Before using this information and the product it supports, read the information in Appendix H, “Notices” on page 113.
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About this guide

The IBM Tivoli Monitoring for Web Infrastructure, Version 5.1.0: WebLogic Server User’s Guide provides information about setting up and using IBM® Tivoli® Monitoring for Web Infrastructure: WebLogic® Server to manage your WebLogic Server resources.

Who should read this guide

This guide is for administrators and system programmers who use IBM Tivoli Monitoring for Web Infrastructure to manage WebLogic Server resources.

Readers should be familiar with the following:

- The operating systems that the Web servers run on, such as UNIX®, Microsoft® Windows® 2000, Windows NT®, and Linux
- Web server administration
- The Tivoli management environment

Publications

This section lists publications in the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server library and any other related documents. It also describes how to access Tivoli publications online, how to order Tivoli publications, and how to submit comments on Tivoli publications.

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server library

The IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server library contains the following publications:

- IBM Tivoli Monitoring for Web Infrastructure Installation and Setup Guide, GC23-4717
  Provides information about installing and setting up IBM Tivoli Monitoring for Web Infrastructure.
- IBM Tivoli Monitoring for Web Infrastructure Release Notes, GI11-0925
  Provides a product overview, system requirements, and additional installation information.
- IBM Tivoli Monitoring for Web Infrastructure Reference Guide, GC23-4720
  Provides detailed programming information about the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server resource models, tasks, commands, and error messages.
  Provides information about installing and using the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server Warehouse Enablement Pack.
  This document is located on the IBM Tivoli Monitoring for Web Infrastructure, Version 5.1.0: Component Software CD in the tedw_apps_etl\gwl\pkg\v110\doc directory.
- IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server Limitations and Workarounds Supplement, SC09-7773
Provides information about problems that might occur, as well as customer issues that have been resolved.

Prerequisite publications

To use the information in this book effectively, you must have some prerequisite knowledge of IBM Tivoli Monitoring, which you can get from the following books:

- **IBM Tivoli Monitoring User’s Guide, SC23-4567**
  Provides an overview of IBM Tivoli Monitoring, especially of resource models. It also describes how to use the user interface.

- **IBM Tivoli Monitoring Workbench User’s Guide, SC23-5678**
  Describes using the IBM Tivoli Monitoring Workbench to create and customize resource models.

Accessing softcopy publications

The publications for this product are available in PDF and HTML formats through the following media:

*IBM Tivoli Monitoring for Web Infrastructure, Version 5.1.0: Documentation CD, LK3T-8515–00*

The Documentation CD contains all of the English language publications for this product, except for the Web-only Limitations and Workarounds supplements. To access the publications, use a Web browser to open the start.html file, which is located in the root directory of the CD.

**Note:** The **IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server Warehouse Enablement Pack Implementation Guide** is located on the product CD, not the documentation CD.

The NLS (national language support) Documentation CD contains both English and non-English language publications for this product, except for the Web-only Limitations and Workarounds Supplements. To access the publications, use a Web browser to open the start.html file, which is located in the root directory of the CD.

Tivoli Information Center

IBM posts all publications for this product, as they become available and whenever they are updated, to the Tivoli Information Center Web site. The Tivoli Information Center is located at the following Web address:


Click the IBM Tivoli Monitoring for Web Infrastructure link to access the product library.

Ordering publications

You can order hardcopy publications online from the IBM Publications Center Web site:


You can also order by telephone by calling one of these numbers:

- In the United States: 800-879-2755
- In Canada: 800-426-4968
In other countries, see the following Web site for a list of telephone numbers:

[http://www.tivoli.com/inside/store/lit_order.html]

**Providing feedback about publications**

If you have comments or suggestions about Tivoli products and documentation, complete the customer feedback survey at the following Web site:

[http://www.tivoli.com/support/survey/]

**Accessibility**

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully. With this product, you can use assistive technologies to hear and navigate the interface. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface. For more information about the accessibility features of this product, see [Appendix G, “Accessibility” on page 111](#).

**Contacting Customer Support**

If you have a problem with any Tivoli product, you can contact Customer Support. See the Customer Support Handbook at the following Web site:

[http://www.tivoli.com/support/handbook/]

The handbook provides information about how to contact Customer Support, depending on the severity of your problem, and the following information:

- Registration and eligibility
- Telephone numbers and e-mail addresses, depending on the country in which you are located
- What information you should gather before contacting support

**Conventions used in this book**

This book uses several conventions for special terms and actions, operating system-dependent commands and paths, and margin graphics.

**Typeface conventions**

The following typeface conventions are used in this book:

- **Bold**
  - Lowercase and mixed-case commands, command options, and flags that appear within text appear like **this**, in **bold** type.
  - Graphical user interface elements and names of keys also appear like **this**, in **bold** type.

- **Italic**
  - Variables, values you must provide, new terms, and words and phrases that are emphasized appear like *this*, in *italic* type.

- **Monospace**
  - Commands, command options, and flags that appear on a separate line, code examples, output, and message text appear like `this`, in monospace type.
Text strings you must type, when they appear within text, names of Java™ methods and classes, and HTML and XML tags also appear like this, in monospace type.
Chapter 1. Overview of IBM Tivoli Monitoring for Web Infrastructure, Version 5.1.0: WebLogic Server

IBM Tivoli Monitoring for Web Infrastructure, Version 5.1.0: WebLogic Server provides a centralized system management tool for WebLogic Server. The IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server enables you to manage WebLogic Servers.

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server provides the ability to manage and monitor WebLogic Server resources by providing extensions to Tivoli Management Framework, IBM Tivoli Monitoring, Tivoli Enterprise Console, Tivoli Business Systems Manager, and Tivoli Enterprise Data Warehouse.

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server uses IBM Tivoli Monitoring resource models to manage distributed WebLogic Server resources effectively.

Use IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server to perform the following tasks:

- Monitor and interpret performance and availability data for WebLogic Server resources across distributed environments
- Manage performance and availability of WebLogic Server resources
- Capture and manage historical data that is stored in a central data warehouse
- Forward WebLogic Server events to the Tivoli Enterprise Console
- Manage event correlation and automation using the Tivoli Business Systems Manager

Note: Tivoli Enterprise Console and Tivoli Business Systems Manager must be installed for you to take advantage of event management functions. This guide addresses event management topics with the assumption that Tivoli Enterprise Console and Tivoli Business Systems Manager are installed where required.

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server provides the following features:

- Availability management
- Performance management
- Operations management

**Availability management**

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server provides resource models that periodically check the status of your WebLogic Server components. For example, the resource models monitor the servers for the following states:

- Running
- Shutdown in process
- Suspended
- Standby
- Unknown
• Down

You can configure the resource models to customize the monitoring cycle and to change the triggering thresholds.

To ensure that you are managing all available resources, IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server provides the discover_weblogic_server task that finds WebLogic Servers. When the discover_weblogic_servers task locates new WebLogic Server resources, it adds them to your Tivoli configuration.

Performance management

The IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server resource models enable you to measure and report the performance of various components running on your WebLogic Server resources, such as Enterprise JavaBean (EJB) performance or database connection pool performance, both of which affect the performance of Web applications running on your servers.

Operations management

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server tasks enable you to manage your WebLogic Server resources on a daily basis. You can use these tasks to do the following:

• Start and stop your WebLogic Servers
• Check the status and retrieve information about your WebLogic Server resources

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server event rules manage the information presented on your event console. These rules correlate and close events as well as remove duplicate and harmless events that are no longer relevant. IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server event reporting functions support standard Tivoli event filtering, which you can use to reduce the number of events sent to your events server. In addition to forwarding events to Tivoli Enterprise Console, IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server can also forward events to Tivoli Business Systems Manager.

Overview of IBM Tivoli Monitoring

IBM Tivoli Monitoring 5.1.1 enables you to deploy preconfigured best practices resource models as well as standard and customized resource models to automate the monitoring of essential resources. In this context, a resource is anything that affects the operation of a computer system and includes physical and logical disks, CPUs, memory, printers, the processes running, and the services, such as LanMan, Windows event log, UNIX syslogd (logging system daemon) and TCP/IP. This enables you to detect bottlenecks and other potential problems and define automatic recovery from critical situations. This ability frees system administrators from manually scanning extensive performance data. The monitoring software integrates with other Tivoli Availability solutions, including Tivoli Business System Manager and Tivoli Enterprise Console.

A resource model captures and returns information, such as database status or server availability, about a resource or software application in the Tivoli management environment. To use a resource model, you must define and distribute it to an endpoint.

Tivoli provides tools for organizing system resources on the Tivoli desktop. Servers are subscribed to profile managers. These subscriptions provide the channel through
which resource models are distributed to servers. A profile manager also contains profiles, which are containers for application-specific information about a particular type of resource. Each profile contains one or more resource models. You can subscribe resources to a profile manager. You can distribute individual profiles within the profile manager to subscribers of the profile manager. You can group profile managers in a way that meets your needs. Profile managers can reflect functional grouping of resources, functional grouping of resource models, or any grouping at all. Likewise, a profile can contain any combination of resource models. However, you must segregate profiles according to resources: Web servers need Web server resource models, and database servers need database server resource models.

You can define each resource model to include information such as how often to check resource status and what to do when certain conditions are met. Some resource models provide predefined settings and response actions, which you can adjust. Other resource models require you to define all the settings. See the IBM Tivoli Monitoring for Web Infrastructure Reference Guide for a description of individual settings.

Before running a resource model, you must subscribe the server resource to the profile manager that contains the profile in which the resource model is stored. You can then distribute the profile to the resource. By default, resource models are set up to become active when you distribute them to subscribers. You can activate and deactivate resource models after they are distributed.

Understanding IBM Tivoli Monitoring terminology

This section describes the main concepts required for understanding how to use the IBM Tivoli Monitoring product.

Note: The definitions below apply to resource models in general. They are not specific to the resource models provided by IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server. For information about the configuration of the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server resource models, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.

Actions

You can associate one or more recovery actions with a specific event. These actions are automatically triggered when the event occurs and, typically, are used for restoring satisfactory system service level. Each time an event occurs, the system provides a notification of the event, triggers a recovery action to restore satisfactory conditions and, if the action is successful, provides a notification that the action was performed. Actions are associated with the execution of a CIM method or the execution of a program. Associate actions with indications when modifying an existing resource model using this software, or when creating a new resource model with the IBM Tivoli Monitoring Workbench.

Attributes

Attributes can be string or numeric values. When creating a new resource model with the IBM Tivoli Monitoring Workbench, you can qualify an event by specifying relevant attributes according to the information you want the resource model to monitor. For example, an event might indicate insufficient disk space. When you specify attributes, such as disk name, or available disk space, the resource model can generate a more precise indication of the problem. For each resource model, some of the attributes are designated as keys.
Cycles  When a resource model is run at an endpoint, it gathers data at regular intervals, called cycles; the duration of a cycle is the cycle time, which is expressed in seconds. A resource model with a cycle time of 60 seconds gathers data every 60 seconds. Each of the supplied resource models has a default cycle time, which you can modify when you define the resource model. At each cycle, the resource model collects data, analyzes it, generates the events and triggers specified actions. The data collected are a snapshot of the status of the resources specified in the resource model.

Gathering Historical Data component

The Gathering Historical Data component enables IBM Tivoli Monitoring to use Tivoli Decision Support for Server Performance Prediction and Tivoli Enterprise Data Warehouse.

The Gathering Historical Data component uses data collected by specific IBM Tivoli Monitoring resource models to populate a database on the Tivoli server where the Gathering Historical Data component is installed. The collected data is aggregated every 24 hours and added to the IBM Tivoli Monitoring database, from where it can be used in analyses that help plan network growth using key system metrics.

For more information about Tivoli Enterprise Data Warehouse, see the following publications:

- Tivoli Distributed Monitoring Warehouse Enablement Pack: Implementation Guide
- Enabling an Application for Tivoli Enterprise Data Warehouse

Heartbeat function

IBM Tivoli Monitoring operates a heartbeat function, which monitors the basic system status at endpoints attached to the gateway at which it is enabled. Events can be sent to the Tivoli Business Systems Manager (provided that the Tivoli Business Systems Manager Adapter component is installed at the gateway), the Tivoli Enterprise Console® , and the IBM Tivoli Monitoring Notice Group.

Indications and Events

An indication is generated when the state of a given resource meets defined criteria. By itself, an indication does not trigger any specific action. When indications are aggregated, the resource model generates an event. When you define an event, you must specify under what conditions a certain number of indications are aggregated into an event. You also specify whether these indications must be consecutive, or whether the sequence may be interrupted by one or more monitoring cycles that do not register any indication. The cycles during which no indication is generated are called holes. An event can notify that there is a problem in the resource state, trigger an action and, if enabled, send a notification to the Tivoli Enterprise Console server or to Tivoli Business Systems Manager.

Indications

Each resource model generates an indication when thresholds you define are exceeded in a given cycle. A single occurrence of an indication does not always represent a problem, however the persistence of indications might. The resource model measures the persistence of the indications and aggregates them according to your specifications, or how you define settings for occurrences and holes. If the persistence of an indication meets the specified
number of occurrences, the resource model generates an event. Indications can be generated in any one of the following circumstances:

- When a single threshold is exceeded
- When a combination of two or more thresholds are exceeded
- When a combination of other factors change

**Occurrences and holes**

Occurrences and holes record whether or not an indication occurs during a cycle for a specific resource model. An occurrence is a cycle during which at least one threshold is exceeded and an indication occurs for a given resource model. A hole is a cycle during which an indication does not occur for a given resource model. A hole means none of the conditions that generate an indication were met.

**Events**

An event is an aggregation of a defined number of consecutive occurrences during which there can be a defined number of consecutive holes. An event is generated only when the aggregation algorithm detects the number of consecutive occurrences defined in the indication with which the event is associated. An event verifies the persistence of an indication by eliminating unrepresentative peaks and troughs over a period of cycles. An indication that persists over several cycles is more likely to be a problem. Thus, an event defines that a number of occurrences over a period of cycles has occurred.

When you define an event, you can specify how many consecutive holes in the sequence of consecutive occurrences are permitted. Specifying how many consecutive holes are permitted during the accumulation of the consecutive occurrences enables you to continue the counting of consecutive occurrences if one or two cycles fall below the threshold.

The following examples illustrate what happens if you define an event as three occurrences and two holes. 1 represents an occurrence and 0 represents a hole.

- **0 1 0 1 0 0 1**
  Because fewer than three holes exist between each of the three occurrences, the three occurrences are consecutive. Therefore, the sequence represents an event.
- **1 0 0 1 0 0 1**
  If each occurrence is followed by the maximum specified holes within seven cycles, an event is triggered.
- **1 0 0 1 0 0 0**
  If the algorithm counts two consecutive occurrences and then observes three consecutive holes (more holes than that allowed in the definition of an event for this example) it sets the count of occurrences to zero. See Table 1.

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Count of occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 0 0</td>
<td>1</td>
</tr>
<tr>
<td>1 0 0 1</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 1. Counting occurrences
While defining an event, you can also indicate if you want the system to notify the Tivoli Enterprise Console server, or the Tivoli Business Systems Manager, that an event was generated. The Tivoli Monitoring operator can change these selections later, when the resource model is included in a Tivoli Monitoring profile. You can also define the degree of severity and the message that will specify the notification of the event.

**Clearing Events**

A *clearing event* is a resource model function that, if enabled, allows IBM Tivoli Monitoring to close an event when the circumstances that caused the event are no longer present. Clearing events can be processed by the Tivoli Enterprise Console server and by Tivoli Business Systems Manager. Clearing events have a severity of *harmless*, regardless of the severity of the original event, but have the same event ID as the original event.

For example, a service stops and the Tivoli Enterprise Console server receives an event notifying it of this problem. Until the service restarts, the problem is still present on the endpoint, but IBM Tivoli Monitoring does not send any further event notifications to the Tivoli Enterprise Console server. If the Clearing Event function is enabled, as soon as the service restarts, a clearing event is sent to the Tivoli Enterprise Console server, thereby closing the original event. The Clearing Event itself does not normally appear on the server, because its only function is to clear the original error event.

**Note:** Correlated events cannot be cleared.

**Monitoring of events and indications**

Events can be sent to the Tivoli Enterprise Console server, the Web Health Console, and Tivoli Business Systems Manager.

**Tivoli Enterprise Console server**

Events can be viewed by a Tivoli Enterprise Console server and contain a set of properties that can help to identify problems.

Clearing events can also be processed by the Tivoli Enterprise Console server. If the default procedure is used to enable the monitoring of events, the Tivoli Enterprise Console server uses the clearing event to close the associated error event. However, if you choose not to install the clearing events rule incorporated in the above-mentioned default procedure, the clearing event is displayed as a separate entity with the same ID as the original error event.
**Web Health Console**

The Web Health Console, an optional part of IBM Tivoli Monitoring, displays the health of each resource model for a selected endpoint as a numeric value between 100 (perfect health) and zero (with zero meaning that an event has been triggered). Intermediate values show the percentage of occurrences currently registered with respect to the total number of occurrences needed to trigger an event.

**Tivoli Business Systems Manager**

Events and clearing events can also be sent to the Tivoli Business Systems Manager, provided that the Tivoli Business Systems Manager Adapter component has been installed on the gateways of the endpoints that are to be monitored. A full description of Tivoli Business Systems Manager can be found in the Tivoli Business Systems Manager documentation.

Clearing events can also be processed by the Tivoli Business Systems Manager, which uses the clearing event to close the associated error event.

**Logging**

For any endpoint, you can log the data collected by a resource model in a local database. Then you can view it through the History View of the Web Health Console. You can choose to store raw or aggregated data. You can also log data to the Tivoli Enterprise Data Warehouse.

**Parameters**

While thresholds can be only numeric values, parameters can be lists of numbers or strings. Using parameters enables you to customize your resource model. You can define different parameters, as required. For each parameter you can specify a value, which can, for example, represent the instances you want to monitor, or a limit you do not want your resource to exceed, depending on how you use this setting in your script. The lists will then be displayed in the IBM Tivoli Monitoring dialogs, and depending on the type of list you select in the IBM Tivoli Monitoring Workbench, the lists will appear in different forms on IBM Tivoli Monitoring. Within the IBM Tivoli Monitoring Workbench, you can define default values and then let the operator customize the settings in IBM Tivoli Monitoring. You can choose one among the following kinds of lists when you specify the parameters:

- Boolean List
- Choice List
- String List
- Numeric List

Some resource models have one or more parameters.

**Profiles**

IBM Tivoli Monitoring is a profile-based application that runs in a Tivoli environment. Different profiles can be defined containing different selections of resource models. All aspects of existing profiles can be modified, including the addition, deletion and customization of resource models. You can distribute multiple profiles to each endpoint.
Recovery Actions

For any event, recovery actions can be run automatically, such as built-in actions (for Windows) or Tivoli Framework tasks. The actions can take positive steps to remedy the situation, or can ensure that information about the event is distributed to the appropriate authorities or entities.

Built-In Actions

Certain events can have one or more built-in actions predefined for them. An action can be either the execution of a common information model (CIM) class method or the execution of a program. Both types of actions can be implemented only through the Workbench. For example, an event that detects the failure of a service could have the restart of that service as its built-in action. Thus, without any human intervention, IBM Tivoli Monitoring detects the failure of a service and automatically restarts it. Built-in actions are defined by default as part of an event, but can be removed. They have the same event ID as the event that they are designed to correct.

Note: The events for the IBM Tivoli Monitoring for Web Infrastructure, Version 5.1.0: WebLogic Server resource models do not have built-in actions. You can add built-in actions to a custom resource model.

Tivoli Framework tasks

For each event you can select one or more Tivoli Framework tasks to be performed when the event is triggered. The tasks that are triggered by an IBM Tivoli Monitoring event can access the event name and event thresholds by accessing the environment variables.

Resource models

IBM Tivoli Monitoring products provide predefined resource models that access specific performance data from the system at runtime. The resource models process the data they collect using an algorithm that determines whether or not the system is performing to expectations. You can either use a resource model’s default values to collect performance data or customize the resource models to match specific requirements in your environment. Distributing resource models using default values enables you to begin monitoring immediately to obtain useful data concerning your enterprise. When you become more familiar with the monitoring process and feedback, you may choose to customize the resource model information.

Scheduling

IBM Tivoli Monitoring contains a scheduling feature that enables you to determine a period within which monitoring takes place and specific scheduling rules.

The monitoring period is determined by defining a from and a to date.

The scheduling rules enable you to define time periods on specific days during which monitoring takes place. Any number of rules can be defined, allowing you to set up a complex pattern of resource monitoring for a profile, covering the time periods important to you.

The scheduled times are always interpreted as local times, enabling you to set up a single rule that monitors the same local time period in different time zones. For example, if your region covers several time zones, but you want to monitor morning activities in each time zone, a single rule...
defining the monitoring period of between 08:00 and 13:00 is interpreted locally in each of the time zones, so that you monitor the same relative period.

You should note also that all times of events or activities reported from endpoints or gateways are logged in the local time of the system from where they originated.

Thresholds

Each resource model defines one or more thresholds. Each threshold has a default numeric value that you can change when you define the resource model or edit it. The following are examples of how a resource model can use thresholds:

- A threshold value might represent a limit that, if not met, indicates an unsatisfactory resource state. For example, if you want the system to notify you when disk space drops under 70%, set the threshold value to 70 to generate an indication each time your disk space is less than 70%.

- Some threshold values control the scope of what the resource model monitors.

You can add a description in the IBM Tivoli Workbench for each threshold in the Threshold dialog explaining what each value measures and how it is used within the monitoring algorithm.

Authorization roles

WebLogic Server administrators are known in the Tivoli environment as Tivoli administrators. Administrators are system or Tivoli administrators who have the authorization to manage WebLogic Server objects. After the product is installed, you can assign authorization roles to administrators that define the operations they can perform. Each administrator or group of administrators is represented by an icon on the Tivoli desktop.

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server fully integrates into Tivoli security. To perform administration functions, administrators must have authorization roles for both IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server and the Tivoli management environment.

