# HP OpenView Service Desk

## Service Level Manager Guide

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**Windows, UNIX**

**Manufacturing Part Number: None**

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**Software Release Date: July 2006**

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# Documentation Updates

This manual's title page contains the following identifying information:

- Version number, which indicates the software version.
- Document release date, which changes each time the document is updated.
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# 1 Overview

This chapter provides an overview of the Service Level Manager features that enable SLM personnel to monitor services and generate SLM reports on services subject to managed service level agreements.

# What is Service Level Manager?

Service Level Manager provides a collection of features that enable organizations to adopt service level management processes in which the services offered to customers at agreed service levels are monitored and evaluated for compliance based on metric data values collected by metric adapters from service monitoring applications.

In organizations that use Service Level Manager, the following activities take place:

- SLM administrators install, configure, and maintain the components required by Service Level Manager.
- Service designers create reusable service definitions that include metrics and objectives in their specifications.
- Service managers create monitored services based on service definitions or hierarchy filters. The service hierarchies contain all configuration items and subordinate services representing the IT infrastructure elements used to deliver the service to the customer.
- SLM personnel monitor a service's current compliance status, the compliance status that the service is predicted to achieve at the end of the current evaluation period, a service’s current availability, and configuration items in need of attention.
- SLM personnel respond to alarm incidents automatically triggered by availability and compliance status changes.
- SLM personnel print evaluation reports or view them online for the previous evaluation period or for the evaluation period currently in progress.
- Service users check the current availability of services they want to use.

# Service Level Manager Features

This section provides an overview of the key features.

## Additional Objects and Extensions

Service Level Manager provides extensions for basic objects such as services, service definitions, and configuration items (CIs), as well as additional objects such as metric adapters, hierarchy filters, and service level objectives.

The additional objects and extensions enable you to specify the following information for the services you offer to customers:

- The metrics and objectives that determine the way each CI in a service hierarchy is measured for availability
- The metrics and objectives that determine the way each service is measured for compliance
- Details about monitoring applications, management servers, and metric adapters, which together measure the performance of configuration items and deliver the results of those measurements for availability and compliance calculation and reporting

The results of availability and compliance calculations are automatically displayed in forms and views, enabling users to monitor availability and compliance continuously throughout the current evaluation period.

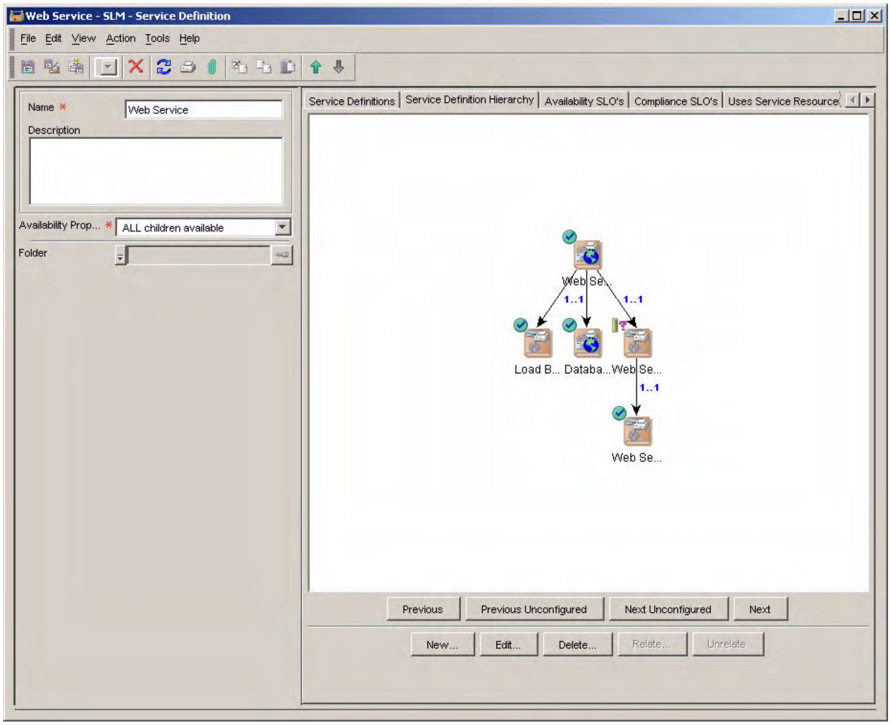
## Service Design Features

Service designers can specify metrics and objectives for reusable service definitions. Whenever a service manager creates a monitored service based on a particular service definition, each configuration item in the hierarchy automatically inherits metrics and objectives from the definition on which it is based. If you want to offer a service at a choice of service levels, your service definitions can offer progressively more demanding objectives with each higher service level.

Service Level Manager provides service design features that simplify the task of building complex service definition hierarchies and specifying metrics and objectives.

You can create service definition hierarchies using a graphical display that shows whether metrics and objectives for the objects in the hierarchy are fully defined. Figure 1-1 shows an example of a service definition hierarchy.

**Figure 1-1** **Example Service Definition Hierarchy**



Web Service - SLM - Service Definition

Name * Web Service

Description

Availability Prop... * ALL children available

Folder

The monitored services you create based on a service definition can also be displayed graphically, enabling you to confirm that the objects in the hierarchy are fully specified.

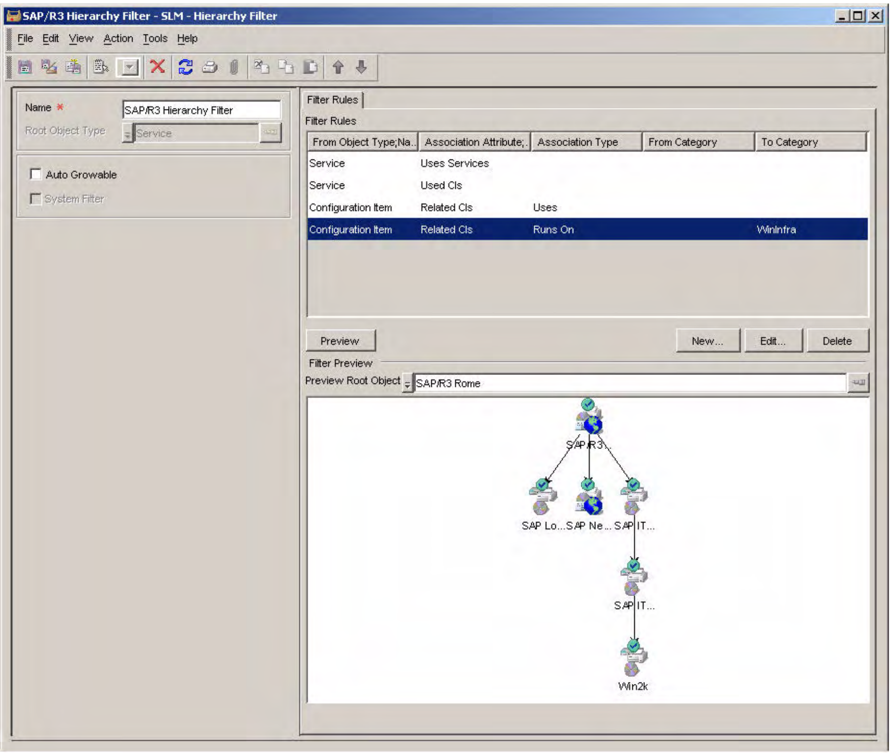
## Service Modeling Features

In organizations that keep their configuration management database (CMDB) updated complete with CI-to-CI relations and CI categories, service designers can make use of hierarchy filters. Services based on a particular hierarchy filter automatically inherit the service hierarchy defined by the filter.

Service modeling features simplify the task of creating a hierarchy filter. An interactive graphical user interface enables you to add, modify, and delete filter rules that determine which CMDB elements are included in a service hierarchy. A graphical preview window displays the service hierarchy based on a specific base object and on the currently included filter rules.

You can trim service hierarchies by specifying leaf nodes. Leaf nodes are elements that have no subordinate elements in the service hierarchy. Trimming service hierarchies enables you to exclude configuration items from availability and compliance calculations without deleting them from the CMDB. An example of such a configuration item might be a non-essential backup server. Figure 1-2 shows an example of a hierarchy filter.

**Figure 1-2** **Example Hierarchy Filter**



Name * SAP/R3 Hierarchy Filter

Root Object Type Service

☐ Auto Growable

☐ System Filter

Filter Rules

| From Object Type;Na.. | Association Attribute;. | Association Type | From Category | To Category |
|---|---|---|---|---|
| Service | Uses Services | | | |
| Service | Used CIs | | | |
| Configuration Item | Related CIs | Uses | | |
| Configuration Item | Related CIs | Runs On | | WinInfra |

Preview Root Object SAP/R3 Rome

## Availability and Compliance Calculations

Service Level Manager performs availability and compliance status calculations repeatedly throughout each evaluation period of a service level agreement. Calculations are triggered by the receipt of metric data values delivered by the installed metric adapters.

Service Level Manager calculates the following:

- Compliance status of service level agreements and services
- Predicted compliance status of service level agreements and services projected from the present moment to the end of the current evaluation period
- Current availability of services and configuration items

## Availability and Compliance Alarms

You can set up alarms that automatically notify SLM personnel of availability and compliance status changes that affect service level agreements, services, and configuration items.

Whenever the calculated availability or compliance status of an object changes, an incident of family `Alarm` is automatically created. The incident contains all the relevant information relating to the status change.

SLM administrators can configure the types of status changes that trigger alarms.

You can create database rules that act upon the creation of alarm incidents. The rules you create can trigger actions, such as sending an e-mail to a service level manager or workgroup specialist, or generating an HP OpenView Operations message.

## Management of Service Level Agreements

Before Service Level Manager starts calculating the compliance status and availability of a service, you need to relate the service to a service level agreement, and you must place the SLA under SLM management. The calculation of availability and compliance is automatically switched on and off according to the actual start and end dates of the service level agreement. Users can manually switch off the calculation of availability and compliance by temporarily withdrawing the service level agreement from SLM management. This might be necessary if, for example, the service level objectives need to be modified during the period of validity of the service level agreement.

## Metric Data Collection

All availability and compliance calculations are based on metric data values collected from external monitoring applications or from analyzed data collected by Service Desk. Service Level Manager provides metric adapters that, once installed and configured, manage the process of gathering metric data values from the supported monitoring applications.

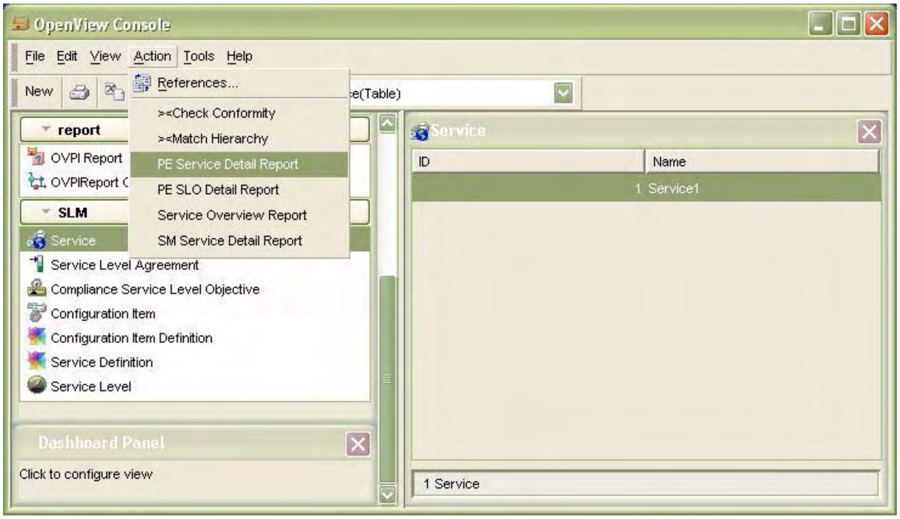
## Availability and Compliance Reports

The SLM OVPI report pack provides a set of pre-configured reports customized for specific roles associated with the service level management process.

Some reports provide summary information. Other reports go into greater detail. When you generate a summary report and view it online, you can often drill down to more detailed graphical information by highlighting an individual line of interest. Reports can also include hyperlinks to other reports that show information from a different perspective.

Reports can be scheduled or produced on demand during an evaluation period. You can view SLM reports from the OpenView console. Figure 1-3 shows the reports available from the Service workspace. In the example shown, the Service Detail report is selected to display information about the Service1 service.

**Figure 1-3** **Viewing a Report for a Service**



| ID | Name |
|---|---|
| 1 | Service1 |

## Recent-time Availability and Compliance Monitoring

SLM personnel can monitor the results of compliance and availability calculations in the OpenView console. Because calculations are made throughout an evaluation period, the overall impression of the state of service level agreements, services, and configuration items is never out of date by more than a few minutes.

Pre-configured monitoring views are designed for specific SLM user roles and guarantee confidentiality of customer-sensitive information.

## Web Console Limitations

Due to limitations in the support of form features in the web console, it is recommended that you use the web console only to view SLM information; for example, to monitor availability and compliance. You cannot use specialized user interface field types such as the Service

Hierarchy, Compliance SLO Table, and SLO Table attributes of services. For further information on the web console, see *HP OpenView Service Desk Administrator's Guide*.

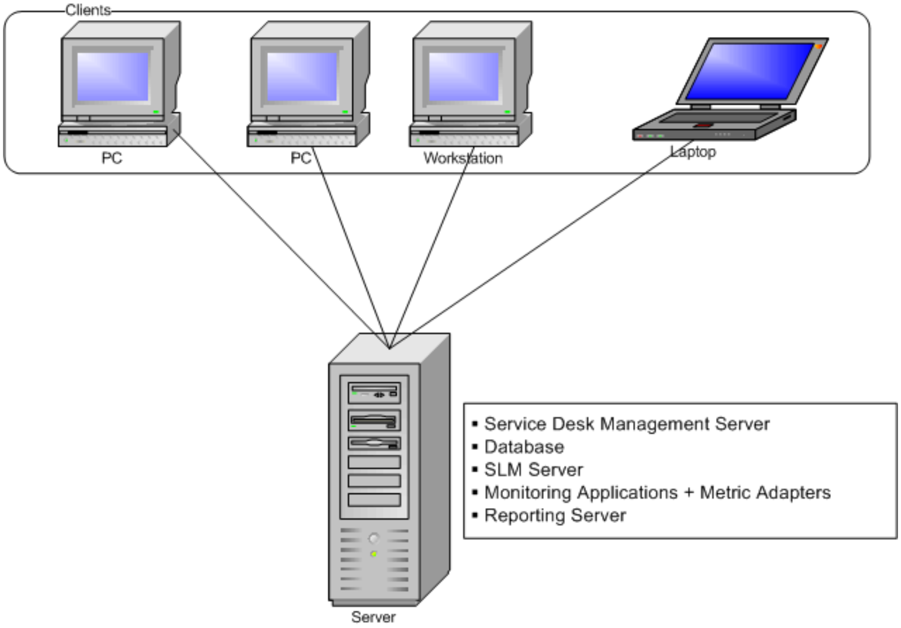
# Types of Deployment

This section describes two types of SLM deployment: monolithic and distributed.

## Monolithic Deployment

In this type of deployment, all components are installed on a single server. Figure 1-4 illustrates an example monolithic deployment.

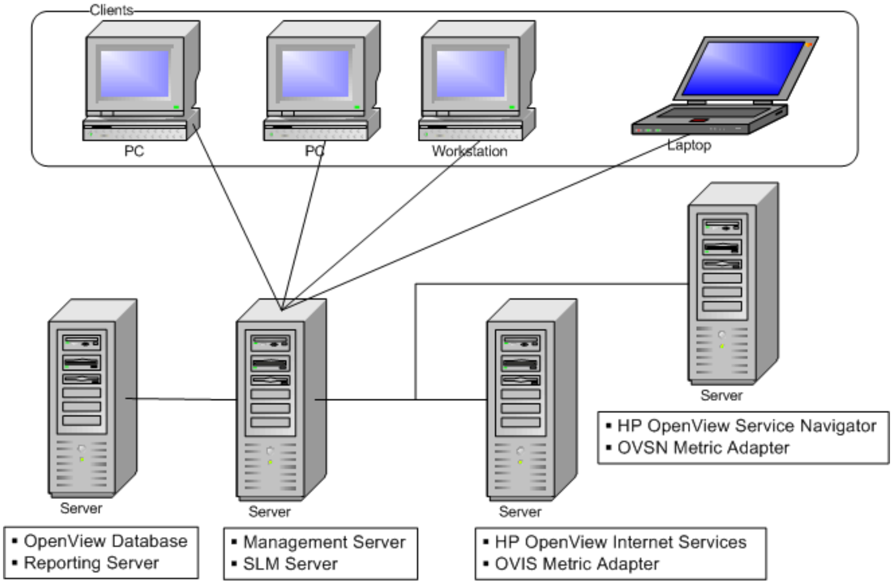
**Figure 1-4** **Monolithic Deployment Example**


Clients
PC
PC
Workstation
Laptop
Server
▪ Service Desk Management Server
▪ Database
▪ SLM Server
▪ Monitoring Applications + Metric Adapters
▪ Reporting Server

## Distributed Deployment

In this type of deployment, the components are distributed among a number of servers. Figure 1-5 illustrates an example of a distributed deployment involving four servers: one for each metric adapter (each adapter is installed on the same system running the corresponding monitoring application), a third server on which the Service Desk management server is installed (on which the SLM server process is running), and a fourth server hosting the HP OpenView database together with the OVPI reporting server.

Figure 1-5 **Distributed Deployment Example**



# 2 Service Level Manager Roles

# SLM Administrator Accounts and Roles

Service Level Manager provides a custom user account and role that you should use for the following administrative tasks:

- Configure general SLM parameters
- Configure metric adapters
- Check the status of metric adapters
- Configure SLM reporting
- Configure the triggering of alarm incidents
- Start and stop the SLM server process

Further information on SLM configuration tasks is available in the Service Desk Online Help.

