMask=CallAnswered
Subject=DNAction
Objects=Queue, RoutePoint, GroupQueues
[WFMTotalHandleTime]
Category=TotalAdjustedTime
MainMask=CallInbound, CallOutbound, OfflineWorkType1
Subject=DNAction
Objects=Agent, Place,GroupAgents,GroupPlaces
[WFMTotalNumberCallsHandled]
Category=TotalNumber
MainMask=CallInbound,CallOutbound
Subject=DNAction
Objects=Agent,Place,GroupAgents,GroupPlaces
```

Appendix

G

Enabling and Configuring Wait-list Functionality

This chapter lists and describes the conditions and settings that make the Workforce Management (WFM) wait-list functionality possible, and offers or refers to instructions for these tasks:

- Automatic Approval (sometimes called auto-granting)
- Auto-publishing
- Wait-listing
- Handling Preferred Time-Off Requests
- Making Ungranted Time-off Requests "Count" in a Build
- Improved Viewing Time-Off Availability

If WFM cannot immediately grant a time-off request, it puts the request on a waiting list (called wait-listing). When all requirements are met, including configuration, WFM can grant the request and insert it into the Master Schedule automatically.

This chapter supplements the information found in Workforce Management Supervisor Help and Agent Help. It includes the following sections:

Overview

WFM considers all wait-listed time-off requests on a First-In, First-Out (FIFO) basis—using the date and time of the request. To determine if there are slots available for the wait-listed time-off request, the process first considers all time off instances that are `Granted/Granted and Scheduled` and have intersecting time steps with the wait-listed request for time off. If the `CalendarOverSchedule` option is set, then `Granted/Not Scheduled` time off instances are also taken into account before processing the wait-list.

Next, WFM considers all `Preferred` time-off requests that were submitted earlier than the wait-listed request that is currently being processed. Only `Preferred` time-off instances that count against the time-off limit according to their actual status are considered. Also, if an earlier `Preferred` request is not valid for time-off within the various limits, it is ignored.

You can configure the advance threshold for automated time-off wait-listing. You can configure the minimum number of weeks in advance that a request can be made for each time-off rule; that minimum number is called the automatic approval threshold. If an ungranted time-off request in the wait-list violates the automatic approval threshold, then WFM removes the request from the wait-list. This time-off request will remain in the status `Preferred`, but it cannot remain wait-listed.

See “Enabling Automatic Approval and Configuring the Threshold” on page 367.

Events that might change the system’s ability to grant time off, such as the agent’s contract availability status, can affect the validity of any time-off request. Thus, wait-listing takes place on a schedule that is specified by a timeout option.

Enabling and Configuring Wait-listing

This section contains several subtopics:

Automatic Approval of Time-off Requests

Wait-list automation is related to automatic approval functionality. The common workflow of wait-list automation is:

1. An agent’s time-off request is automatically approved, but there are no time-off slots within the limits of the request.
2. The request is wait-listed until the appropriate time-off slots appear, and then automatically approved, if possible.

3. If automatic approval is enabled but the time-off request is beyond the automatic approval threshold, then the request cannot be wait-listed. It is instead saved with the status `Preferred`.

Note: Automatic approval must be enabled for wait-listing to work. If automatic approval is not enabled, then the supervisor must manually grant time-off requests and a request cannot be wait-listed, even if requested by the agent.

Enabling Automatic Approval and Configuring the Threshold

Automatic Approval must be enabled for wait-listing to work.

Procedure: Learn About Automatic Approval

Purpose: To read about automatic approval in Configuration Utility help.

Start of procedure

1. Open the Configuration Utility help topic `Policies > Time-Off Rules > Configuring Time-Off Rules`.
2. Scroll down to the `Time Off Request Rules Area`.
3. Locate the option `Automatic Approval A Minimum of □ Week(s) in Advance And For A Minimum Of □ Hours`.
4. Read the text in this section of help.

End of procedure

Procedure: Enable and Configure Automatic Approval

Start of procedure

1. Open Configuration Utility.
2. 2. Open the Policies > Time Off Rules dialog box.
3. 3. Select the option `Automatic Approval A Minimum of □ Week(s) in Advance And For A Minimum Of □ Hours`.

4. 4. Enter values into the empty fields ().

End of procedure

Configuring Auto-publishing

When WFM automatically approves a time-off request, it can also insert it into the Master Schedule automatically, if auto-publishing is enabled.