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server uses the following authorization roles:

- weblogic_super
- weblogic_admin
- weblogic_user

Managed resources and endpoints

A managed resource is a system or network resource that you manage with Tivoli Management Framework. A managed resource is a specific resource that has a default policy defined in a policy region. An endpoint is a managed resource that is the target for distribution of a profile or the resource on which a task or job is to be run. IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server uses endpoint objects to represent WebLogic Servers. To manage WebLogic Server resources, the Tivoli endpoint must be installed on each node represented by a WebLogic Server object.
Note: In the Tivoli environment, the term *node* is used to refer to any managed resource with Tivoli Management Framework installed. In the WebLogic environment, the term node is used to refer to the WebLogic Server. In this document, unless specifically indicated, the Tivoli environment definition of *node* is used.

**User interface options**

You can use the following user interfaces when working with IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server:

- The Tivoli desktop, which is the traditional Tivoli graphical user interface (GUI)
- The command line interface (CLI) for viewing and operational management of resources
- IBM Tivoli Monitoring Web Health Console to work with resource models
- Tivoli Enterprise Console to work with event management
- Tivoli Business Systems Manager to work with event management and to run some tasks
- Tivoli Enterprise Data Warehouse to gather data about your resources
Chapter 2. Setting up IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server

This chapter describes how to configure IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server.

Guidelines for setting up the product

The following table describes the steps required to set up IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server, as well as links to where to find more information.

Table 2. Guidelines for setting up the product

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During installation, IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server performs several tasks that help to set up your IBM Tivoli Monitoring environment, including creating the WebLogic Monitoring profile manager, adding resources to the profiles, and adding resource models to profiles.

If you want to create additional profile managers or customize the subscribers or resource models assigned to your profile manager, the procedures are documented in Appendix C, “Setting up IBM Tivoli Monitoring” on page 91.

Setting authorization roles

Objective

To assign the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server authorization roles for managing resources to administrators and users.
Background information
When you install IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server, the following three roles are created:

- weblogic_super
- weblogic_admin
- weblogic_user

All tasks require that you assign at least one of these roles to the Tivoli administrator who is running the task. In addition, some tasks require Tivoli authorities as defined by Tivoli management region roles. To run tasks and processes, the Tivoli administrator must have the required Tivoli authority and must be assigned one of the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server authorization roles. You can assign IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server authorization as Tivoli management region roles or as resource roles, depending on local authorization requirements.

Required authorization role
senior

Before you begin
Before setting authorization roles, you must have installed IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server. See the IBM Tivoli Monitoring for Web Infrastructure Installation and Setup Guide for information on installation.

When you finish
Add managed resources to a policy region.

Procedure
You can perform this procedure from the command line or the Tivoli desktop.

Command Line: Use the wsetadmin command to set or change resource authorization roles. See the Tivoli Management Framework Reference Manual for more information.

Tivoli desktop: Follow these steps to perform this procedure from the Tivoli desktop:
1. Open the Administrators collection to see the icons representing the defined Tivoli administrators.
2. Right-click the existing administrator whose role you want to modify to access the pop-up menu.
3. Select Edit Resource Roles to access the Set Resource Roles window.
4. Select a resource for which you want to set the administrator’s role from the Resources scrolling list.
5. Add or remove roles for the selected resources as follows:
   - To add roles for the selected resources, select one or more roles from those shown in the Available Roles scrolling list and click the left-arrow button. The selected roles are moved from the Available Roles scrolling list to the Current Roles scrolling list. You can also double-click an entry in the Available Roles scrolling list to move it automatically to the Current Roles scrolling list.
   - To remove roles for the selected resources, select one or more roles from those shown in the Current Roles scrolling list and click the right-arrow button. The selected roles are moved from the Current Roles scrolling list to
the Available Roles scrolling list. You can also double-click an entry in the Current Roles scrolling list to move it automatically to the Available Roles scrolling list.

6. You must click Change & Close or Change to add and remove the selected roles and save your changes.

   **Note:** You must click Change for each resource to which you assign roles.

7. *(Optional)* Repeat Steps 4 through 6 for each resource to which you want to assign roles.

8. Click Change & Close to return to the Administrators window.

The administrator must restart the Tivoli desktop before this change takes effect.

---

**Registering IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server resources**

**Objective**

To register IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server objects that represent your WebLogic Server components.

**Background information**

The first step in managing WebLogic Server components is to create IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server objects to represent the components that you want to manage.

You can register these objects in one of three ways:

- Using the Tivoli desktop
- Using the command line
- Using the weblogic_server_discover task

When registering a WebLogic Server, the server is validated using the STRONG value.

**Required authorization role**

weblogic_admin or weblogic_super for the Tivoli desktop

weblogic_super for the weblogic_server_discover task

**Before you begin**

Any systems that you want to manage with IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server must have a supported version of WebLogic Server or higher installed and must be configured as Tivoli endpoints. See the *Tivoli Management Framework Reference Manual* for information about configuring Tivoli endpoints.

**Note:** All of the WebLogic Servers in any specific WebLogic Domain should be the same version of BEA WebLogic Server. This is a general expectation of the BEA WebLogic Server product.

Ensure that the WebLogic Server is running.

Once you have registered a WebLogic Domain, it is recommended that the first server you register be the WebLogic Administration Server. The domain wide config.xml file resides on this server.
When you finish
Subscribe servers to profile managers, if needed. Distribute resource models to the
new IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server objects so that
you can monitor their status and performance.

Procedure
You can perform this procedure from the command line, the Tivoli desktop, or as a
task.

Note: If you experience problems performing this procedure, see Appendix F,
“Problem determination” on page 105 for information about log files and
common problems that might occur. You can also see the IBM Tivoli
Monitoring for Web Infrastructure Reference Guide for information about
messages.

Command line: Use the wweblogic -RegisterDomain command to register a
WebLogic Domain. Use the wweblogic -RegisterServer command to register a
WebLogic Server. For the CLI syntax for these commands, see the IBM Tivoli
Monitoring for Web Infrastructure Reference Guide.

Tivoli desktop: Follow these steps to register objects from the Tivoli desktop:
1. To register a WebLogic Domain, from the Create menu inside the Monitoring
for WebLogic policy region or a sub-region, select WebLogicDomain.
2. Complete the following fields on the Register Domain window:
   - **Label**: Unique identifier for the WebLogic Domain.
   - **Domain Name**: Name of the WebLogic Domain as specified in the configuration file on
     the WebLogic Administration Server.
   - **Maximum Days Unvalidated**: Maximum number of days to allow the WebLogic Domain to be
     unvalidated. If a WebLogicServer remains unvalidated for more days
     than this setting, it will be removed the next time a DiscoverServers
     method is run against this WebLogicDomain.
   - **System User**: Login ID of the administrator of the WebLogicDomain. This ID is used
     to connect to the underlying WebLogic Domain.
   - **System Password**: System password to use for domain operations.
   - **Confirm System Password**: Confirmed system password to use for domain operations.
   - **TEC Server**: Unique identifier for the Tivoli Event Console server. To determine the
     value for the TEC Server option, perform the wlookup -ar EventServer
     command and use the resulting value. This value is optional.
3. Click Execute & Close.
4. To register a WebLogic Server, from the WebLogic Domain in which you want
to register the server, click the WebLogicDomain menu and then select Register
   Server.
5. Complete the following fields on the Register Server window:
   - **Endpoint Label**: Name or IP address of the machine where the WebLogic Server runs.
This name should not be confused with the label of the endpoint object that points to that machine. A valid IP address contains less than four octets, assuming subnet masks are set up correctly. For example, 255, 255.255, 255.255.255, and 255.255.255.255 are all valid IP addresses.

**Label**  
Label you want to use for the Tivoli object. Must be unique within the Tivoli management region. If left blank, this label will default to a close match of the server name.

**Server Name**  
Name of the WebLogic Server, according to the WebLogic configuration file, config.xml.

**Version**  
6.1 or 7.0.

**Listen Address**  
IP address on which the WebLogic Server listens to requests, according to the WebLogic configuration file, config.xml. A valid IP address contains less than four octets, assuming subnet masks are set up correctly. For example, 255, 255.255, 255.255.255, and 255.255.255.255 are all valid IP addresses. If left blank, this attribute defaults to 127.0.0.1.

**Listen Port**  
Port on which the WebLogic Server listens to requests, according to the WebLogic configuration file, config.xml. If left blank, this attribute defaults to 7001.

**JRE Directory**  
The full path to the directory of the Java Runtime Environment (JRE). A valid java executable should exist under JRE directory/bin.

**Root Directory**  
The full path to the top level directory of the WebLogic installation to which the WebLogic Server belongs.

**Class Path**  
Java class path used by the WebLogic Server. weblogic.jar should be included in this ClassPath.

**Log File**  
The full path to the logfile for this Server. You may leave blank if the version of the server is less than 7.0.

**Start Command**  
The command to use to start the WebLogic Server when it is operating as a managed server (not operating as an administration server). Include the full path to the command plus any flags the command might require. For more information, see "Starting, stopping, or killing a server" on page 58.

**Start Command Admin**  
The command to use to start the WebLogic Server when it is operating as the administration server. Include the full path to the command plus any flags the command might require.

**Administration Server**  
TRUE or FALSE. If TRUE is selected, this WebLogic Server is the Administration Server for the domain in which it resides. Only one single server acts in this capacity. In the event that you register a server as the Administration Server and then register a second server in the same domain as the Administration Server, the original Administration Server would then cease to be the Administration Server.
Server will no longer be the Administration Server for that domain. Only the last WebLogic Server that is configured or registered as an Administration Server will have that status for a domain.

**Validation Level**
Sets the level of validation for the configuration of the WebLogicServer. WEAK validation verifies directories and paths specified in attributes existing on the endpoint. STRONG validation attempts to connect to the underlying WebLogic Server after configuration. The default value is STRONG.

6. Click **Set & Execute**.

**Task:** Follow these steps to perform this procedure using a task:

1. From the Tivoli desktop, double-click the **Monitoring for WebLogic** policy region.
2. Double-click the **WebLogic Control Tasks** icon.
3. Double-click the **discover_weblogic_servers** task icon and complete the Execute Task window. Select the WebLogic Domain object on which you want to run the weblogic_server_discover task.
4. Select **Display on Desktop** to display the output of the task on the desktop.

![Figure 1. WebLogic Server resources output](image)
5. Increase the timeout value because the weblogic_server_discover task takes a considerable amount of time to finish.

6. Click Execute or Execute and Dismiss.

For more information on the weblogic_server_discover task, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.

**Link to a JRE for each endpoint**

Before you can monitor your resources, you must link to a JRE for each endpoint. For more information on this subject, see the IBM Tivoli Monitoring for Web Infrastructure Installation and Setup Guide.

**Setting up the IBM Tivoli Monitoring environment**

**Objective**
To set up the environment required to run IBM Tivoli Monitoring commands.

**Background information**
In order to issue IBM Tivoli Monitoring commands such as wdmcmd and wdmkseng in a command window, you first need to source in the Tivoli environment.

**Required authorization role**
On UNIX, the user must have root privileges; on Windows, the user must have membership in the Administrators group.

**Before you begin**
Before you can monitor your resources, you must link to a JRE for each endpoint. For more information on this subject, see "Link to a JRE for each endpoint" on page 17.

**When you finish**
None

**Procedure**
You can perform this procedure from the command line.

To set up the environment, enter one of the following commands at the command prompt:

- On a UNIX managed node, enter one of the following commands:
  - For non-C shells:
    ```
    . /etc/Tivoli/setup_env.sh
    ```
  - For C shell:
    ```
    source /etc/Tivoli/setup_env.csh
    ```

- On a UNIX endpoint, enter one of the following commands:
  - For non-C shells:
    ```
    . /<lcf.install_dir>/dat/<x>/lcf_env.sh.cshetc/Tivoli/lcf/x/lcf_env.sh
    ```
  - For C shell:
    ```
    source /<lcf.install_dir>/dat/<x>/lcf_env.sh.cshetc/Tivoli/lcf/x/lcf_env.sh
    ```

  where \(x\) is the number of the endpoint installed on the machine.

- On a Windows managed node, enter:
  ```
  %SYSTEMROOT%\system32\drivers\etc\Tivoli\setup_env.cmd
  ```
On a Windows endpoint, enter:

```
%SYSTEMROOT%\tivoli\lcf\x\lcf_env.cmd
```

where $x$ is the number of the endpoint installed on the machine.

---

**Distributing profiles**

You can distribute profiles from either the Tivoli desktop or by using MDist2.

**Distributing profiles from the Tivoli desktop**

**Objective**

To distribute profiles to specified subscribers.

**Background information**

You can distribute profiles to the following groups:

- **All levels of subscribers**
  
  Distributes the profile to all subscribers in the hierarchy.

- **Next level of subscribers**
  
  Distributes the profile only to the subscribers named in the Distribute to These Subscribers: scrolling list of the Distribute Profile window. This option does not distribute to subscribers at lower levels of the hierarchy. Perform the distribution process from profile managers at more than one level to reach all the profile endpoints if a profile manager with subscribers resides at the next lower level.

Consider the following example. You have a profile in which a dataless profile manager is subscribed to a profile manager, and the dataless profile manager has a subscribed endpoint. If you distribute to the next level of subscribers, the profile manager distributes the profile only to the dataless profile manager. If you distribute to all levels of subscribers, the profile manager distributes the profile to the dataless profile manager and to the endpoint.

**Required authorization role**

admin

**Before you begin**

- Create a profile manager and profile. See "Creating profile managers and profiles" on page 92 for information.
- Add subscribers to a profile manager. See "Subscribing resources to profile managers" on page 93 for information.
- Add a resource model to a profile. See "Adding default resource models to profiles" on page 94 and "Adding customized resource models to profiles" on page 95 for information.

You can also use the predefined profile managers and profiles created during installation.

See the IBM Tivoli Monitoring for Web Infrastructure Reference Guide for detailed information about each resource model.

**When you finish**

None
Procedure
You can perform this procedure from the Tivoli desktop only.

Tivoli desktop:
1. Open the IBM Tivoli Monitoring Profile window by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the Monitoring for WebLogic Server policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon containing the resource model you want to distribute.
2. Click Profile \(\rightarrow\) Distribute. The Distribute Profile window opens.
3. Select one of the Distribute To options. These options are explained in the Background information section. You have the following choices:
   - Next level of subscribers
   - All levels of subscribers
   These options are explained in "Background information" on page 18.
4. Select one of the Distribute Will options based on the following descriptions:
   - Preserve modifications in subscribers’ copy of the profile retains changes to existing resource models in each copy of the profile.
   - Make subscribers’ profile an EXACT COPY of this profile overwrites the subscriber’s profile with an exact copy of the profile being distributed. If you edit the configuration of a resource model in the subscriber’s copy, those changes are written to every copy of that profile.
5. Select the subscribers to receive the profile using the following steps:
   a. Select the list of subscribers that you want to distribute the profile to from the Do Not Distribute to These Subscribers scrolling list.
   b. Click the left arrow to move the subscribers to the Distribute to These Subscribers scrolling list.
   Note: Make sure that each subscriber in the Distribute to These Subscribers scrolling list is either a profile manager or a supported Tivoli management agent endpoint. IBM Tivoli Monitoring does not support other types of endpoints.
6. Click one of the following:
   - Distribute & Close
     Distributes the profile immediately, closes the Distribute Profile window, saves the settings you made, and returns to the IBM Tivoli Monitoring Profile window.
   - Distribute
     Distributes the profile immediately, saves the settings you made, and leaves the Distribute Profile window open.
   - Schedule
     Schedules the distribution of the profile with the Tivoli Scheduler. For details about using the Tivoli Scheduler, refer to the Tivoli Management Framework User’s Guide. You can also see "Scheduling a job" on page 70 for more information.
7. Click Profile \(\rightarrow\) Close to close the IBM Tivoli Monitoring Profile window.
Distributing profiles using MDist2

Objective
To circulate copies of the monitoring profile to subscribers while using MDist2 so that administrators and users can activate the monitoring process.

Background information
IBM Tivoli Monitoring uses Multiplexed Distribution (MDist2) to perform asynchronous profile data transfers through a hierarchy of repeaters. MDist2 returns a sequence of responses containing the distribution status from each endpoint to the application initiating the distribution. These responses are sent back to IBM Tivoli Monitoring in a log file, on the MDist2 command line, or through the MDist2 GUI.

IBM Tivoli Monitoring uses the following MDist2 functions:

Asynchronous delivery
IBM Tivoli Monitoring submits a distribution request and immediately receives a distribution identifier and confirmation that the distribution is in progress. MDist2 uses the callback function to send the final distribution status for each endpoint when it completes each endpoint distribution instead of waiting until all endpoints are distributed.

Assured delivery
Assures that distributed profiles are delivered to the endpoints when there are network interruptions, computer shutdowns, or disconnected endpoints. Assured delivery tries to reestablish the connections until it is either successful or the distribution time expires.

Check-point and restart
Assures that an interrupted data stream resumes from the last successful checkpoint. You do not have to resend all the IBM Tivoli Monitoring Profile data when the distribution resumes, but only the data that was not sent when the interruption occurred.

Data depoting
Stores segments of the profile at a depot close to the endpoint so the endpoints can retrieve the data from the depot instead of from the source host. This reduces network traffic and speeds up the distribution.

Required authorization role
admin

Before you begin
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 92 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 93 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 94 and “Adding customized resource models to profiles” on page 95 for information.

You can also use the predefined profile managers and profiles created during installation.

See the IBM Tivoli Monitoring for Web Infrastructure Reference Guide for detailed information about each resource model.
When you finish
None

Procedure
You can perform this procedure from the command line or from the Tivoli desktop.

Command Line: Use the wdistrib command to distribute the profile to the
subscribers of the profile manager. This command updates subscriber databases
and configuration files. If no subscriber is specified, wdistrib updates all
subscribers. Refer to the Tivoli Management Framework Reference Manual for more
information about the wdistrib command.

Tivoli desktop:
1. Open the IBM Tivoli Monitoring Profile window by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the Monitoring for WebLogic Server policy region icon to
display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon containing the resource model you want to
distribute.
2. Click Profile → Distribute to display the Distribute Profile window.
3. Select one of the Distribute To options. These options are explained in the
Background information section. You have the following choices:
   • Next level of subscribers
   • All levels of subscribers
   These options are explained in “Background information” on page 18
4. Select one of the Distribute Will options based on the following descriptions:
   • Preserve modifications in subscribers’ copy of the profile retains changes to
   existing resource models in each copy of the profile.
   • Make subscribers’ profile an EXACT COPY of this profile overwrites the
   subscriber’s profile with an exact copy of the profile being distributed. If you
   edit the configuration of a resource model in the subscriber’s copy, those
   changes are written to every copy of that profile.
5. Select the subscribers to receive the profile using the following steps:
   a. Select the list of subscribers that you want to distribute the profile to from
   the Do Not Distribute to These Subscribers scrolling list.
   b. Click the left arrow to move the subscribers to the Distribute to These
   Subscribers scrolling list.
   Note: Make sure that each subscriber in the Distribute to These Subscribers
   scrolling list is either a profile manager or a supported Tivoli
   management agent endpoint. IBM Tivoli Monitoring does not support
   other types of endpoints.
6. Click one of the following:
   Distribute & Close
   Distributes the profile immediately, closes the Distribute Profile
   window, saves the settings you made, and returns to the IBM Tivoli
   Monitoring Profile window.
   Distribute
   Distributes the profile immediately, saves the settings you made, and
   leaves the Distribute Profile window open.
Schedule

Schedules the distribution of the profile with the Tivoli Scheduler. For details about using the Tivoli Scheduler, refer to the Tivoli Management Framework User’s Guide. You can also see “Scheduling a job” on page 70 for more information.

7. Click Profile → Close to close the IBM Tivoli Monitoring Profile window.
Chapter 3. Setting up the Tivoli Enterprise Console for event correlation

This chapter provides information on setting up the Tivoli Enterprise Console for event correlation. Setting up event correlation requires the configuration of the Tivoli Enterprise Console event server.

For information about the event classes and rules included with IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server, see Appendix E, “Event classes and rules” on page 105.

For information about using Tivoli Enterprise Console, see the Tivoli Enterprise Console User’s Guide.

If you experience problems using the procedures in this chapter, see Appendix F, “Problem determination” on page 105. You can also see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide for information about any messages that you receive.

Overview of the Tivoli Enterprise Console

The Tivoli Enterprise Console provides the following functions:

- Receiving events from various sources
- Processing events using rules
- Grouping events and delegating the groups selectively to administrators
- Responding to events automatically
- Viewing events at a console

In the Tivoli Enterprise Console, rules (.rls) files contain the logic for correlation of events. BAROC (.baroc, Basic Recorder of Objects in C) files contain the defined event classes.

The following list explains basic concepts of event management. For more information about the Tivoli Enterprise Console, refer to the Tivoli Enterprise Console User’s Guide.

Events

An event is a structured piece of information. It carries information about itself, including the event class, event identity, severity, location (host where the event originated), and description. IBM Tivoli Monitoring uses events with resource models to verify the persistence of an indication over a period of cycles.

Sources of Events

The Tivoli Enterprise Console accepts events from many sources. For example, you can configure resource models to send events. Typically, Tivoli software is set up so that events are sent in response to changes in an application or system resource.

Event Processing

The Tivoli Enterprise Console uses rules to process events. A rule is made up of a set of logic statements. The rule determines what to do with the
A rule’s logic provides one or more responses to the event: it can drop insignificant events, escalate important events, create new events, or respond to defined relationships of multiple events (event correlation). It can also close an old event when a new event indicates that the original condition is resolved.

**Event Grouping**

The Tivoli Enterprise Console can filter events into *event groups*. These event groups are typically organized by function but can also be organized by other criteria, such as location or organizational jurisdiction.

Event groups are especially useful for subdividing all Tivoli Enterprise Console events into manageable chunks. Administrators can be assigned to one or more event groups.

**Viewing Events**

The Tivoli Enterprise Console includes a console where administrators can watch for incoming events and respond to them. The Tivoli Enterprise Console can filter out normal events, respond automatically to anticipated problems, and forward only those events that require human intervention.

**Responses to Events**

The Tivoli Enterprise Console normally provides automatic responses to many common events, either by executing response programs or by executing Tivoli tasks. For example, you can set up a response to the event that is received when a server becomes unavailable. The specific response can inform an administrator or attempt automatic restarts of the server, or a combination of both.