## SLM Administrator Account

The `SLMAdministrator` account is created automatically during installation of the Service Desk management server. SLM administrators should use this account to configure Service Level Manager.

The `SLMAdministrator` account is installed with the default password `slmadmin`. To maintain security, you are advised to substitute a non-default password.

The `SLMAdministrator` account is assigned the `SLMAdministrator` role. This role is installed automatically during installation.

## SLM Core Account

The `SLMCore` account is created automatically during installation of the Service Desk management server. Because it is an integration account, it does not provide access to the user interface. Do not delete the SLM Core account: Service Level Manager tasks need it to communicate with the management server.

# Service Customer

The service customer benefits from Service Level Manager by being able to monitor the current availability of services.

## Monitoring Current Service Availability

Customers can monitor the current availability status of services they use. If they experience difficulty accessing those services, this facility can help them isolate the cause. If a service is registered as being currently available, a customer's inability to access the service may be due to a problem that can be addressed without the need to contact the service provider's help desk.

## Service Designer

Service designers use Service Level Manager features to design and model services.

### Designing Services

In designing services, service designers may be involved in the following activities:

- Creating service definitions
- Maintaining service definitions

### Maintaining Service Definitions

In maintaining service definitions, service designers may be involved in the following activities:

- Responding to requests to change an existing service definition. Change requests are usually sponsored by service managers or customer relationship managers.
- Adding or modifying CI metrics, as requested by a service manager or a customer relationship manager.
- Adding or modifying service level objective thresholds, as requested by a service manager or customer relationship manager.
- Participating as the technical lead in functional design activities for a custom design.

### Modeling Services

In modeling services, service designers may be involved in the following activities:

- Creating hierarchy filters
- Creating monitored services based on hierarchy filters

# Service Manager

Service managers use Service Level Manager features to create standard and custom monitored services.

## Creating Monitored Services

Service managers create monitored services suitable for specific customers. To measure the compliance of a monitored service, the service needs to be based on one of the following:

- A service definition developed by a service designer.
- A hierarchy filter that specifies the required configuration items and subordinate services in the service hierarchy.

Service managers add all information specific to a particular customer, including service hours, planned downtimes of configuration items, and so on. Service managers may liaise with customer relationship managers to ensure the accuracy of this information.

## Relating a Service to a Managed Service Level Agreement

Regardless of how the service is created, it needs to be related to a service level agreement, and the service level agreement needs to be placed under SLM management. This task is typically performed by the service manager or by the customer relationship manager.

## Detaching a Service from its Originating Service Definition

This may be necessary when a customer relationship manager requests a change that cannot be applied to the originating service definition.

# Customer Relationship Manager

Customer relationship managers use Service Level Manager features to define service level agreements, represent a customer's interests within the service-provider organization, and monitor current service availability.

## Defining Service Level Agreements

Customer relationship managers assist in the definition of service level agreements related to a specific customer.

## Monitoring Service Availability and Compliance

Customer relationship managers monitor the availability and compliance of services used by a specific customer. They ensure that current service unavailability is being investigated, and if necessary, ensure that a contingency plan is in place.

## Service Planner

The service planner takes a long-term strategic view that compares evaluation results against their objectives to identify over-provisioning and under-provisioning. The aim is to spread the available resources as evenly as possible to optimize the overall level of service provision without losing efficiency.

The service planner does not monitor the current availability and compliance status, and so does not make use of the recent-time monitoring facilities. Instead, the service planner focuses on reports designed to clarify the comparison between objectives and results.

# 3 Metric Data Collection

# What is Metric Data Collection?

Service Level Manager uses specific HP OpenView monitoring applications to measure the availability and compliance status of services associated with managed service level agreements. Without the regular collection of metric data values from these monitoring applications, you cannot monitor the compliance status of services in the OpenView console, and you cannot produce SLM reports.

To collect metric data values, Service Level Manager provides metric adapters. The following table lists each metric adapter together with the monitoring application it is designed to work with.

**Table 3-1** **Metric Adapters**

| Metric Adapter | HP OpenView Monitoring Application |
|---|---|
| Ovisma | Internet Services |
| Ovpmma | Performance Manager |
| Ovsdma | Service Desk |
| Ovsnma | Operations Service Navigator |

## The OVIS Metric Adapter

By installing and configuring the OVIS metric adapter, you can measure availability and compliance based on metric data values collected from an installed OVIS database.

## The OVPM Metric Adapter

By installing and configuring the OVPM metric adapter, you can measure availability and compliance based on metric data available to an OpenView Performance Manager server.

## The Service Desk Metric Adapter

The Service Desk metric adapter is automatically installed and configured when you install the Service Desk management server. With this adapter, you can measure availability and compliance based on analyzed data criteria logged by a Service Desk application server.

### The OVSN Metric Adapter

The OVSN metric adapter collects and publishes metric data values based on service status change events. Because Service Navigator services can correspond to either configuration items or services, you can use this metric adapter to measure the availability of configuration items as well as the compliance of services. The discovery process identifies all Service Navigator services currently being monitored. The initial discovery process results in the status of each service being delivered to the application server. From then on, the metric adapter publishes each status change event. OVSN metric definitions are identified according to the specification of the way the nodes have been generated by a SPI (see "OVSN MRP Definition and SPI Parsing Configuration Files" on page 51). Service Navigator supports the service states Overall and Operational. To ensure that the OVSN metric adapter receives usable metric data values from Service Navigator, do not disable all states, do not disable the Overall state, and do not change the default state from Overall to Operational.

### The Open Metric Adapter

Open MA is a toolkit for developing user-specific SLM metric adapters capable of collecting metric data values from monitoring applications other than those supported by the supplied metric adapters. For further information, see *HP OpenView Service Desk Open Metric Adapter Developer Guide*.

## Enabling Metric Data Collection

To enable the collection of metric data values, you need to do the following:

1. Install and configure the monitoring applications you intend to use. Because the monitoring applications feed the SLM server with metric data values, you need to ensure the following:

    - Configuration items in a service hierarchy must be measured in a way that enables their availability to be calculated. This applies to every leaf node configuration item (that is, a configuration item that has no subordinate configuration item in a service hierarchy). Configuration items higher up the hierarchy do not need to have their availability calculated based on metric data values; they can have their availability calculated according to their availability propagation rules.

- Each service must be measured in a way that enables its compliance status to be calculated. If you decide to calculate a service's compliance status based on the infrastructure availability metric alone, you do not need to measure the service in other ways.

2. Install and configure the required metric adapter for each installed monitoring application you intend to use. For example, if you use HP OpenView Internet Services as a monitoring application, you need to install and configure the OVIS metric adapter. See the *HP OpenView Service Desk Installation Guide* for instructions on installing metric adapters. The OVSD metric adapter is automatically installed and configured when you install the Service Desk management server.
3. Create a monitored service based on a service definition or a hierarchy filter, and specify the metrics and objectives throughout the underlying infrastructure.
4. Place the monitored service under SLM management. Metric adapters automatically start collecting metric data values as soon as a managed service level agreement becomes active (that is, as soon as its actual start date arrives).

**NOTE** The OVIS, OVPM, and OVSN metric adapters cannot be tested unless their associated monitoring application is installed and configured. If you want to simulate the behavior of one of these metric adapters in the absence of its associated monitoring application, use the corresponding metric adapter simulator (see “Metric Adapter Simulators” on page 57).

### Unreachable Metrics

For metrics associated with a managed service level agreement, if no metric value is collected within a certain period (the expiration period), the state of the metric changes from "Available" to "Unreachable". The expiration period is specified by the general metric adapter configuration setting `DefaultTaskExpirePeriod` or the specific metric adapter configuration setting `ExpirePeriod`. (For detailed information about `DefaultTaskExpirePeriod` and `ExpirePeriod`, see “Metric Adapter Configuration Settings” on page 40)

**NOTE** The state of metrics not associated with a managed service level agreement is always "Available".

# Metric Adapter Configuration Files

For instructions on installing and configuring metric adapters, see *HP OpenView Service Desk Installation Guide*.

After installing a metric adapter, you should verify that it is registered in the OpenView console.

**To verify that a metric adapter is registered in the OpenView Console:**

1. Log on to the HP OpenView console with the SLM Administrator account.
2. From the OpenView console, open the SLM workspace group.
3. Select the Metric Adapter workspace.

   The metric adapter should be visible in the list. Reasons for a metric adapter not being visible in the list include the following:

   - The SLM server is not running.
   - The metric adapter is not running
   - The metric adapter configuration file does not specify the correct SLM server

## Metric Adapter Configuration Settings

Configuration settings are stored in the metric adapter configuration file. It is not recommended to modify the configuration file except when instructed to do so, such as when following instructions in the release notes. Each configuration setting falls into one of the following categories:

- General settings that specify the behavior of a particular metric adapter or its connectivity to the SLM server.
- Connector settings are metric adapter specific. They specify information required for connecting to the monitoring application, such as the database user ID and password.
- Discovery and location filters are metric adapter specific. They specify how to reduce the amount of metrics identified during metric discovery (not implemented in the beta release)

- Task settings are metric adapter specific. They are bound to a connector, and specify the way measurement reference points are grouped in order to have metric data values collected together.
- Data point settings are metric adapter specific. They specify information required to identify each item of metric data to be collected.

## General Metric Adapter Configuration Settings

Unless explicitly stated, the following configuration settings apply to all types of metric adapter:

- `DataPointSynchronizationDelay`

  The delay period for the retention of metric data values (measured from the time stamp of the most recently delivered value).

- `DefaultTaskExpirePeriod`

  To be used when the expiration period is not specified in the task configuration This setting is the one used in the configuration generated by metric discovery.

- `DefaultTaskPollingPeriod`

  Used when the polling interval is not specified in the task configuration. This setting is the one used in the configuration generated by metric discovery.

- `DiscoveryInterval`

  The scheduled discovery polling interval (in seconds). To disable scheduled discovery, set this value to 0.

- `HeartBeatsInterval`

  The heartbeat polling interval (in seconds). To disable heartbeat polling, set the value to 0.

- `IsEventBased`

  The event based flag. Used during publishing of every metric data point to signal to the server whether the data point is event-based or polled. For the OVIS metric adapter, this is "0" (polled).

- `MrpDefinitionDiscoveryInterval`

The scheduled metric definition discovery polling interval (in seconds). A value of 0 (zero) disables scheduled metric definition discovery.

- `Publisher.APP_NAME`

  Application name for the store-and-forward client object used by the publisher.

- `Publisher.DESTINATION`

  Full URL used by the publisher as the store-and-forward target when sending data points.

- `Publisher.MAX_FILE_BUFFER_SIZE`

  The maximum disk buffer size (in kilobytes) used by the store-and-forward connection from the metric adapter publisher to the SLM core in the event of communication disruptions. A value of 0 (zero) indicates an unlimited buffer size (up to the disk capacity).

- `Publisher.RESPONSE_TIMEOUT`

  The BBC response time-out for the store-and-forward client object used by the publisher.

- `SequenceNumber`

  Number of configurations received by the metric adapter from the configuration server.

- `ServerHost`

  The name of the SLM server system.

- `TypeByte`

  The source type flag. Used during publishing of every data point. A value of (`1`) signals to the server that data is coming from a metric adapter. Other values are reserved for future use.

## Open MA Configuration Settings

The following configuration settings are specific to Open metric adapters.

### Open MA Connector Configuration Settings

- `Class`

The name of the connector class (fixed: `com.hp.ov.sd.slm.sa.openma.OpenConnector`)

- `DiscoveryMaxHistory`

  The time filter for discovery (in minutes). Metrics older than the specified time are considered out of date, and are disregarded. If this parameter is set to 24*60, metrics older than one day are disregarded.

### Open MA Task Configuration Settings

- `ConnectorRef`

  The name of the linked connector (fixed: Open Connector).

- `ExpirePeriod`

  The time to expire a data point (in seconds). If this field is not present, the `DefaultTaskExpirePeriod` value specified in the metric adapter's general settings is used.

- `PollingPeriod`

  The polling interval for the scheduling of this task. If this field is not present, the `DefaultTaskPollingPeriod` value specified in the metric adapter's general settings is used.

### Open MA Data Point Configuration Settings

- `MetricTypeValue1`

  User-defined metric definitions attribute 1.

- `MetricTypeName1`

  Displayed name of user-defined metric definitions attribute “Metric Type Value 1”.

- `MetricTypeValue2`

  User-defined metric definitions attribute 2.

- `MetricTypeName2`

  Displayed name of user-defined metric definitions attribute “Metric Type Value 2”.

- `MetricTypeValue3`

  User-defined metric definitions attribute 3.

- `MetricTypeName3`

  Displayed name of user-defined metric definitions attribute “Metric Type Value 3”.

- `MetricTypeValue4`

  User-defined metric definitions attribute 4.

- `MetricTypeName4`

  Displayed name of user-defined metric definitions attribute “Metric Type Value 4”.

- `SourceIdentifier`

  The name of the monitoring application that generates the metric.

- `User Data Value 1`

  User-defined metrics attribute 1.

- `User Data Name 1`

  Displayed name of user-defined metrics attribute “User Data Value 1”.

- `User Data Value 2`

  User-defined metrics attribute 2.

- `User Data Name 2`

  Displayed name of user-defined metrics attribute “User Data Value 2”.

- `User Data Value 3`

  User-defined metrics attribute 3.

- `User Data Name 3`

  Displayed name of user-defined metrics attribute “User Data Value 3”.

- `User Data Value 4`

  User-defined metrics attribute 4.

- `User Data Name 4`

  Displayed name of user-defined metrics attribute “User Data Value 4”.

- `User Data Value 5`

  User-defined metrics attribute 5.

- `User Data Name 5`

  Displayed name of user-defined metrics attribute “User Data Value 5”.

- `User Data Value 6`

  User-defined metrics attribute 6.

- `User Data Name 6`

  Displayed name of user-defined metrics attribute “User Data Value 6”.

## OVIS Configuration Settings

The following configuration settings are specific to OVIS metric adapters.

### OVIS Connector Configuration Settings

- `Class`

  The name of the connector class (fixed: `com.hp.ov.sd.slm.sa.ovis.Connector`)

- `DBName`

  The name of the OVIS database.

- `DiscoveryMaxHistory`

  The time filter for discovery (in minutes). Metrics older than the specified time are considered out of date, and are disregarded. If this parameter is set to 24*60, metrics older than one day are disregarded.

- `DriverName`

  The JDBC driver name used for connection.

- `Host`

  The hostname or IP address of the OVIS installation.

- `Login`

The OVIS database login name.

- `NbReconnection`

  The numbers of attempted connections to the OVIS database.

- `Password`

  The OVIS database password.

- `Port`

  The port number of the OVIS database instance.

- `Table`

  The name of the OVIS database table (by default: `IOPS_DETAIL_DATA`).

- `Timeout`

  The JDBC connection time-out (in seconds).

- `URL`

  The complete URL connection string for the JDBC driver.

### OVIS Task Configuration Settings

- `Connector`

  The name of the linked connector.

- `ExpirePeriod`

  The time to expire a data point (in seconds). If this field is not present, the `DefaultTaskExpirePeriod` value specified in the metric adapter's general settings is used.

- `Filter`

  The part of the `WHERE` statement in the SQL query used by this task. By default, filters only data related to `PROBENAME`.

- `MaxHistoryLimit`

  The maximum history interval for the first request during a clean startup (in seconds).

- `PollingPeriod`

The polling interval for the scheduling of this task. If this field is not present, the DefaultTaskPollingPeriod value specified in the metric adapter's general settings is used.

- Table

  The name of the OVIS database table or %TABLE% if the task uses the table name specified in the connector configuration settings.

### OVIS Data Point Configuration Settings

- Host

  The value of the HOST field from OVIS (that is, the name of the monitored system).

- Metric

  The field name from the IOPS_DETAIL_DATA table specifying the metric type (for example, AVAILABILITY, TRANFERTPUT, RESPONSETIME, or SETUPTIME).

- Probe

  The probe type.

- System

  The value of the SYSTEM field from OVIS (that is, the name of the OVIS server).

- Target

  The value of the TARGET field from OVIS (dependent on the probe).

## OVPM Configuration Settings

The following configuration settings are specific to OVPM metric adapters.

### OVPM Connector Configuration Settings

- Class

  The name of the connector class (fixed: com.hp.ov.sd.slm.sa.ovpm.Connector)

- Host

  The hostname or IP address of the OVPM installation.

- `Login`

  The login name for the OVPM user account.

- `NbReconnection`

  The numbers of attempted connections to the OVPM server.

- `Password`

  The password for the OVPM user account.

- `Port`

  The port number of the running OVPM instance.

- `URL`

  The complete URL connection string for the OVPM.

### OVPM Task Configuration Settings

- `Connector`

  The name of the linked connector.

- `ExpirePeriod`

  The time to expire a data point (in seconds). If this field is not present, the `DefaultTaskExpirePeriod` value specified in the metric adapter's general settings is used.

- `Filter`

  The filter to be applied to the measurement reference point collection, depending to the connection implementation.

- `MaxHistoryLimit`

  The maximum history interval for the first request during a clean startup (in seconds).

- `MonitoredSystem`

  The name of monitored system configured inside OVPM.

- `PollingPeriod`

  The polling interval for the scheduling of this task. If this field is not present, the `DefaultTaskPollingPeriod` value specified in the metric adapter's general settings is used.

- `TimeDiff`

The time difference (fixed value: `0`).

### OVPM Data Point Configuration Settings

- `Metric`

  The OVPM metric name.

- `OvpmClass`

  The class name to which the metric belongs.

- `OvpmFilter`

  An optional filter string.

- `OvpmServer`

  The host name or IP address of the OVPM installation.

- `OvpmSystem`

  The name of the monitored system configured in OVPM.

## OVSN Configuration Settings

The following configuration settings are specific to OVSN metric adapters.

### OVSN Connector Configuration Settings

- `Class`

  The name of the Connector class (fixed: `com.hp.ov.sd.slm.sa.ovsn.Connector`)

- `Host`

  The hostname or IP address of the OVSN installation.

- `NbReconnction`

  The numbers of connections.