To enable and configure auto-publishing, use Configuration Manager or Genesys Administrator to set the WFM Server option `AutoPublishTimeOffToSchedule` to `1` or `2`. See "AutoPublishTimeOffToSchedule" on page 127.

Configuring Wait-listing

Wait-listing is a background function that is enabled by circumstances and configuration. The circumstances are: automatic approval must be enabled and an agent's time-off request must be valid (time off slots and agent credit must be available).

To configure wait-listing, use Configuration Manager or Genesys Administrator to open the WFM Server option `wait-listTimeout`. See "WaitlistTimeout" on page 129.

Notes

Why does a time-off request get wait-listed?

- The time-off request is valid (for example, not for time in the past).
- The time-off request is not for more time than the agent's time-off balance contains.
- The automatic approval option is enabled.

WFM will only wait-list those time-off requests, which would have been automatically approved, if not for time-off limits.

  - If automatic approval is not set up in the accrual rule or the threshold has been passed, then that particular time-off cannot be wait-listed.
  - The requesting agent should have sufficient time-off balance and there can be no other restrictions.
  - If limits allow, the request will be granted and not wait-listed

Treatment of Preferred Time-off Requests

Preferred time-off requests (having the status Preferred) are not considered during schedule building. When a master schedule is published, Preferred time-offs do not count against limits and agent balance anymore, because usually they are not scheduled.

To override this functionality, use Configuration Manager or Genesys Administrator to open the WFM Server option "CalendarOverScheduleData" on page 128, which makes unscheduled time-offs count against the agent balance and time-off limits.

Viewing Available Time-off Slots

Now Agents can see if the time off that they want is available before they request it. At the Time Off screen, just hover the cursor over any time slot, and you will see time off limits and wait list data about the time slot in a popup. See the section `Wait-Listing Notes` in the WFM Web for Agents help topic `Time Off > Requesting Time Off`.

Use Cases and Notes

When Availability Overrides Seniority

1. Request A asks for time slots that are not available (8AM-6PM). The time 8-9AM is not available, and so Request A is wait-listed.
2. Request B comes in later, but asks for time slots that are available (10AM-6PM).

The Result: Request B is granted and Request A remains wait-listed, even though Request B came in later.

When Seniority Overrides Availability

1. Request A is wait-listed. The time slots for automatic approval of this request become available, but the wait-list timeout has not yet expired.So this request remains wait-listed.
2. Request B comes in later and asks for the same time slots as Request A.

The Result:

- If the time slots are available for both requests, Request B is honored immediately and Request A is honored after the wait-list timeout expires.
- If the time slots are available for only one request, Request B is wait-listed and after the wait-list timeout expires, Request A is granted first.

Rules to Remember

- When the wait-list process can grant a request, it changes the saved status of that request to granted (and removes the internal wait-list flag).

- If the auto-publish and wait-list functions are set up together, then granted requests are published to the master schedule.
- A wait-listed request can be granted only if: automatic approval is enabled, the time-off request is valid, there are no other restrictions.

WFM removes from the wait-list any time-off request that has expired (the time steps that it specifies are in the past) or belongs to an agent with no time-off balance.

Appendix

H

MS SQL Database Replication

This appendix contains the following sections:

System Requirements

The replication solution requires MS SQL Server 2008 R2 Enterprise Edition server.

Setting Up the Database Replication

This procedure assumes that there is an existing single database instance, which you should update to the latest version. For new WFM installations, create a database as described in Workforce Management 8.1 Administrator's Guide.

There are two ways to set up the replication:

- Copy During Replication, page 372
- Copy Before Replication, page 373

Procedure:
Copy During Replication

Prerequisites

- If your database is not a new installation of WFM, update your original WFM database to the latest WFM Database version.

Start of procedure

1. Make a WFM Database Utility (DBU) backup of the original database.
2. Create new database instances in all locations and on each instance run WFM DBU to create the WFM table structure. The original WFM database will not be used.
3. Set up replication using the following procedure:
   a. Enable distribution on all servers. This can be done manually or using a script named `1 Before Replication. Enable Distribution - run on all servers.sql` that DBU provides in the DBU installation directory `\scripts\`.
   b. Create a Publication on one Database Server. This can be done manually or using a script named `2 Before Replication. Create Publication - run on one server only.sql` that DBU provides in the DBU installation directory `\scripts\`.
   c. Make that publication “peer-to-peer”. This can be done manually or using a script named `3 Before Replication. Enable Peer-To-Peer Replication - run on one server only.sql` that DBU provides in the DBU installation directory `\scripts\`.