You cannot use the Tivoli Enterprise Console automatic response mechanism with this product. However, you can write Tivoli Enterprise Console rules that accomplish the same thing.

---

**Configuring the Tivoli Enterprise Console event server**

**Objective**

To set up your Tivoli Enterprise Console event server to process WebLogic Server events.

**Background information**

You must set up the event server before events can be sent to Tivoli Enterprise Console. Use the WebLogic_Configure_TEC task to set up the Tivoli Enterprise Console event server.

The WebLogic_Configure_TEC task performs the following actions:

- Imports the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server event classes and rule set
- Imports the IBM Tivoli Monitoring event classes (if they are not already present)
- Imports the Tivoli Business Systems Manager rule set, if appropriate
- Compiles the rule base to incorporate new classes and rules
- Loads the new rule base (optional)
- Optionally stops and restarts the event server
You can configure only one Tivoli Enterprise Console event server for each Tivoli management region. When you have interconnected Tivoli management regions, run the Configure Event Server task against each Tivoli management region that contains a Tivoli Enterprise Console event server.

If your Tivoli Enterprise Console event server is in a separate Tivoli management region from the one that contains IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server, you must run the WebLogic_Send_Files_To_TEC task before running the Weblogic_Configure_TEC task. The .baroc and .rls files used to configure the Tivoli Enterprise Console event server must be present in the Tivoli management region before configuration.

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server includes the following sets of event classes and rules specific to WebLogic Server:

- ITMWLS_Events
- Events for each resource model, such as the WebLogic_Server_Down event

**Required authorization role**
weblogic_senior

**Before you begin**

Ensure that you have the Tivoli Enterprise Console server installed in the same Tivoli management region where you have IBM Tivoli Monitoring and IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server installed. If you have the Tivoli Enterprise Console server installed on a different Tivoli management region, you have the option of making a two-way connection between the Tivoli management regions. See the *Tivoli Management Framework User’s Guide* for details on properly connecting two Tivoli management regions.

Ensure that you have taken the following steps to properly connect the two Tivoli management regions:

- Run the `wconnect` command as a two-way connection.
- Install the Tivoli Enterprise Console ACF product on the Tivoli management region that has IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server installed but not Tivoli Enterprise Console by completing the following steps:
  1. From the Tivoli desktop menu, select Install.
  2. Select Install Product.
  4. Click Install & Close.
- Ensure that you update the following Tivoli managed resources:
  - Register each of the Tivoli management regions in the ManagedNode property of the other Tivoli management region.
  
  **Note:** Use the `wlookup` command to ensure that you have a valid registration. If your registration is not accurate, use the `wupdate` command to properly register the Tivoli management region on a managed node.
  
Note: Use the wlookup and wregister commands to ensure that you have a valid registration. If your registration is not accurate, use the wupdate command to properly register the Tivoli management region in the event server.

– Register the WebLogicServer managed resource in the Tivoli management region where Tivoli Enterprise Console resides.

Note: Use the wlookup and wregister commands to ensure that you have a valid registration. If your registration is not accurate, use the wupdate command to properly register the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server managed resources.

See the Tivoli Management Framework Reference Manual for details on the wconnect, wlookup, wregister, and wupdate commands.

If you choose to make a two-way connection between the Tivoli management region where Tivoli Enterprise Console resides and the Tivoli management region where IBM Tivoli Monitoring and IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server reside, run the WebLogic_Send_Files_To_TEC task after connecting the two Tivoli management regions in order to place the required files on the remote Tivoli management region. See the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server Reference Guide for details on running the WebLogic_Send_Files_To_TEC task.

When you finish
None

Procedure
You can run this procedure from the command line or the Tivoli desktop.

Command line: Use the wruntask command to run the WebLogic_Configure_TEC task. For the CLI syntax for this task, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.

Tivoli desktop: Follow these steps to perform this procedure from the Tivoli desktop:
1. From the Tivoli desktop, double-click the WebLogic Monitoring policy region.
2. Double-click the WebLogic Event Tasks icon.
3. Double-click the WebLogic_Configure_TEC task icon and complete the Execute Task window. Select the managed node on which you want configure the event server.
4. Select Display on Desktop to display the output of the task on the desktop.
5. Increase the timeout value because the WebLogic_Configure_TEC task can take a considerable amount of time to finish.
6. Click Execute & Dismiss to display the Configure Event Server window.
Figure 2. The WebLogic_Configure_TEC task window

Complete the following fields:

**Rule Base Configuration**
Specify the way that the rule base is created:

**Rule Base Name**
Specify the rule base name here. You must select a rule base that does not exist. If you want to reuse a rule base name, you must delete the old rule base first. See the *Tivoli Enterprise Console User’s Guide* for details.

**Copy Base Name**
If you select this option, you must type the name of the new rule base in the **Rule Base Name** field.

**Event Group Name**
This is supplied for compatibility with Tivoli Enterprise Console 3.6 servers. For Tivoli Enterprise Console 3.7.1, any value you put here is ignored.

**Restart Event Server?**
Select **Yes** if you want this rule base to be used after configuration is complete.

7. Click **Set and Execute** to start the task. The Configure Event Server Output window displays the job status after the task is completed.
Chapter 4. Integrating with Tivoli Business Systems Manager

This chapter provides information on using Tivoli Business Systems Manager to manage WebLogic Server resources and events.

Integrating IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server into Tivoli Business Systems Manager includes the following steps:

Table 3. Integrating with Tivoli Business System Manager

<table>
<thead>
<tr>
<th>Goal</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configure your Tivoli Enterprise Console event server to forward events to Tivoli Business Systems Manager.</td>
<td>“Configuring the Tivoli Enterprise Console event server to work with Tivoli Business Systems Manager” on page 31</td>
</tr>
<tr>
<td>Define the specific IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server objects for Tivoli Business Systems Manager using a discovery task.</td>
<td>“Discovering resources for Tivoli Business Systems Manager” on page 32</td>
</tr>
</tbody>
</table>

This chapter also provides a list of the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server tasks that you can run from Tivoli Business Systems Manager and information about uninstalling the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server integration from Tivoli Business Systems Manager.

Understanding Tivoli Business Systems Manager

Tivoli Business Systems Manager is a business systems management tool that enables you to graphically monitor and control interconnected business components and operating system resources. A business component and its resources are referred to as a Line of Business (LOB).

Tivoli Business Systems Manager consists of the following components:

**Tivoli Business Systems Manager management server**

The Tivoli Business Systems Manager management server processes all the availability data that is collected from various sources. Availability data is inserted in the Tivoli Business Systems Manager database, where intelligent agents provide alerts on monitored objects and then broadcast those alerts to Tivoli Business Systems Manager workstations. The management server processes all user requests that originate from the workstations and includes a database server that is built around a Microsoft SQL Server database.

**Tivoli Business Systems Manager workstation**

The Tivoli Business Systems Manager workstation displays objects in customized views, called Line of Business Views. Objects are presented in a hierarchical TreeView so that users can see the relationship between objects. Alerts are overlaid on the objects when the availability of the object is threatened.
**Tivoli Event Enablement**

Tivoli Event Enablement is installed on the Tivoli Enterprise Console event server and enables the event server to forward events to Tivoli Business Systems Manager. Tivoli Event Enablement defines event classes and rules for handling events related to Tivoli Business Systems Manager.

For more information about Tivoli Business System Manager, see the Tivoli Business System Manager documentation.

---

**Prerequisites**

Before you integrate IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server into Tivoli Business Systems Manager, perform the following prerequisite steps:

- Install Tivoli Business Systems Manager, as described in the *Tivoli Business Systems Manager Installation and Configuration Guide*. You must install Tivoli Business Systems Manager Version 1.5 with patch 35.
- Install and configure the Tivoli Event Enablement (with patch 38) on all Tivoli Enterprise Console event servers that receive events that you want to forward to Tivoli Business Systems Manager. See the *Tivoli Business Systems Manager Installation and Configuration Guide* for more information.
- Configure Tivoli Business Systems Manager to communicate with each Tivoli Event Enablement installed in the previous step. See the *Tivoli Business Systems Manager Installation and Configuration Guide* for more information.

---

**Integrating IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server with Tivoli Business Systems Manager**

**Objective**

To integrate IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server with Tivoli Business Systems Manager so you can receive WebLogic Server events on the Tivoli Business Systems Manager.

**Background information**

To enable Tivoli Business Systems Manager to manage WebLogic Server events, you must install an IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server integration program on the Tivoli Business Systems Manager server. This integration program performs the following steps:

- Defines the WebLogic Server objects in Tivoli Business Systems Manager
- Adds IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server tasks to the object types in Tivoli Business Systems Manager
- Defines a line of business for WebLogic Server resources

**Required authorization role**

You must have administrator authority on the Tivoli Business Systems Manager server.

**Before you begin**

Make sure that your Tivoli Business Systems Manager environment is configured correctly and that you have Tivoli Event Enablement installed on each Tivoli Enterprise Console event server that you want to forward events. For more information, see the *Tivoli Business Systems Manager Installation and Configuration Guide*.
When you finish
Configure the Tivoli Enterprise Console event server to forward events to Tivoli Business Systems Manager. See “Configuring the Tivoli Enterprise Console event server to work with Tivoli Business Systems Manager” for more information.

Procedure
Use the following steps to install the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server integration program:

1. On the Tivoli Business Systems Manager server, insert the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server CD and, from a command prompt, navigate to the \TBSM directory.
2. Type install to start the installation wizard.
3. Click Next on the welcome screen.
4. Specify an installation location for the Tivoli Business Systems Manager integration program. The default location is C:tivoli\itmwls. Click Browse to select a different installation location.
   Click Next to continue.
5. Provide the following Microsoft SQL Server information and click Next to start the installation.
   - **SQL Server**: The name of the SQL server with which this Tivoli Business Systems Manager server is associated
   - **SQL Userid**: The SQL user ID
   - **SQL Password**: The password for the user ID defined above
   A progress bar is displayed to show the progress of the installation. When installation is complete, a message is displayed.
6. Click Finish to exit the installation wizard.

---

Configuring the Tivoli Enterprise Console event server to work with Tivoli Business Systems Manager

Objective
To configure the Tivoli Enterprise Console event server to forward events to Tivoli Business Systems Manager.

Background information
Before Tivoli Enterprise Console event servers can forward events to Tivoli Business Systems Manager, you must configure them to use a rule base.

Required authorization role
senior

Before you begin
Install the Tivoli Event Enablement on each Tivoli Enterprise Console event server that you want to forward events to Tivoli Business Systems Manager. For more information, see the Tivoli Business Systems Manager Installation and Configuration Guide for more information.
When you finish
Define your WebLogic Server objects for Tivoli Business Systems Manager with the WebLogic_TBSM_Discovery task, as described in “Discovering resources for Tivoli Business Systems Manager”.

Procedure
Use the WebLogic_Discover_TEC task to configure (or reconfigure) each event server. If you installed the Tivoli Event Enablement on the event server, this task recognizes that and compiles the rule base that forwards events to Tivoli Business Systems Manager. For information on running this task, see “Configuring the Tivoli Enterprise Console event server” on page 24.

Discovering resources for Tivoli Business Systems Manager

Objective
To discover the specific IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server objects for Tivoli Business Systems Manager.

Background information
The IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server integration program that you installed in “Integrating IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server with Tivoli Business Systems Manager” on page 30 defined the types of objects that you want Tivoli Business Systems Manager to manage. After you define the object types, you must discover the specific objects. You can do this with the WebLogic_TBSM_Discovery task. This task searches a managed node for objects and sends a DISCOVER event to Tivoli Business Systems Manager for each object. The WebLogic_TBSM_Discovery task also maintains a list of the objects that have been discovered and alerts Tivoli Business Systems Manager when they have been deleted by sending Tivoli Business Systems Manager a GONE event for each object that no longer exists on the managed node.

Required authorization role
weblogic_admin, weblogic_super

Before you begin
Configure your Tivoli Enterprise Console event server, as described in “Configuring the Tivoli Enterprise Console event server to work with Tivoli Business Systems Manager” on page 31.

When you finish
Use Tivoli Business Systems Manager to view and manage your WebLogic Server objects. For information on using Tivoli Business Systems Manager, see the Tivoli Business Systems Manager User’s Guide. For information on the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server tasks that you can run from Tivoli Business Systems Manager, see “Working with Tivoli Business Systems Manager” on page 33.

Procedure
You can perform this procedure from the command line or the Tivoli desktop.

Command line: Use the wruntask command to run the WebLogic_TBSM_Discovery task from the command line. For information on the CLI syntax for this task, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.

Tivoli desktop: Use the following steps to run this procedure as a task:
1. Open the task library window by performing the following steps:
a. Open the Tivoli desktop.
b. Double-click the Monitoring for WebLogic Server policy region icon to display the policy region.

2. In the WebLogic Server task library, double-click the WebLogic_TBSM_Discovery task.

3. Select the managed node on which you want to search for objects.

   **Note:** This task must be run on the Tivoli Enterprise Console server machine in the managed node. If your Tivoli Enterprise Console server is in another Tivoli management region that has been connected to the Tivoli management region containing IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server, run the task on the Tivoli Enterprise Console server in the connected Tivoli management region.

4. Select Display on Desktop to display the output on the desktop.

5. Increase the timeout value if you selected more than one managed node because this can cause the task to take longer to display output.

6. Click Execute.

   If the task completes successfully, you receive a return code of 0.

---

**Working with Tivoli Business Systems Manager**

In addition to using Tivoli Business Systems Manager to monitor the state of your resources, you can also run tasks on the objects. IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server tasks are loaded into Tivoli Business Systems Manager when you install the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server integration program. These tasks appear on the Operation Tasks menus for the WebLogic objects. The Operation Tasks menu is displayed when you right-click an object.

You can perform the following WebLogic Server tasks from Tivoli Business Systems Manager:

- Start_Server
- Stop_Server
- Kill_Server

Tivoli Business Systems Manager also monitors the status of resource models. Events generated by the Tivoli Enterprise Console adapter or resource models are forwarded from Tivoli Enterprise Console to Tivoli Business Systems Manager.

For more information about these tasks and resource models, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.

---

**Uninstalling IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server integration from Tivoli Business Systems Manager**

**Objective**

To remove the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server integration program from Tivoli Business Systems Manager.
**Background information**
Uninstalling the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server integration program removes the WebLogic Server object definitions and objects from Tivoli Business Systems Manager.

**Required authorization role**
You must have administrator authority on the Tivoli Business Systems Manager server.

**Before you begin**
None

**When you finish**
None

**Procedure**
Use the following steps to perform this procedure:

1. From a command prompt on the Tivoli Business Systems Manager server, navigate to the directory where you installed the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server integration program. The default directory is `C:\tivoli\itmwls`.

2. Type `uninstall` to start the uninstallation wizard.

3. Click Next on the welcome screen.

4. The installation location for the Tivoli Business Systems Manager integration program is displayed. Click Next to continue.

5. Provide the following Microsoft SQL Server information and click Next to start the uninstallation:
   - **SQL Server**
     The name of the SQL server with which this Tivoli Business Systems Manager server is associated
   - **SQL Userid**
     The SQL user ID
   - **SQL Password**
     The password for the user ID defined above

6. Click Finish to exit the installation wizard.
Chapter 5. Working with resource models

This chapter provides information about using the resource models that are included in IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server. You can customize various management aspects of the resource models so that they have the appropriate settings for your monitoring environment. Customizing a resource model includes the following steps:

<table>
<thead>
<tr>
<th>Goal</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modify indications.</td>
<td>“Modifying indications” on page 36</td>
</tr>
<tr>
<td>Specify tasks for indications.</td>
<td>“Specifying tasks for an indication” on page 38</td>
</tr>
<tr>
<td>Send notices to administrators.</td>
<td>“Sending a notice to administrators when an event occurs” on page 39</td>
</tr>
<tr>
<td>Create scheduling rules.</td>
<td>“Creating scheduling rules” on page 41</td>
</tr>
<tr>
<td>Modify data logging settings.</td>
<td>“Modifying data logging settings” on page 43</td>
</tr>
<tr>
<td>Manage profiles and resource models at endpoints.</td>
<td>“Managing profiles and resource models at endpoints” on page 45</td>
</tr>
<tr>
<td>Manage gateways.</td>
<td>“Managing IBM Tivoli Monitoring gateways” on page 46</td>
</tr>
<tr>
<td>Determine which resource models are running.</td>
<td>“Determining which resource models are running on endpoints” on page 46</td>
</tr>
<tr>
<td>View resource model results.</td>
<td>“Viewing resource model results with the IBM Tivoli Monitoring Web Health Console” on page 47</td>
</tr>
</tbody>
</table>

Resource model library

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server provides the following resource models.

<table>
<thead>
<tr>
<th>Resource model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector Connection Pools</td>
<td>Monitors the WebLogic Server’s connector connection pools (JCA), connection load, and connections rejected rate.</td>
</tr>
<tr>
<td>DB Connection Pools</td>
<td>Monitors the WebLogic Server’s DB connection pools.</td>
</tr>
<tr>
<td>Enterprise Java Beans</td>
<td>Monitors the WebLogic Server’s Enterprise Java Bean (EJB) transactions.</td>
</tr>
<tr>
<td>Execution Queue</td>
<td>Monitors the number of pending requests in the WebLogic Server’s execution queue.</td>
</tr>
<tr>
<td>HTTP Sessions</td>
<td>Monitors the WebLogic Server HTTP Session throughput and load.</td>
</tr>
<tr>
<td>JVM</td>
<td>Monitors the performance of the Java Virtual Machine (JVM) runtime memory.</td>
</tr>
</tbody>
</table>
Table 5. IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server resource models (continued)

<table>
<thead>
<tr>
<th>Resource model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messaging</td>
<td>Monitors the WebLogic Server messaging (JMS) server and the destination load and throughput.</td>
</tr>
<tr>
<td>Server State</td>
<td>Monitors the availability of WebLogic Servers.</td>
</tr>
<tr>
<td>Transactions</td>
<td>Monitors WebLogic Server transactions.</td>
</tr>
<tr>
<td>Web Applications Servlets and JSPs</td>
<td>Monitors the WebLogic Server’s Servlet and Java server pages (JSP) throughput and response time.</td>
</tr>
</tbody>
</table>

For information about the default configuration of these resource models, see the *IBM Tivoli Monitoring for Web Infrastructure Reference Guide*.

### Modifying indications

**Objective**
To modify indication rules so that resources are monitored and events are generated relevant to your environment.

**Background information**
Each resource model triggers an indication if certain conditions defined by the resource model’s thresholds are not satisfied during the monitoring cycle.

**Required authorization role**
admin

**Before you begin**
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 92 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 93 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 94 for information.

You can also use the predefined profile managers and profiles created during installation.

**When you finish**
Distribute the profile to which the resource model belongs. See “Distributing profiles from the Tivoli desktop” on page 18.

– OR –

**Optional**: Continue customizing the resource model:
- Specify if you want corrective or reporting tasks for an event. See “Specifying tasks for an indication” on page 38.
- Specify if you want to receive information on a specific event through a notice. See “Sending a notice to administrators when an event occurs” on page 39.
- Specify if you want the monitoring of resource models to take place on specific time periods of selected days. See “Creating scheduling rules” on page 41.
Specify if you want the log data collected by a resource model written to a local database. See “Modifying data logging settings” on page 43.

**Procedure**

You can perform this procedure from either the command line or the Tivoli desktop.

**Command Line:** Use the `wdmeditprf` command to customize a resource model for a profile. See the *IBM Tivoli Monitoring Reference Guide* for more information.

**Tivoli desktop:**

1. Open the IBM Tivoli Monitoring Profile window by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the *Monitoring for WebLogic Server* policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.

2. Select the resource model that you want to customize from the IBM Tivoli Monitoring Profile window.

3. Click **Edit** to open the Edit Resource Model dialog.

4. Click **Indications**. The Indications and Actions window opens and displays the indications appropriate to the selected resource model.

5. Select the indication that contains the values you want to modify.

6. Apply the changes to the values that are appropriate to your requirements. See the *IBM Tivoli Monitoring for Web Infrastructure Reference Guide* for the default resource model settings.

You can customize the following fields. For more information about these fields, see the IBM Tivoli Monitoring documentation.

- **Number of occurrences**
  Specifies the number of consecutive times the problem occurs before the software generates an indication. You can change this value to specify the number of times a problem occurs before an indication is generated.

- **Number of holes**
  Determines how many cycles that do not produce an indication can occur between cycles that do produce an indication.

  Use the value for the **Number of Holes** in conjunction with the **Number of Occurrences** parameter and the **Cycle Time** to define a time window for the generation of an event.

- **Send TEC Events**
  Select this check box to send an event to the Tivoli Enterprise Console. You must have Tivoli Enterprise Console installed and configured.

- **Send to TBSM**
  Sends events to Tivoli Business Systems Manager. You do not need to select this box. If you have Tivoli Business Systems Manager installed and configured, Tivoli Enterprise Console automatically forwards events to Tivoli Business Systems Manager.

7. Specify the severity of the indication in the **Severity** pull-down list. You have the following options:
   - **FATAL**
8. Click one of the following buttons:

**Apply Changes**
Saves the changes and leaves the Indications and Actions window open.

**Apply Changes and Close**
Closes the Indications and Actions window and saves the changes.

## Specifying tasks for an indication

**Objective**
To specify a task so administrators and users can determine corrective or reporting tasks for an event.

**Background information**
You can select one or more task to run automatically when an event occurs. These tasks can access the IBM Tivoli Monitoring event name and thresholds by accessing the environment variables.

**Required authorization role**
admin

**Before you begin**
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 92 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 93 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 94 and for information.

You can also use the predefined profile managers and profiles created during installation.

**When you finish**
Distribute the profile to which the resource model belongs. See “Distributing profiles from the Tivoli desktop” on page 18

– OR –

**Optional:** Continue customizing the resource model:
- Specify if you want to customize your thresholds and events to optimize the monitoring process. See “Modifying indications” on page 36.
- Specify if you want to receive information on a specific event through a notice. See “Sending a notice to administrators when an event occurs” on page 39.
- Specify if you want the monitoring of resource models to take place on specific time periods of selected days. See “Creating scheduling rules” on page 41.
- Specify if you want the log data collected by a resource model written to a local database. See “Modifying data logging settings” on page 43.
Procedure
You can perform this procedure from either the command line or the Tivoli desktop.