- `Port`

  The port number of the running OVSN installation (by default 7278).

- `Timeout`

  The JDBC connection time-out (in seconds).

### OVSN Task Configuration Settings

- `Connector`

  The name of the linked connector.

- `PollingPeriod`

  The polling interval for the scheduling of this task. Because the OVSN metric adapter is event-based, it uses this value for periodically checking the status of the listener component.

### OVSN Data Point Configuration Settings

- `Host`

  The name of the OVSN server.

- `Label`

  Text identifying the node.

- `Metric`

  The name of the service configured in OVSN.

# OVSN MRP Definition and SPI Parsing Configuration Files

This section describes configuration files for OVSN MRP definitions and OVSN SPI parsing.

## OVSN MRP Definition

Unlike measurement reference point definitions discovered in other monitoring applications, the OVSN MRP definition is characterized by a text field that does not come directly from OpenView Service Navigator.

The service name of an OVSN node is also mapped to the OVSN MRP field `Metric`.

The nodes and service names are automatically generated by a SPI. A SPI discovers a topology and generates multiple sub-nodes according to its inputs and its skills.

Then, part of the text needs to be identified as the metric location, and another part needs to be identified as the metric definition.

### Example 1

- Oracle:Listener:139.50.38.157
  - Oracle:Listener
  - 139.50.38.157
- Oracle:EC:139.50.38.157
  - Oracle:EC
  - 139.50.38.157
- OVOAgent:139.50.37.185
  - OVOAgent
  - 139.50.37.185
- SLM
  - SLM

—

**Example 2**

- OSSPI:phydisk@@ovsolt17.india.hp.com
  - OSSPI:phydisk
  - ovsolt17.india.hp.com
- OSSPI:phydisk:/dev/rdsk/c0t0d0s0@@ovsolt17.india.hp.com
  - OSSPI:phydisk:/dev/rdsk/c0t0d0s0
  - ovsolt17.india.hp.com
- OSSPI:netif@@ovsolt17.india.hp.com
  - OSSPI:netif
  - ovsolt17.india.hp.com
- OSSPI:netif:eri0@@ovsolt17.india.hp.com
  - OSSPI:netif:eri0
  - ovsolt17.india.hp.com
- OSSPI:netif:eri0:net@@ovsolt17.india.hp.com
  - OSSPI:netif:eri0:net
  - ovsolt17.india.hp.com

**Example 3**

This theoretical example does not rely on a real SPI.

- MyFirstKey(somewhere.hp.com)MySecondKey
  - MyFirstKeyMySecondKey
  - somewhere.hp.com
- MyFirstKey(shortname(.hp.com))MySecondKey
  - MyFirstKeyMySecondKey
  - Shortname(.hp.com)

### Linear Parsing

Linear parsing consists of moving a cursor from left to right or from right to left between the boundaries in search of delimiters. The text inside the intervals is extracted either in the definition, or in the location.

## OVSN SPI Parsing Configuration File

The `OvsnMA_SpiParsing.xml` file is located in the same place as the `OvsnMA.xml` configuration file.

The purpose of this configuration file is to specify how to separate the metric definition and the metric location.

```
<!--
Don't forget to replace XML special characters to references.
Character   Reference
&       &amp;
<       &lt;
>       &gt;
"       &quot;
'       &apos;
-->
<SpiParsingList>
    <!— DEFI:NIT:ION:LOCATION -->
    <SpiLinearParsing>
        <LinearLeftParsing>
            <DefinitionExtraction/>
            <Delimiter extract=”none”>:</Delimiter>
            <LocationExtraction>
        <LinearLeftParsing>
    </SpiLinearParsing>
    <!— DEFINITION@@LOC@@TION -->
    <SpiLinearParsing>
        <LinearRightParsing>
```

```
            <DefinitionExtraction>
            <Delimiter extract=”none”>@@</Delimiter>
            <LocationExtraction>
        </LinearRightParsing>
    </SpiLinearParsing>
    <!— DEF(LOC(A)TION)INITION -->
    <SpiLinearParsing>
        <LinearRightParsing>
            <DefinitionExtraction/>
            <Delimiter extract=”none”>(</Delimiter>
            <LocationExtraction/>
        </LinearRightParsing>
        <LinearLeftParsing>
            <Delimiter extract=”none”>)</Delimiter>
            <DefinitionExtraction/>
        </LinearLeftParsing>
    </SpiLinearParsing>
    <!— “CPU”_LOCATION -->
    <SpiLinearParsing>
        <LinearRightParsing>
            <Delimiter extract=”Definition”>CPU</Delimiter>
            <Delimiter extract=”none”>_</Delimiter>
            <LocationExtraction/>
        </LinearRightParsing>
    </SpiLinearParsing>
    <!— “DISK”_LOCATION -->
    <SpiLinearParsing>
        <LinearRightParsing>
            <Delimiter extract=”Definition”>DISK</Delimiter>
            <Delimiter extract=”none”>_</Delimiter>
            <LocationExtraction/>
        </LinearRightParsing>
    </SpiLinearParsing>
    …
    …
</SpiParsingList>
```

## OVSN SPI Parsing Configuration Settings

- `SpiParsingList`

  Contains a list of SPI parsing results. The adapter takes each parsing in the list until it finds one that matches (that is, all delimiters found)

- `SpiLinearParsing`

  Parsing specification of a SPI, using linear parsing

- `LinearRightParsing`

  Parsing from left to right. The tags inside are defined from left to right.

- `LinearLeftParsing`

  Parsing from right to left. Tags inside are defined from left to right.

- `DefinitionExtraction`

  The part to be extracted into the definition.

- `LocationExtraction`

  The part to be extracted into the location.

- `Delimiter extract=”none”`

  Delimiter to progress into the parsing direction. The delimiter found is excluded from the definition text and the location text.

- `Delimiter extract=”Definition”`

  Delimiter to progress into the parsing direction. The delimiter found is included in the definition text. This delimiter is also very useful for string-matching.

- `Delimiter extract=”Location”`

Delimiter to progress into the parsing direction. The delimiter found is included in the location text. This delimiter is also very useful for string-matching.

## Example Parsing Process

Depending on whether the tag `LinearRightParsing` or `LinearLeftParsing` is used, a different way to process the input data is applied. However, the method of defining and then ordering what to be parsed is always done from the left to the right.

Consider the example of using the following SPI configuration file to parse string `OSSPI:def1@@hostname1@@def2`:

```
<SpiParsingList>

    <SpiLinearParsing>

        <LinearRightParsing>

            <DefinitionExtraction/>

            <Delimiter extract="none">@@</Delimiter>

            <LocationExtraction/>

        </LinearRightParsing>

    </SpiLinearParsing>

</SpiParsingList>
```

The result is as follows:

- `Definition:OSSPI:def1`
- `Location:hostname1@@def2`

The parsing process is explained as follows:

The cursor scans from left to right to match the first @@. Expressed another way: the cursor scans from right to left to match the last @@.

Then the original string is split into two parts: `OSSPI:def1` and `hostname1@@def2`. The left part `OSSPI:def1` is mapped to tag `DefinitionExtraction`; the right part `hostname1@@def2` is mapped to tag `LocationExtraction`.

# Metric Adapter Simulators

Metric adapter simulators enable SLM administrators, service designers and service managers to simulate the behavior of OVIS, OVPM and OVSN metric adapters without the need to install and configure the associated monitoring application.

Metric adapter simulators emulate the following features:

- Metric discovery
- Datapoint collection and delivery to the SLM server
- Heartbeat polling (checking the availability of a metric adapter simulator)

## Configure a Metric Adapter Simulator

1. "Define the Metric Adapter Configuration File" on page 57
2. "Create a Metric Adapter Simulator Input File" on page 59
3. "Start the Metric Adapter Simulator" on page 64

## Define the Metric Adapter Configuration File

You need to define the configuration file to be used by the metric adapter simulator. The name of configuration file must start with `Ovis`, `Ovpm`, `Ovsn` or `Open` and end with `MA` (for example, `OvisSimulatorMA.xml` and `OvisTestMA.xml`).

The configuration file for `OvisSimulatorMA.xml` is as follow:

**Figure 3-1 Configuration File for OVIS Metric Adapter Simulator**

```
<?xml version="1.0" encoding="UTF-8"?>

<Config>

    <MA name="OvisSimulatorMA">

        <Publisher.BUFFER_PATH/>

        <Publisher.APP_NAME>OvisSimulatorMASimulator</Publisher.APP_NAME>

        <ServerHost>localhost</ServerHost>
        <Publisher.MAX_FILE_BUFFER_SIZE/>
        <DefaultTaskPollingPeriod>300</DefaultTaskPollingPeriod>
        <DataPointVersionByte>1</DataPointVersionByte>
        <DataPointSynchronizationDelay>10</DataPointSynchronizationDelay>

<Publisher.BUFFERSIZE_OUTPUT_STREAM>0</Publisher.BUFFERSIZE_OUTPUT_STREAM>
        <TypeByte>1</TypeByte>
        <isEventBased>0</isEventBased>
        <SequenceNumber>0</SequenceNumber>
        <Publisher.RESPONSE_TIMEOUT>60</Publisher.RESPONSE_TIMEOUT>
        <HeartBeatsInterval>300</HeartBeatsInterval>
        <DiscoveryInterval>0</DiscoveryInterval>
        <DefaultTaskExpirePeriod>600</DefaultTaskExpirePeriod>
    </MA>
    <Connector name="input1">
        <Class>com.hp.ov.sd.slm.sa.simulator.Connector</Class>
        <File>OvisSimulatorMAInput.txt</File>
    </Connector>
    <Task name="Task1">
        <Connector>input1</Connector>
    </Task>
    <DiscoveryLocationFilter>
        <All/>
    </DiscoveryLocationFilter>
    <DiscoveryMrpDefinitionFilter>
        <All/>
    </DiscoveryMrpDefinitionFilter>
</Config>
```

For OVPM and OVSN metric adapter simulators, you need to replace the string `OvisSimulatorMA` with `OvpmSimulatorMA` or `OvsnSimulatorMA` in the following places:

```
<MA name="OvisSimulatorMA">
        <Publisher.APP_NAME>OvisSimulatorMASimulator</Publisher.APP_NAME>
        <File>OvisSimulatorMAInput.txt</File>
```

You may want to reduce the value of the following parameters to speed up your tests:

- `DataPointSynchronizationDelay`
- `DefaultTaskPollingPeriod`

## Create a Metric Adapter Simulator Input File

You need to create a metric adapter simulator input file to define the basis of the simulation. You need to specify the input file in the metric adapter simulation configuration file (in the example configuration file in the section "Define the Metric Adapter Configuration File" on page 57, the name of the input file is `OvisSimulatorMAInput.txt`).

The input file specifies the following information:

- Metrics to be discovered

  The name given to each discovered metric adheres to the usual naming convention for discovered metrics (for further information, see the Service Desk Online Help).

- A tab-separated list of datapoints (that is, metric values) to be sent to the SLM server at regular intervals

  The simulator iterates to the next value in the value list at each task polling period. Each time the end of the list is reached, the simulator returns to the beginning of the list.

### To create a metric adapter simulator input file:

- Use one of the sample input files as a template:

## Sample Metric Adapter Simulator Input Files

### Sample OVIS Metric Adapter Simulator Input File

```
#
# The following section defines the Measurement Points
#
<?xml version="1.0" encoding="UTF-8"?>
<Discovery>
<MRP
name="RESPONSETIME_HTTP_probed.hp.com/_something_probed.hp.com_ovisserver.hp.com
">
<Probe>HTTP</Probe>
<Unit>Seconds</Unit>
<TargetHost>probed.hp.com</TargetHost>
<Metric>RESPONSETIME</Metric>
<TargetInfo>probed.hp.com/</TargetInfo>
<System>ovisserver.hp.com</System>
<Type>Double</Type>
<TaskRef>Task1</TaskRef>
<Customer>someone</Customer>
<ServiceName>something</ServiceName>
<Location>probed.hp.com</Location>
</MRP>
<MRP name="
AVAILABILITY_HTTP_probed.hp.com/_something_probed.hp.com_ovisserver.hp.com">
<Probe>HTTP</Probe>
<Unit>Percent</Unit>
<TargetHost>probed.hp.com</TargetHost>
<Metric>AVAILABILITY</Metric>
<TargetInfo>probed.hp.com/</TargetInfo>
<System>ovisserver.hp.com</System>
<Type>Double</Type>
```

```
<TaskRef>Task1</TaskRef>
<Customer>someone</Customer>
<ServiceName>something</ServiceName>
<Location>probed.hp.com</Location>
</MRP>
</Discovery>
#
# The following section defines the Datapoint values
#
<DataPointValues>
RESPONSETIME_HTTP_probed.hp.com/_something_probed.hp.com_ovisserver.hp.com 1.1
1.2 1.3 1.4
AVAILABILITY_HTTP_probed.hp.com/_something_probed.hp.com_ovisserver.hp.com 1 1 0
1
</DataPointValues>
```

### Sample OVPM Metric Adapter Simulator Input File

```
#
# The following section defines the Measurement Points
#
<?xml version="1.0" encoding="UTF-8"?>
<Discovery>
    <MRP name="
PROC_MEM_RES_PROC_PROC_NAME=explorer_PROCESS_probed.hp.com+(MWA)_ovpmserver">
        <Type>Integer</Type>
        <TaskRef>Task1</TaskRef>
        <OvpmSystem>probed.hp.com+(MWA)</OvpmSystem>
        <OvpmServer>ovpmserver</OvpmServer>
        <Metric>PROC_MEM_RES</Metric>
        <OvpmClass>PROCESS</OvpmClass>
        <OvpmFilter>PROC_PROC_NAME=explorer</OvpmFilter>
        <Location>probed.hp.com</Location>
    </MRP>
    <MRP name="GBL_CPU_TOTAL_UTIL__GLOBAL_probed.hp.com+(MWA)_ovpmserver">
        <Type>Double</Type>
        <TaskRef>Task1</TaskRef>
        <OvpmSystem>probed.hp.com+(MWA)</OvpmSystem>
        <OvpmServer>ovpmserver</OvpmServer>
        <Metric>GBL_CPU_TOTAL_UTIL</Metric>
        <OvpmClass>GLOBAL</OvpmClass>
        <OvpmFilter></OvpmFilter>
        <Location>probed.hp.com</Location>
    </MRP>
</Discovery>
#
# The following section defines the Datapoint values
#
<DataPointValues>
PROC_MEM_RES_PROC_PROC_NAME=explorer_PROCESS_probed.hp.com+(MWA)_ovpmserver
10000 20000 30000
GBL_CPU_TOTAL_UTIL__GLOBAL_probed.hp.com+(MWA)_ovpmserver10.0 10.5 11.0 11.5
</DataPointValues>
```

### Sample OVSN Metric Adapter Simulator Input File

```
#
# The following section defines the Measurement Points
#
<?xml version="1.0" encoding="UTF-8"?>
<Discovery>
    <MRP name="W2K:IISADMIN:probed.hp.com_ovsnserver.hp.com">
        <Type>Integer</Type>
        <TaskRef>Task1</TaskRef>
        <MetricDefinition>W2K:IISADMIN</MetricDefinition>
        <Metric>W2K:IISADMIN:probed.hp.com</Metric>
        <OvsnServer>ovsnserver.hp.com</OvsnServer>
        <Label>W2K:IISADMIN:probed.hp.com label</Label>
        <Location>probed.hp.com </Location>
    </MRP>
    <MRP name="SAP: probed.hp.com_ovsnserver.hp.com">
        <Type>Integer</Type>
        <TaskRef>Task1</TaskRef>
        <MetricDefinition>SAP</MetricDefinition>
        <Metric>SAP: probed.hp.com</Metric>
        <OvsnServer>ovsnserver.hp.com</OvsnServer>
        <Label>SAP: probed.hp.com_ovsnserver.hp.com label</Label>
        <Location>probed.hp.com</Location>
    </MRP>
</Discovery>
#
# The following section defines the Datapoint values
#
<DataPointValues>
W2K:IISADMIN:probed.hp.com_ovsnserver.hp.com 1 2 4 8
SAP:probed.hp.com_ovsnserver.hp.com 0 1 2 4
</DataPointValues>
```

## Start the Metric Adapter Simulator

**To start a metric adapter simulator:**

- From a command prompt, run the appropriate command for your operating system (see Table 3-2):

**Table 3-2 Metric Adapter Simulator Startup Command**

| Operating System | Script |
|---|---|
| Windows | startMASimulator.bat [OvisSimulatorMA \| OvpmSimulatorMA \| OvsnSimulatorMA] |
| HP-UX, Solaris | startMASimulator.sh [OvisSimulatorMA \| OvpmSimulatorMA \| OvsnSimulatorMA] |

For example, to start the OVIS metric adapter simulator on Windows, run the following command from a command prompt:

```
startMASimulator.bat OvisSimulatorMA
```

# 4 Availability and Compliance Calculations

This chapter describes how the calculation engine performs availability and compliance calculations on monitored services.

# Availability and Compliance Calculation Overview

Service Level Manager includes a calculation engine capable of measuring the performance of configuration items, services and service level agreements against objectives agreed with service receivers.

Calculations are based on the following factors:

- The user-defined metric objectives for each metric assigned to configuration items and services in a service hierarchy.

  All compliance status calculations are based on the calculated objective status of configuration item metrics and service metrics (see “Metric Objective Status” on page 67).

- User-defined metric calculation and availability propagation rules.

  These rules dictate how many metric objectives need to be achieved and how many subordinate services and configuration items need to be available (see “Metric Calculation Rules” on page 73 and “Availability Propagation Rules” on page 74).

- The service hours agreed with service receivers.

  Metric objectives that are not achieved outside service hours are disregarded in availability and compliance calculations.

- The planned downtime schedules assigned to configuration items.

  Metric objectives that are not achieved during planned downtime periods are disregarded in availability and compliance calculations.

## Metric Objective Status

All availability and compliance calculations are based on the metric objectives specified by SLM personnel and the status of metric objectives computed by the calculation engine.