Note: For the scripts listed in steps 3a, 3b, and 3c above, specific Database Server names—and in some cases, other information such as database name, files location, publication name, user login and password—must be entered into the script before running it.

   d. Configure ranges for primary key values. Identity value ranges must be assigned for replicated tables which use auto-incremented identify fields. WFM Database Utility provides a script named `4 Reseed. Change Identify Field Ranges - run on all servers.sql` that DBU provides in the DBU installation directory `\scripts\`.
   Note: identity ranges on each database instance must be unique and values in the script should be modified manually, depending on the number of database instances used.

4. Restore the WFM DBU database backup (from Step 1) to any single database instance.

End of procedure

Restored data is synchronized across all locations by MSSQL Server replication.

Procedure: Copy Before Replication

Prerequisites

- If your database is not a new installation of WFM, update your original WFM database to the latest WFM Database version.

Start of procedure

1. Back up your WFM database, using DBU backup or MSSQL backup tools.
2. Create new additional database instances, if needed. The original database instance will also be used.
3. Create and restore the database on each new instance using WFM Database Utility or restore the MSSQL backup from Step 1.
4. Set up replication using the following procedure:
   a. Enable distribution on all servers. This can be done manually or using a script named `1 Before Replication. Enable Distribution - run on all servers.sql` that DBU provides in the DBU installation directory `\scripts\`.
   b. Create a Publication on one Database Server. This can be done manually or using a script named `2 Before Replication. Create Publication - run on one server only.sql` that DBU provides in the DBU installation directory `\scripts\`.
   c. Make that publication "peer-to-peer". This can be done manually or using a script that DBU provides named `3 Before Replication. Enable Peer-To-Peer Replication - run on one server only.sql` that DBU provides in the DBU installation directory `\scripts\`.

Note: For the scripts listed in steps 4a, 4b, and 4c above, specific Database Server names—and in some cases, other information such as database name, files location, publication name, user login and password—must be entered into the script before running it.

d. Configuring ranges for primary keys values. Identity value ranges must be assigned for replicated tables which use auto-incremented identify fields. WFM Database Utility provides a script named `4 Reseed. Change Identify Field Ranges - run on all servers.sql` that DBU provides in the DBU installation directory `\scripts\`.
Note: Identity ranges on each database instance must be unique and values in the script should be modified manually, depending on the number of database instances used.

End of procedure

Maintaining Database Replication

Procedure: Restoring replicated databases from backup

Purpose: You can back up the replicated database at any time. To restore the backup:

Start of procedure

1. Verify that nobody is using any database instances.
2. For MSSQL backups, use Microsoft tools and documentation to restore the backup of the replicated database.
3. For WFM Database Utility backups, use the Database Restore functionality on a single instance of the database.

All data should be replicated and synchronized across the instances.

End of procedure

Replication issues

Due to unforeseen usage scenarios or operational mistakes in access rights configuration, there may be occasional data collisions caused by replication. Solve these collisions on a case-by-case basis, using MSSQL conflict resolution tools.

Application-Level Access Limitations

Genesys recommends that you deploy the WFM application so that all actively running WFM Server and WFM Data Aggregator components access the same database instance. (“Actively running” means that these components are updating the database.) You could set up WFM Configuration Utility instances to access and to write to different instances of database, but if you do that then Genesys recommends some application and user restrictions.

Certain deployment and access limitations would assure that the same data is not being modified in multiple database instances at the same time. The MSSQL database replication will not resolve data collisions caused by complex simultaneous modifications of the same data records on different database instances. The only solution is to prevent such collisions on the application level, by assigning access rights and restricting certain functionality so that it is performed only on the “main” instance of the database.

Site Access Rights

During the configuration of the system it should be decided, which site will be configured by WFM Configuration Utility, and on which database instance. Users who connect to that instance and want to change the data from WFM Configuration Utility should be given access to only those sites which are to be modified in that particular database instance.

Module Access Rights

Configuration Utility contains functionality that involves the modification of data for multiple sites, or data that is not related to a site object and thus cannot be protected by site access rights. There are also subsystems which provide access to data that is also modified by WFM Server through the WFM Web interface. This functionality should be accessible only to users who are connecting to the main database with Configuration Utility.

Following is a list of subsystems, menu items, or functions which should be restricted in local database instances, and be available only to users who are connecting to the main database server.