Command Line: Use the `wdmeditprf` command to customize a resource model for a profile. See the IBM Tivoli Monitoring Reference Guide for more information.

Tivoli desktop:
1. Open the IBM Tivoli Monitoring Profile window by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the Monitoring for WebLogic Server policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.
2. Select a resource model from the IBM Tivoli Monitoring Profile window and click `Edit` to open the Edit Resource Model window.
3. Click `Indications`. The Indications and Actions window opens and displays the indications appropriate to the selected resource model.
4. Select the indication for which you want to specify a task.
5. Click `Tasks` in the Action List window. The Tasks window opens.
6. Double-click the appropriate task library from the scroll list of the Libraries panel. The tasks contained in the library are displayed in the Tasks panel.
7. Double-click the appropriate task in the Tasks panel. You can also click `Select Task`.
8. Specify the appropriate parameters in the Configure Task window.
   Additional information: This only applies to tasks that require input parameters.
9. Click `Change & Close` to add the task to the Action List panel in the Indications and Actions window.

Repeat these steps for each task you want to add.

Sending a notice to administrators when an event occurs

Objective
To send a notice in response to an event so administrators can take the appropriate actions or responses.

Background information
You can select the IBM Tivoli Monitoring Utility task to send notices in response to an event.

Required authorization role
admin

Before you begin
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 92 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 93 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 94 for information.
You can also use the predefined profile managers and profiles created during installation.

You must create an administrator before you can subscribe the administrator to a notice group. For information about creating administrators, see the Tivoli Management Framework, Version 3.7.1: Reference Manual.

**When you finish**

Distribute the profile to which the resource model belongs. See “Distributing profiles from the Tivoli desktop” on page 18

– OR –

Optional: Continue customizing the resource model:

- Specify if you want to customize your thresholds and events to optimize the monitoring process. See “Modifying indications” on page 36.
- Specify if you want corrective or reporting tasks for an event. See “Specifying tasks for an indication” on page 38.
- Specify if you want the monitoring of resource models to take place on specific time periods of selected days. See “Creating scheduling rules” on page 41.
- Specify if you want the log data collected by a resource model written to a local database. See “Modifying data logging settings” on page 43.

**Procedure**

You can perform this procedure from either the command line or the Tivoli desktop.

**Command Line:** Use the `wdmeditprf` command to customize a resource model for a profile. See the IBM Tivoli Monitoring Reference Guide for more information.

**Tivoli desktop:**

1. Open the IBM Tivoli Monitoring Profile window by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the **Monitoring for WebLogic Server** policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.
2. Select a resource model from the IBM Tivoli Monitoring Profile window and click **Edit** to open the Edit Resource Model window.
3. Click **Indications**. The Indications and Actions window opens and displays the indications appropriate to the selected resource model.
4. Select the indication for which you want to generate notices.
5. Click **Tasks** in the Action List window. The Tasks window opens.
6. Double-click the **IBM Tivoli Monitoring Utility Tasks** library in the scroll list of the Libraries panel. The tasks contained in the IBM Tivoli Monitoring Utility Tasks library are displayed in the Tasks panel.
8. Specify the appropriate parameters in the Configure Task window.

   **Additional information:** Run the `wlsnotif -g` command to see the available Notice Groups. See the IBM Tivoli Monitoring Reference Guide for more information.
9. Click **Change & Close** to add the task to the Action List panel in the Indications and Actions window.

---

**Creating scheduling rules**

**Objective**
To create schedule rules so administrators and users can determine the time periods on selected days when monitoring takes place.

**Background information**
IBM Tivoli Monitoring contains a scheduling feature that enables you to create specific scheduling rules that determine a period when monitoring takes place. You can divide the overall collection period into active and inactive intervals by applying one or more schedule rules.

The scheduling rules enable you to define time periods on specific weekdays during which monitoring takes place. You can define any number of rules that enable you to set up a complex pattern of resource monitoring for a profile and covers the periods that you want to monitor. If the profile contains more than one schedule rule, all the time intervals are respected, and rules are combined by adding together the time periods they define. For example, if you specify a rule that requests monitoring between 8:00 and 14:00 every day and another that requests all-day monitoring on Fridays, the sum of the two rules gives all-day monitoring only on Fridays, and monitoring between 8:00 and 14:00 on all other days. If the second rule instead requested monitoring from 12:00 to 18:00 on Fridays, the sum of the rules would give monitoring between 8:00 and 18:00 on Fridays and between 08:00 and 14:00 on all other days.

The scheduled times are always interpreted as local times, enabling you to set up a single rule that monitors the same local time period in different time zones. All times of events or activities reported from endpoints or gateways are also logged in the local time of the system from where they originated.

The **Scheduling** window has the following group boxes:

**Schedule**
Sets the data collection period. By default, all resource models are set to always collect data.

**Schedule Rules**
Contains a list of the defined scheduling rules, which manage the time intervals during which the resource model is active.

**Rule Editor**
Creates and edits schedule rules.

**Required authorization role**
**admin**

**Before you begin**
- Create a profile manager and profile. See "Creating profile managers and profiles" on page 92 for information.
- Add subscribers to a profile manager. See "Subscribing resources to profile managers" on page 93 for information.
- Add a resource model to a profile. See "Adding default resource models to profiles" on page 94 for information.
You can also use the predefined profile managers and profiles created during installation.

**When you finish**

Distribute the profile to which the resource model belongs. See “Distributing profiles from the Tivoli desktop” on page 18

— OR —

Optional: Continue customizing the resource model:

- Specify if you want to customize your thresholds and events to optimize the monitoring process. See “Modifying indications” on page 36
- Specify if you want corrective or reporting tasks for an event. See “Specifying tasks for an indication” on page 38
- Specify if you want to receive information on a specific event through a notice. See “Sending a notice to administrators when an event occurs” on page 39
- Specify if you want the log data collected by a resource model written to a local database. See “Modifying data logging settings” on page 43

**Procedure**

You can perform this procedure from either the command line or the Tivoli desktop.

**Command Line:** Use the `wdmeditprf` command to customize a resource model for a profile. See the *IBM Tivoli Monitoring Reference Guide* for more information.

**Tivoli desktop:**

1. Open the IBM Tivoli Monitoring Profile window by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the Monitoring for WebLogic Server policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.
2. Select a resource model from the IBM Tivoli Monitoring Profile window and click **Edit** to open the Edit Resource Model window.
3. Click **Schedule** to open the Scheduling window.
4. To use the default monitoring period, select **Always** in the Schedule panel.
5. To customize the monitoring period, perform the following steps:
   a. Set a **Start Date** and **Stop Date** to customize the monitoring period.
   b. Click **New Rule** in the Schedule Rules panel.
   c. Type a name for the rule in the **Rule Name** text box of the Rule Editor panel.
   d. Select one or more items in the weekday list to specify the day or days on which you want the collections active during the collection period.
      
      Additional information: Use the **Shift** or **Ctrl** key as necessary to select more than one day from the list.
   e. Set the **Start Time** and **Stop Time** for the collection activity or select the **All Day** check box.
Additional information: Times are always interpreted as local time where the endpoint engine runs. Setting a time interval of 08:00 to 13:00 ensures that monitoring takes place between those times in all time zones to which you distribute the profile.

f. Click Set Rule. Your new rule appears in the Schedule Rules list.

Additional information: To display the details of any rule, select the rule in the Schedule Rules list. Its settings are displayed in the Rule Editor group box.

6. Click Modify & Close to save your rule and close the Scheduling window.

Repeat these steps for each scheduling rule that you want to create.

---

**Modifying data logging settings**

**Objective**

To modify data logging information so administrators and users can log data collected by a resource model and write it in a local database.

**Background information**

You can view the log data through the IBM Tivoli Monitoring Web Health Console after you write it in a local database. You can store one of the following types of data in the database:

- **Raw data**
  Data written exactly as the resource model collects it. All the monitored values are collected and copied in the database.

- **Aggregated data**
  Data collected and aggregated at fixed intervals that you define (Aggregation Period). Only the aggregated values are written in the database. The aggregated data is calculated on the basis of one or more of the following options:
  - Maximum
  - Minimum
  - Average

**Tivoli Enterprise Data Warehouse data logging**

Data collected is logged to the Tivoli Enterprise Data Warehouse.

**Note:** To enable Tivoli Enterprise Data Warehouse data logging, you must disable aggregated data logging.

**Required authorization role**

admin

**Before you begin**

- Create a profile manager and profile. See “Creating profile managers and profiles” on page 92 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 93 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 94 for information.

You can also use the predefined profile managers and profiles created during installation.
When you finish
Distribute the profile to which the resource model belongs. See “Distributing profiles from the Tivoli desktop” on page 18.

– OR –

Optional: Continue customizing the resource model:
• Specify if you want to customize your thresholds and events to optimize the monitoring process. See “Modifying indications” on page 36.
• Specify if you want corrective or reporting tasks for an event. See “Specifying tasks for an indication” on page 38.
• Specify if you want to receive information on a specific event through a notice. See “Sending a notice to administrators when an event occurs” on page 39.
• Specify if you want the monitoring of resource models to take place on specific time periods of selected days. See “Creating scheduling rules” on page 41.

Procedure
You can perform this procedure from either the command line or the Tivoli desktop.

Command Line: Use the wdmeditprf command to customize a resource model for a profile. See the IBM Tivoli Monitoring Reference Guide for more information.

Tivoli desktop:
1. Open the IBM Tivoli Monitoring Profile window by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the Monitoring for WebLogic Server policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.
2. Select a resource model from the IBM Tivoli Monitoring Profile window and click Edit to open the Edit Resource Model window.
3. Click Logging to open the Logging window.
4. Select Enable Data Logging in the Data Logging Settings panel. To enable raw data logging, select Raw Data.
5. To enable logging aggregated data, perform the following steps to specify the aggregation rule applied to the data before it is written to the database:
   a. Set Hours and Minutes of the Aggregation Period to the required values.
   b. Select one or more of the following functions to perform on the numerical data collected during the aggregation period before it is written to the database:
      Maximum
      Calculates and logs the peak value in each aggregation period.
      Minimum
      Calculates and logs the lowest value in each aggregation period.
      Average
      Calculates and logs the average of all values in each aggregation period.
6. To enable Tivoli Enterprise Data Warehouse data logging, clear Aggregated data and select TEDW data.
7. Set Hours and Minutes of the Historical Period to the required values.
8. Click Apply Changes and Close to save your changes and close the Logging window.

Managing profiles and resource models at endpoints

Objective
To manage profiles and resource models after they are distributed to endpoints so administrators and users can maintain monitoring processes on those endpoints.

Background information
None

Required authorization role
admin

Before you begin
• Create a profile manager and profile. See “Creating profile managers and profiles” on page 92 for information.
• Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 93 for information.
• Add a resource model to a profile. See “Adding default resource models to profiles” on page 94 for information.
• Distribute the profile. See “Distributing profiles from the Tivoli desktop” on page 18 for information.

You can also use the predefined profile managers and profiles created during installation.

When you finish
None

Procedure
You can perform this procedure from the Tivoli command line only.

Command Line: Use the wdmcmd command to stop or restart IBM Tivoli Monitoring on one or more endpoints from a gateway or server.

Use the wdmcmd distrib command to distribute a profile to one or more subscribers.

Use the wdmeng command to stop or start profiles or resource models at endpoints or to delete profiles at endpoints.

Use the wdmengls command to return a list and the status of all resource models that have been distributed on a specified endpoint.

Use the wdmengtrace command to set the trace parameters of the IBM Tivoli Monitoring engine at the endpoint.

See the IBM Tivoli Monitoring Reference Guide for information about the syntax of these commands.
Managing IBM Tivoli Monitoring gateways

Objective
To manage IBM Tivoli Monitoring on gateways so administrators and users can run monitoring processes on those gateways.

Background information
None

Required authorization role
admin

Before you begin
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 92 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 93 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 94 for information.
- Distribute the profile. See “Distributing profiles from the Tivoli desktop” on page 18 for information.

You can also use the predefined profile managers and profiles created during installation.

When you finish
None

Procedure
You can perform this procedure from the Tivoli command line only.

Command Line: Use the wdmnn command to stop or start selected IBM Tivoli Monitoring processes on one or all gateways. See the IBM Tivoli Monitoring Reference Guide for more information.

Determining which resource models are running on endpoints

Objective
To determine which resource models are running on an endpoint.

Background information
None

Required authorization role
admin

Before you begin
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 92 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 93 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 94 for information.
- Distribute the profile. See “Distributing profiles from the Tivoli desktop” on page 18 for information.
You can also use the predefined profile managers and profiles created during installation.

When you finish
None

Procedure
You can perform this procedure from the command line.

You can also view the resource models distributed to endpoints with the Web Health Console, as described in “Viewing resource model results with the IBM Tivoli Monitoring Web Health Console”.

Command Line: Use the `wdmlseng` command to determine which resource models are running on an endpoint:

```
wdmlseng -e <endpoint>
```

where `<endpoint>` is the Tivoli endpoint label.

Refer to the IBM Tivoli Monitoring User’s Guide for more information.

### Viewing resource model results with the IBM Tivoli Monitoring Web Health Console

This section provides an overview of the Web Health Console. For complete information on installing and working with the Web Health Console see the latest version of the IBM Tivoli Monitoring User’s Guide. The Web Health Console runs on Netscape 6.x and Internet Explorer 6.x. You can use the Web Health Console for the following purposes:

- Checking, displaying, and analyzing the status and health of endpoints that have distributed resource models
- Displaying an endpoint’s real-time and historical data logged to the IBM Tivoli Monitoring database
- Viewing online and historical data on endpoints as a follow-up to specific problems
- Starting and stopping the IBM Tivoli Monitoring engine and individual resource models on selected endpoint
- Removing a profile from the selected endpoints

You can use the Web Health Console to check, display, and analyze the status and health of any endpoint with profiles and resource models. Status reflects the state of the endpoint, such as running or stopped. Health is a numeric value determined by resource model settings. You can also use the Web Health Console to work with real-time or historical data from an endpoint that is logged to the IBM Tivoli Monitoring database.

You can use the diagnostic and monitoring capabilities of the Web Health Console to perform targeted analysis of problems associated with individual endpoints when an event is sent to the Tivoli Enterprise Console. Use the online and historical data to follow up specific problems with single endpoints.

### Understanding resource health

The Web Health Console obtains events and indications from endpoints. The Web Health Console displays the health of each potential problem as a numeric value.
between 100 (perfect health) and zero (with zero meaning that the conditions for the corresponding event are met). Intermediate values show the percentage of occurrences currently registered with respect to the total number of occurrences needed to trigger an event. See Table 6.

Table 6. Health Determination Example

<table>
<thead>
<tr>
<th>Cycle</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU%</td>
<td>55</td>
<td>73</td>
<td>54</td>
<td>63</td>
<td>68</td>
</tr>
<tr>
<td>Occurrences or Holes</td>
<td>H</td>
<td>O</td>
<td>H</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Occurrence Count</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Health %</td>
<td>100</td>
<td>75</td>
<td>75</td>
<td>50</td>
<td>25</td>
</tr>
</tbody>
</table>

Table 6 displays the health percentage changes in steps of 25% because 4 occurrences were required to trigger an event; if the indication required 5 occurrences, the health percentage would have changed by steps of 20%. Resource health is determined at the indication level and passed up to the endpoint. The lowest health of any indication in a resource model is shown as the health of that resource model and the lowest health of any resource model installed on an endpoint is shown as the health of that endpoint. For example, if one indication on one resource model that is installed on an endpoint has a health of zero, the health of the endpoint is shown as zero.

The required occurrences, cycle times, thresholds, and parameters for indications are defined when the resource model is created in the IBM Tivoli Monitoring Workbench. If you use the default profile managers created during the installation of IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server, the occurrences, cycle times, thresholds, and parameters are already defined.

Connecting the IBM Tivoli Monitoring Web Health Console

You can connect the IBM Tivoli Monitoring Web Health Console to any Tivoli management region server, managed node, or endpoint, and configure it to monitor any or all of the endpoints that are found in that region. The IBM Tivoli Monitoring Web Health Console does not have to be within the region itself, although it could be. To connect to the IBM Tivoli Monitoring Web Health Console you need access to the server on which the IBM Tivoli Monitoring Web Health Console server is installed and the IBM Tivoli management region on which you want to monitor health. All user management and security is handled through the IBM Tivoli management environment. This includes creating users and passwords as well as assigning authority.

For more information, see the Web Health Console documentation in the IBM Tivoli Monitoring publications library.
This chapter provides information about working with IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server resources. The following table provides an overview of the topics covered in this chapter.

<table>
<thead>
<tr>
<th>Goal</th>
<th>Where to find information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Register or unregister a WebLogic Domain.</td>
<td>“Register or unregister a WebLogic Domain” on page 49</td>
</tr>
<tr>
<td>Configure a WebLogic Domain.</td>
<td>“Configure WebLogic Domains” on page 50</td>
</tr>
<tr>
<td>Register or unregister a WebLogic Server.</td>
<td>“Register or unregister WebLogic Servers” on page 51</td>
</tr>
<tr>
<td>Configure a WebLogic Server.</td>
<td>“Configure WebLogic Servers” on page 53</td>
</tr>
<tr>
<td>Discover the WebLogic Servers within a specific domain.</td>
<td>“Discover the WebLogic Servers within a specific domain” on page 56</td>
</tr>
<tr>
<td>Start, stop, or kill a server.</td>
<td>“Starting, stopping, or killing a server” on page 58</td>
</tr>
<tr>
<td>Validate a WebLogic Server.</td>
<td>“Validate a WebLogic Server” on page 60</td>
</tr>
</tbody>
</table>

**Note:** The procedures in this chapter are performed from the Tivoli desktop or the command line.

### Register or unregister a WebLogic Domain

**Objective**
To register or unregister a WebLogic Domain.

**Background information**
None

**Required authorization role**
weblogic_admin, weblogic_super

**Before you begin**
None

**When you finish**
None

**Procedure**
You can perform this procedure as a command or from the Tivoli desktop.

**Command line:** Use the `wweblogic -RegisterDomain` command to register a WebLogic Domain. Use the `wweblogic -UnregisterDomain` command to unregister a WebLogic Domain. For the CLI syntax for these commands, see the *IBM Tivoli Monitoring for Web Infrastructure Reference Guide*.

**Tivoli desktop:** Complete the following steps to register a WebLogic Domain from the Tivoli desktop:
1. From the Create menu inside the Monitoring for WebLogic policy region or a sub-region, select WebLogicDomain.

2. Complete the following fields on the Register Domain window:

   **Label**    Unique identifier for the WebLogic Domain.
   
   **Domain Name**    Name of the WebLogic Domain as specified in the configuration file on the WebLogic Administration Server.
   
   **Maximum Days Unvalidated**    Maximum number of days to allow the WebLogic Domain to be unvalidated. If a WebLogic Server remains unvalidated for more days than this setting, it will be removed the next time a DiscoverServers method is run against this WebLogicDomain.
   
   **System User**    Login ID of the administrator of the WebLogicDomain. This ID is used to connect to the underlying WebLogic Domain.
   
   **System Password**    System password to use for domain operations.
   
   **Confirm System Password**    Confirmed system password to use for domain operations.
   
   **TEC Server**    Unique identifier for the Tivoli Event Console server. To determine the value for the TEC Server option, perform the wlookup -ar EventServer command and use the resulting value. This value is optional.

3. Click Execute & Close.

Complete the following steps to unregister a WebLogic Domain from the Tivoli desktop:

1. Select the WebLogic Domain that you want to unregister.
2. From the Edit menu select Delete.
3. Click Yes in the confirmation window.

---

### Configure WebLogic Domains

**Objective**
To configure or change the properties of an existing WebLogic Domain.

**Background information**
None

**Required authorization role**
weblogic_admin, weblogic_super

**Before you begin**
None

**When you finish**
None

**Procedure**
You can perform this procedure as a command or from the Tivoli desktop.
Command line: Use the `wweblogic -ConfigureDomain` command to configure a WebLogic Domain. For the CLI syntax for these commands, see the *IBM Tivoli Monitoring for Web Infrastructure Reference Guide*.

Tivoli desktop: Use the following steps to run this procedure from the Tivoli desktop:

1. From the Tivoli desktop, double-click the policy region that contains the application server objects to display the Policy Region window.
   The default policy region is Monitoring for WebLogic. If you created additional policy regions, open the one that contains the objects you want to work with.
2. Right-click the WebLogic Domain that you want to configure and click Configure.
3. Complete the following fields on the Configure Domain window:
   - **Label**: Unique identifier for the WebLogic Domain.
   - **Domain Name**: Name of the WebLogic Domain as specified in the configuration file on the WebLogic Administration Server.
   - **Maximum Days Unvalidated**: Maximum number of days to allow the WebLogic Domain to be unvalidated. If a WebLogic Server remains unvalidated for more days than this setting, it will be removed the next time a DiscoverServers method is run against this WebLogic Domain.
   - **System User**: Login ID of the administrator of the WebLogic Domain. This ID is used to connect to the underlying WebLogic Domain.
   - **System Password**: System password to use for domain operations.
   - **Confirm System Password**: Confirmed system password to use for domain operations.
   - **TEC Server**: Unique identifier for the Tivoli Event Console server. To determine the value for the TEC Server option, perform the `wlookup -ar EventServer` command and use the resulting value. This value is optional.
4. Click **Execute & Close**.

Register or unregister WebLogic Servers

Objective
To register or unregister a WebLogic Server.

Background information

Note: All of the WebLogic Servers in any specific WebLogic Domain must be the same version of BEA WebLogic Server. This is a general expectation of the BEA WebLogic Server product.

When registering a WebLogic Server, the server is validated using the STRONG value.

Required authorization role
`weblogic_admin`, `weblogic_super`
Before you begin
Once you have registered a WebLogic Domain, it is recommended that the first server you register be the WebLogic Administration Server. The domain wide config.xml file resides on this server.

When you finish
None

Procedure
You can perform this procedure as a command or from the Tivoli desktop.