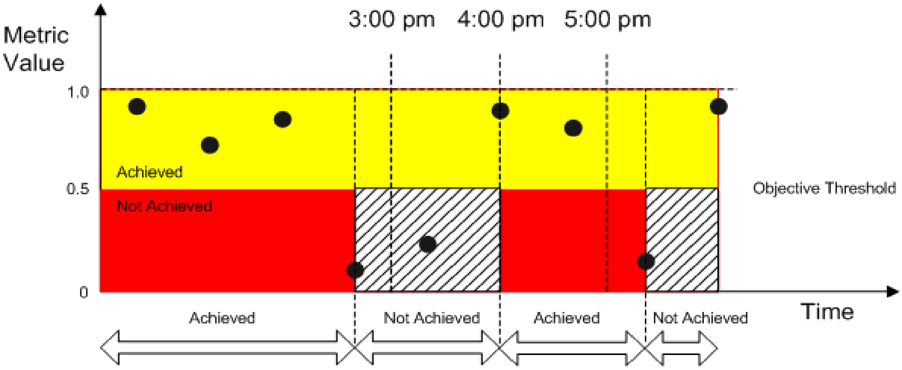
SLM personnel can specify a metric objective for each configuration item metric and service metric in a service hierarchy. Metrics with objectives are included in availability and compliance calculations. Metrics without objectives are disregarded in availability and compliance calculations, but are still collected in SLM reports.

A metric objective is composed of an objective threshold value and operator. Together, these attributes specify a target for comparison against metric data values supplied by metric adapters. Whenever a metric adapter delivers a metric data value, the objective status calculation compares this value against the corresponding objective threshold value. This comparison indicates the current metric objective status; that is, whether the objective is achieved or not achieved.

For example, suppose the metric data values for a configuration item metric can be between 0 and 1, and you specify a metric objective with a threshold value of 0.5 and an objective condition of `Greater Than`. If a metric adapter delivers a metric data value of 0.7, the objective status for the metric is achieved. If the metric adapter delivers a metric data value of 0.2, the objective status for the metric is not achieved.

Figure 4-1 displays a simplified graph showing the objective status over a period of a few hours for a particular metric objective. If a user monitors the configuration item metric at 3:00pm, the objective status is displayed as Not Achieved. It remains at that status until 4.00pm, when the metric adapter delivers a metric data value above the threshold value. If a user monitors the configuration item metric at 5:00pm, the objective status is displayed as Achieved.

**Figure 4-1 Example Metric Objective Status**



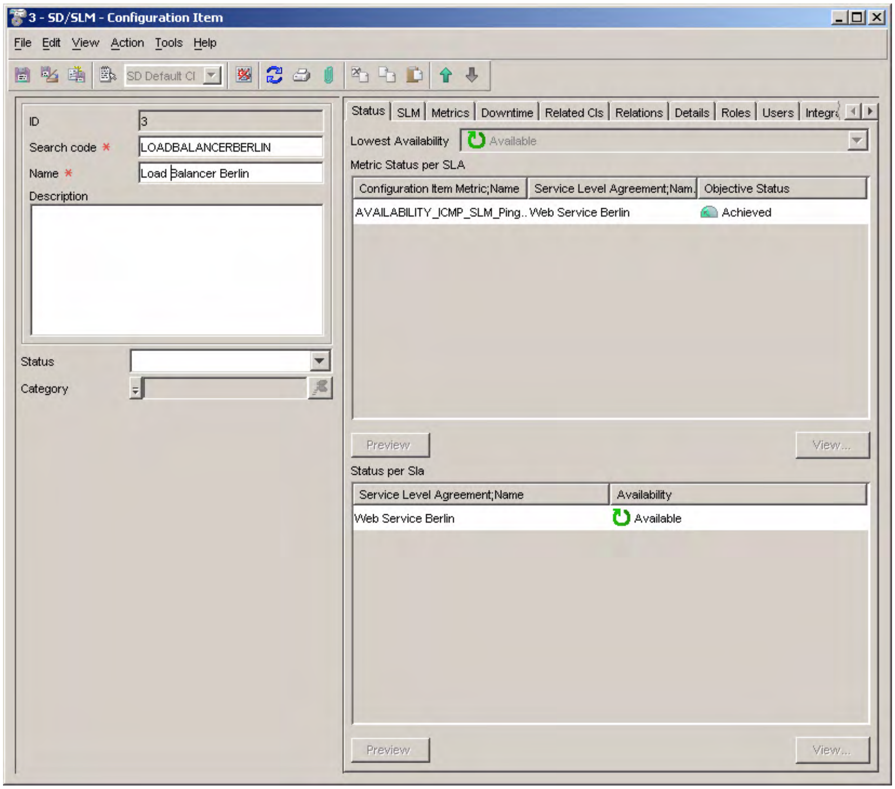
If a metric adapter is unable to deliver a metric data value, objective status calculations use the assumed objective status according to the configured metric unavailability policy (for further information, see the Service Desk Online Help).

When specifying a metric objective, SLM personnel should consider the possible range of metric data values that the corresponding metric adapter will receive and deliver to the calculation engine. For example, Internet Services availability probes (such as ICMP ping) pass values of 0 or 1 to the OVIS metric adapter. A suitable metric objective might have a threshold value of 0.5 and the > operator (that is, greater than), or a threshold value of 1 and the >= operator (that is, greater than or equal to). Objectives suitable for an OVIS response time probe can be chosen by referring to the history of response times displayed in the Internet Services dashboard.

## Objective Status of Configuration Item Metrics

The objective status of a configuration item metric provides a snapshot impression of the state of health of the configuration item in the current evaluation period of an associated service level agreement. For example, Figure 4-2 shows that the objective status of the configuration item metric measuring Load Balancer Berlin subject to the Web Service Berlin service level agreement is currently achieved:

Figure 4-2 **Objective Status of Configuration Item Metrics**


3 - SD/SLM - Configuration Item
File Edit View Action Tools Help
SD Default CI
Status SLM Metrics Downtime Related CIs Relations Details Roles Users Integr
Preview
View...
Preview
View...

ID: 3
Search code *: LOADBALANCERBERLIN
Name *: Load Balancer Berlin
Description:
Status:
Category:

Lowest Availability: Available

Metric Status per SLA

| Configuration Item Metric;Name | Service Level Agreement;Nam | Objective Status |
|---|---|---|
| AVAILABILITY_ICMP_SLM_Ping.. | Web Service Berlin | Achieved |

Status per Sla

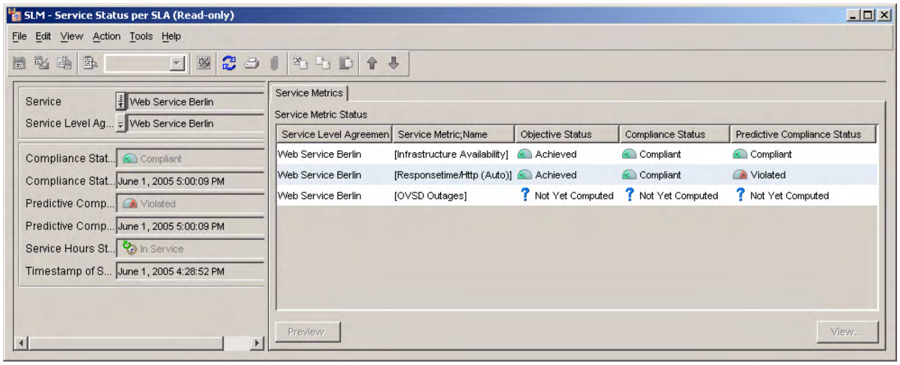
| Service Level Agreement;Name | Availability |
|---|---|
| Web Service Berlin | Available |

All configuration item metrics have their objective status calculated as described in “Metric Objective Status” on page 67.

## Objective Status of Service Metrics

The objective status of a service metric provides a snapshot impression of its state of health in the current evaluation period of an associated service level agreement. For example, Figure 4-3 shows that the objective status of two of the service metrics for Web Service Berlin are currently achieved, and the third service metric is not yet computed:

**Figure 4-3** **Objective Status of Service Metrics**


SLM - Service Status per SLA (Read-only)
File Edit View Action Tools Help
Service Metrics
Preview
View...

| | |
|---|---|
| Service | Web Service Berlin |
| Service Level Ag... | Web Service Berlin |
| Compliance Stat... | Compliant |
| Compliance Stat... | June 1, 2005 5:00:09 PM |
| Predictive Comp... | Violated |
| Predictive Comp... | June 1, 2005 5:00:09 PM |
| Service Hours St... | In Service |
| Timestamp of S... | June 1, 2005 4:28:52 PM |

Service Metric Status

| Service Level Agreemen | Service Metric;Name | Objective Status | Compliance Status | Predictive Compliance Status |
|---|---|---|---|---|
| Web Service Berlin | [Infrastructure Availability] | Achieved | Compliant | Compliant |
| Web Service Berlin | [Responsetime/Http (Auto)] | Achieved | Compliant | Violated |
| Web Service Berlin | [OVSD Outages] | ? Not Yet Computed | ? Not Yet Computed | ? Not Yet Computed |

All service metrics apart from the infrastructure availability metric have their objective status calculated as described in “Metric Objective Status” on page 67.

The way the infrastructure availability metric has its objective status calculated is explained in “Service Infrastructure Availability” on page 72.

The objective status of a service metric is measured throughout the current evaluation period to compute the compliance status of the service metric. (See “Compliance Status of Service Metrics” on page 76.)

# Availability

Service Level Manager performs availability calculations on the following object types in a service hierarchy:

- Configuration items

  Availability can be calculated for all configuration items throughout a service hierarchy. A configuration item's availability status indicates whether the configuration item is functioning. A configuration item is either available or not available. Unavailable configuration items should be assigned to specialists for investigation and repair. By viewing the availability status of each configuration item, specialists are able to understand why a configuration item fails to obey its availability propagation rule, or why a service fails to achieve its infrastructure availability objective. (See "Configuration Item Availability" on page 71.)

- Services

  A service is available if the objective status of its infrastructure availability metric is achieved. (See "Service Infrastructure Availability" on page 72.)

Availability calculations are only performed on objects associated with active service level agreements placed under SLM management. Because objective values apply to a specific service level, the result of each availability calculation is specific to a particular service level agreement. For a given object type, there is one objective value for each active service level agreement to which the top-level service is linked. This means, for example, that a particular shared configuration item may be available with respect to one service level agreement, and unavailable with respect to another service level agreement.

## Configuration Item Availability

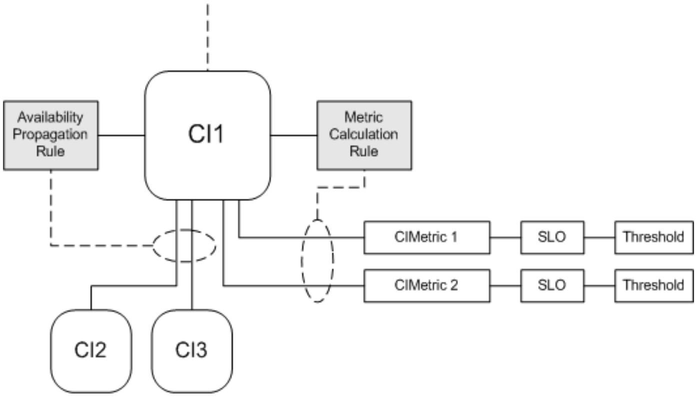
Configuration item availability calculations consider the following factors:

- Does the configuration item currently obey its metric calculation rule? (See page 73.)

- Does the configuration item currently obey its availability propagation rule? (See page 74.)

A configuration item is defined as being available if it currently obeys both rules. It is unavailable if it violates either rule.

**Figure 4-4** **Configuration Item Availability Calculation**



If a service hierarchy includes a configuration item that has no objectives defined for any of its metrics, or has no metrics defined, the metric calculation rule is ignored. Availability is calculated based on its availability propagation rule and the availability of its subordinate configuration items.

Leaf node configuration items (that is, configuration items that have no subordinate configuration items in the hierarchy) cannot have their availability calculated correctly based on the availability propagation rule alone. A leaf node configuration item should have at least one metric specified together with an accompanying objective.

## Service Infrastructure Availability

A service is currently available if its infrastructure availability objective is currently achieved. The infrastructure availability objective of the service is achieved if the service currently obeys its availability propagation rule (see page 74).

## Metric Calculation Rules

You can assign a metric calculation rule to each configuration item in a service hierarchy. The metric calculation rule imposes a condition on the number of metric objectives a configuration item needs to achieve. If the rule is broken, the configuration item is considered unavailable.

The following table lists the metric calculation rules that can be selected for a configuration item.

**Table 4-1** **Metric Calculation Rules**

| Rule | Explanation |
|---|---|
| `ALL metric objectives met` | All the metric objectives of a configuration item must be achieved. |
| `AT LEAST ONE metric objective met` | At least one metric objective of a configuration item must be achieved. |

The most appropriate rule to assign depends on the function performed by the configuration item:

- Assign the `ALL metric objectives met` rule to configuration items that should be considered unavailable if any of their metric objectives are not achieved. For example, if a service designer assigns this rule to metric objectives that test the following criteria of a web server, the rule is broken if either metric objective is not achieved:
  - — Is the web server service running?
  - — Is the web server’s file system accessible?
- Assign the `AT LEAST ONE metric objective met` rule to configuration items that should only be considered unavailable if all of their metric objectives are not achieved. For example, if a service designer assigns this rule to metric objectives that test the following criteria of an application running on a server, the rule is broken if both the objectives are not achieved:
  - — Is the application accessible through a PC client?
  - — Is the application accessible through a web client?

## Availability Propagation Rules

You can assign an availability propagation rule to each configuration item and service in a service infrastructure. The availability propagation rule imposes a condition on the number of subordinate configuration items or services that need to be available. If the rule is broken, the configuration item or service is considered unavailable.

Table 4-2 lists the availability propagation rules that can be selected for a service.

**Table 4-2** **Availability Propagation Rule for Services**

| Rule | Explanation |
|---|---|
| `ALL children available` | All the used configuration items connected by the Used CIs attribute and service infrastructures connected by the Uses Services attribute must be currently available. |
| `AT LEAST ONE child available` | At least one used configuration item connected by the Used CIs attribute or service infrastructure connected by the Uses Services attribute must be currently available. |

Table 4-3 lists the availability propagation rules that can be selected for a configuration item.

**Table 4-3** **Availability Propagation Rule for Configuration Items**

| Rule | Explanation |
|---|---|
| `ALL children available` | All the configuration items connected by the Related CIs attribute must be currently available. |
| `AT LEAST ONE child available` | At least one configuration item connected by the Related CIs attribute must be currently available. |

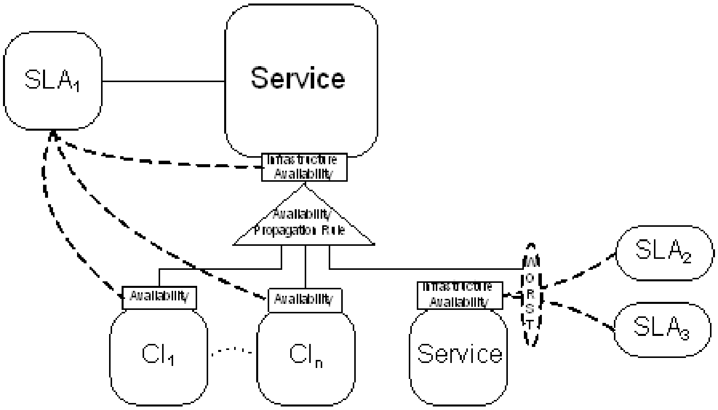
The most appropriate rule to assign to a service or configuration item depends on the function performed by the subordinate configuration items and services:

- Assign the `ALL children available` rule to configuration items and services that should be considered unavailable if any of their subordinate configuration items and services are unavailable
- Assign the `AT LEAST ONE child available` rule to configuration items and services that should only be considered unavailable if all of their subordinate CIs and services are unavailable

Figure 4-5 shows the factors that are taken into account by the availability propagation rule of the service at the top of a service hierarchy. The factors are as follows:

- The availability of each configuration item used by the top level service. Only configuration items related to the top-level service by the Used CIs attribute are considered. See “Configuration Item Availability” on page 71 for an explanation of how configuration item availability is calculated.
- The infrastructure availability of services used by the top-level service. Only services related to the top-level service by the Uses Services attribute are considered. If a used service is related to two or more active service level agreements (for example, SLA2 and SLA3 in Figure 4-5), the worst infrastructure availability is used by the availability propagation rule.

**Figure 4-5** **Infrastructure Availability Calculation**


SLA$_1$
Service
Infrastructure Availability
Availability Propagation Rule
Availability
Availability
Infrastructure Availability
CI$_1$
CI$_n$
Service
WORST
SLA$_2$
SLA$_3$

# Compliance

Service Level Manager performs compliance calculations on the following object types associated with an active service level agreement:

- Services

  A service has its compliance status calculated for each active service level agreement to which it is associated (see “Compliance Status of Services” on page 79)

- Service level agreements

  The compliance status is calculated for all active service level agreements (see “Compliance Status of Service Level Agreements” on page 80)

## Compliance Status of Service Metrics

During an evaluation period, each service metric associated with an active service level agreement has its compliance status calculated. These measurements determine whether services and service level agreements are compliant.

The way compliance status is calculated depends on the metric category of the service metric:

- Standard and infrastructure metrics need to be aggregated over time to compute their compliance percentage. The compliance percentage is then compared against compliance thresholds to compute the compliance status (see “Compliance Status of Standard and Infrastructure Service Metrics” on page 76).
- Aggregated metrics are already aggregated by the time a metric adapter delivers metric data values to the calculation engine. These values are compared against their metric objectives to compute the compliance status.

### Compliance Status of Standard and Infrastructure Service Metrics

Compliance calculations add up periods when the objective status of a service metric is not achieved during service hours. This value (the total violation time) is subtracted from the total service time (that is, the total duration of scheduled service hours during the current evaluation period), and divided by the total service time. The result of this computation is the compliance percentage of the service metric (see Figure 4-6).