- Main Synchronization—Security option: `General>Allow synchronization`
- Agents Update—Security option: `General>Allow synchronization`
- Global Settings—Security option `General>Allow to modify Global settings`
- User Security—Security option `Configuration>User Security`
- Skills—Security option `Configuration>Skills`
- Time Zones—Security option `Configuration>Time Zones`

- Organization/BU, Sites—Enable only the security option `Configuration>Organization>Add/Edit/Delete`
- Organization Teams—These can be accessible on remote sites, but only in read only mode. Enable only the security option `Configuration>Organization>Read"`
- Schedule State Groups—Enable only the security option `Configuration>Schedule State Groups`

Notes: On the Master database, users should enable both options: `Modules>Configuration>Organization>Read` and `Modules>Configuration>Organization>Add/Edit/Delete`. That setting allows any actions on BUs, Sites and Teams.

On Remote locations, users should enable only `Modules>Configuration>Organization>Read`.

That setting allows users to move agents between teams, but they cannot delete or create a BU, site or team.

Disable the `Modules>Configuration>Organization>Add/Edit/Delete` option for users who connect to and work on remote locations / databases.

Appendix

WFM Overtime Functionality

This chapter describes the Workforce Management (WFM) Overtime functionality in the following sections:

Overview

WFM provides Overtime planning and tracking views for Supervisors, into which they can enter overtime hours for a single agent or multiple agents by specifying the time interval and activity.

The system automates the overtime insertion process in the following ways:

- Finds the appropriate shift definition for the extended shift
- Schedules break/meals on the overtime part of the shift
- Designates overtime by specifying a marked type

Note: Overtime functionality is available on the Master Schedule only. There is no overtime interface for Agents.

You can also enter overtime in the Intra-Day, Agent Extended, and Weekly views by inserting a work set with Marked Time. Secondary shifts and activities can be used to plan overtime.

Overtime Requirements View

In WFM Web, you can plan, set, and track how overtime requirements are met, in the Master Schedule > Overtime view. To use this view, set the user security rights in the Configuration Utility > User Security > Module > Access Overtime Requirement.

Overtime data is displayed in a grid, which has an editable Overtime Requirement column and a read-only Overtime Scheduled column. The Overtime Scheduled column is calculated according to the scheduled Marked Time (which should have the `Overtime` option checked). The following optional columns contain information that justifies the need of overtime hours (see Figure 43):

Staffing—Calculated and required staffing.

Difference—Schedule coverage showing the difference between calculated and required.

Variance—Equals the coverage minus the calculated, and is the anticipated non-working overhead.

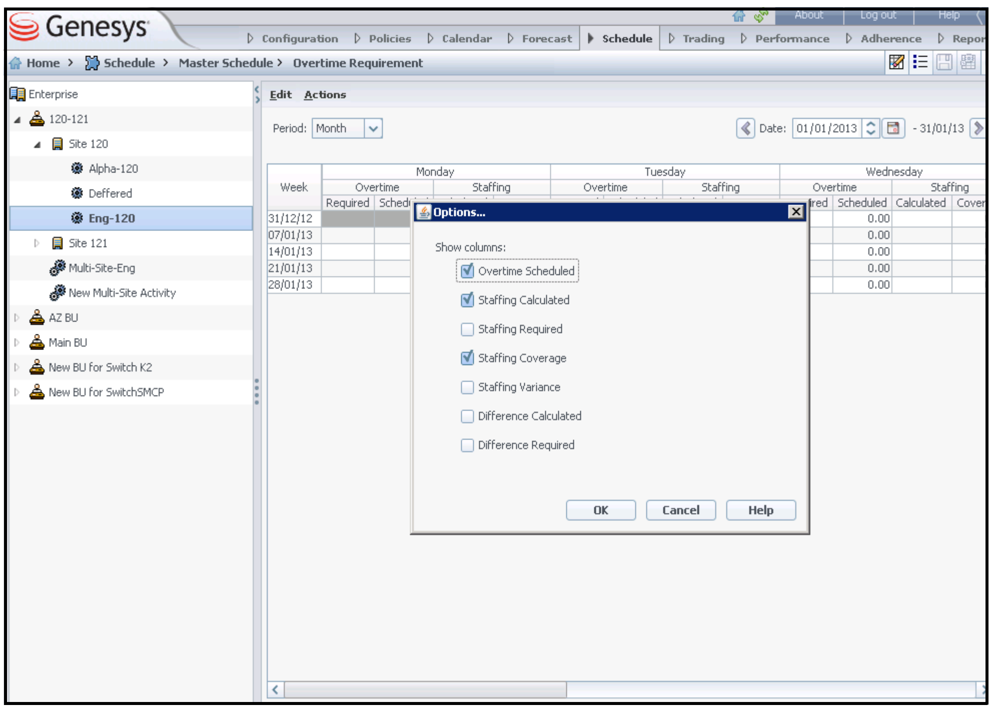

Figure 43: Overtime Requirement View with Monthly Granularity

Assigning Secondary Skill Sets for Overtime

Shifts are assigned to contacts in Web > Policies > Contracts view (see Figure 44) as either Primary or Secondary. Secondary assignments are used for overtime only and represent a broader set of constraints, while Primary assignments are used for other functionality.