Command line: Use the `wweblogic -RegisterServer` command to register a WebLogic Server. Use the `wweblogic -UnregisterServer` command to unregister a WebLogic Server. For the CLI syntax for these commands, see the *IBM Tivoli Monitoring for Web Infrastructure Reference Guide*.

Tivoli desktop: Use the following steps to run this procedure from the Tivoli desktop:

1. From the Tivoli desktop, double-click the policy region that contains the application server objects to display the Policy Region window.
   The default policy region is Monitoring for WebLogic. If you created additional policy regions, open the one that contains the objects you want to work with.
2. Right-click the WebLogic Domain that contains the servers you want to register and click Register Server.
3. Complete the following fields on the Register Server window:
   - **Endpoint Label**: Name or IP address of the machine where the WebLogic Server runs. Do not confuse this name with the label of the endpoint object that points to that machine. A valid IP address contains less than four octets, assuming subnet masks are set up correctly. For example, 255, 255.255, 255.255.255, and 255.255.255.255 are all valid IP addresses.
   - **Label**: Label you want to use for the Tivoli object. This label must be unique within the Tivoli management region. If left blank, this label will default to a close match of the server name.
   - **Server Name**: Name of the WebLogic Server, according to the WebLogic configuration file, config.xml.
   - **Version**: Version of the WebLogic Server. This value is either 6.1 or 7.0.
   - **Listen Address**: IP address on which the WebLogic Server listens to requests, according to the WebLogic configuration file, config.xml. A valid IP address contains less than four octets, assuming subnet masks are set up correctly. For example, 255, 255.255, 255.255.255, and 255.255.255.255 are all valid IP addresses. If left blank, this attribute defaults to 127.0.0.1.
   - **Listen Port**: Port on which the WebLogic Server listens to requests, according to the WebLogic configuration file, config.xml. If left blank, this attribute defaults to 7001.
   - **JRE Directory**: The full path to the directory of the Java Runtime Environment (JRE). A valid java executable should exist under JRE directory/bin.
Root Directory
The full path to the top level directory of the WebLogic installation to which the WebLogic Server belongs.

Class Path
Java class path used by the WebLogic Server. weblogic.jar should be included in this ClassPath.

Log File
The full path to the logfile for this Server. You may leave blank if the version of the server is less than 7.0.

Start Command
The command to use to start the WebLogic Server when it is operating as a managed server (not operating as an administration server). Include the full path to the command plus any flags the command might require. For more information, see “Starting, stopping, or killing a server” on page 58.

Start Command Admin
The command to use to start the WebLogic Server when it is operating as the administration server. Include the full path to the command plus any flags the command might require.

Administration Server
TRUE or FALSE. If TRUE is selected, this WebLogic Server is the Administration Server for the domain in which it resides. Only one server acts in this capacity. In the event that you register a server as the Administration Server and then register a second server in the same domain as the Administration Server, the original Administration Server is no longer the Administration Server for that domain. Only the last WebLogic Server that is configured or registered as an Administration Server has that status for a domain.

Validation Level
Sets the level of validation for the configuration of the WebLogicServer. WEAK validation verifies directories and paths specified in attributes existing on the endpoint. STRONG validation attempts to connect to the underlying WebLogic Server after configuration. The default value is STRONG.

4. Click Set & Execute.

Use the following steps to unregister a WebLogic Server from the Tivoli desktop:
1. From the Tivoli desktop, double-click the policy region that contains the server objects to display the Policy Region window. The default policy region is Monitoring for WebLogic. If you created additional policy regions, open the one that contains the objects you want to work with.
2. Double-click on the WebLogic Domain that contains the WebLogic Server you want to work with.
3. Select the WebLogic Server and from the Edit menu select Delete.
4. Click Yes in the confirmation window.

Configure WebLogic Servers

Objective
To configure or change the properties of an existing WebLogic Server.
Background information

Note: All of the WebLogic Servers in any specific WebLogic Domain must be the same version of BEA WebLogic Server. This is a general expectation of the BEA WebLogic Server product.

When configuring a WebLogic Server, the server is validated using the STRONG value.

Required authorization role
weblogic_admin, weblogic_super

Before you begin
None

When you finish
None

Procedure
You can perform this procedure as a command or from the Tivoli desktop.

Command line: Use the wweblogic -ConfigureServer command to configure a WebLogic Server. For the CLI syntax for these commands, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.

Tivoli desktop: Use the following steps to run this procedure from the Tivoli desktop:

1. From the Tivoli desktop, double-click the policy region that contains the application server objects to display the Policy Region window. The default policy region is Monitoring for WebLogic. If you created additional policy regions, open the one that contains the objects you want to work with.
2. Right-click the WebLogic Domain that contains the objects you want to work with and select Open.
3. Right-click the WebLogic Server that you want to configure and click Configure.

Figure 3. The Policy Region: Monitoring for WebLogic window
Complete or edit the following fields on the Configure Server window:

**Endpoint Label**
Name or IP address of the machine where the WebLogic Server runs. Do not confuse this name with the label of the endpoint object that points to that machine. A valid IP address contains less than four octets, assuming subnet masks are set up correctly. For example, 255, 255.255, 255.255.255, and 255.255.255.255 are all valid IP addresses.

**Label**
Label you want to use for the Tivoli object. This label must be unique within the Tivoli management region. If left blank, this label will default to a close match of the server name.

**Server Name**
Name of the WebLogic Server, according to the WebLogic configuration file, config.xml.

**Version**
6.1 or 7.0.

**Listen Address**
IP address on which the WebLogic Server listens to requests, according to the WebLogic configuration file, config.xml. A valid IP address contains less than four octets, assuming subnet masks are set up correctly. For example, 255, 255.255, 255.255.255, and 255.255.255.255 are all valid IP addresses. If left blank, this attribute defaults to 127.0.0.1.

**Listen Port**
Port on which the WebLogic Server listens to requests, according to the WebLogic configuration file, config.xml. If left blank, this attribute defaults to 7001.

**JRE Directory**
The full path to the directory of the Java Runtime Environment (JRE). A valid java executable should exist under JRE directory/bin.

**Root Directory**
The full path to the top level directory of the WebLogic installation to which the WebLogic Server belongs.

**Class Path**
Java class path used by the WebLogic Server. weblogic.jar should be included in this ClassPath.
Log File
The full path to the logfile for this Server. You may leave blank if the version of the server is less than 7.0.

Start Command
The command to use to start the WebLogic Server when it is operating as a managed server (not operating as an administration server).
Include the full path to the command plus any flags the command might require. For more information, see “Starting, stopping, or killing a server” on page 58.

Start Command Admin
The command to use to start the WebLogic Server when it is operating as the administration server. Include the full path to the command plus any flags the command might require.

Administration Server
TRUE or FALSE. If TRUE is selected, this WebLogic Server is the Administration Server for the domain in which it resides. Only one server acts in this capacity. In the event that you register a server as the Administration Server and then register a second server in the same domain as the Administration Server, the original Administration Server is no longer the Administration Server for that domain. Only the last WebLogic Server that is configured or registered as an Administration Server has that status for a domain.

Validation Level
Sets the level of validation for the configuration of the WebLogicServer.
WEAK validation verifies directories and paths specified in attributes existing on the endpoint. STRONG validation attempts to connect to the underlying WebLogic Server after configuration. The default value is STRONG.

5. Click Set & Execute.

Discover the WebLogic Servers within a specific domain

Objective
To discover the WebLogic Servers within a specific domain.

Background information
None

Required authorization role
weblogic_super

Before you begin
At least one WebLogic Server (preferably the WebLogic Administration Server) must be manually registered within the WebLogic Domain before you can discover WebLogic objects.

There are several required server properties that an automated discovery process might not be able to determine. The shell script generated by the discovery process is prefaced with several default variables that you must correct. For example, if the file system locations of the java classes that provide the weblogic.jar file are stored in the ClassPath attribute of the ServerStart section of the WebLogic Server config.xml file the WebLogic Server will run. If this section is missing from the config.xml file or the ClassPath attribute is not set, then the discovery process cannot determine the location of the weblogic.jar file.
It is possible for the values of the discovered properties to be set incorrectly. You must edit the script generated by the discovery process before executing the script.

**When you finish**

None

**Procedure**

You can perform this procedure as a task or from the Tivoli desktop.

**Task:** Use the `wruntask` command to use the `discover_weblogic_servers` task. See Chapter 7, “Working with tasks and jobs” on page 63 for information about running tasks.

**Tivoli desktop:** Use the following steps to run this procedure from the Tivoli desktop:

1. From the Tivoli desktop, double-click the policy region that contains the application server objects to display the Policy Region window. The default policy region is Monitoring for WebLogic. If you created additional policy regions, open the one that contains the objects you want to work with.

2. Right-click the WebLogic Domain that contains the objects you want to work with and select **Discover Servers** to begin a read-only examination of all WebLogic Server resources known by the WebLogic Administration Server for the current WebLogic Domain.

*Figure 5. The Discover Servers window*
Starting, stopping, or killing a server

Objective
To start, stop, or kill a WebLogic Server.

Background information
If a WebLogic Server is down, any web applications hosted by that server are also down.

Required authorization role
weblogic_admin, weblogic_super

Before you begin
To start a server, you first must edit a script. The Start Server command (that can be a script) specified when you create a WebLogic Server object must be an existing file on the endpoint. It must include properly set environment variables and code to start the WebLogic JVM. The Start Server script can be a "wrapper" script that you write that initializes the environment and then invokes an existing script (for example, one that has been externally provided by a vendor). Alternatively, you can specify an externally provided script as the Start Server script. However, you might want to customize this script to recognize environment variables that are passed from the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server environment. For example, if a vendor-provided script has a hard-coded password and you want to remove this from the provided script, you can modify the script to use the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server environment variable "WLS_SystemPassword" instead of the hard-coded value.

Note: If you intend to use an externally provided script that expects the current working directory to be already set, then a "wrapper" script that you write is required to set the current working directory properly. For example, some of the sample servers from BEA include start scripts that expect the current working directory to be the same as where the script itself is located. So, your wrapper script must cd into that directory.
Several environment variables are predefined for the script during invocation. They include the following:

**WLS_DomainName**
The name for the domain in which the WebLogic Server is contained.

**WLS_ServerName**
The name of the WebLogic Server.

**WLS_ListenAddress**
The IP address the WebLogic Server listens on.

**WLS_ListenPort**
The port the WebLogic Server listens on.

**WLS_AdminHost**
The IP address or hostname the domain administration server listens on.

**WLS_AdminPort**
The port the domain administration server listens on.

**WLS_SystemUser**
A user in the WebLogic Domain with startup privileges.

**WLS_SystemPassword**
The cleartext password of the above user.

**WLS_RootDirectory**
The root directory of the WebLogic installation on the given endpoint. In WebLogic Server 6.1, this must be the current directory during startup. The startup script should change to this directory before Java is invoked.

**WLS_LogFile**
The path and name of the log file for the given WebLogic Server. If a relative path is used, then it is relative to the value of WLS_RootDirectory.

**WLS_IsAdminServer**
Set to TRUE if the server being started is the administration server for the domain.

**WLS_JreDirectory**
The root directory of a valid JRE installation. Use 
${WLS_JreDirectory}/bin/java in a POSIX shell to invoke Java. Use %WLS_JreDirectory%\bin\java in a Windows command shell.

**WLS_ClassPath**
A Java classpath that contains the weblogic.jar file.

**ADMIN_URL**
Defined as http://{WLS_AdminHost}:${WLS_AdminPort}. Provided for compatibility with prior WebLogic startup scripts.

**SERVER_NAME**
Same as WLS_ServerName. Provided for compatibility with older WebLogic startup scripts.

The following script typically initializes environment variables and changes directories to invoke a BEA-supplied startup script:

```bash
## fail if any command fails or if undefined variable used
set -eu

BEA_7_0_DIR=/data/bea_7.0.1
LOGFILE=/data/bvt/myStartPetstore7.log
date >>$LOGFILE
```

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When you finish
None

Procedure
You can perform this procedure from the command line, as a task, or from the Tivoli desktop.

Command line: Use the `wweblogic -StartServer` command to start a WebLogic Server. Use the `wweblogic -StopServer` command to stop a WebLogic Server. Use the `wweblogic -KillServer` command to kill a WebLogic Server. For the CLI syntax for these commands, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.

Task: Use the `wruntask` command to use either the `start_weblogic_server` task, the `stop_weblogic_server` task, or the `kill_weblogic_server` task. See Chapter 7, “Working with tasks and jobs” on page 63 for information about running tasks.

Tivoli desktop: Use the following steps to run this procedure from the Tivoli desktop:

1. From the Tivoli desktop, double-click the policy region that contains the server objects to display the Policy Region window. The default policy region is Monitoring for WebLogic. If you created additional policy regions, open the one that contains the objects you want to work with.
2. Double-click on the WebLogic Domain that contains the WebLogic Server you want to work with.
3. Right-click the WebLogic Server and click Start Server, Stop Server, or Kill Server to start, stop, or kill the server.

Validate a WebLogic Server

Objective
To validate a WebLogic Server.

Background information
WEAK validation checks the information provided during the registration and configuration processes to ensure it matches a server’s installation on a file system. For example, it makes sure that the value provided for JreDirectory is a real file system directory with bin/java in it. STRONG validation ensures that the specified server is manageable by attempting to open a connection to it. STRONG validation fails if the server is not currently running. STRONG validation includes WEAK validation.

Required authorization role
weblogic_admin, weblogic_super
Before you begin
None

When you finish
None

Procedure
You can perform this procedure from the command line, as a task, or from the Tivoli desktop.

Command line: Use the `wweblogic -ValidateServer` command to validate a WebLogic Server. For the CLI syntax for these commands, see the *IBM Tivoli Monitoring for Web Infrastructure Reference Guide*.

Task: Use the `wruntask` command to use the `validate_weblogic_server` task. See Chapter 7, “Working with tasks and jobs” on page 63 for information about running tasks.

Tivoli desktop: Use the following steps to run this procedure from the Tivoli desktop:
1. From the Tivoli desktop, double-click the policy region that contains the server objects to display the Policy Region window.
   The default policy region is Monitoring for WebLogic. If you created additional policy regions, open the one that contains the objects you want to work with.
2. Double-click on the WebLogic Domain that contains the WebLogic Server you want to work with.
3. Right-click the WebLogic Server and click Validate.
Chapter 7. Working with tasks and jobs

This chapter provides information about using tasks and jobs to manage your WebLogic Server resources.

Table 7 shows the options to manage tasks and jobs.

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The installation process installs the task library in the product policy region. Do not remove the task library from this policy region. The task library contains default policies that affect how the task library works.

The policy region containing the task library defines task and job policies. Default policies set profile manager options and endpoints for tasks. Validation policies control the creation and execution of tasks.

Running a task

**Objective**
To run one of the standard tasks in the task library.

**Background information**
A task is an action that must be routinely performed on selected endpoints or managed nodes throughout the network. A task defines the executables to be run, the authorization role required to execute the task, and the user or group name under which the task is run. IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server provides standard tasks in a task library. Standard tasks run on any system without consideration of platform type.

**Required authorization roles**
See the IBM Tivoli Monitoring for Web Infrastructure Reference Guide for the authorization role required for each task.

**Before you begin**
None

**When you finish**
None

**Procedure**
You can perform this procedure from either the command line or the Tivoli desktop.
**Command Line:** Use the `wruntask` command to run a task. See the *IBM Tivoli Monitoring for Web Infrastructure Reference Guide* for information about running tasks from the command line.

For more information about the `wruntask` command, see the *Tivoli Framework Reference Manual*.

**Tivoli desktop:**

1. Open the task library window by performing the following steps:
   a. Open the Tivoli desktop.
   b. Double-click the *Monitoring for WebLogic Server* policy region icon to display the policy region.
   c. Double-click the product task icon to open the product task library window.
2. Double-click the task icon that you want to run to open the Execute Task window.

*Additional information:* The Execute Task window is a generic window that contains execution parameters for all tasks.

3. Select one of the following check boxes in the *Execution Mode* group box:
   - **Parallel**
     Runs the task simultaneously on all targets. Parallel is typically the fastest method of execution.
   - **Serial**
     Runs the task sequentially on all targets in alphabetical order.
   - **Staged**
     Runs the task on all targets in alphabetical order according to a schedule you specify. Staged execution is useful if you are running the task on a large number of endpoints. Complete Step 5 to specify the *Staging Count* (number of targets to run against per stage) and the *Staging Interval* (number of seconds between each set).
4. Type a timeout value (in seconds) for the task in the *Timeout* text box.

*Additional information:* The *Timeout* value does not stop the task. This value specifies the number of seconds the Tivoli desktop waits for the task to complete before it issues an error. The task continues to execute on the endpoint without displaying the output results. Setting an early timeout enables your Tivoli desktop to become available again if the task takes a long time to execute. The default is 60 seconds. If the task takes longer to complete than the specified *Timeout* and is running in **Serial** or **Staged** mode, the product moves on to other endpoints after this time expires.

5. **Optional:** If you selected **Staged** in Step 3 specify the number of endpoints to include in each staged set in the *Staging Count* text box and the number of seconds between each set’s startup time in the *Staging Interval* text box.
6. Select one or more of the following check boxes in the Output Format dialog to choose the output returned upon task completion:
   - **Header**
     Includes a descriptive header for each record, such as the task name and target.
   - **Return Code**
     Includes the programming codes produced when the task executes.
   - **Standard Error**
     Includes all error messages encountered when the task executes.
Standard Output
Includes all information that results from the task execution.

7. Select one of the following in the **Output Destination** group box to choose an output destination:

- **Click Display on Tivoli desktop** to display the task output on the Tivoli desktop.
  
  Additional information: If you choose **Display on Desktop**, you have the option, inside the output display window, of saving the information to a file.

- **Click Save to File** to save the output to a file.
  
  a. Type the name of the endpoint on which to save the output in the **On Host** text box.
     
     Additional information: The endpoint must be a Tivoli client.
  
  b. Type the absolute path name for the output file in the **Output File** text box.
     
     Additional information: Example: `/tmp/mytask.out`
  
  c. Click **Set & Close** to set your choices and return to the Execute Task window.

8. Choose the endpoints on which you want to run the task by doing one of the following:

- Run the task on specific endpoints by doing the following:
  
  a. Select the endpoints from the **Available Task Endpoints** list.
  
  b. Click the left arrow button to move the selected endpoints to the **Selected Task Endpoints** list.

  —OR—

- Run the task on all subscribers of the specified profile managers by doing the following:
  
  a. Select profile managers from the **Available Profile Managers** list.
  
  b. Click the left arrow button to move the selected profile managers to the **Selected Profile Managers** list.

9. Click **Execute** or **Execute and Dismiss**. If the task requires additional input parameters, the task argument window is displayed. Otherwise, the task executes.
Customizing a task

Objective
To customize one of the standard tasks in the task library so you can save defined arguments for future use.

Note: You can only customize tasks that use additional arguments.

Background information
A customized task is a standard task with defined arguments saved in the task library with a unique name. For example, you can customize a task to save task output results to a file after each execution. Because you can customize task arguments, the Tivoli environment does not display argument dialogs when you run the task from the Tivoli desktop. However, if you run a customized task from the command line, you still must specify the task arguments. Running a customized task requires additional information before it runs, such as the target of the task.

Required authorization roles
weblogic_admin

Before you begin
None

When you finish
You can run the task by following the procedure in “Running a task” on page 63. When you run a customized task, the Tivoli desktop does not display the task argument dialog.

Procedure
You can perform this procedure from the Tivoli desktop only.

1. Open the task library window by performing the following steps:

   Additional information: For information about how to fill in the task argument dialog, refer to the task description in the IBM Tivoli Monitoring for Web Infrastructure Reference Guide or click Task Description to display the online help.

10. Click Set & Execute to run the task.
a. Open the Tivoli desktop.
b. Double-click the Monitoring for WebLogic Server policy region icon to display the policy region.
c. Double-click the product task icon to open the product task library window.

2. Double-click a task icon to open the Execute Task window for that task.
3. Click Execute to open the task argument window.
4. Enter the appropriate values for this customized task.
   Additional information: For information about each field in these windows, see the task description in the IBM Tivoli Monitoring for Web Infrastructure Reference Guide or click Task Description to display the online help.
5. Click Save to open the Save Argument window.
6. Type the following information to define the customized task:
   a. Type a name for the task in the Name text box.
      Additional information: This name is displayed in the Library Contents field so you can view the customized tasks that are based on the parent task.
   b. Type an identifier for this task.
      Additional information: An identifier is the name of the task icon that is displayed in the Task Library window. A customized task identifier has two parts. Use the standard task name in the first part. Use descriptive information that makes sense to you in the second.
      The software generates a unique default name if no identifier is entered.
      To enable filtering for an identifier without the standard task name, edit the tl_def_man_nodes policy method in the task library policy object. See the Tivoli Framework Reference Manual for more information.
   c. Type a description of this task in the Description text box.
      Additional information: This description is displayed when you click Task Description in the task argument window for this customized task.
   d. Optional: Select Show by Identifier to change the Library Contents list to use the task identifier instead of the task name.
   e. Click Save & Close to return to the task argument window.
7. Click Cancel in the task argument window.
8. Click Close in the Execute Task window to return to the Task Library window.
9. Click View to display the View drop-down menu.
10. Click Refresh from the View drop-down menu to display the new customized task.

---

**Creating a job**

**Objective**
To create a job by defining execution parameters so you can specify a target that enables you to schedule it to run at certain times in the Scheduler.

**Background information**
A job is a task with defined and saved arguments that can be executed many times on specific managed resources. You can create jobs from both standard and customized tasks in the product task library. Like tasks, you store jobs in task libraries so you can reuse them.

**Required authorization roles**
weblogic_admin
Before you begin
None

When you finish
After you create a job, you can run it immediately using the procedure described in “Running a job” on page 69. You also can schedule jobs to run at certain times in the Scheduler, as described in “Scheduling a job” on page 70.

Procedure
You can perform this procedure from either the command line or the Tivoli desktop.

Command Line: Use the wcrtjob command to create jobs from the command line. See the Tivoli Management Framework Reference Manual for information about the wcrtjob command.