Because the total service time is fixed and the violation time can only increase throughout the current evaluation period, the compliance percentage can never increase during an evaluation period.

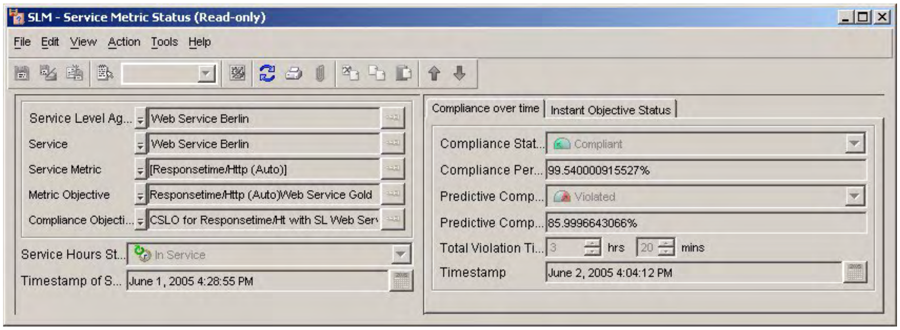
**Figure 4-6** **Compliance Percentage Calculation Equation**

$$Compliance\ Percentage\ =\ \frac{(Total\ Service\ Time - Violation\ Time)}{Total\ Service\ Time} \times 100$$

The compliance percentage is compared against the compliance violation threshold value (if this has been specified) to determine the compliance status (that is, whether the service metric is compliant or violated).

The service metric status form in Figure 4-7 shows an example of a compliance percentage calculation for an OVIS Responsetime HTTP service metric. In this example, the associated service level agreement is subject to a monthly evaluation period and has no service hours schedule (meaning service hours are continuous with a total service time for a 30-day month of 720 hours). With a total violation time of 3 hours 20 minutes, the compliance percentage is calculated to be ((720-3.333)/720)*100 = 99.54%.

**Figure 4-7** **Compliance Percentage Calculation Example**



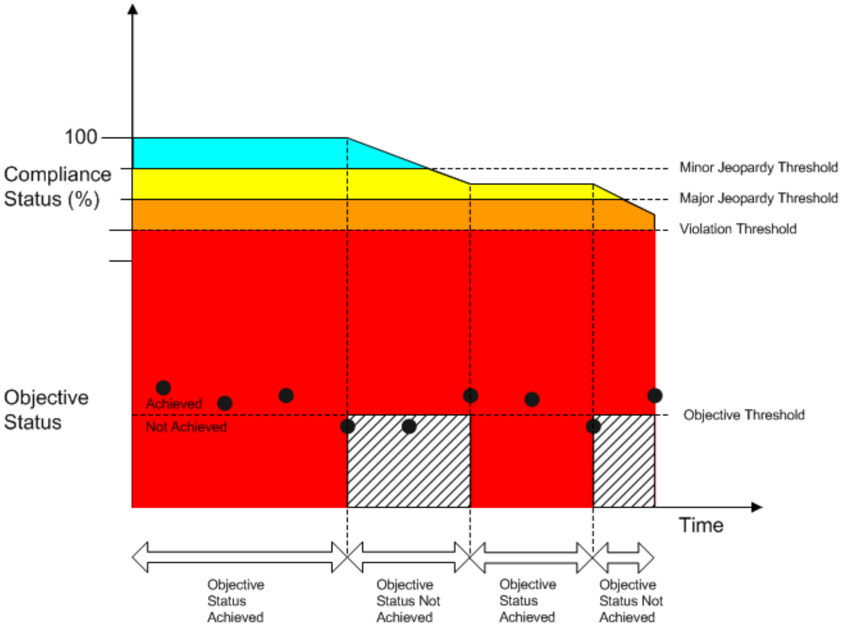
| | |
|---|---|
| Service Level Ag... | Web Service Berlin |
| Service | Web Service Berlin |
| Service Metric | [Responsetime/Http (Auto)] |
| Metric Objective | Responsetime/Http (Auto)Web Service Gold |
| Compliance Objecti... | CSLO for Responsetime/Ht with SL Web Serv |
| Service Hours St... | In Service |
| Timestamp of S... | June 1, 2005 4:28:55 PM |

| | |
|---|---|
| Compliance Stat... | Compliant |
| Compliance Per... | 99.540000915527% |
| Predictive Comp... | Violated |
| Predictive Comp... | 85.9996643066% |
| Total Violation Ti... | 3 hrs 20 mins |
| Timestamp | June 2, 2005 4:04:12 PM |

If you specify a compliance jeopardy threshold, the compliance calculation compares the compliance percentage against the jeopardy threshold value as well as the violation threshold value to determine whether the compliance status is compliant, in jeopardy, or violated. By specifying compliance jeopardy thresholds, Service Level Manager can warn of a compliance percentage dropping towards its violation threshold before the compliance status changes from compliant to violated. You can assign up to three jeopardy thresholds, each with a different severity code.

Figure 4-8 shows an example of how the compliance status of an objective drops as a result of periods when the objective is not achieved.

**Figure 4-8** **Compliance Status of Standard and Infrastructure Service Metrics**



## Predicted Compliance Status of Standard and Infrastructure Service Metrics

Compliance calculations predict the compliance status of a service metric that will be applicable at the end of the current evaluation period assuming the current trend will continue for the remainder of the evaluation period.

Figure 4-9 shows the formula used for the predicted compliance percentage calculation. It differs from the compliance percentage calculation by using the service hours that have expired so far in the current evaluation period instead of the total number of service hours during the evaluation period.

**Figure 4-9** **Predicted Compliance Percentage Calculation Equation**

$$Predicted\ Compliance\ Percentage = \frac{(Expired\ Service\ Time - Violation\ Time)}{Expired\ Service\ Time} \times 100$$

The predicted compliance percentage is compared against the compliance violation and jeopardy threshold values to determine the predicted compliance status (that is, whether the service metric is predicted to be compliant, in jeopardy, or violated).

### Compliance Status of Aggregated Service Metrics

For aggregated service metrics, the compliance status is not calculated until the final metric collection has taken place in the current evaluation period. At the end of the evaluation period, the calculation engine compares the value of the final metric collection result against the compliance threshold values and objective conditions.

### Predicted Compliance Status of Aggregated Service Metrics

Compliance calculations predict the compliance status of an aggregated service metric that will be applicable at the end of the current evaluation period based on the most recent metric collection result, and assuming that each subsequent metric collection will deliver the same result throughout the remainder of the evaluation period.

## Compliance Status of Services

Compliance calculations measure the following aspects of service compliance:

- Compliance status
- Predicted compliance status

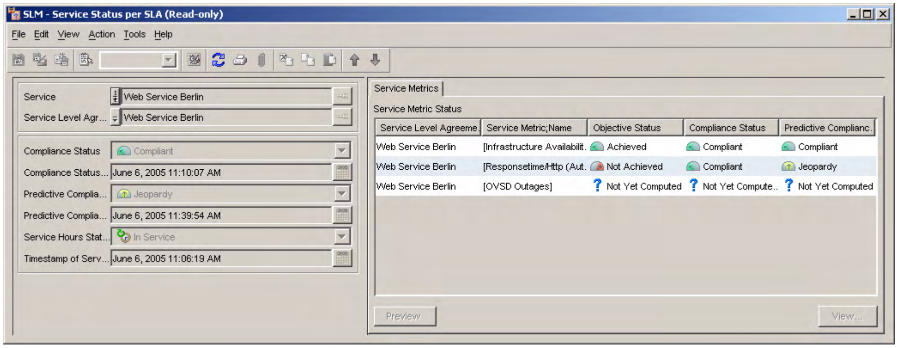
### Service Compliance Status

The compliance status of a service is defined as the lowest compliance status of its service metrics. For example, if the compliance status of each service metric is `Jeopardy`, the service compliance status is also `Jeopardy`. If the compliance status of one service metric changes to `Violated`, the service compliance status also changes to `Violated`.

### Predicted Service Compliance Status

The predicted compliance status of a service is defined as the lowest predicted compliance status of its service metrics. For example, if the compliance status of each service metric is predicted to be `Compliant` at the end of the evaluation period, the service is also predicted to achieve the same compliance status. If the predictive compliance status of one service metric drops to a lower value (for example, `Jeopardy`), the predicted service compliance status also drops to that value, as shown in Figure 4-10.

**Figure 4-10** **Example Predicted Service Compliance Status**



| | |
|---|---|
| Service | Web Service Berlin |
| Service Level Agr... | Web Service Berlin |
| Compliance Status | Compliant |
| Compliance Status... | June 6, 2005 11:10:07 AM |
| Predictive Complia... | Jeopardy |
| Predictive Complia... | June 6, 2005 11:39:54 AM |
| Service Hours Stat... | In Service |
| Timestamp of Serv... | June 6, 2005 11:06:19 AM |

Service Metric Status

| Service Level Agreeme. | Service Metric;Name | Objective Status | Compliance Status | Predictive Complianc. |
|---|---|---|---|---|
| Web Service Berlin | [Infrastructure Availabilit. | Achieved | Compliant | Compliant |
| Web Service Berlin | [Responsetime/Http (Aut. | Not Achieved | Compliant | Jeopardy |
| Web Service Berlin | [OVSD Outages] | ? Not Yet Computed | ? Not Yet Compute.. | ? Not Yet Computed |

## Compliance Status of Service Level Agreements

Compliance calculations measure the following aspects of service level agreement compliance:

- Compliance status
- Predicted compliance status

### Compliance Status

The compliance status of a service level agreement is defined as the lowest compliance status of services associated with the service level agreement. For example, if all services are currently `Compliant`, the service level agreement is also currently `Compliant`. If one service drops to a lower compliance status (for example, `Jeopardy`), the service level agreement also drops to that compliance status.

### Predicted Compliance Status

The predicted compliance status of a service level agreement is defined as the lowest predicted compliance status of services associated with the service level agreement. For example, if all services are predicted to be `Compliant`, the service level agreement is also predicted to be `Compliant`. If one service drops to a lower predicted compliance status (for example, `Jeopardy`), the service level agreement also drops to that predicted status.

# 5 Monitoring Availability and Compliance

This chapter explains how SLM personnel monitor the compliance status of services subject to managed service level agreements.

# Accessing the Monitoring Views

Users can monitor availability and compliance using standard views and forms.

## Customer Relationship Managers

Customer relationship managers should access a view of service statuses filtered to display the services for the customers they represent. The view should include the following attributes:

- Current availability
- Compliance percentage
- Compliance status
- Predicted compliance percentage
- Predicted compliance status

Alternatively, an explorer type view can be used, with the navigation pane applying the same filter as before, and a table view displaying the list of service metrics for the selected service.

## Service Managers

Service managers should access a view of service statuses filtered to display the services for which they are responsible. The view should include the following attributes:

- Current infrastructure availability
- Compliance percentage
- Compliance status
- Predicted compliance percentage
- Predicted compliance status

Alternatively, an explorer type view can be used, with the navigation pane applying the same filter as before, and a table view displaying the list of service metrics for the highlighted service.

# Investigating Service Infrastructure Availability

Infrastructure availability is measured using the infrastructure availability service metric. If a service infrastructure is measured as being unavailable, it means the service currently fails to obey its availability propagation rule. This in turn is caused by the unavailability of one or more subordinate services or used configuration items. Allowing a service to remain unavailable over a period of time has the following consequences:

- Service receivers are unable to use the service
- The infrastructure availability metric may be placed in jeopardy or may be violated

To investigate the reason why a service is unavailable, you should check the current availability of each subordinate service and each configuration item in the service hierarchy (see "Investigating Availability Status of Configuration Items" on page 86).

# Investigating Availability Status of Configuration Items

If a configuration item is unavailable, it currently fails to obey one or both of the following:

- The configuration item's availability propagation rule
- The configuration item's metric calculation rule

To track down the reason for unavailability, do the following:

First check the objective status of each configuration item metric:

- If all objectives are achieved, the configuration item obeys its metric calculation rule, and the current unavailability must be due to the unavailability of a subordinate configuration item.
- If all objectives are not achieved, the configuration item fails to obey its metric calculation rule. If the metric calculation rule is set to `AT LEAST ONE metric objective met`, you should take action that enables at least one metric objective to be achieved. If the metric calculation rule is set to `ALL metric objectives met`, you should take action that enables all metric objectives to be achieved.
- If some objectives are not achieved and the metric calculation rule is set to `AT LEAST ONE metric objective met`, the configuration item obeys its metric calculation rule and so no action is required. If some objectives are not achieved and the metric calculation rule is set to `ALL metric objectives met`, the configuration item fails to obey its metric calculation rule, and you should take action that enables all metric objectives to be achieved.

# Investigating Service Compliance Status

If the compliance status of a service is in jeopardy, the compliance status of one or more of its compliance objectives is in jeopardy. First check the compliance status of the service metrics.

If all service metrics are compliant, check the compliance status of the infrastructure availability metric. If the status is in jeopardy, you should investigate the current availability status of each subordinate service and each configuration item in the service hierarchy.

# 6 SLM Reporting

# Configuring User Access to SLM Reports

You can configure Service Desk to enable users to view SLM reports from the OpenView console. A report viewed in this way displays context-specific information about a selected managed service level agreement, monitored service, or configuration item.

For information on how to view SLM reports from the OpenView console, see the Service Desk online help.

For a description of each SLM report, see *Service Desk Reporting User Guide*.

This section explains how SLM report administrators can control user access to SLM reports.

## SLM Data Warehouse Model

The User dimension defines users associated with both service level agreements and services.

- The following users are associated with service level agreements:
  - Paying Entity (Customer Business Manager)
  - Customer Relationship Manager
- The following users are associated with services:
  - Service Manager
  - Service Administrator

The User table is populated whenever SLM dimensions are exported. (For information on how to configure SLM dimension exports, see the Service Desk online help.) The mapping rules that define how users are associated to service level agreements and services are stored in XPL configurations in the [dw.configSrv.users] section, and can be customized.

For services, no default mappings are currently provided. For service level agreements, the default mapping rules are:

- PayingEntity=Contract.Paid by Person

This mapping means that the Paying Entity for the service level agreement is given by the Paid By Person attribute of the Contract associated to the service level agreement.

- customerRelationshipManager=Contract.To person

  This mapping means that the customerRelationshipManager for the service level agreement is given by the To Person attribute of the Contract associated to the service level agreement.

## User Access to SLM Reports from the OpenView Console

You can control the following aspects of user access to SLM reports from the OpenView console:

- "Filter Accessible Reports Based on User Role" on page 91
- "Filter Report Data" on page 92

### Filter Accessible Reports Based on User Role

The SLM reports that a user can access from the OpenView console can be configured according to the user's role (that is, the role of the user currently logged on to the OpenView console). Typically, the Paying Entity should be granted access to contract-based reports such as SLA Overview, SLA Details, SLO Overview, and so on, whereas the Service Manager should be granted access to infrastructure reports such as Service Overview, Service Details, CI Details, and so on.

The association of roles and the list of reports that can be accessed for each object type (service level agreement, service, and configuration item) is defined by OVPI Report objects that are managed from the OpenView Console.

The association comprises sets of parameters and values to specify the following:

- Report identification and parameters.
- Object type.
- List of user roles that can access the report.

- Name of system action to launch the report. This is the name of the command displayed to the user when the user navigates to the workspace of the associated object type and accesses the Action menu.

### Filter Report Data

Data displayed in SLM reports displayed from the OpenView console can be filtered according to the user currently logged onto the OpenView console. Typically, only service level agreements associated with the Paying Entity should be listed in the SLA Overview report.

Filtering of data included in the reports is performed by specifying parameters when the report is launched. Two parameters are currently supported for the pre-configured SLM reports:

- Target entity OID (for example, the OID of the service level agreement to be included in the SLA Detail report)
- User OID (for example, the OID of the Paying Entity for the SLA Overview report, or the OID of the Service Manager for Service Overview report)

By passing the appropriate parameter and value as arguments when the report is launched, the content of the report is filtered according to the parameter value. If no value is specified, no filtering is done.

For example:

- If the service level agreement OID parameter is specified when the SLA Detail report is launched, only the information related to the specified service level agreement is displayed in the report. If no value is specified for this parameter, details related to all the service level agreements are included in the report.
- If the user OID parameter is specified when the SLA Overview report is launched, only the information related the specified service level agreement for which the specified user is the Paying Entity is included in the report. If no value is specified for this parameter, all the service level agreements are included in the report.

## SLM Report Mappings

This section describes the attributes of the OVPI Report objects required for the report mapping in the SLM reports accessible from the OpenView console. Attribute values can be customized and extended by administrators.

Each system action that launches a report in the context of the workspace of a particular object type is specified in a specific OVPI Report object with a name such as SLM:CI Detail. In this example, the report presents details of a configuration item that is subject to availability and compliance calculations.

The attributes of an OVPI Report object define the mapping between the report to launch, the user role, and the target entity being reported on.