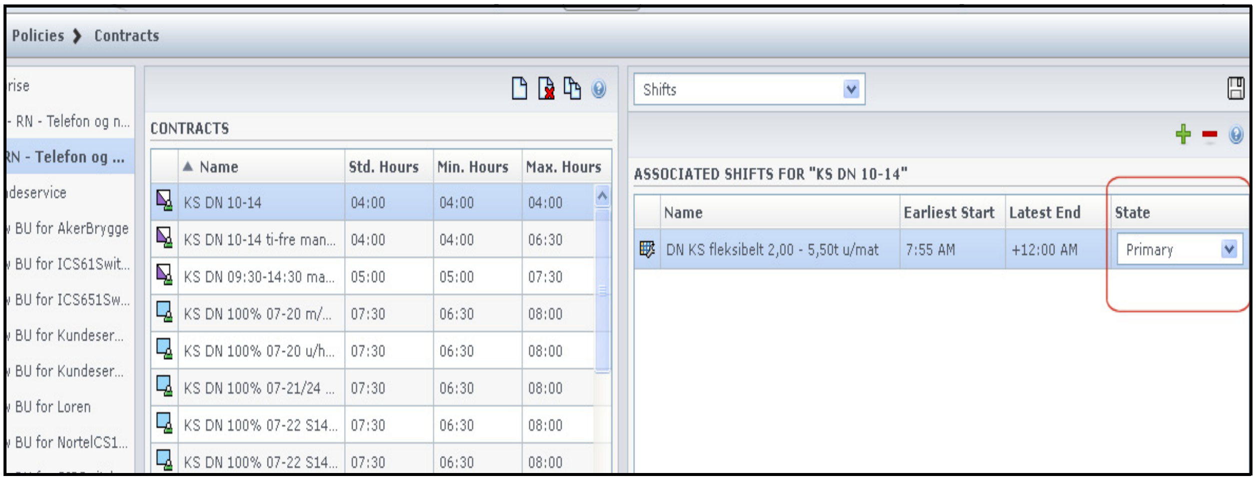

Figure 44: Web for Supervisors—Policies > Contracts > Shift Assignment

Secondary activities can be defined in one of two ways in the Web > Configuration > Agents > Activities view (see Figure 45 on page 380):

1. Assigning skills to the agent as Secondary
2. Assigning activities as Secondary with an effective date.

During overtime, agents can work on activities for which they are not normally scheduled. Therefore, entering overtime for an agent can change the agent's work day so that the usual shift definition no longer fits.

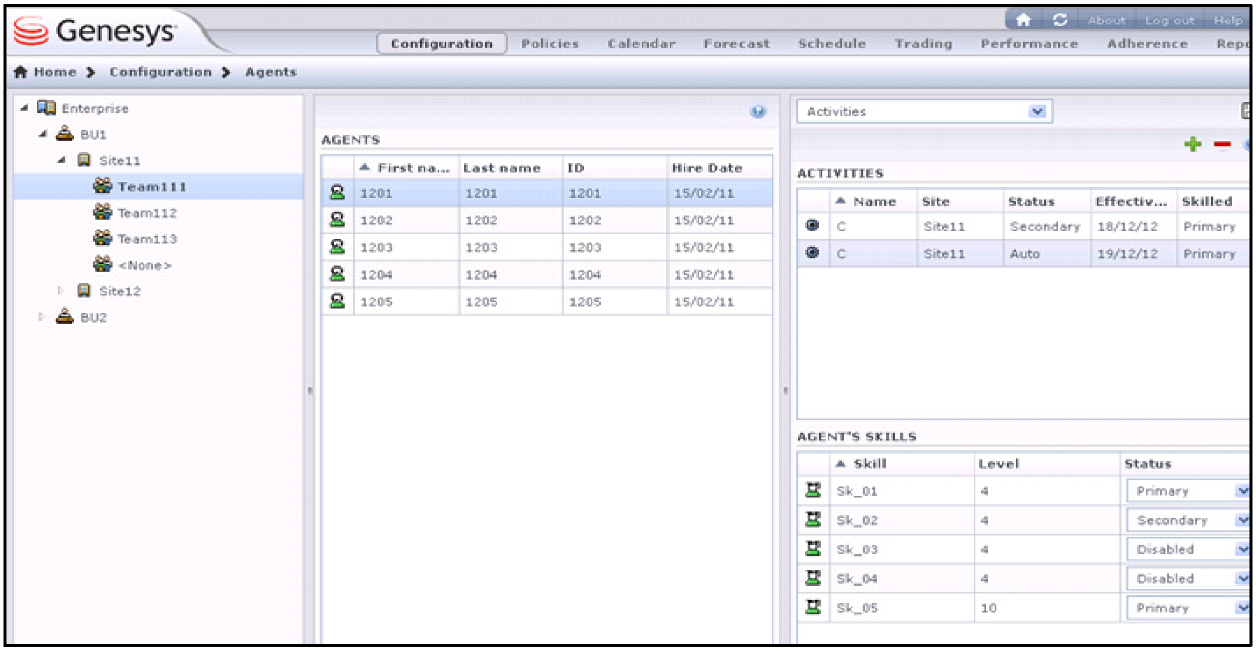

Figure 45: Web for Supervisors—Configuration > Agents > Activities View

Note: During WFM migration from 7.6.1 to 8.x, all shifts and activities are set as Primary assignments.

Configuring Overtime for Individual Agents

The Overtime view is available in the Master Schedule only. However, you must publish a scenario with the inserted work sets before the information can be seen in the Overtime view.

You can schedule overtime for an agent by inserting a work set and using Marked Time to mark it as overtime. Use one the wizards in the following views:

- Insert Wizard—Schedule > Intra-Day, Agent-Extended views (Master and Scenarios)
- Insert Multiple Wizard—Schedule > Intra-Day, Agent-Extended, and Weekly views (Master and Scenarios)

See Using the Insert Multiple Wizard to Set Overtime for Individual Agents.

Procedure: Using the Insert Multiple Wizard to Set Overtime for Individual Agents