Tivoli desktop:
1. Open the task library window by performing the following steps:
   a. Open the Tivoli desktop.
   b. Double-click the Monitoring for WebLogic Server policy region icon to display the policy region.
   c. Double-click the product task icon to open the product task library window.
2. Click Create to display the Create drop-down menu.
3. Select Job from the Create drop-down menu to open the Create Job window.
4. Type a descriptive job name in the Job Name text box.
   Additional information: The job name identifies the icon on the Tivoli desktop. The name can include any alphanumeric character, an underscore (_), dash (–), period (.), or a blank space.
5. Select the task on which the job is based from the Task Name list.
6. In the Execution Mode group box, select one of the following check boxes:
   Parallel
   Runs the task simultaneously on all targets. Parallel is typically the fastest method of execution.
   Serial
   Runs the task sequentially on all targets in alphabetical order.
   Staged
   Runs the task on all targets in alphabetical order according to a schedule you specify. Select staged execution if you are running the task on a large number of endpoints. Complete Step 5 to specify the Staging Count (number of targets to run against per stage) and the Staging Interval (number of seconds between each set).
7. In the Execution Parameters group box, type the timeout value (in seconds) for the task in the Timeout text box.
   Additional information: This value specifies the number of seconds the product waits for the task or job to complete before it issues an error. The default is 60 seconds. If the task takes longer to complete than the specified Timeout and is running in Serial or Staged mode, the product moves on to other endpoints after this time expires. The task continues to execute on the endpoint, even though the product stopped waiting for it to end.
8. Optional: If you selected Staged in Step 6, specify the number of endpoints to include in each staged set in the Staging Count text box and the number of seconds between each set’s startup time in the Staging Interval text box.
9. Select one or more of the following check boxes to choose the output type in the **Output Format** group box:

**Header**
Includes a descriptive header for each record.

**Return Code**
Includes the programming codes produced when the job executes.

**Standard Error**
Includes all error messages encountered when the job executes.

**Standard Output**
Includes all information that results from the job execution.

10. Do one of the following in the **Output Destination** group box to choose an output destination:

- Click **Display on Tivoli desktop** to display the job output on the Tivoli desktop. Go to Step 12.
  
  Additional information: If you choose **Display to Desktop**, you have an option, inside the output display window, to save the information to a file.
  —OR—

- Click **Save to File** to save the output to a file and open the Destination for Task Output window. Go to Step 11.

11. Do the following in the Destination for Task Output window to save the job output to a file:

a. Type a Tivoli client endpoint name on which to save the output in the **On Host** text box.

b. Type the absolute path name for the output file in the **Output File** text box.

  Additional information: Example: `/tmp/myjob.out`

c. Click **Set & Close** to set your choices and return to the Create Job window.

12. Do one of the following to choose the endpoints on which to run the job:

- Run the job on specific endpoints by doing the following:
  
a. Select the endpoints from the **Available Task Endpoints** list.

b. Click the left arrow button to move the selected endpoints to the **Selected Task Endpoints** list.

  —OR—

- Run the job on all subscribers of the specified profile managers by doing the following:
  
a. Select profile managers from the **Available Profile Managers** list.

b. Click the left arrow button to move the selected profile managers to the **Selected Profile Managers** list.

13. Click **Create & Close** to create the job and return to the Task Library window.

Additional information: The new job icon appears in the Task Library window.

### Running a job

**Objective**
To run a job on specific endpoints immediately so you can perform a management operation.
Background information
If you created a job from a standard task, the Tivoli desktop displays the task argument dialog so that you can fill in any required information.

Jobs created from customized tasks run without further input because all required information is specified. (See “Customizing a task” on page 66 for information about how to create a customized task.)

Required authorization roles
weblogic_admin

Before you begin
Before you can run a job, you must create it, as described in “Creating a job” on page 67.

When you finish
After you create a job, you can set it up to run on a regular schedule as described in “Scheduling a job” on page 70.

Procedure
You can perform this procedure from the command line or the Tivoli desktop.

Command Line: Use the wrunjob command to run jobs from the command line. For more information about this command, see the Tivoli Framework Reference Manual.

Tivoli desktop:
1. Open the task library window by performing the following steps:
   a. Open the Tivoli desktop.
   b. Double-click the Monitoring for WebLogic Server policy region icon to display the policy region.
   c. Double-click the product task icon to open the product task library window.
2. Do one of the following:
   • Double-click the job icon created from a customized task to begin executing the job.
   – OR –
   • Double-click the job icon created from a standard task. Go to Step 3.
3. Type the values in the task window.
   Additional information: For information about specific fields, see the task description in the IBM Tivoli Monitoring for Web Infrastructure Reference Guide or click Task Description to display the online help. The job runs and displays the output on the Tivoli desktop or sends it to a file based on the job specification.

Scheduling a job

Objective
To schedule jobs to occur regularly so you can routinely perform management operations.

Background information
The product uses Scheduler to schedule jobs. Scheduler is a service that enables you to run jobs unattended. You can schedule a job to run one time or multiple times. Scheduler notifies you by the manner you select when a job is complete.
Required authorization roles
weblogic_admin

Before you begin
To schedule a job, the job must exist in the task library. You create a job by following the procedure described in “Creating a job” on page 67.

When you finish
None

Procedure
You can perform this procedure from either the command line or the Tivoli desktop.

Command Line: Use the wschedjob command to schedule a job in the Task Library from the command line. From the command line, you can only schedule jobs that already exist in the task library. For more information, see the Tivoli Framework Reference Manual.

Tivoli desktop:
1. Open the task library window by performing the following steps:
   a. Open the Tivoli desktop.
   b. Double-click the Monitoring for WebLogic Server policy region icon to display the policy region.
   c. Double-click the product task icon to open the product task library window.
2. Drag the job icon that you want to schedule onto the Scheduler icon located in the Tivoli Desktop for Administrator <root_admin_name> window on the Tivoli desktop.
3. Optional: Do the following if a task argument window opens:
   a. Type the appropriate information for each field in the dialog.
      Additional information: Refer to the task description in the IBM Tivoli Monitoring for Web Infrastructure Reference Guide or click Task Description to display the online help for this task.
   b. Click Set & Execute to set the task arguments and open the Add Scheduled Job window.
4. Type a label for the job icon in the Job Label text box of the Add Scheduled Job window.
   Additional information: The label identifies the icon on the Tivoli desktop. The job label can include alphanumeric character, underscores (_), dashes (–), periods (.), and blanks. If you do not specify a label, the job name is used.
5. Do one of the following:
   • Select Disable the Job to stop a scheduled job from running.
   —OR—
   • Clear Disable the Job to continue running a scheduled job.
   Additional information: For more information on job disabling, see the Tivoli Management Framework User’s Guide.
6. Optional: Type a job description to uniquely identify the job in the Description field.
7. Set the date and time to begin scheduling in the Schedule Job For group box:
   a. Type a date in the Month, Day, and Year text boxes.
b. Enter the time using the **Hour** and **Minute** drop-down lists and the **AM** and **PM** radio buttons.

8. *Optional*: Repeat the job by doing the following in the **Repeat the Job** group box:
   a. Do one of the following:
      * Select **Repeat the job indefinitely** to repeat the job indefinitely.
      * Repeat the job a finite number of times by doing the following:
        1) Select **Repeat the job**.
        2) Type the number of times you want the job to run.
   b. Set the interval between start times for the job in the **The job should start every** field.

9. Select any of the following check boxes in the **When Job Completes** group box to send job completion notification:
   * Send a notice to a specific group by doing the following:
     a. Select **Post Tivoli Notice**.
     b. Click **Available Groups** to open the Available Groups window.
     c. Select a group from the list of notice groups.
     d. Click **Set** to set your group and return to the Add Scheduled Job window.
   * Send a notice to your Tivoli desktop by doing the following:
     a. Select **Post Status Dialog on Tivoli desktop**.
     b. Type the message you want displayed in the text box next to the check box.
   * Send an e-mail to a specified user by doing the following:
     a. Select the **Send e-mail to**.
     b. Type the complete e-mail address in the text box next to the check box.
   * Log the job completion status to a file by doing the following:
     a. Select **Log to File**.
     b. Enter the file destination by doing one of the following:
        - Type the file destination in the **Host** and **File** text boxes. The host must be a Tivoli client endpoint and the file must be a fully qualified path name. For example: /tmp/mytask.out
        - OR –
        - Browse for the file destination by doing the following:
          1) Click **File Browser** to open the File Browser window.
          2) Double-click on a host name to display the directories and files for that host.
          3) Select a directory and file from the **Directories** and **Files** lists.
          4) Click **Set File & Close** to return to the Add Scheduled Job window.

10. *Optional*: Set retry, cancel, or restriction options by doing the following:
    a. Click **Set Retry/Cancel/Restriction Options** to open the Set Retry/Cancel Restrictions Options window.
    b. Choose one of the following cancel job options:
• Clear **Cancel job** to have the Scheduler continue trying the job indefinitely.
  
  —OR—

• Set the Scheduler to cancel a job in a specified time frame by doing the following:
  
  1) Select **Cancel job**.
  
  2) Type the time frame for the Scheduler to wait before canceling a job that has not started.

c. Click one of the following retry options:

• Click **Retry the job until success** to retry the job until it runs successfully.
  
  —OR—

• Specify the number of times a job attempts to run by doing the following:
  
  1) Select **Retry the job**.
  
  2) Type the number of attempts to start the job in the text box.
  
  3) Type the amount of time the Scheduler waits before retrying in the **The job should retry every** field.

d. Select any of the following check boxes in the **Restrictions** group box to specify the job run times:

  **During the day**
  
  Set the beginning and ending hour of the day for the job to run.

  **At night**
  
  Set the beginning and ending hour of the night for the job to run.

  **During the week**
  
  Set the beginning and ending day of the week for the job to run.

  **On weekends**
  
  Set the beginning and ending day of the weekend for the job to run.

e. Click **Set** to set the options and return to the Add Scheduled Job window.

11. Click **Schedule Job & Close** to schedule the job and return to the Tivoli desktop.
Chapter 8. Enabling Tivoli Enterprise Data Warehouse

This chapter provides information on enabling IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server for Tivoli Enterprise Data Warehouse.

Overview

Tivoli Enterprise Data Warehouse enables you to access application reports from various Tivoli and customer applications. The infrastructure provides a set of extract, transform and load (ETL) utilities that you use to extract and move data from Tivoli application data stores to a central data warehouse database.

Tivoli Enterprise Data Warehouse provides the following capabilities:

- An open architecture for storing, aggregating, and correlating historical data. In addition to the data collected by IBM Tivoli software, Tivoli Enterprise Data Warehouse has the flexibility and extensibility to enable you to integrate your own application data.
- Database optimizations for the efficient storage of large amounts of historical data and for fast access to data for analysis and report generation.
- The infrastructure and tools necessary for maintaining and viewing the collected data. These include the Tivoli Enterprise Data Warehouse application, IBM DB2 Universal Database™ Enterprise Edition, the Data Warehouse Center, DB2 Warehouse Manager, and a user interface for creating and viewing reports.
- The ability to use your choice of data analysis tools to examine your historical data. In addition to the report interface, you can analyze your data using other products such as online analytical processing (OLAP), planning, trending, analysis, accounting, and data mining tools.
- The ability to control access to your historical data. You can keep data about multiple customers and data centers in one central data warehouse, but restrict access so that customers can see and work with data and reports based only on their data and not any other customer’s data. You can also restrict an individual user’s ability to access data.
- A zero-footprint client. Users can access Tivoli Enterprise Data Warehouse reports from any system by using a Web browser. No special software is required on the user’s system.
- Internationalization support. Not only is the report interface localized, application programmers can localize the data stored in the central data warehouse.

Tivoli Enterprise Data Warehouse consists of the following components:

- Control server
- Central data warehouse
- Data marts
- Report interface

Control server

The control server contains the control database for Tivoli Enterprise Data Warehouse from which you manage your data warehouse.
The control server has these subcomponents:

- A server program that controls communication between the control server, the central data warehouse server, the data mart server, and the report server.
- The control database, which contains metadata for Tivoli Enterprise Data Warehouse.

The control server uses the following parts of the IBM DB2 product, which you must install manually before installing the control server. These parts are all automatically installed when you install IBM DB2 Universal Database Enterprise Edition on a Microsoft Windows system.

- DB2 Server
- The Data Warehouse Center, a component that automates data warehouse processing. You can use the Data Warehouse Center to define the ETL processes that move and transform data into the central data warehouse and the star schemas used by the data marts. Then, you can use the Data Warehouse Center to schedule, maintain, and monitor these processes.
- The warehouse agent, part of DB2 Warehouse Manager.

**Central data warehouse**

The central data warehouse is a DB2 database that contains the historical data for your enterprise. The system that hosts the central data warehouse is called the central data warehouse server. The central data warehouse component uses IBM DB2 Universal Database Enterprise Edition, which you must install manually before installing the control server.

**Data marts**

A separate DB2 database contains the data marts for your enterprise. Each data mart contains a subset of the historical data from the central data warehouse to satisfy the analysis and reporting needs of a specific department, team, customer, or application. The system that hosts this DB2 database is called the data mart server. Although you can have many data marts, you can have only one data mart server.

The data mart component requires IBM DB2 Universal Database Enterprise Edition, which you must install manually before installing the control server.

The warehouse pack for IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server creates data marts whose structure is suitable for the report interface. They do this by providing an extract, transform, and load (ETL) process, called a data mart ETL, that creates the data mart and loads it with data from the central data warehouse.

You can modify an existing data mart, or create new data marts that contain slightly different data, to address a reporting need specific to your situation. To modify or create a data mart, you must be familiar with database ETL processes and with the internal representation of a data mart as star schemas in the Tivoli Enterprise Data Warehouse databases. For information about this, see *Enabling an Application for Tivoli Enterprise Data Warehouse*.

**Report interface**

The Tivoli Enterprise Data Warehouse report interface (RPI) provides tools and a graphical user interface that other Tivoli software products use to create and display reports. You can use Tivoli Enterprise Data Warehouse to customize reports.
provided with other Tivoli software and to create new reports. You also use the report interface to control access to data marts and to the reports associated with a data mart. The system on which you install the report interface is called the report server.

Use the Work with Reports task group in the report interface to manage users, groups, and data marts for Tivoli Enterprise Data Warehouse or to run, create, and view Tivoli Enterprise Data Warehouse reports.

Working with users and user groups

This section describes tasks associated with managing user groups for Tivoli Enterprise Data Warehouse. It includes the following topics:

Table 8. Guidelines for working with Tivoli Enterprise Data Warehouse users and user groups

<table>
<thead>
<tr>
<th>Goal</th>
<th>Where to find information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand users and user groups.</td>
<td>“About users and user groups”</td>
</tr>
<tr>
<td>Understand Tivoli Enterprise Data Warehouse roles.</td>
<td>“The Tivoli Enterprise Data Warehouse roles”</td>
</tr>
<tr>
<td>Create an IBM Console user.</td>
<td>“Creating an IBM Console user” on page 78</td>
</tr>
<tr>
<td>Assign roles to a user.</td>
<td>“Assigning roles to a user” on page 78</td>
</tr>
<tr>
<td>Create a user group.</td>
<td>“Creating a user group” on page 79</td>
</tr>
<tr>
<td>Assign users to a user group.</td>
<td>“Assigning users to a user group” on page 79</td>
</tr>
<tr>
<td>Assign a user group to a data mart.</td>
<td>“Assigning user groups to a data mart” on page 80</td>
</tr>
</tbody>
</table>

About users and user groups

You control access to data in Tivoli Enterprise Data Warehouse data marts by specifying which user groups (collections of users) can run the reports that access the data in each data mart. Each user in a user group is given access to the reports the user group can access.

By default, Tivoli Enterprise Data Warehouse provides the TWHAdmin user group, which contains a single user: superadmin. You can customize the TWHAdmin user group for the needs of your enterprise.

A user can be assigned to more than one user group.

The Tivoli Enterprise Data Warehouse roles

The following Tivoli Enterprise Data Warehouse roles control access to tasks and activities:

- Warehouse Security Administrator
  
  With this role, a user can create and manage groups and data marts. A user with this role controls access to data marts by assigning users to groups and by giving groups access to specific data marts. In effect, this role controls access to the Tivoli Enterprise Data Warehouse data using user groups and data marts.

- Report roles control a user’s ability to create and modify reports for the data marts his user groups can access. Assign only one of the following roles to each user:
- Advanced Report Author
  With this role, a user can create, modify, run, and delete public and their own personal reports, and save the output of reports, both public and personal.
- Report Author
  With this role, a user can run and save the output of public and private reports and create, modify, and delete their own personal reports.
- Report Reader
  With this role, a user can run public reports and view the saved output of public reports.

Creating an IBM Console user

**Objective**
To create an IBM Console user.

**Background information**
Tivoli Enterprise Data Warehouse is displayed using the IBM Console, which is also used by other Tivoli software products. A user is given access to tasks in the IBM Console based on the roles that are assigned to that user. One user can have roles for diverse tasks including administering IBM Console users, managing Tivoli Enterprise Data Warehouse user groups and data marts, running and viewing the output of Tivoli Enterprise Data Warehouse reports, and performing tasks associated with other Tivoli software products.

**Required authorization role**
superadmin

**Before you begin**
None

**When you finish**
The Tivoli Enterprise Data Warehouse online help also guides you through additional tasks for managing users, such as updating or displaying the properties of a user and deleting a user.

**Procedure**
To create an IBM Console user, complete the following steps:
1. From the IBM Console, select **Administer Users** and then **Create a User**.
2. Open the Task Assistant and follow the instructions provided in the online help to create a user.

Assigning roles to a user

**Objective**
To assign roles to a user.

**Background information**
None

**Required authorization role**
superuser

**Before you begin**
None
When you finish
The Tivoli Enterprise Data Warehouse online help also guides you through additional tasks for managing users, such as updating or displaying the properties of a user and deleting a user.

Procedure
To assign a role to a user, complete the following steps:
1. From the IBM Console, select **Administer Users and Roles** and then **Manage Users**.
2. From the table of users, click the context menu icon of a user and select **Properties**.
3. Follow the instructions in the Task Assistant about assigning roles to the user.

Creating a user group

Objective
To create a user group.

Background information
None

Required authorization role
Administration Authorizations

Before you begin
None

When you finish
The Tivoli Enterprise Data Warehouse online help also guides you through additional tasks for managing user groups, such as updating or displaying the properties of a user group, adding users to a user group, and deleting a user group.

Procedure
To create a user group, complete the following steps:
1. From the IBM console, select **Work with Reports** and then **Manage User Groups**.
2. In the Manage User Groups window, click the context menu of Root and select **Create**.
3. Follow the instructions in the Task Assistant about creating user groups.

Assigning users to a user group

Objective
To assign users to user groups.

Background information
None

Required authorization role
Administration Authorizations

Before you begin
None
When you finish
The Tivoli Enterprise Data Warehouse online help also guides you through additional tasks for managing user groups, such as updating or displaying the properties of a user group, adding or removing users from a user group, and deleting a user group.

Procedure
To assign one or more users to a user group, perform the following steps:
1. From the IBM Console, select Work with Reports and then Manage User Groups.
2. In the Manage User Groups window, click the context menu icon of a group and select Properties.
3. Follow the instructions in the Task Assistant about assigning users to user groups.

Assigning user groups to a data mart

Objective
To assign user groups to a data mart.

Background information
Grant access to only those user groups whose users need the data mart to perform tasks.

Required authorization role
Administration Authorizations

Before you begin
None

When you finish
The Tivoli Enterprise Data Warehouse online help can guide you through additional tasks for managing user groups, such as updating or displaying the properties of a user group, removing users from a user group, and removing data mart access from a user group.

Procedure
To assign user groups to a data mart, complete the following steps:
1. From the IBM Console, select Work with Reports and then Manage Data Marts.
2. In the Manage Data Marts window, in the Data Mart view, click the context menu icon for the data mart that you want to change and click Properties.
3. Select the User Groups tab.
4. Open the Task Assistant and follow the instructions provided in the online help to assign a user group to a data mart.

Managing Tivoli Enterprise Data Warehouse reports

Tivoli Enterprise Data Warehouse reports display a static view of the data in a data mart. Reports are provided by the warehouse pack for IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server, along with the data marts required to collect the data used in the report.

Tivoli Enterprise Data Warehouse provides three types of reports, which contain a static view of your data:
Extreme case
An extreme case report is a “one measurement versus many components or groups of components” report that displays the worst or best n cases. This report displays a maximum of 25 cases.

Health check
A health check report displays status and performance for a specified measurement over a period of time. The data in a health check report is aggregated at the application server level.

Summary
A summary report displays the overall status of the resource models. The data in a summary report is aggregated at the application server level and is grouped by operating system, node, and application server.

This section describes the following tasks:

Table 9. Guidelines for working with Tivoli Enterprise Data Warehouse reports

<table>
<thead>
<tr>
<th>Goal</th>
<th>Where to find information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run a report</td>
<td>“Running reports” on page 83</td>
</tr>
<tr>
<td>Schedule a report to run automatically</td>
<td>“Scheduling reports to run automatically” on page 84</td>
</tr>
<tr>
<td>Modify the default settings of a report</td>
<td>“Modifying default settings for reports” on page 85</td>
</tr>
<tr>
<td>Create a custom report</td>
<td>“Creating reports” on page 86</td>
</tr>
</tbody>
</table>

For more information about working with reports, see the Tivoli Enterprise Data Warehouse online help.

Tivoli software products using the Tivoli Enterprise Data Warehouse can provide prepackaged reports that enable you to access specific information about your business environment. All of these reports are listed in the Manage Reports and Report Output task of the Work with Reports task group in the IBM Console. This includes reports from all Tivoli software products that use the Tivoli Enterprise Data Warehouse report interface. Tivoli software products can also provide a different reporting interface.

A Tivoli Enterprise Data Warehouse report uses data from a single data mart.

If you have the appropriate role, you can also create additional reports or modify existing reports. Before you can create a new report or modify an existing report, you must understand the structure of the underlying warehouse data and of the operational data that is the source of that data. For information about the structure of data in the data mart and in the central data warehouse, see Enabling an Application for Tivoli Enterprise Data Warehouse.