Table 6-1 describes the attributes of the OVPI Report object type:

**Table 6-1** **OVPI Report Attributes**

| Attribute | Description |
|---|---|
| `Filename` | Report name (as defined in OVPI) |
| `Directory` | Report path (as defined in OVPI) |
| `Action name` | Report launch command as it appears on the Action menu |
| `Name` | Report name as it appears in the title of the report window |
| `Target Entity` | The object type for which to add the command on the Action menu |
| `Roles` | The list of roles allowed to launch the report.<br>Note: If this parameter is not specified, the report is accessible by every user regardless of role. |

**Table 6-1 OVPI Report Attributes (Continued)**

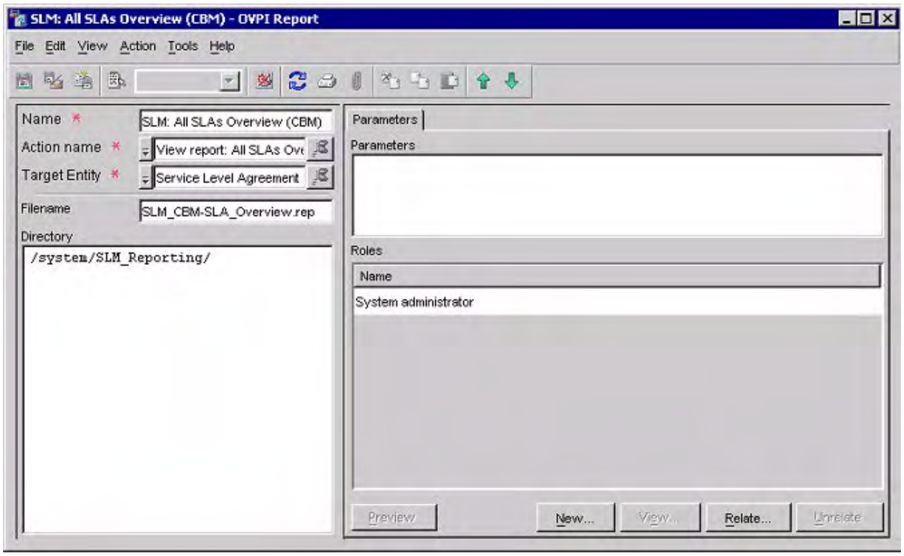
| Attribute | Description |
|---|---|
| `Parameters` | OVPI report parameters to be passed to the reporting system at report launch.<br>OVPI_REPORT_PARAM=[%u\|%e]<br>• %u : the OID of the user logged on in the console<br>• %e : the OID of the selected object |

## Example SLM Report Mappings

This section includes example report settings to demonstrate how to control access to SLM reports from the OpenView console.

- System administrators can open the SLA Overview report and can view all service level agreements:

**Figure 6-1 SLA Overview Report for System Administrators**



SLM: All SLAs Overview (CBM) - OVPI Report

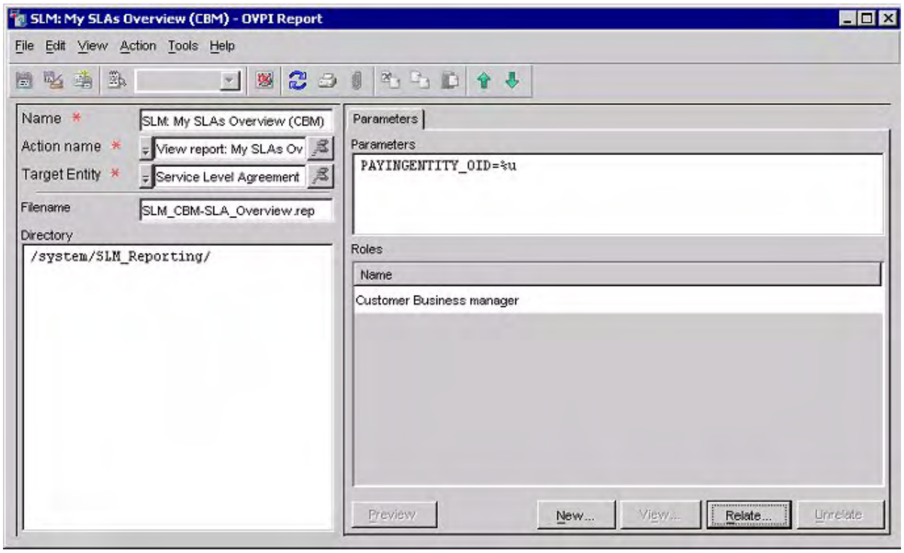
Name * SLM: All SLAs Overview (CBM)
Action name * View report: All SLAs Ove
Target Entity * Service Level Agreement
Filename SLM_CBM-SLA_Overview.rep
Directory /system/SLM_Reporting/

Roles

| Name |
|---|
| System administrator |

- Customer business managers can open the SLA Overview report and can view information about the service level agreements associated with them:

**Figure 6-2 SLA Overview Report for Paying Entities**



SLM: My SLAs Overview (CBM) - OVPI Report

Name * SLM: My SLAs Overview (CBM)

Action name * View report: My SLAs Ov

Target Entity * Service Level Agreement

Filename SLM_CBM-SLA_Overview.rep

Directory

```
/system/SLM_Reporting/
```

Parameters

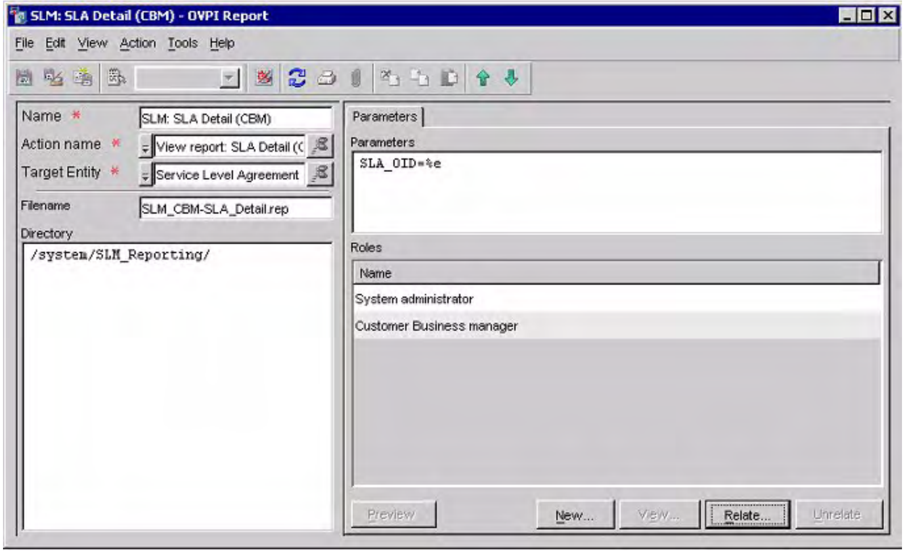
```
PAYINGENTITY_OID=%u
```

Roles

| Name |
|---|
| Customer Business manager |

- System administrators and customer business managers can open the SLA Detail report and can view details of the selected service level agreement:

**Figure 6-3 SLA Detail Report for System Administrators and Paying Entities**



SLM: SLA Detail (CBM) - OVPI Report

Name * SLM: SLA Detail (CBM)

Action name * View report: SLA Detail (C

Target Entity * Service Level Agreement

Filename SLM_CBM-SLA_Detail.rep

Directory /system/SLM_Reporting/

Parameters SLA_OID=%e

Roles

| Name |
|---|
| System administrator |
| Customer Business manager |

## Producing SLM Reports in PDF and SREP Format

You can use standard OVPI features to produce static versions of SLM reports (for further information, refer to your OVPI documentation). When producing a static report in PDF format, the reporting system explores all drill-down combinations and generates one page for each combination. Because of the interactive nature of the pre-configured SLM reports, this can result in very large PDF documents. For this reason, specific SLM reports are available for PDF and SREP generation. These versions are based on the SLM reports described in *Service Desk Reporting User Guide*, but contain fewer drill-down options and so produce smaller static output files.

The static versions of SLM reports are available in the `SLM Reporting/Static` folder in your Performance Insight standard viewer or web access server. Table 6-2 lists the categories of report that are available:

**Table 6-2 Categories of Static SLM Report**

| Category | Available Reports | Time Period for Graphs | Data Granularity |
|---|---|---|---|
| Hourly | All infrastructure reports (Service Overview, Service Detail and CI Detail) | Previous hour | Five-minutely |
| Daily | All infrastructure reports | Previous day | Hourly |
| Weekly | All infrastructure reports | Previous week | Daily |
| Monthly | All infrastructure reports | Previous month | Daily |
| Evaluation Period | All SLA-based reports (SLA Overview, SLA Detail, SLO Detail and Service Detail) | Previous SLA evaluation period | Daily |

## Customizing the Static Report Time Period

For all static report categories apart from EvaluationPeriod, you can customize the time period for graphs. The way you do this depends on the report access method.

### OVPI Standard Viewer

1. Right click the graph.
2. Select "Set Time Period...".
3. Specify the required time period in the dialog box.

### OVPI Web Server

1. Click the `Edit graph` icon in the top right corner of the graph.
2. Specify the required time period in the dialog box.

**NOTE** The `Edit graph` icon only appears if element editing is enabled. To enable element editing, click the **Preference** menu in the top right corner of the browser, expand **Deployed Items**, click **View** and select the **Allow Element Editing** check box.

### Viewing Static Reports from the OpenView Console

Access to static SLM reports is not currently supported from the OpenView console.

# 7 SLM Scenarios

This chapter describes scenarios to illustrate the functional capabilities of Service Level Manager.

# Scenario 1: Metric Configuration and Discovery

This scenario demonstrates the process by which an SLM administrator configures a metric adapter and performs metric discovery. It is assumed that all required product components are already installed.

The SLM administrator receives a request from the service level manager to provide the following OVIS (HP OpenView Internet Services) measurement types:

- ICMP (to measure the availability of specific configuration items)
- HTTP (to measure the availability of a web service and the response time for serving up a specific web page)

## Configuring the Metric Adapter

After installing the OVIS metric adapter on the host on which OVIS is installed, the SLM administrator must configure the metric adapter. This is done by editing the `<installation directory>\data\conf\OvisMA.xml` file.

Figure 7-1 shows the initial contents of the configuration file. The text strings displayed in a bold typeface need to be replaced by installation-specific values. Table 7-1 lists the values that must be provided.

**Figure 7-1 Initial Contents of Configuration File**

```
<?xml version="1.0" encoding="UTF-8"?>

<Config>

    <MA name="OvisMA">

        <Publisher.APP_NAME>OvisMAPublisher</Publisher.APP_NAME>

        <DefaultTaskPollingPeriod>300</DefaultTaskPollingPeriod>

        <DataPointVersionByte>1</DataPointVersionByte>

        <ServerHost>$SLM_HOSTNAME$</ServerHost>

        <TypeByte>1</TypeByte>
        <isEventBased>0</isEventBased>
        <SequenceNumber>0</SequenceNumber>
        <Publisher.RESPONSE_TIMEOUT>60</Publisher.RESPONSE_TIMEOUT>
        <DiscoveryInterval>3600</DiscoveryInterval>
        <MrpDefinitionDiscoveryInterval>86400</MrpDefinitionDiscoveryInterval>
        <HeartBeatsInterval>300</HeartBeatsInterval>
        <DefaultTaskExpirePeriod>600</DefaultTaskExpirePeriod>
        <DataPointSynchronizationDelay>600</DataPointSynchronizationDelay>
    </MA>
    <Connector name="$OVIS_HOSTNAME$">
        <Timeout>10</Timeout>
        <DiscoveryMaxHistory>10080</DiscoveryMaxHistory>
        <CryptedPassword>FIrnif9Zv5nLaM+F/q5/QA==</CryptedPassword>
        <Host>$OVIS_HOSTNAME$</Host>
        <Class>com.hp.ov.sd.slm.sa.ovis.Connector</Class>
        <URL>jdbc:inetdae7:$OVIS_HOSTNAME$:$OVIS_PORT$</URL>
        <DBName>reporter</DBName>
        <DriverName>com.inet.tds.TdsDriver</DriverName>
        <Table>IOPS_DETAIL_DATA</Table>
        <Port>$OVIS_PORT$</Port>
        <Login>openview</Login>
        <nbReconnection>10</nbReconnection>
    </Connector>
    <DiscoveryLocationFilter>
        <All/>
    </DiscoveryLocationFilter>
</Config>
```

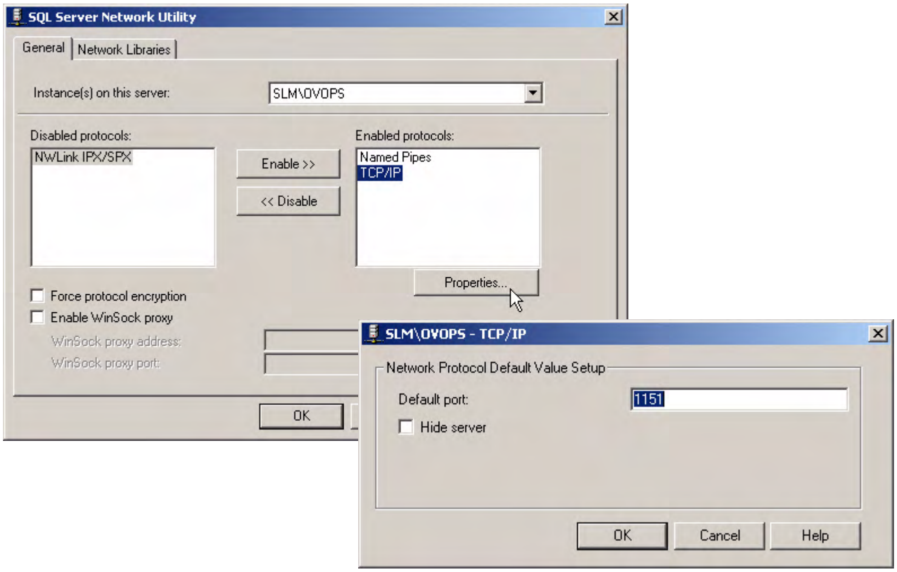
The SLM administrator needs to replace the following default text strings in the configuration file:

**Table 7-1**

| Default Text String | Replaced Text String |
|---|---|
| **$SLM_HOSTNAME** | Hostname or IP address of the SLM server. |
| **$OVIS_HOSTNAME** | Hostname or IP address of the OVIS server. |
| **$OVIS_PORT** | Port number for connections to OVIS database. |

To identify the correct OVIS_PORT value, the SLM administrator runs the following application: `C:\Program Files\Microsoft MS SQL Server\80\Tools\Binn\SVRNETCN.exe`. The correct port number is displayed in the TCP/IP properties dialog box:

**Figure 7-2** **Identifying the Correct OVIS Port**



Instance(s) on this server: SLM\OVOPS

Disabled protocols: NWLink IPX/SPX

Enabled protocols: Named Pipes, TCP/IP

□ Force protocol encryption

□ Enable WinSock proxy

WinSock proxy address:

WinSock proxy port:

Network Protocol Default Value Setup

Default port: 1151

□ Hide server

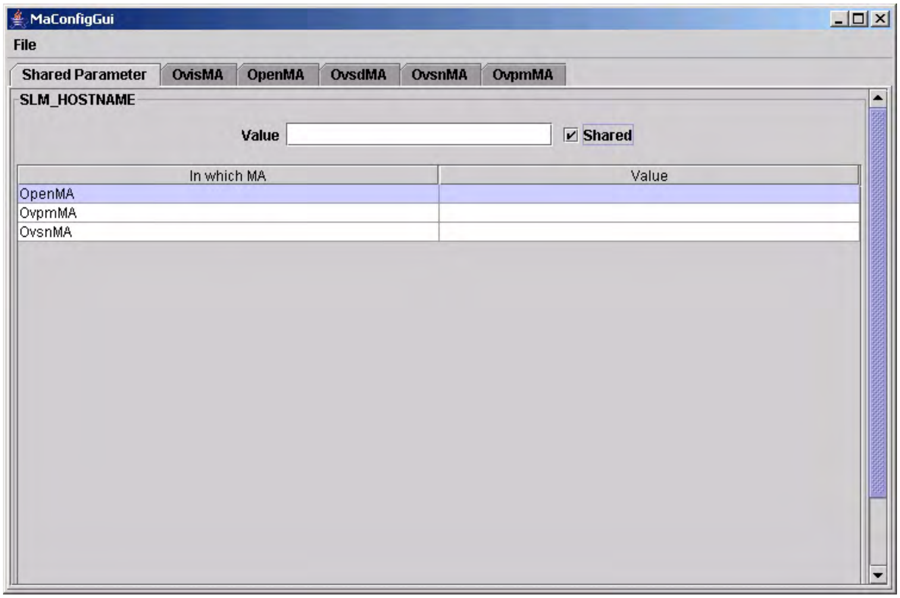
In this scenario, the SLM server process runs on a host named SLM, the OVIS host is set to LOCALHOST because OVIS is installed on the same host as the OVIS metric adapter, and the required OVIS port number is identified as 1151 (see Figure 7-2).