Purpose: To add a work set for an individual agent for overtime by using the Insert Multiple Wizard in WFM Web.

Start of procedure

1. In the Intra-Day, Agent Extended, or Weekly view, select Insert Multiple from one of the following:
   - Actions toolbar
   - Actions menu
   - Right-clicking on the agent's schedule and selecting the Shortcut menu (not in Weekly view)

   If you have unsaved changes, WFM Web prompts you to save them before proceeding.
2. In the Insert Multiple Wizard, select `Insert Work set`.
3. Create a new overtime work set by selecting `Marked Time` for the designated work type.

Notes: You must select Marked Time, otherwise the resulting work set is not created as overtime (see Figure 46 on page 382). Also, inserting a work set over an existing shift can change the scheduled activities in the affected interval.

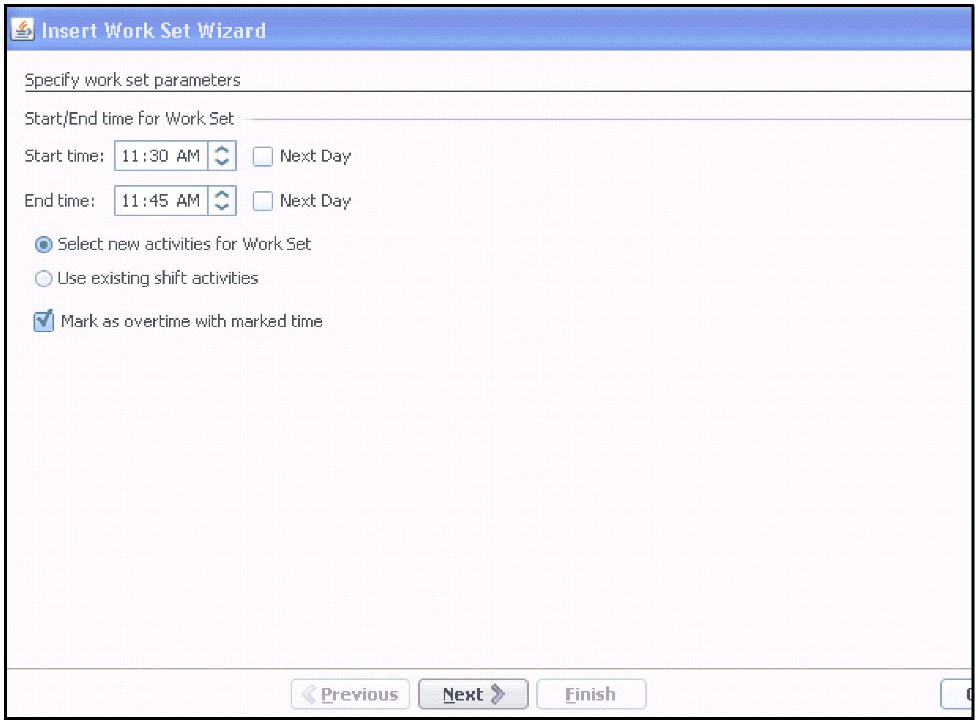

Figure 46: Insert Multiple Wizard—Inserting an Overtime Work Set

Tracking Scheduled Overtime Results

You can use the following views to track scheduled overtime results:

- Schedule > Schedule Scenarios Intra-Day view in the Performance Data pane
- Schedule > Master Schedule Intra-Day view in the Performance Data pane
- Schedule > Master Schedule view > Overtime view

The Performance Data pane separates the scheduled overtime part of the coverage within the calculated staffing graph and distinguishes it from the overtime requirement. See Figure 47 on page 383.