For information about any problems that might occur, see the “Troubleshooting” chapter in the Installing and Configuring Tivoli Enterprise Data Warehouse, Version 1, Release 1.

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server star schemas, data marts, and reports
IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server contains the following Tivoli Enterprise Data Warehouse star schemas, data marts, and reports.
For detailed information on the specific data mart, star schema, and report mapping of IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server, see the *IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server Warehouse Enablement Pack Implementation Guide* located in the doc directory of *IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server Installation CD*.

**Star schemas**

*Star schema* is a set of three or more data tables.

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server provides the following star schemas:

- GWL Server Hourly Star Schema
- GWL Server Daily Star Schema
- GWL Server Weekly Star Schema
- GWL Server Monthly Star Schema
- GWL JDBC Connection Pool Hourly Star Schema
- GWL JDBC Connection Pool Daily Star Schema
- GWL JDBC Connection Pool Weekly Star Schema
- GWL JDBC Connection Pool Monthly Star Schema
- GWL JMS Server Hourly Star Schema
- GWL JMS Server Daily Star Schema
- GWL JMS Server Weekly Star Schema
- GWL JMS Server Monthly Star Schema
- GWL Execute Queue Hourly Star Schema
- GWL Execute Queue Daily Star Schema
- GWL Execute Queue Weekly Star Schema
- GWL Execute Queue Monthly Star Schema
- GWL JTA Hourly Star Schema
- GWL JTA Daily Star Schema
- GWL JTA Weekly Star Schema
- GWL JTA Monthly Star Schema
- GWL JVM Hourly Star Schema
- GWL JVM Daily Star Schema
- GWL JVM Weekly Star Schema
- GWL JVM Monthly Star Schema
- GWL JMS Destination Hourly Star Schema
- GWL JMS Destination Daily Star Schema
- GWL JMS Destination Weekly Star Schema
- GWL JMS Destination Monthly Star Schema
- GWL JMS Server Hourly Star Schema
- GWL JMS Server Daily Star Schema
- GWL JMS Server Weekly Star Schema
- GWL JMS Server Monthly Star Schema
- GWL Connector Component Hourly Star Schema
- GWL Connector Component Daily Star Schema
- GWL Connector Component Weekly Star Schema
- GWL Connector Component Monthly Star Schema
• GWL Web Application Component Hourly Star Schema
• GWL Web Application Component Daily Star Schema
• GWL Web Application Component Weekly Star Schema
• GWL Web Application Component Monthly Star Schema
• GWL EJB Hourly Star Schema
• GWL EJB Daily Star Schema
• GWL EJB Weekly Star Schema
• GWL EJB Monthly Star Schema
• GWL Servlet Hourly Star Schema
• GWL Servlet Daily Star Schema
• GWL Servlet Weekly Star Schema
• GWL Servlet Monthly Star Schema

Data marts and reports
This warehouse pack provides one data mart: WebLogic Datamart.

GWL Monitoring for WebLogic Server provides the following prepackaged reports:

WebLogic Server Availability (Daily) - EC
This extreme case report shows the 25 worst case WebLogic Server in terms of their average percentage of time that the WebLogic Server is up and running for the specified time period.

WebLogic JDBC Connection Pool Statistics (Daily) - SM
This summary report lists the average rate of leaked connections and the average of requesters waiting for a connection for all database pools and all WebLogic servers for the specified time period.

WebLogic EJB Transactions (Daily) - HC
This health check report examines the trends of EJB Transactions in terms of average percentage of transactions timed out and average number of transactions committed and attempted per cycle across all WebLogic Enterprise Server Beans for all WebLogic servers in the specified time period.

WebLogic Servlet Performance (Daily) - EC
This extreme case report shows the 25 busiest WebLogic Servlets in terms of invocation for the specified time period.

WebLogic JMS Load (Daily) - EC
This extreme case report shows the 25 worst case WebLogic Server Java Messaging Services order by destination type in terms of messages throughput for the specified time period.

Running reports

Objective
To run a report using the report interface.

Background information
None

Required authorization role
AdvRepAuthRole, RepAuthRole, or RepReaderRole

Before you begin
None
When you finish
The Tivoli Enterprise Data Warehouse online help can also guide you through additional tasks for reports, such as displaying the properties of a report, modifying the settings, and deleting a report. Also see "Modifying default settings for reports" on page 85 for information about customizing the reports.

Procedure
To run a report using the report interface, complete the following steps:
1. From the IBM Console, select Work with Reports and then Manage Reports and Report Output.
2. In the Manage Reports and Report Output window, in the Reports view, click the context menu icon of a report and select Run.
3. For more information about running reports, see the online help in the Task Assistant. The online help can also help guide you through additional tasks for reports, such as displaying the properties of a report and deleting a report.

Scheduling reports to run automatically

Objective
To automatically run reports.

Background information
Using the Tivoli Enterprise Data Warehouse report interface, you can schedule a report to run automatically when the associated data mart is updated. This ensures that when you examine the output of the report, it displays the most recent data in the warehouse.

Required authorization role
AdvRepAuthRole

Before you begin
None

When you finish
The Tivoli Enterprise Data Warehouse online help can also guide you through additional tasks for reports, such as modifying or displaying the properties of a report and deleting a report.

Procedure
To schedule a report to run automatically when the associated data mart is updated, complete the following steps:
1. From the IBM Console, select Work with Reports and then Manage Reports and Report Output.
2. In the Manage Reports and Report Output window, in the Reports view, click Reports.
3. Click the context menu icon of a report and select Properties.
4. Select the Schedule tab.
5. In the Schedule window, select Run the report when the data mart is built.
6. Click OK.

For more information about automatically running reports, see the online help in the Task Assistant. The online help can also guide you through additional tasks for reports, such as modifying or displaying the properties of a report and deleting a report.
Modifying default settings for reports

Objective
To modify default settings for report creation.

Background information
When you create or modify a report, you select predetermined values for the time frame of the report. The predetermined values of Peak Hours and Weekdays specified under Filtering in the Time page of report properties can be modified. Do this by modifying the information in the control database on the control server.

The default value for Peak Hours is 9:00 am through 5:00 PM, or 0900 to 1700. This value can be modified to reflect different peak hours if necessary.

The default value for Weekdays is Monday through Friday. This value can also be modified.

The RPI.TimeFilters table contains the following filters and default filter values.

<table>
<thead>
<tr>
<th>TIME_FILTER_NAME</th>
<th>TIME_FILTER_VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak hours</td>
<td>hour(meas_hour) in (9,10,11,12,13,14,15,16,17)</td>
</tr>
<tr>
<td>Weekdays</td>
<td>dayofweek(meas_date) between 2 and 6</td>
</tr>
</tbody>
</table>

Required authorization role
AdvRepAuthRole

Before you begin
None

When you finish
For additional information on the properties of the RPI.TimeFilters table, see Enabling an Application for Tivoli Enterprise Data Warehouse.

Procedure
To change the values displayed in the report interface, perform the following steps:

1. Connect to the control database (TWH_MD).
2. Use an SQL statement similar to the following to modify the values for Peak Hours or Weekdays in the RPI.TimeFilters table. The following example sets the Weekdays filter to represent Sunday through Thursday:

   Update RPI.TimeFilters set TIME_FILTER_VALUES = dayofweek(meas_date) between 1 and 5 where TIME_FILTER_NAME = Weekdays

   After doing this, when you select a Weekdays filter for a report in the report interface, the data returned is for Sunday through Thursday.

Note: There is no error-checking for the values that you insert into the tables for Peak Hours and Weekdays. Therefore, ensure that the information you insert into the tables is correct. You can save a report that contains incorrect values for these parameters without receiving an error message. The message is not generated until the report is run.
Creating reports

Objective
To create a report.

Background information
None

Required authorization role
AdvRepAuthRole or RepAuthRole

Before you begin
Ensure that you use descriptive and meaningful names for the reports you create. Report names are unique across all users of Tivoli Enterprise Data Warehouse.

When you finish
The Tivoli Enterprise Data Warehouse online help also guides you through additional tasks for reports, such as modifying or displaying the properties of a report and deleting a report.

Procedure
You can perform this procedure from the IBM Console.

1. Click Work with Reports and select Create a Report.
2. Select one of the following type of reports to create: Extreme Case, Health Check, and Summary.
3. Select the data mart that contains the information from which to create the report.
4. Click OK.
5. Click the General tab and enter the Name and Description for the report.
6. Click the Metrics tab, and select Add to add a new metric to graph and display the Add Metrics screen.
7. Select the star schema containing the metric that you would like to graph and to display a list of available metrics for the star schema.
8. Check one or more of the metrics that you want to graph.
9. Click Next.
10. Select the aggregation type that you want for each metric.
11. Click Next.
12. Specify the attributes to filter by, group by, or order by.
13. Click the Time tab, and specify the Time frame for which you want to run the report.

   Additional information: You can specify a General Time Frame, such as the Last 7 days, or a Specific Time Interval, such as January 1, 2002 through January 31, 2002.

14. Click the Schedule tab, and select whether the report is run when the data mart is built.
15. Click OK.
Appendix A. Task and command authorization roles quick reference

Table 11 lists the minimum required authorization roles for the WebLogic Server tasks. For information about these authorization roles, see “Setting authorization roles” on page 11.

Table 11. IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server task authorization roles

<table>
<thead>
<tr>
<th>Task name</th>
<th>Minimum authorization role</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebLogic_Configure_TEC</td>
<td>weblogic_senior or weblogic_super</td>
</tr>
<tr>
<td>WebLogic_Send_Files_To_TEC</td>
<td>weblogic_senior or weblogic_super</td>
</tr>
<tr>
<td>kill_weblogic_server</td>
<td>weblogic_super</td>
</tr>
<tr>
<td>start_weblogic_server</td>
<td>weblogic_super</td>
</tr>
<tr>
<td>stop_weblogic_server</td>
<td>weblogic_super</td>
</tr>
<tr>
<td>TBSM_discovery_webLogic</td>
<td>weblogic_senior or weblogic_super</td>
</tr>
<tr>
<td>validate_weblogic_server</td>
<td>weblogic_super</td>
</tr>
</tbody>
</table>

Table 12 lists the minimum required authorization roles for the commands.

Table 12. IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server command authorization roles

<table>
<thead>
<tr>
<th>Task name</th>
<th>Minimum authorization role</th>
</tr>
</thead>
<tbody>
<tr>
<td>wweblogic –ListDomains</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –RegisterDomain</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –UnregisterDomain</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –ConfigureDomain</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –ListServers</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –RegisterServer</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –UnregisterServer</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –ValidateServer</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –ConfigureServer</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –StartServer</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –StopServer</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –KillServer</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –ShowServerAttributes</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
<tr>
<td>wweblogic –ShowDomainAttributes</td>
<td>weblogic_admin, weblogic_super</td>
</tr>
</tbody>
</table>
Appendix B. Task quick reference

A task is an operation or set of operations that is performed routinely. The following table lists the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server tasks alphabetically. For more information about these tasks, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.

The IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server tasks include the following:

Table 13. IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server tasks

<table>
<thead>
<tr>
<th>Task name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>discover_weblogic_servers</td>
<td>Discovers the WebLogic Servers within a specific domain.</td>
</tr>
<tr>
<td>kill_weblogic_server</td>
<td>Kills the WebLogic Server.</td>
</tr>
<tr>
<td>start_weblogic_server</td>
<td>Starts the WebLogic Server.</td>
</tr>
<tr>
<td>stop_weblogic_server</td>
<td>Stops the WebLogic Server.</td>
</tr>
<tr>
<td>validate_weblogic_server</td>
<td>Validates the WebLogic Server.</td>
</tr>
<tr>
<td>WebLogic_Configure_TEC</td>
<td>Clones the Tivoli Enterprise Console rule base based on the one specified, imports the WebLogic baroc files and rules, imports the Tivoli Business Systems Manager rules, compiles the rule base, and loads the rule base, stopping and restarting the Tivoli Enterprise Console server if requested.</td>
</tr>
<tr>
<td>WebLogic_Send_Files_To_TEC</td>
<td>Sends files to Tivoli Enterprise Console.</td>
</tr>
<tr>
<td>WebLogic_TBSM_Discovery</td>
<td>Sends a DISCOVER event to Tivoli Business System Manager for each WebLogic Server that IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server is currently managing. For any resources that were removed since the last time this task was run, this task sends a GONE event to Tivoli Business System Manager.</td>
</tr>
</tbody>
</table>
Appendix C. Setting up IBM Tivoli Monitoring

During installation, IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server performs several tasks that help set up your IBM Tivoli Monitoring environment, including creating profile managers, adding resources to the profiles, and adding resource models to profiles. The WebLogic Monitoring profile manager is created during installation. This appendix provides procedures to create additional profile managers or customize the resources and resource models assigned to your profile manager.

Table 14 provides guidelines for the order in which you set up monitoring information and the required procedures for setting up IBM Tivoli Monitoring.

Note: For additional or advanced information on IBM Tivoli Monitoring in the Tivoli environment, see the IBM Tivoli Monitoring User's Guide.

Table 14. Monitoring resources and applications guidelines

<table>
<thead>
<tr>
<th>Goal</th>
<th>See</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set up profile managers and profiles to organize your resource models. This makes the distribution of resource models more efficient. You might need to set up multiple profile managers and profiles within the profile managers to meet the needs of your environment.</td>
<td>“Creating profile managers and profiles” on page 92</td>
</tr>
<tr>
<td>Subscribe endpoints to the profile manager. This determines which resources receive a profile when the profile is distributed. Profiles contain resource models to run against the endpoints.</td>
<td>“Subscribing resources to profile managers” on page 93</td>
</tr>
<tr>
<td>Populate each profile manager/profile with resource models for the resource that you want to monitor. Include resource models with the default values or customize the default values to meet the needs of your environment.</td>
<td>“Adding default resource models to profiles” on page 94 “Adding customized resource models to profiles” on page 95</td>
</tr>
</tbody>
</table>
| For each resource model in your profile, do the following:  
• Determine how the resource model generates an event by specifying thresholds, occurrences, and holes for each indication for that resource model.  
• Specify if you want corrective or reporting tasks for an event.  
• Specify if you want to receive information on a specific event through a notice.  
• Specify when the monitoring occurs.  
• Specify if you want the collected log data written to a local database. | “Modifying indications” on page 36 “Specifying tasks for an indication” on page 38 “Sending a notice to administrators when an event occurs” on page 39 “Creating scheduling rules” on page 41 “Modifying data logging settings” on page 43 |
| For each profile in your profile manager, do the following:  
• Specify the subscribers that you want to distribute the monitoring profile to and distribute the profile.  
• Specify the subscribers that you want to distribute the monitoring profile to while using MDist2. | “Distributing profiles from the Tivoli desktop” on page 18 “Distributing profiles using MDist2” on page 28 |
Creating profile managers and profiles

Objective
To create profile managers and profiles so you can organize and distribute your resource models more efficiently.

Background information
A monitoring profile is a group of defined resource models that you can distribute to a subscribed managed resource in a profile manager.

In addition to activating default resource models, profile managers and profiles can group resources to enable simultaneous monitoring of multiple resources. You can hierarchically organize the profile managers. The profile manager is the top level of the organization and contains specific profiles that contain specific resource models. Instances are then subscribed to the profile managers, which enable the monitoring information to be channeled to those resources.

You can create an unlimited number of profile managers, but it is recommended that they reflect some logical or functional grouping of resources or the business’s organizational structure. For example, profile managers could be labeled Sales and Marketing, Administration and Finance, and Operations to reflect a business organization.

For more information about profile managers, including the different types (such as dataless), see the Tivoli Management Framework documentation.

Required authorization role
admin

Before you begin
Set up the Tmw2kProfile managed resource types. Refer to the IBM Tivoli Monitoring User’s Guide for information.

When you finish
Add resource models to the profile. See “Adding default resource models to profiles” on page 94 or “Adding customized resource models to profiles” on page 95.

Procedure
You can perform this procedure from either the command line or the Tivoli desktop.

Command Line:
1. Use the wcrtprfmgr command to create a profile manager. For example, to create a profile manager called "ProfMgr2" in the TestRegion policy region, enter the following command:
   wcrtprfmgr @PolicyRegion:TestRegion ProfMgr2
2. Optional: Use the wsetpm command to make the policy manager operate in dataless mode. For example, to make the profile manager ProfMgr2 dataless, enter the following command:
   wsetpm -d @ProfileManager:ProfMgr2

   where:
   -d Specifies that the profile manager operates in a dataless mode.
3. Use the `wcrtprf` command to create a profile. For example, to create a profile called "MarketingProf2" in the ProfMgr2 profile manager, enter the following command:

   wcrtprf @ProfileManager:ProfMgr2 MarketingProfile MarketingProf2

For additional information about these commands, see the *Tivoli Management Framework Reference Manual*.

**Tivoli desktop:**

1. Open the Policy Region window by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to open the policy region.
2. Select **Create → Profile Manager** to open the Create Profile Manager window.
3. Type a unique name in the **Name/Icon Label** text box.
4. Click **Create & Close**.
5. Double-click the profile manager icon to open the Profile Manager window.
6. Select **Create → Profile** to open the Create Profile window.
7. Type a unique name for the profile in the **Name/Icon** text box.
8. Select the **Tmw2kProfile** resource from the **Type** list.
9. Click **Create & Close**. An icon for the new profile is displayed in the **Profiles** area of the Profile Manager window.

---

### Subscribing resources to profile managers

**Objective**
To add managed resources to a monitoring profile so administrators can define which resource to monitor.

**Background information**
Subscribing resources to a profile manager determines which resources receive a profile when the profile is distributed. IBM Tivoli Monitoring uses the list of subscribers to determine which systems are monitored. To add a subscriber to a distributed monitoring profile, you must add the subscriber to the profile manager.

**Note:** Resources can also be subscribed to profiles from the IBM Tivoli Monitoring Profile window. See “Distributing profiles from the Tivoli desktop” on page 18.

**Required authorization role**
admin

**Before you begin**
Create a monitoring profile with monitoring sources. See “Creating profile managers and profiles” on page 92 for information.

**When you finish**
Distribute the monitoring profile to the subscribed resource. See “Distributing profiles from the Tivoli desktop” on page 18 for information.

**Procedure**
You can perform this procedure from either the command line or the Tivoli desktop.
Command Line: Use the `wsub` command to add subscribers to the profile manager. For example, to add a database called "Sample@bburns" as a subscriber to the profile manager `DatabaseMonitors`, enter the following command:

```
wsub @ProfileManager:DatabaseMonitors @PolicyRegionName:Sample@bburns
```

For additional information about these commands, see the *Tivoli Management Framework Reference Manual*.

Tivoli desktop:
1. Open the Policy Region window.
2. Double-click a profile manager icon to open the Profile Manager window.
3. Select Profile Manager → Subscribers.
4. Select the subscribers to receive the profile distribution from the Available to become Subscribers scrolling list.
5. Click the left-arrow button to move the selected subscribers to the Current Subscribers scrolling list.
6. Click Set Subscriptions & Close to add the subscribers. Subscribers are displayed in the Subscribers field of the Profile Manager window.

Adding default resource models to profiles

**Objective**
To add a resource model to a profile using its default values so you can run the resource model immediately.

**Background information**
A resource model captures and returns information about a resource or application. You set up resource models and distribute them to endpoints. Each resource model monitors multiple resources. Choose the resource models to add to a profile based on the resources you want to monitor. Adding one or more of these resource models to a profile enables you to begin monitoring resources immediately.

Put all the resource models that you are going to distribute to the same endpoint in a single profile because the distribution occurs on a per-profile basis.

**Required authorization role**
admin

**Before you begin**
- Create a profile manager and profile. See "Creating profile managers and profiles" on page 92 for information.
- Add subscribers to a profile manager. See "Subscribing resources to profile managers" on page 93 for information.

**When you finish**
Distribute the profile. See "Distributing profiles from the Tivoli desktop" on page 18.

**Procedure**
You can perform this procedure from either the command line or the Tivoli desktop.

**Command Line:** Use the `wdmeditprf` command to add a customized resource model to a profile. For more information, see the *IBM Tivoli Monitoring for Web Infrastructure, Version 5.1.0: WebLogic Server Reference Guide*. 
Desktop:
1. Open the IBM Tivoli Monitoring Profile window.
2. Click Add With Defaults to open the Add Resource Models to Profile window.
3. Select the resource model category from the Category drop-down list.
4. Select the resource model you want from the Resource Model drop-down list.
5. Click Add & Close. The resource model is added to the IBM Tivoli Monitoring Profile.

Adding customized resource models to profiles

Objective
To add a resource model with customized settings so that administrators and users can specify the relevant type of platform, cycle time, and threshold values that meet the needs of your environment and add the resource model to a profile.

Background information
Resource models are set up and distributed to WebLogic Server objects. In addition to using the predefined resource models that are installed with the product, you can customize the predefined resource models. Each resource model monitors a different resource. Choose the resource models that you want to customize and the setting you want to use to monitor those resources.

Required authorization role
admin

Before you begin
• Create a profile manager and profile. See “Creating profile managers and profiles” on page 92 for information.
• Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 93 for information.

When you finish
Distribute the profile. See “Distributing profiles from the Tivoli desktop” on page 18

Procedure
You can perform this procedure from either the command line or the Tivoli desktop.

Command Line: Use the wdmeditprf command to add a customized resource model to a profile. For more information, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.

Tivoli desktop:
1. Open the IBM Tivoli Monitoring Profile window.
2. Click Add to open the Add Resource Models to Profile window.
3. Select the resource model category from the Category drop-down list.
4. Select the desired resource model from the Resource Model drop-down list.
5. Set the frequency with which the resource model monitors the data in the Cycle Time text box. Enter a time in seconds.
6. Use the following steps to change any of the threshold values:
   a. Select the Threshold Name that you want to change.
b. Change the currently assigned threshold value to a value appropriate to your requirements.

c. Click **Apply** to set and display the new value in the Threshold Value window.

7. **Optional**: Click **Indications** or **Parameters** to make required modifications to indications and parameters and click **Schedule** to add schedule information. Additional information: If you do not perform this step, the indications and parameters use the default values shipped with the resource models. See “Modifying indications” on page 36 and “Creating scheduling rules” on page 41 for information.