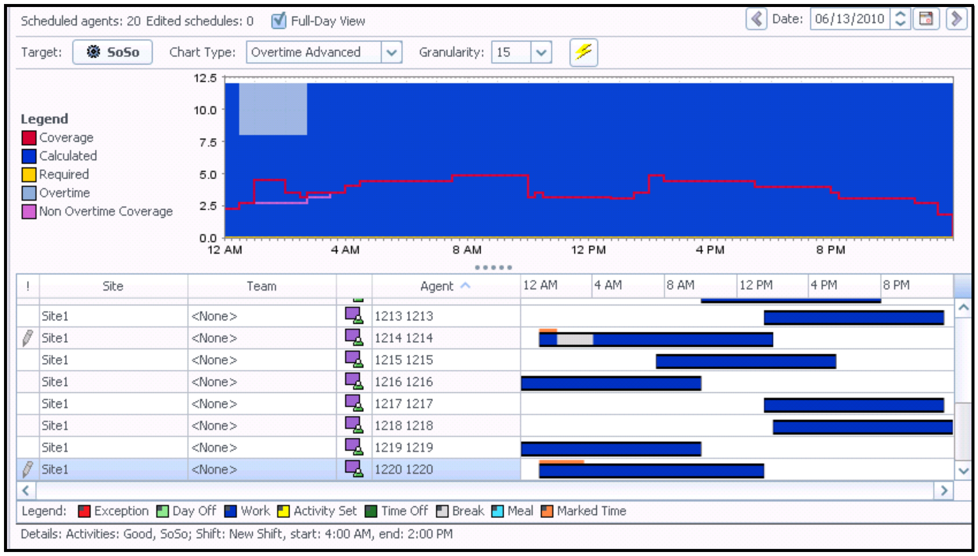

Figure 47: Calculated Staffing Graph—Full Day View

Supplements

Related Documentation Resources

The following resources provide additional information that is relevant to this software. Consult these additional resources as necessary.

Genesys Workforce Management

- *Workforce Management 8.1 Configuration Utility Help*, which explains how to use the WFM Configuration Utility to set up WFM objects (such as sites, time zones, and Agents) and constraints (such as security settings, working hours, and time-off rules).
- *Workforce Management 8.1 Web for Supervisors Help*, which explains how to use the Supervisor web interface to create forecasts and schedules, make schedule and staffing changes, and to track Agent real-time adherence and contact center performance. WFM Web for Supervisors also contains the WFM reporting functions.
- *Workforce Management 8.1 Web for Agents Help*, which instructs Agents on how to check their schedules, request time off and working hours, adjust other preferences, and make schedule trades with other Agents.
- *Workforce Management 8.1 WFM Integration API Developer's Guide*, which gives an overview of the Application Programming Interfaces (API) functions and architecture, and explains the functions that each service provides. This Guide includes short code examples that demonstrate how to use the methods included in each service.
- *Workforce Management 8.1 WFM Integration API Reference (JavaDoc)*, which provides a complete reference to the publicly exposed portion of the WFM Integration API.
- Release Notes and Product Advisories for this product, which are available on the Genesys Technical Support website at `http://genesyslab.com/support`.

Management Framework

- *Framework 8.1 Stat Server User's Guide,* particularly those sections that explain how statistics are configured.

Genesys

- *Genesys Technical Publications Glossary,* which ships on the Genesys Documentation Library DVD, provides a comprehensive list of the Genesys and computer-telephony integration (CTI) terminology and acronyms used in this document.
- *Genesys Migration Guide*, which ships on the Genesys Documentation Library DVD, provides documented migration strategies for Genesys product releases. Contact Genesys Technical Support for more information.

Information about supported hardware and third-party software is available on the Genesys Technical Support website in the following documents:

- *Genesys Supported Operating Environment Reference Guide*
- *Genesys Supported Media Interfaces Reference Manual*

Consult the following additional resources as necessary:

- *Genesys Hardware Sizing Guide,* which provides information about Genesys hardware sizing guidelines for the Genesys 8.x releases.
- *Genesys Interoperability Guide,* which provides information on the compatibility of Genesys products with various Configuration Layer Environments; Interoperability of Reporting Templates and Solutions; and Gplus Adapters Interoperability.
- *Genesys Licensing Guide,* which introduces you to the concepts, terminology, and procedures that are relevant to the Genesys licensing system.
- *Genesys Database Sizing Estimator 8.x Worksheets,* which provides a range of expected database sizes for various Genesys products.

For additional system-wide planning tools and information, see the release-specific listings of System Level Documents on the Genesys Technical Support website. These documents are accessible from the `system level documents by release` tab in the Knowledge Base `Browse Documents` Section.

Genesys product documentation is available on the:

- Genesys Technical Support website at `http://genesyslab.com/support`.
- Genesys Documentation wiki at `http://docs.genesyslab.com/`.
- Genesys Documentation Library DVD and/or the Developer Documentation CD, which you can order by e-mail from Genesys Order Management at `orderman@genesyslab.com`.

Document Conventions

This document uses certain stylistic and typographical conventions—introduced here—that serve as shorthands for particular kinds of information.

Document Version Number

A version number appears at the bottom of the inside front cover of this document. Version numbers change as new information is added to this document. Here is a sample version number:

80fr_ref_06-2008_v8.0.001.00

You will need this number when you are talking with Genesys Technical Support about this product.

Screen Captures Used in This Document

Screen captures from the product graphical user interface (GUI), as used in this document, may sometimes contain minor spelling, capitalization, or grammatical errors. The text accompanying and explaining the screen captures corrects such errors *except* when such a correction would prevent you from installing, configuring, or successfully using the product. For example, if the name of an option contains a usage error, the name would be presented exactly as it appears in the product GUI; the error would not be corrected in any accompanying text.

Type Styles

Table 37 describes and illustrates the type conventions that are used in this document.

Table 37: Type Styles

Type Style	Used For	Examples
Italic	• Document titles • Emphasis • Definitions of (or first references to) unfamiliar terms • Mathematical variables Also used to indicate placeholder text within code samples or commands, in the special case where angle brackets are a required part of the syntax (see the note about angle brackets on page 388).	Please consult the *Genesys Migration Guide* for more information. Do *not* use this value for this option. A *customary and usual* practice is one that is widely accepted and used within a particular industry or profession. The formula, $x + 1 = 7$ where x stands for . . .

Table 37: Type Styles (Continued)

Type Style	Used For	Examples
Monospace font (Looks like teletype or typewriter text)	All programming identifiers and GUI elements. This convention includes: • The *names* of directories, files, folders, configuration objects, paths, scripts, dialog boxes, options, fields, text and list boxes, operational modes, all buttons (including radio buttons), check boxes, commands, tabs, CTI events, and error messages. • The values of options. • Logical arguments and command syntax. • Code samples. Also used for any text that users must manually enter during a configuration or installation procedure, or on a command line.	Select the Show variables on screen check box. In the Operand text box, enter your formula. Click OK to exit the Properties dialog box. T-Server distributes the error messages in EventError events. If you select true for the inbound-bsns-calls option, all established inbound calls on a local agent are considered business calls. Enter exit on the command line.
Square brackets ([ ])	A particular parameter or value that is optional within a logical argument, a command, or some programming syntax. That is, the presence of the parameter or value is not required to resolve the argument, command, or block of code. The user decides whether to include this optional information.	smcp_server -host [/flags]
Angle brackets (< >)	A placeholder for a value that the user must specify. This might be a DN or a port number specific to your enterprise. **Note:** In some cases, angle brackets are required characters in code syntax (for example, in XML schemas). In these cases, italic text is used for placeholder values.	smcp_server -host <confighost>

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