8. Click **Add & Close** to save your changes. The IBM Tivoli Monitoring Profile window now shows the customized resource model.

### Rerunning failed profile distributions

**Objective**
To verify that the distribution to an endpoint failed so that you can rerun the distribution for the failed endpoint.

**Background information**
When a distribution fails, IBM Tivoli Monitoring creates a profile manager that contains the endpoint subscribers that failed.

When you successfully redistribute profiles, the software deletes the profile manager that it created for the failed distribution. A wholly or partially unsuccessful redistribution retains the profile manager containing only the subscribers that were unsuccessful in the redistribution. Continue correcting the errors and retrying the distribution until the profile is successfully distributed to all endpoints.

**Required authorization role**
admin

**Before you begin**
None

**When you finish**
None

**Procedure**
You can perform this procedure from the Tivoli desktop only.

**Tivoli desktop:**
1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to open the policy region.
2. Select **View → Refresh** from the Policy Region dialog box to see the new profile managers.
3. Review the new profile manager names to determine and correct the cause of the failure. The following profile manager names are derived from a failed distribution:

- The failed distribution creates the following profile manager name due to a Bad_Interpreter error:

  \( \text{OriginalProfileName}_{-}\text{Push}\_\text{Failed}\_\text{Bad}\_\text{Interpreter} \)

  where:

  \( \text{OriginalProfileName} \)

  The name of the profile that you were distributing when the error occurred.

  The AMW089E error message is displayed at this point, indicating that the resource model type is not compatible with the endpoint operating system. For example, you might have distributed a Windows resource model to a UNIX-T endpoint.

- The failed distribution creates the following profile manager name due to any other error:

  \( \text{OriginalProfileName}_{-}\text{Distribution}\_\text{Failed} \)

  where:

  \( \text{OriginalProfileName} \)

  The name of the profile that you were distributing when the error occurred.

4. Subscribe the profile managers that contain the failed endpoints to the profile manager that contained the original profile.

   **Note:** This can be done only if the profile manager used for the original distribution was not a dataless endpoint.

5. Distribute the original profile to the failed endpoints by selecting these profile managers as the target for the distribution. You can also edit the profile managers to delete an endpoint from a group of failed endpoints before retrying the distribution.
Appendix D. Creating custom resource models

This section describes how you can use the Resource Model Wizard to create your own resource models using the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server common information model (CIM) classes. Refer to the IBM Tivoli Monitoring Workbench documentation for more information on how to create resource models.

For information about the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server CIM classes, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.

The following topics are discussed in this section:

Table 15. Guidelines for creating custom resource models

<table>
<thead>
<tr>
<th>Goal</th>
<th>Where to find information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a custom resource model that uses the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server CIM classes.</td>
<td>&quot;Creating custom resource models using the IBM Tivoli Monitoring Workbench&quot;</td>
</tr>
</tbody>
</table>

Creating custom resource models using the IBM Tivoli Monitoring Workbench

Objective
To create customized resource models in the IBM Tivoli Monitoring Workbench using IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server CIM classes and use the Resource Model Wizard to guide you through the process.

Background information
The IBM Tivoli Monitoring Workbench is a programming tool for creating, modifying, debugging, and packaging resource models for use with IBM Tivoli Monitoring products. Samples of the "best practice" resource models have been provided for use within the IBM Tivoli Monitoring Workbench. The sample resource models are intended as working examples for creating new resource models. Also, you can use the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server "best practice" resource models as examples.

The Tivoli Maintenance and Support Contract covers assistance with problems relating to the operation of the IBM Tivoli Monitoring Workbench, but does not cover assistance for new or modified resource models other than the ones that are included in the IBM Tivoli Monitoring Workbench.

The Resource Model Wizard guides you through the process of creating resource models using IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server CIM classes. For information about the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server CIM classes, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.

Refer to the IBM Tivoli Monitoring Workbench documentation for more information on how to create resource models.
Required authorization role
admin

Before you begin
Before you begin, you must perform the following steps:

1. Install and configure Windows Management Instrumentation.
   

2. Install and configure IBM Tivoli Monitoring Workbench.

3. Load each CIM class you want to use.
   
   Additional Information: Load the classes by running the mofcomp command from the WORKBENCH/w32–ix86 directory on the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server installation CD. For more information about the mofcomp command, refer to the Windows Management Instrumentation documentation.

   See the IBM Tivoli Monitoring for Web Infrastructure Installation and Setup Guide for more information on loading these files.

When you finish
Refer to IBM Tivoli Monitoring Workbench documentation for instructions on how to build and deploy your new resource model. Resource models created to use the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server CIM classes need to be distributed to the WebLogic Server objects.

Procedure

1. From the IBM Tivoli Monitoring Workbench, click File → New.

2. Select Java Script Resource Model and click OK.

3. Select Resource Model Wizard and click OK.

4. Select the CIM/WMI data source type.

5. Select all of the available operating systems on which you want the resource model to run.

6. Click Next.

7. Type "root\CIMv2" in the Connect to namespace field.
   
   Additional Information: "\root\CIMv2" refers to the namespace in the class repository that includes resource model information.

8. Optional: Type your password.

9. Click OK to display the Select a Class window.
   
   Additional Information: The Selected Class field displays all available CIM classes for use in your custom resource models.

10. Select the CIM class properties to monitor from the Available Properties group box.

11. Select one or more CIM classes.

   Additional information: For information about the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server CIM classes, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.

12. Click Next.

13. Follow the Resource Model Wizard instructions to complete your resource model. See the IBM Tivoli Monitoring Workbench documentation for detailed instructions.
14. After the wizard is complete, add the CIM classes as platform-specific dependencies to the resource model by doing the following:
   a. Open the IBM Tivoli Monitoring Workbench dialog box containing the decision tree SCRIPT.
   b. In the tree on the left side of the window, click "+" to expand the tree list for the newly created resource model.
   c. Click "+" to the left of Dependencies to expand the Dependencies tree.
   d. Right-click on a platform-specific dependency element to display the Add pop-up menu.
   e. Click Add to display the Open dialog box.
   f. For the Look in field, scroll to select the IBM Tivoli Monitoring for Web Infrastructure installation CD.
   g. Click one of the following directories for the operating system on which the resource models will run:
      • Windows: Workbench/w32–ix86.
      —OR—
      • Unix (including Linux-ix86, aix4–r1, HP–UX10, solaris2): Workbench/UNIX.
   h. Select the appropriate .mof file and then click Open to add the classes to the Dependencies folder.
Appendix E. Event classes and rules

This appendix contains information about the Tivoli Enterprise Console event classes and rules that IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server provides. The following topics are discussed in this appendix:

- “Event classes”
- “Rules for resource models and events”

Event classes

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server provides the Tivoli Enterprise Console event class, WebLogic_Event. Events for this class are generated by the resource models.

Rules for resource models and events

IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server provides rules for events generated by resource models. The rules are contained in the weblogic_to_TBSM.rls file. The rules and their functions are as follows:

**close_events_matching_clearing**

Correlates and closes the original status change event associated with this clearing event.

**forward_WebLogic_Event_to_tbsm_1**

Takes events the resource models generate and sends them to Tivoli Business Services Manager.

**forward_WebLogic_Event_to_tbsm_2**

Takes clearing events generated by IBM Tivoli Monitoring and sends them to Tivoli Business Services Manager.
Appendix F. Problem determination

This appendix provides information about resolving problems that might occur when you run IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server. Problems can be caused by the following things:

- Machine or server availability
- Operating system environment
- IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server configuration

Possible problems and workarounds

The following sections describe problems that might occur and provide workarounds or fixes.

General problem determination

Table 16. General problems and solutions

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>A clarification of how the Start Server functionality works with the</td>
<td>1. On the endpoint, add the WebLogic server password to the vendor startup</td>
</tr>
<tr>
<td>WebLogic startup script installed on an endpoint.</td>
<td>script by setting the WLS_PW variable, for example, WLS_PW=%WLS_systempassword%.</td>
</tr>
<tr>
<td></td>
<td>2. Add the password to the WLS_PW variable.</td>
</tr>
<tr>
<td></td>
<td>3. Test the wrapper script to ensure that it is setup correctly. For an</td>
</tr>
<tr>
<td></td>
<td>example of a wrapper script, see “Starting, stopping, or killing a server”</td>
</tr>
<tr>
<td></td>
<td>on page 58.</td>
</tr>
<tr>
<td></td>
<td>4. On the managed node, configure the server object to reference the</td>
</tr>
<tr>
<td></td>
<td>wrapper script.</td>
</tr>
</tbody>
</table>

The wdmeng -start command for an entire profile fails on HP-UX endpoints

This command works for a single resource model. Start each resource model separately using this command.

The winstall command always returns success even if the command failed.

After the last script runs, you can access a .passed file in the wtemp directory. This file indicates if the winstall command was successful.

When registering a server without configuring the endpoint, you receive the following message: FRWSL0024E A failure was detected by the oserv daemon: FRWOG0040E Transaction Error

First configure the endpoint, and then register the server.

Tivoli Enterprise Console problem determination

Table 17. Tivoli Enterprise Console problems and solutions

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>
## Tivoli Enterprise Data Warehouse problem determination

### Table 18. Tivoli Enterprise Data Warehouse problems and solutions

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
</table>
| No data in the reports. In the case of summary reports, the report is empty. | This can occur in the following situations.  
  - Resource model logging is not enabled. See "Modifying data logging settings" on page 43 for information.  
  - You have not installed the IBM Tivoli Monitoring, Warehouse Enabling component and have not successfully uploaded data to the middle layer database. See the IBM Tivoli Monitoring documentation.  
  - You have not installed and run the IBM Tivoli Monitoring Tivoli Enterprise Data Warehouse support on the Tivoli management region server. See the IBM Tivoli Monitoring for Web Infrastructure Installation and Setup Guide.  
  - You have not installed and run the IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server Warehouse Enablement Pack processes. See IBM Tivoli Monitoring for Web Infrastructure Installation and Setup Guide.  
  - You have not installed the IBM Tivoli Monitoring warehouse enablement pack and run the AMX_ETL1_Process before installing the WebLogic Server warehouse enablement pack (GWL WEP). If you ran the AMX_ETL1_Process before installing the GWL WEP, you need to reset some tables in the TWH_CDW database. To do so, you can use the scripts located under the `<TWH_TOPDIR>/amx/v511/misc/tools` directory. The `reset.bat` file resets the extract_control window for the IBM Tivoli Monitoring entries, deletes the permanent IBM Tivoli Monitoring tables in the central data warehouse database and empties 4 tables in the TWH_CDW database. If you had data from a previous warehouse enablement pack in the warehouse central database, comment the following statements before running the script against the central data warehouse database:  
    - delete from TWG.COMPATTR  
    - delete from TWG.COMPRELN  
    - delete from TWG.MSMT  
    - delete from TWG.COMP  
  Once you run the `reset.bat` script, then you can rerun the AMX_ETL1_Process and then the GWL_ETL2_Process. |
### Table 18. Tivoli Enterprise Data Warehouse problems and solutions (continued)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>You see the following error in the TWHApp.log file:</td>
<td>If you install the Tivoli Enterprise Data Warehouse Pack with one user ID (such as “db2admin”) and the IBM Tivoli Monitoring 5.1.1 Warehouse Enablement or this warehouse enablement pack with another user ID (such as “db2”), you must create a temporary tablespace for the warehouse enablement pack installation user.</td>
</tr>
</tbody>
</table>
| (F) CDWICO0022E Failure detected during SQL script execution for Database (TWH_MART). Return code was (4) Check messages in DB2 log (twh_ibm_db2_runlog.log), Removing TMP script. Exiting... | To create a temporary tablespace, on the system that is the Tivoli Enterprise Data Warehouse Control Server, open a DB2 command window and issue the following commands:  

db2 connect to TWH_CDW user <userID> \ using <password>  
db2 create user temporary tablespace usertmp2 \ managed by system using ('usertmp2')  
db2 connect to TWH_MART user <userID> \ using <password>  
db2 create user temporary tablespace usertmp3 \ managed by system using ('usertmp3')  
where <userID> is the warehouse enablement pack install user and <password> is the password of that user.                                                                                                                                                                                                   |
| And the following error in the twh_ibm_db2_runlog.log file:             | General errors occur while using Tivoli Enterprise Data Warehouse                                                                                                                                                                                                    |
| DECLARE global temporary TABLE Prune_Mart_Control( Table_Name VARCHAR(120) NOT DB21034E THe command was processed as an SQL statement because it was not a valid Command Line Processor command. During SQL processing it returned: SQL0286N A default table space could not be found with a page size of at least "4096" that authorization ID "DB2" is authorized to use. SQLSTATE=42727 | See the “Troubleshooting” chapter in the *Installing and Configuring Tivoli Enterprise Data Warehouse, Version 1, Release 1* guide for more information.                                                                                                                                                                                                                                                                 |

### Tasks problem determination

The following table lists general task problems that might occur.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>A task fails.</td>
<td>Ensure that you assigned the resource roles to the administrator running the task. See &quot;Setting authorization roles&quot; on page 11 for more information. After you assign the resource roles, immediately stop and start the Tivoli Desktop so the assigned roles take effect.</td>
</tr>
</tbody>
</table>

### Resource models problem determination

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>A resource model fails to start but no event is reported to Tivoli Enterprise Console.</td>
<td>Tivoli Enterprise Console events are not generated when a resource model fails to start; they are generated when there is a problem or change in a resource being monitored. Problems that occur with the resource model itself are reported in the IBM Tivoli Monitoring Web Health Console.</td>
</tr>
<tr>
<td>Problem</td>
<td>Solution</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Changing the password of the WebLogicDomain object will allow validation of the WebLogicServer to succeed, but the resource models have not picked up the new passwords. If the resource models attempt to connect with the wrong password, BEA WebLogic Server will lock their user account out from the system.</td>
<td>Change the password on the WebLogic Domain object from the Tivoli Desktop, and then stop and restart all the resource models that are running.</td>
</tr>
<tr>
<td>The IBM Tivoli Monitoring engine is not available.</td>
<td>Refer to the IBM Tivoli Monitoring documentation for additional assistance.</td>
</tr>
<tr>
<td></td>
<td>For Windows endpoints:</td>
</tr>
<tr>
<td></td>
<td>1. Open the Task Manager to see if the m12javaprovider.exe process is running.</td>
</tr>
<tr>
<td></td>
<td>2. If it is not running:</td>
</tr>
<tr>
<td></td>
<td>a. From a command window on the Tivoli management region server, source the Tivoli environment, as described in &quot;Setting up the IBM Tivoli Monitoring environment&quot; on page 17.</td>
</tr>
<tr>
<td></td>
<td>b. Restart the engine by executing the following command:</td>
</tr>
<tr>
<td></td>
<td><code>wdmcmd -restart -e endpoint_name</code></td>
</tr>
<tr>
<td></td>
<td>where <code>endpoint_name</code> is the name of the endpoint.</td>
</tr>
<tr>
<td></td>
<td>3. If the m12javaprovider.exe is running, use the Task Manager to end the process manually and then restart the engine as described above.</td>
</tr>
<tr>
<td></td>
<td>For UNIX endpoints:</td>
</tr>
<tr>
<td></td>
<td>1. Execute the <code>wdmlseng</code> command to determine if the engine is running.</td>
</tr>
<tr>
<td></td>
<td>2. If it is not running:</td>
</tr>
<tr>
<td></td>
<td>From a command window on the Tivoli management region server, source the Tivoli environment, as described in &quot;Setting up the IBM Tivoli Monitoring environment&quot; on page 17.</td>
</tr>
<tr>
<td></td>
<td>Restart the engine by executing the following command:</td>
</tr>
<tr>
<td></td>
<td><code>wdmcmd -restart -e endpoint_name</code></td>
</tr>
<tr>
<td></td>
<td>where <code>endpoint_name</code> is the name of the endpoint.</td>
</tr>
<tr>
<td></td>
<td>3. If the engine is running:</td>
</tr>
<tr>
<td></td>
<td>a. Stop the it by running the following command:</td>
</tr>
<tr>
<td></td>
<td><code>wdmcmd -stop endpoint_name</code></td>
</tr>
<tr>
<td></td>
<td>b. Restart the engine as described above.</td>
</tr>
<tr>
<td>Problem</td>
<td>Solution</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| You distribute a monitoring profile and it is not showing up on the Web Health Console. | Refer to the IBM Tivoli Monitoring documentation for additional assistance. Determine if the distribution was interrupted by running the following command: wmdist -I repeatername  

If the output shows that the distribution was interrupted, you can clear the distribution in the following ways:  
1. Stop the gateway on which the repeater resides by running the following command:  
   wgateway gateway_name stop
   
   where gateway_name is the name of the gateway.

2. Clear the repeater by running the following command:  
   wmdist -B repeatername
   
   If this is not successful, use the following commands to delete temporary files:  
   cd '/wtemp'
   rm ./states/*
   rm ./depot/*

3. Restart the gateway/repeater by running the following command:  
   wgateway gateway_name start
   
   where gateway_name is the name of the gateway.

4. Redistribute the profile.

Find the trace_ILT.log file in LCFNEW/GWL/logs. The Trace_ILT.log file logs several types of messages depending on the setting of the logging level. The default setting is ERROR. To change the logging level, run the witmsettrace command. For example, witmsettrace GWL DEBUG_MAX logs all levels of messages for IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server. Also, the msg_ILT.log file logs any errors.

If the log file does not exist, stop the IBM Tivoli Monitoring engine and run the IBM Tivoli Monitoring task DMLinkJRE as specified in the IBM Tivoli Monitoring for Web Infrastructure Installation and Setup Guide. Restart the engine.

If the trace_WebLogic_ilt.log file exists, view the contents to see if it is using the WebLogic JRE.

If it is not using the WebLogic Server JRE, stop the IBM Tivoli Monitoring engine and run the IBM Tivoli Monitoring task DMLinkJRE, specifying the WebLogic Server JRE and restarting the engine. See the IBM Tivoli Monitoring for Web Infrastructure Installation and Setup Guide for more information. |
<p>| You see a “Not Compiled” status for a resource model on the Web health Console. | On a Windows endpoint, this occurs when you do not have Windows Script Host, Version 5.6, installed. Run the cscript command from the command prompt to verify the version of Windows Script Host. If it is not Version 5.6, you can download it from the Microsoft Web site. |</p>
<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
</table>
| You see a “Missed PreReq” status for a resource model on the Web health Console | You probably have not run the DMLinkJRE command. Run the DMLinkJRE command as specified in the IBM Tivoli Monitoring for Web Infrastructure Installation and Setup Guide.  
If this problem occurs after the resource model has already run successfully, restart the IBM Tivoli Monitoring engine on the endpoint. You can restart the engine from the Web Health Console or from the command line (with the wdmcmd command). |
| A resource model fails.                                                | Restart the IBM Tivoli Monitoring engine on the endpoint. You can restart the engine from the Web Health Console or from the command line (with the wdmcmd command).  
The resource models write trace messages in one of the following files on the endpoint:  
• For UNIX: $LCF_DATDIR/LCFNEW/AMW/log/trace_dmxengine.log  
• For Windows: %LCF_DATDIR%\LCFNEW\Tmw2k\Tmw2k.log  
The statements preceding the resource model aborting message in the trace file should contain information about why the resource model failed.  
For more information, refer to the IBM Tivoli Monitoring User’s Guide. |
| The WebLogic Server is under stress and the resource models are unable to connect to the server. When this occurs, the resource models report a Retrying state. | To determine if stress is the problem, check the following items:  
• The specified port to see if it is the correct port.  
• The logs to see if the server is running.  
• The admin console to determine if the server is inaccessible.  
   Note: If the server is inaccessible, the resource models will be unable to connect to the server.  
The stress level that causes this behavior is BEA WebLogic Server dependent. |
| Non-key attributes in the events sent to Tivoli Enterprise Console do not reflect the current values as displayed in the IBM Tivoli Monitoring Web Health Console. | Because the Web Health Console displays real-time data and Tivoli Enterprise Console provides a snapshot of the data at the time the event was generated, it is possible for the information in the events to be out of sync with the information displayed on the Web Health Console. |
| The WebLogic server is running but the resource model says it is down.  | The wrong JRE was specified when the DMLinkJRE task was run.  
To link the ILT to the correct JRE, first stop the engine on the endpoint. On Windows NT, make sure the m12javaprovider.exe is also stopped. Then run the DMLinkJRE task as specified in the IBM Tivoli Monitoring For Web Infrastructure Installation and Setup Guide. Specify the location of the WebLogic Server JRE. Then restart the engine. |

For information about the resource model error codes reported in the IBM Tivoli Monitoring Web Health Console, see the IBM Tivoli Monitoring for Web Infrastructure Reference Guide.
Appendix G. Accessibility

Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server enable you to:

- Use assistive technologies such as screen-reader software and a digital speech synthesizer to hear what is displayed on the screen.
- Operate specific or equivalent features using only the keyboard.
- Magnify what is displayed on the screen.

In addition, the product documentation includes the following features to aid accessibility:

- All documentation is available in both HTML and convertible PDF formats to give the maximum opportunity for you to apply screen-reader software.
- All images are provided with alternative text so that users of the documentation with vision impairments can understand the contents of the images.

Using assistive technologies

Assistive technology products such as screen-readers function with both the text-based and graphical user interfaces found in IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server. Consult the assistive technology product documentation for specific information about using it to access command-line or graphical interfaces.

Magnifying what is displayed on the screen

In all components of IBM Tivoli Monitoring for Web Infrastructure: WebLogic Server other than the Web Health Console, you can magnify the screens of the product user interfaces using facilities provided by the operating systems on which the product is run. For example, in a Windows environment you can change the screen settings to a lower resolution to enlarge the font sizes of the text on the screen. Information about these facilities is provided in the relevant operating system documentation.

Documentation in accessible formats

All user documentation is provided in HTML format, which can be read directly by assistive tools such as screen readers, or in convertible PDF format. Convertible PDF files are those that can be converted from PDF to HTML by the Adobe PDF to HTML converter. For information about converting PDF documents to HTML, refer to the Adobe book Optimizing Adobe PDF Files for Accessibility.

Using alternative text

All documentation images are provided with an alternative text that can be read by assistive tools such as screen readers.
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