To apply these values, the SLM administrator runs the following command from the command prompt to launch the Metric Adapter Configuration utility:

```
<install_dir>\bin\startMAConfigGui.bat
```

The Shared Parameters tab page appears. The SLM administrator types the hostname of the SLM server in the Value field to indicate that each metric adapter installed on this server must deliver metric data values to the identified SLM server.:

**Figure 7-3** **Metric Adapter Configuration Utility (Shared Parameters)**



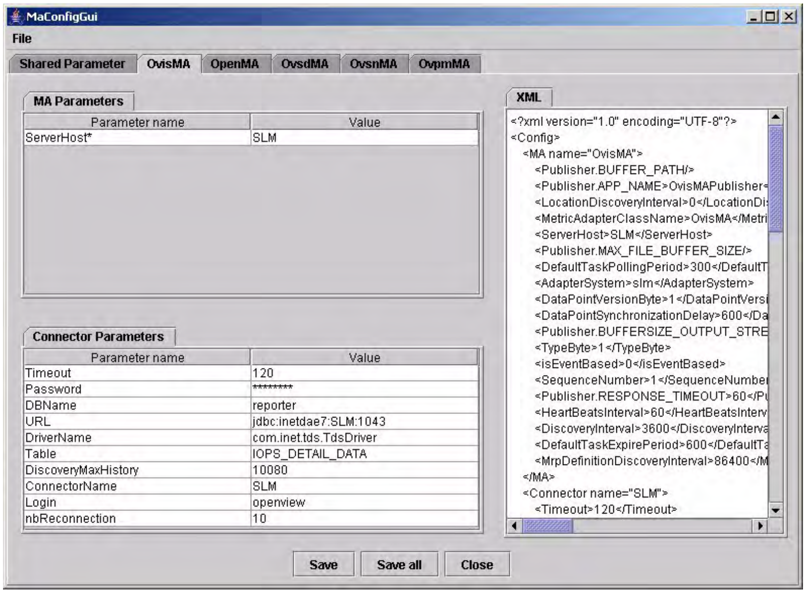
SLM_HOSTNAME

Value ☑ Shared

| In which MA | Value |
|---|---|
| OpenMA | |
| OvpmMA | |
| OvsnMA | |

The SLM administrator clicks the OvisMA tab page and types the correct values for the OVIS host name and port. The updated configuration file is displayed in the adjoining XML panel:

**Figure 7-4** **Metric Adapter Configuration Utility (OvisMA Parameters)**



MA Parameters

| Parameter name | Value |
|---|---|
| ServerHost* | SLM |

Connector Parameters

| Parameter name | Value |
|---|---|
| Timeout | 120 |
| Password | ******** |
| DBName | reporter |
| URL | jdbc:inetdae7:SLM:1043 |
| DriverName | com.inet.tds.TdsDriver |
| Table | IOPS_DETAIL_DATA |
| DiscoveryMaxHistory | 10080 |
| ConnectorName | SLM |
| Login | openview |
| nbReconnection | 10 |

XML

```
<?xml version="1.0" encoding="UTF-8"?>
<Config>
  <MA name="OvisMA">
    <Publisher.BUFFER_PATH/>
    <Publisher.APP_NAME>OvisMAPublisher<
    <LocationDiscoveryInterval>0</LocationDi
    <MetricAdapterClassName>OvisMA</Metri
    <ServerHost>SLM</ServerHost>
    <Publisher.MAX_FILE_BUFFER_SIZE/>
    <DefaultTaskPollingPeriod>300</DefaultT
    <AdapterSystem>slm</AdapterSystem>
    <DataPointVersionByte>1</DataPointVersi
    <DataPointSynchronizationDelay>600</Da
    <Publisher.BUFFERSIZE_OUTPUT_STRE
    <TypeByte>1</TypeByte>
    <isEventBased>0</isEventBased>
    <SequenceNumber>1</SequenceNumbe
    <Publisher.RESPONSE_TIMEOUT>60</Pu
    <HeartBeatsInterval>60</HeartBeatsInterv
    <DiscoveryInterval>3600</DiscoveryInterva
    <DefaultTaskExpirePeriod>600</DefaultTa
    <MrpDefinitionDiscoveryInterval>86400</M
  </MA>
  <Connector name="SLM">
    <Timeout>120</Timeout>
```

Finally, the SLM administrator clicks Save All and then File→Exit to save the settings and close the utility. Figure 7-5 shows the edited configuration file for the OVIS metric adapter:

**Figure 7-5** **Edited Configuration File**

```
<?xml version="1.0" encoding="UTF-8"?>

<Config>

    <MA name="OvisMA">

        <Publisher.APP_NAME>OvisMAPublisher</Publisher.APP_NAME>

        <DefaultTaskPollingPeriod>300</DefaultTaskPollingPeriod>

        <DataPointVersionByte>1</DataPointVersionByte>

        <ServerHost>SLM</ServerHost>

        <TypeByte>1</TypeByte>

        <isEventBased>0</isEventBased>

        <SequenceNumber>0</SequenceNumber>

        <Publisher.RESPONSE_TIMEOUT>60</Publisher.RESPONSE_TIMEOUT>

        <DiscoveryInterval>3600</DiscoveryInterval>
        <MrpDefinitionDiscoveryInterval>86400</MrpDefinitionDiscoveryInterval>
        <HeartBeatsInterval>300</HeartBeatsInterval>
        <DefaultTaskExpirePeriod>600</DefaultTaskExpirePeriod>
        <DataPointSynchronizationDelay>600</DataPointSynchronizationDelay>
    </MA>
    <Connector name="LOCALHOST">
        <Timeout>10</Timeout>
        <DiscoveryMaxHistory>10080</DiscoveryMaxHistory>
        <CryptedPassword>FIrnif9Zv5nLaM+F/q5/QA==</CryptedPassword>
        <Host>LOCALHOST</Host>
        <Class>com.hp.ov.sd.slm.sa.ovis.Connector</Class>
        <URL>jdbc:inetdae7:LOCALHOST:1151</URL>
        <DBName>reporter</DBName>
        <DriverName>com.inet.tds.TdsDriver</DriverName>
        <Table>IOPS_DETAIL_DATA</Table>
        <Port>1151</Port>
        <Login>openview</Login>
        <nbReconnection>10</nbReconnection>
    </Connector>
    <DiscoveryLocationFilter>
        <All/>
    </DiscoveryLocationFilter>
</Config>
```

## Suppressing Initial Metric Discovery

To suppress initial metric discovery, the SLM administrator opens the following file in a text editor:

```
<HP OpenView installation
directory>/misc/xpl/config/defaults/slm.ini
```

In the line that contains the string `bool OvisMAdiscoverAll=true`, the SLM administrator changes the value of the `OvisMAdiscoverAll` parameter from `true` to `false`.

The SLM administrator is now ready to register the metric adapter in the OpenView Console and trigger metric definition discovery.

## Triggering Metric Definition Discovery

To register the metric adapter in the OpenView Console and trigger metric definition discovery, the SLM administrator first starts the SLM server by running the following command from a command prompt:

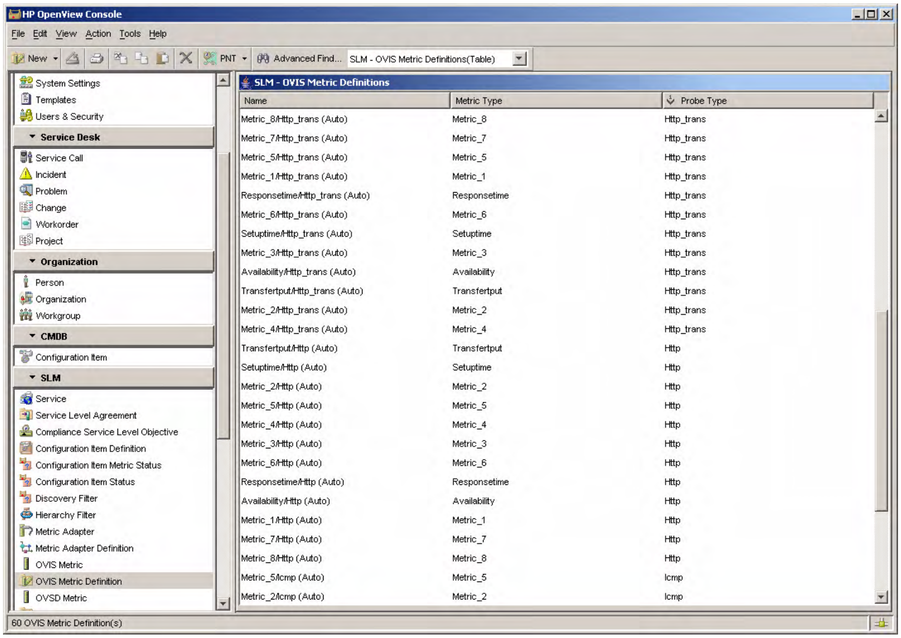
```
ovc -start ovsdslm
```

The SLM administrator now starts the OVIS metric adapter:

```
ovc -start ovisma
```

The SLM administrator navigates to the OVIS Metric Definitions workspace to confirm that the metric definition discovery process has created objects representing the probes configured in OVIS:

**Figure 7-6 Discovered OVIS Metric Definitions**



SLM - OVIS Metric Definitions

| Name | Metric Type | Probe Type |
|---|---|---|
| Metric_8/Http_trans (Auto) | Metric_8 | Http_trans |
| Metric_7/Http_trans (Auto) | Metric_7 | Http_trans |
| Metric_5/Http_trans (Auto) | Metric_5 | Http_trans |
| Metric_1/Http_trans (Auto) | Metric_1 | Http_trans |
| Responsetime/Http_trans (Auto) | Responsetime | Http_trans |
| Metric_6/Http_trans (Auto) | Metric_6 | Http_trans |
| Setuptime/Http_trans (Auto) | Setuptime | Http_trans |
| Metric_3/Http_trans (Auto) | Metric_3 | Http_trans |
| Availability/Http_trans (Auto) | Availability | Http_trans |
| Transfertput/Http_trans (Auto) | Transfertput | Http_trans |
| Metric_2/Http_trans (Auto) | Metric_2 | Http_trans |
| Metric_4/Http_trans (Auto) | Metric_4 | Http_trans |
| Transfertput/Http (Auto) | Transfertput | Http |
| Setuptime/Http (Auto) | Setuptime | Http |
| Metric_2/Http (Auto) | Metric_2 | Http |
| Metric_5/Http (Auto) | Metric_5 | Http |
| Metric_4/Http (Auto) | Metric_4 | Http |
| Metric_3/Http (Auto) | Metric_3 | Http |
| Metric_6/Http (Auto) | Metric_6 | Http |
| Responsetime/Http (Auto) | Responsetime | Http |
| Availability/Http (Auto) | Availability | Http |
| Metric_1/Http (Auto) | Metric_1 | Http |
| Metric_7/Http (Auto) | Metric_7 | Http |
| Metric_8/Http (Auto) | Metric_8 | Http |
| Metric_5/Icmp (Auto) | Metric_5 | Icmp |
| Metric_2/Icmp (Auto) | Metric_2 | Icmp |

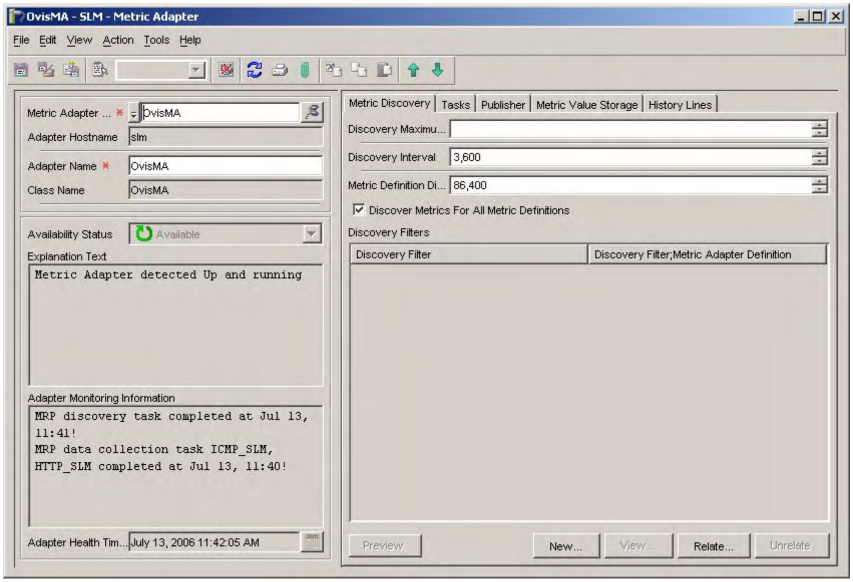
60 OVIS Metric Definition(s)

## Triggering Metric Discovery

Now that metric definitions have been discovered, the SLM administrator can configure metric discovery filtering and trigger metric discovery. To do so, the metric adapter must be related to discovery filters that specify the metric definitions for which metrics are to be discovered.

The SLM administrator opens the OVIS metric adapter object in a form and clicks the New button in the Discovery Filters panel:

**Figure 7-7** **Relating a Discovery Filter to the Metric Adapter**

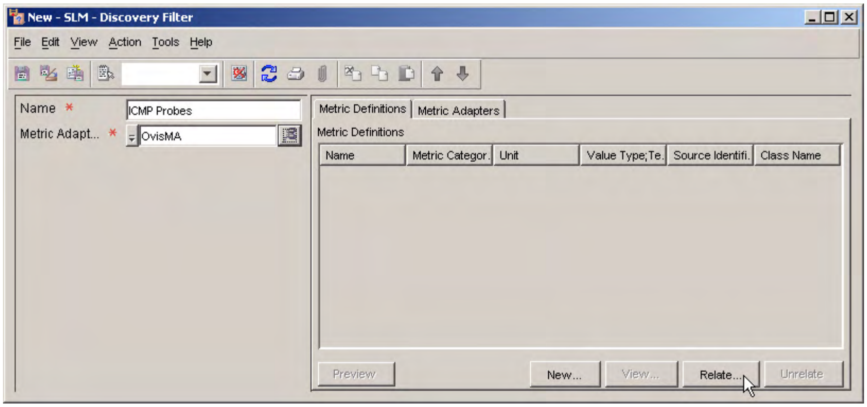


Metric Adapter ... * OvisMA
Adapter Hostname slm
Adapter Name * OvisMA
Class Name OvisMA
Availability Status Available
Explanation Text
Metric Adapter detected Up and running
Adapter Monitoring Information
MRP discovery task completed at Jul 13, 11:41!
MRP data collection task ICMP_SLM, HTTP_SLM completed at Jul 13, 11:40!
Adapter Health Tim... July 13, 2006 11:42:05 AM

Discovery Maximu...
Discovery Interval 3,600
Metric Definition Di... 86,400
☑ Discover Metrics For All Metric Definitions
Discovery Filters

In the Discovery Filter form, the SLM administrator clicks the Relate button in the Metric Definitions panel:

**Figure 7-8 Relating Metric Definitions to the Discovery Filter**



Name * ICMP Probes

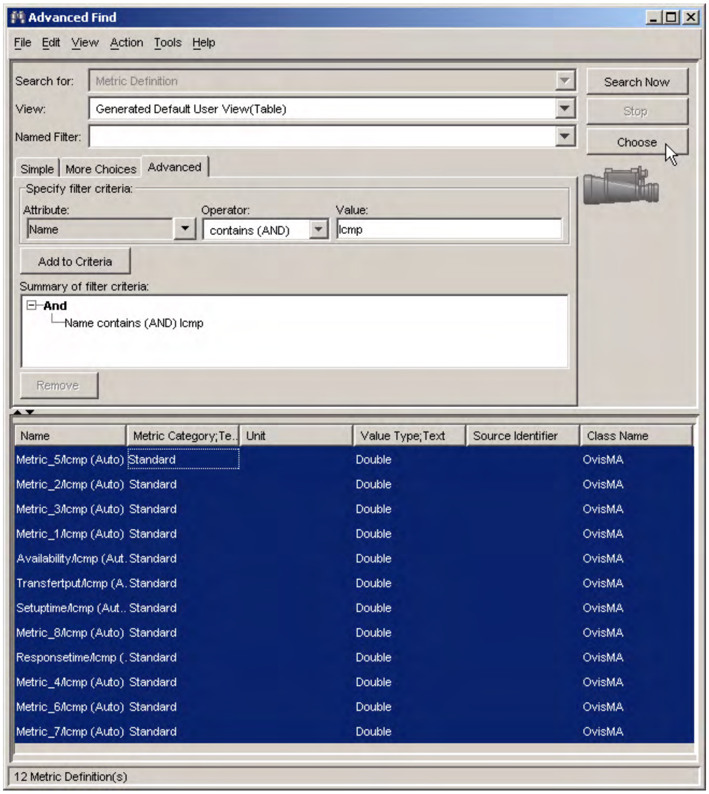
Metric Adapt... * OvisMA

Metric Definitions

| Name | Metric Categor. | Unit | Value Type;Te. | Source Identifi. | Class Name |
|---|---|---|---|---|---|

In the Advanced Find dialog box, the SLM administrator specifies a search criterion to search for all ICMP metric definitions, selects them in the search results panel, and then clicks the Choose button:

**Figure 7-9** **Choosing the ICMP Metric Definitions**



Search for: Metric Definition
View: Generated Default User View(Table)
Named Filter:

Specify filter criteria:
Attribute: Name
Operator: contains (AND)
Value: Icmp

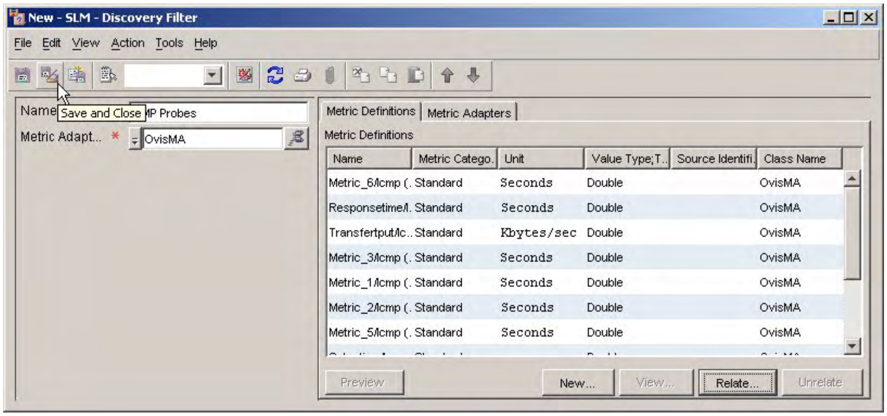
Summary of filter criteria:
And
Name contains (AND) Icmp

| Name | Metric Category;Te.. | Unit | Value Type;Text | Source Identifier | Class Name |
|---|---|---|---|---|---|
| Metric_5/Icmp (Auto) | Standard | | Double | | OvisMA |
| Metric_2/Icmp (Auto) | Standard | | Double | | OvisMA |
| Metric_3/Icmp (Auto) | Standard | | Double | | OvisMA |
| Metric_1/Icmp (Auto) | Standard | | Double | | OvisMA |
| Availability/Icmp (Aut. | Standard | | Double | | OvisMA |
| Transfertput/Icmp (A. | Standard | | Double | | OvisMA |
| Setuptime/Icmp (Aut.. | Standard | | Double | | OvisMA |
| Metric_8/Icmp (Auto) | Standard | | Double | | OvisMA |
| Responsetime/Icmp (. | Standard | | Double | | OvisMA |
| Metric_4/Icmp (Auto) | Standard | | Double | | OvisMA |
| Metric_6/Icmp (Auto) | Standard | | Double | | OvisMA |
| Metric_7/Icmp (Auto) | Standard | | Double | | OvisMA |

12 Metric Definition(s)

The selected metric definitions are now listed in the discovery filter:

**Figure 7-10** **The Selected Metric Definitions Related to the Discovery Filter**



Name: MP Probes

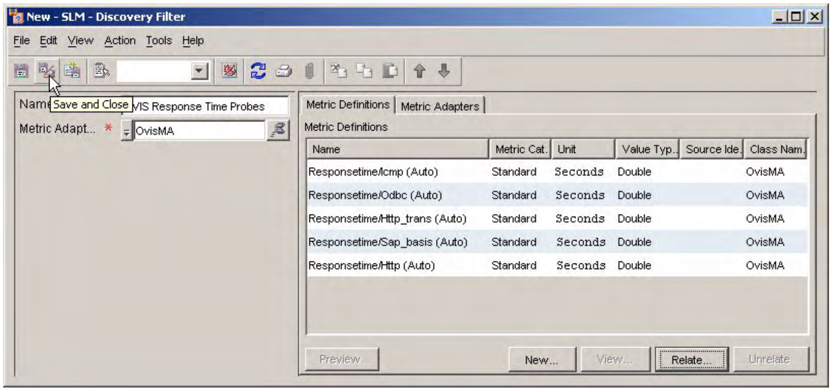
Metric Adapt... *: OvisMA

Metric Definitions

| Name | Metric Catego. | Unit | Value Type;T.. | Source Identifi. | Class Name |
|---|---|---|---|---|---|
| Metric_6/Icmp (. | Standard | Seconds | Double |  | OvisMA |
| Responsetime/I. | Standard | Seconds | Double |  | OvisMA |
| Transfertput/Ic.. | Standard | Kbytes/sec | Double |  | OvisMA |
| Metric_3/Icmp (. | Standard | Seconds | Double |  | OvisMA |
| Metric_1/Icmp (. | Standard | Seconds | Double |  | OvisMA |
| Metric_2/Icmp (. | Standard | Seconds | Double |  | OvisMA |
| Metric_5/Icmp (. | Standard | Seconds | Double |  | OvisMA |

In the same way, the SLM administrator creates another discovery filter that includes all OVIS metric definitions that measure response time:

**Figure 7-11** **The Discovery Filter for Response Time Metrics**



Name: VIS Response Time Probes

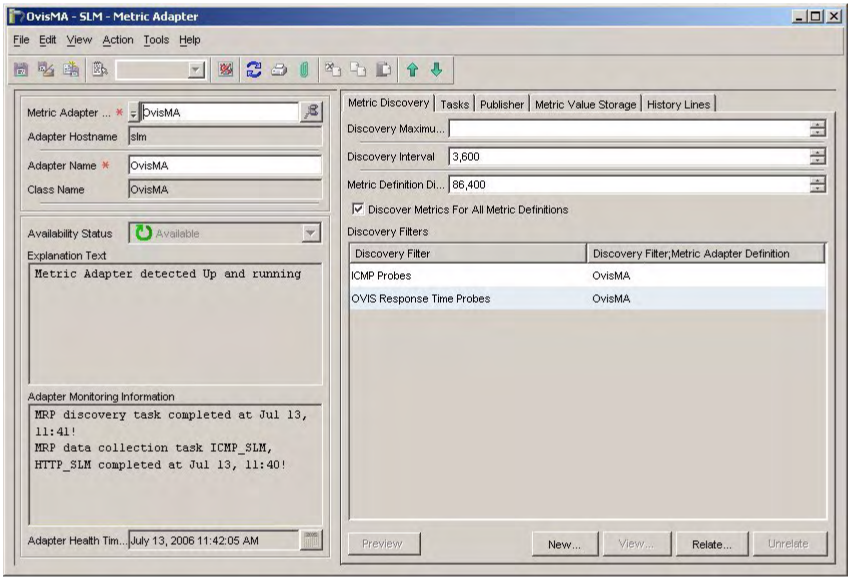
Metric Adapt... *: OvisMA

Metric Definitions

| Name | Metric Cat. | Unit | Value Typ. | Source Ide. | Class Nam. |
|---|---|---|---|---|---|
| Responsetime/Icmp (Auto) | Standard | Seconds | Double |  | OvisMA |
| Responsetime/Odbc (Auto) | Standard | Seconds | Double |  | OvisMA |
| Responsetime/Http_trans (Auto) | Standard | Seconds | Double |  | OvisMA |
| Responsetime/Sap_basis (Auto) | Standard | Seconds | Double |  | OvisMA |
| Responsetime/Http (Auto) | Standard | Seconds | Double |  | OvisMA |

By relating an additional discovery filter to the metric adapter (see Figure 7-12), the SLM administrator increases the scope of the discovery process. All metrics related to any metric definition included in any discovery filter will be discovered when metric discovery is triggered.

**Figure 7-12** **The Metric Adapter with Both Discovery Filters Added**



Metric Adapter ... * OvisMA
Adapter Hostname slm
Adapter Name * OvisMA
Class Name OvisMA

Availability Status Available

Explanation Text

```
Metric Adapter detected Up and running
```

Adapter Monitoring Information

```
MRP discovery task completed at Jul 13,
11:41!
MRP data collection task ICMP_SLM,
HTTP_SLM completed at Jul 13, 11:40!
```

Adapter Health Tim... July 13, 2006 11:42:05 AM

Discovery Maximu...
Discovery Interval 3,600
Metric Definition Di... 86,400
☑ Discover Metrics For All Metric Definitions

Discovery Filters

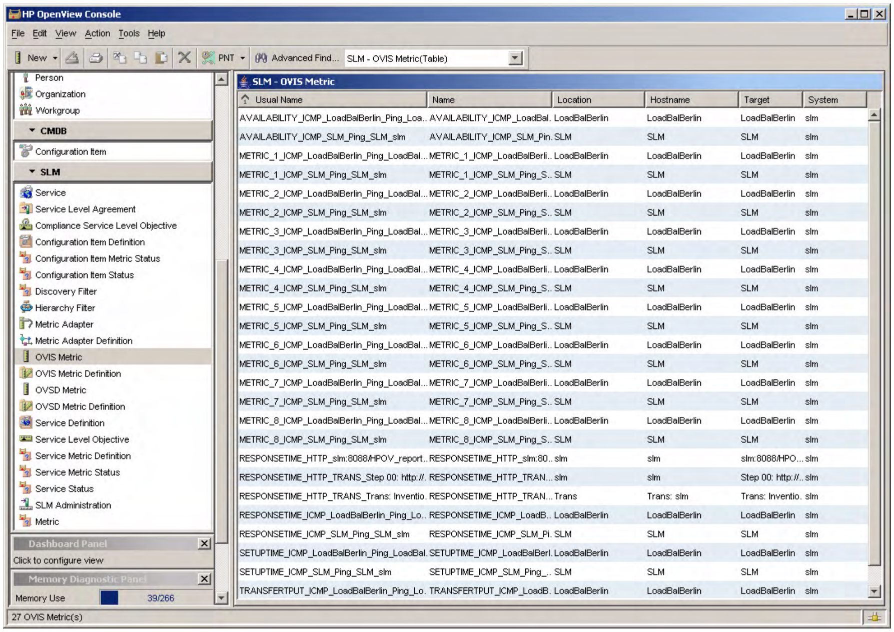
| Discovery Filter | Discovery Filter;Metric Adapter Definition |
|---|---|
| ICMP Probes | OvisMA |
| OVIS Response Time Probes | OvisMA |

The SLM administrator now runs the following command from a command prompt to restart the OVIS metric adapter. This triggers the metric discovery process:

```
ovc -restart ovisma
```

The SLM administrator navigates to the OVIS Metric workspace to confirm that the metric discovery process has created objects representing the specific sources of metric data values:

**Figure 7-13** **Discovered OVIS Metrics**



| Usual Name | Name | Location | Hostname | Target | System |
|---|---|---|---|---|---|
| AVAILABILITY_ICMP_LoadBalBerlin_Ping_Loa.. | AVAILABILITY_ICMP_LoadBal. | LoadBalBerlin | LoadBalBerlin | LoadBalBerlin | slm |
| AVAILABILITY_ICMP_SLM_Ping_SLM_slm | AVAILABILITY_ICMP_SLM_Pin. | SLM | SLM | SLM | slm |
| METRIC_1_ICMP_LoadBalBerlin_Ping_LoadBal... | METRIC_1_ICMP_LoadBalBerli.. | LoadBalBerlin | LoadBalBerlin | LoadBalBerlin | slm |
| METRIC_1_ICMP_SLM_Ping_SLM_slm | METRIC_1_ICMP_SLM_Ping_S.. | SLM | SLM | SLM | slm |
| METRIC_2_ICMP_LoadBalBerlin_Ping_LoadBal... | METRIC_2_ICMP_LoadBalBerli.. | LoadBalBerlin | LoadBalBerlin | LoadBalBerlin | slm |
| METRIC_2_ICMP_SLM_Ping_SLM_slm | METRIC_2_ICMP_SLM_Ping_S.. | SLM | SLM | SLM | slm |
| METRIC_3_ICMP_LoadBalBerlin_Ping_LoadBal... | METRIC_3_ICMP_LoadBalBerli.. | LoadBalBerlin | LoadBalBerlin | LoadBalBerlin | slm |
| METRIC_3_ICMP_SLM_Ping_SLM_slm | METRIC_3_ICMP_SLM_Ping_S.. | SLM | SLM | SLM | slm |
| METRIC_4_ICMP_LoadBalBerlin_Ping_LoadBal... | METRIC_4_ICMP_LoadBalBerli.. | LoadBalBerlin | LoadBalBerlin | LoadBalBerlin | slm |
| METRIC_4_ICMP_SLM_Ping_SLM_slm | METRIC_4_ICMP_SLM_Ping_S.. | SLM | SLM | SLM | slm |
| METRIC_5_ICMP_LoadBalBerlin_Ping_LoadBal... | METRIC_5_ICMP_LoadBalBerli.. | LoadBalBerlin | LoadBalBerlin | LoadBalBerlin | slm |
| METRIC_5_ICMP_SLM_Ping_SLM_slm | METRIC_5_ICMP_SLM_Ping_S.. | SLM | SLM | SLM | slm |
| METRIC_6_ICMP_LoadBalBerlin_Ping_LoadBal... | METRIC_6_ICMP_LoadBalBerli.. | LoadBalBerlin | LoadBalBerlin | LoadBalBerlin | slm |
| METRIC_6_ICMP_SLM_Ping_SLM_slm | METRIC_6_ICMP_SLM_Ping_S.. | SLM | SLM | SLM | slm |
| METRIC_7_ICMP_LoadBalBerlin_Ping_LoadBal... | METRIC_7_ICMP_LoadBalBerli.. | LoadBalBerlin | LoadBalBerlin | LoadBalBerlin | slm |
| METRIC_7_ICMP_SLM_Ping_SLM_slm | METRIC_7_ICMP_SLM_Ping_S.. | SLM | SLM | SLM | slm |
| METRIC_8_ICMP_LoadBalBerlin_Ping_LoadBal... | METRIC_8_ICMP_LoadBalBerli.. | LoadBalBerlin | LoadBalBerlin | LoadBalBerlin | slm |
| METRIC_8_ICMP_SLM_Ping_SLM_slm | METRIC_8_ICMP_SLM_Ping_S.. | SLM | SLM | SLM | slm |
| RESPONSETIME_HTTP_slm:8088/HPOV_report.. | RESPONSETIME_HTTP_slm:80.. | slm | slm | slm:8088/HPO... | slm |
| RESPONSETIME_HTTP_TRANS_Step 00: http://. | RESPONSETIME_HTTP_TRAN... | slm | slm | Step 00: http://.. | slm |
| RESPONSETIME_HTTP_TRANS_Trans: Inventio. | RESPONSETIME_HTTP_TRAN... | Trans | Trans: slm | Trans: Inventio. | slm |
| RESPONSETIME_ICMP_LoadBalBerlin_Ping_Lo.. | RESPONSETIME_ICMP_LoadB.. | LoadBalBerlin | LoadBalBerlin | LoadBalBerlin | slm |
| RESPONSETIME_ICMP_SLM_Ping_SLM_slm | RESPONSETIME_ICMP_SLM_Pi. | SLM | SLM | SLM | slm |
| SETUPTIME_ICMP_LoadBalBerlin_Ping_LoadBal. | SETUPTIME_ICMP_LoadBalBerl. | LoadBalBerlin | LoadBalBerlin | LoadBalBerlin | slm |
| SETUPTIME_ICMP_SLM_Ping_SLM_slm | SETUPTIME_ICMP_SLM_Ping_.. | SLM | SLM | SLM | slm |
| TRANSFERTPUT_ICMP_LoadBalBerlin_Ping_Lo. | TRANSFERTPUT_ICMP_LoadB. | LoadBalBerlin | LoadBalBerlin | LoadBalBerlin | slm |

27 OVIS Metric(s)

Notice that fewer metrics were discovered than metric definitions. The difference is due to the application of a metric discovery filter.

# Scenario 2: Designing a Service Definition

This scenario demonstrates the creation of a service definition suitable for use in Service Level Manager. “Scenario 3: Creating a Monitored Service based on a Service Definition” on page 145 demonstrates the creation of a monitored service based on this service definition.

## Building the Service Definition Hierarchy

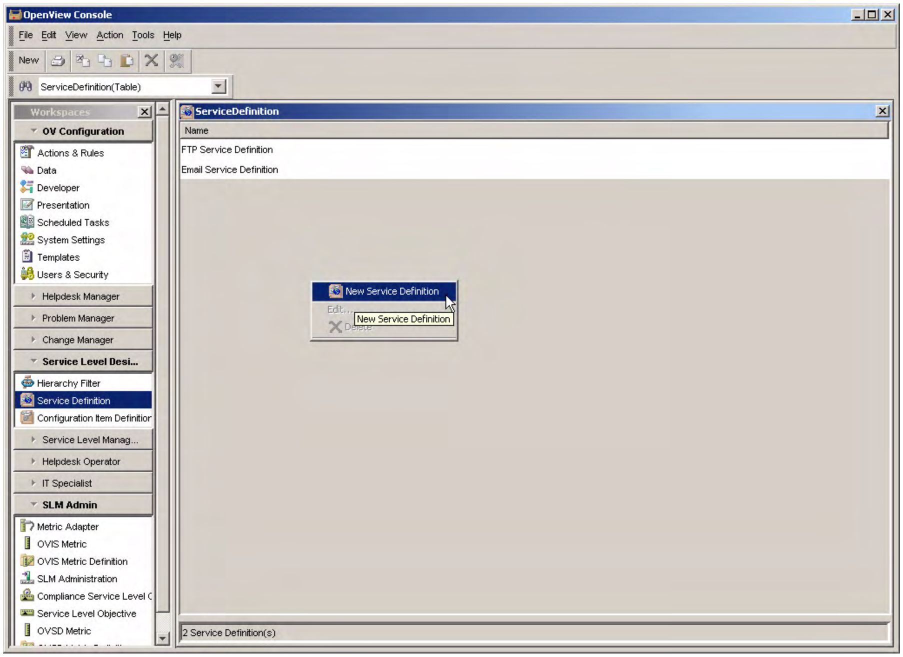
The service designer starts the process by considering the dependencies in the service definition hierarchy. The service designer considers the following questions:

- Which of the service components need to be monitored for compliance and availability?
- Does the service depend on subordinate services provided by other departments or organizations?
- How do all the components depend on each other?

In this scenario, the service designer intends to design a service definition for a web service with a load-balanced web server front end, a database behind it, and a web server farm comprising at least one web server. In this example, the database component is a service provided by a different department within the same organization.

The service designer accesses the Service Definition workspace, right-clicks in the view, and chooses the command to create a new service definition:

**Figure 7-14** **Creating the Service Definition**

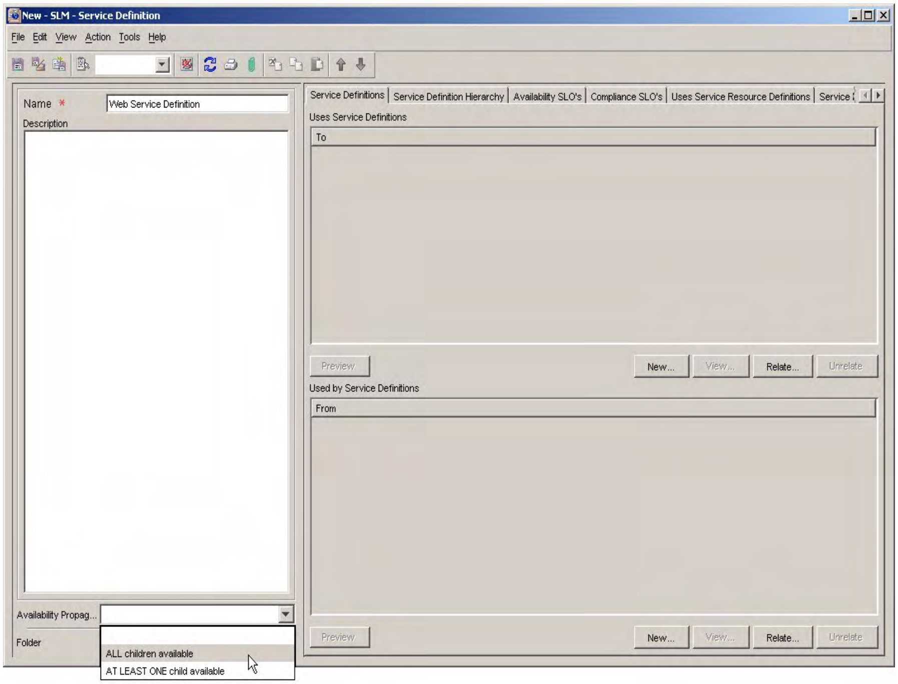


| Name |
|---|
| FTP Service Definition |
| Email Service Definition |

2 Service Definition(s)

The new service definition opens in a form. Although basic details such as a description can be entered in the form, it is sufficient at this stage to specify the name. The service designer also selects the availability propagation rule that requires all used components to be available:

**Figure 7-15 Basic Service Definition Details**



Name * Web Service Definition

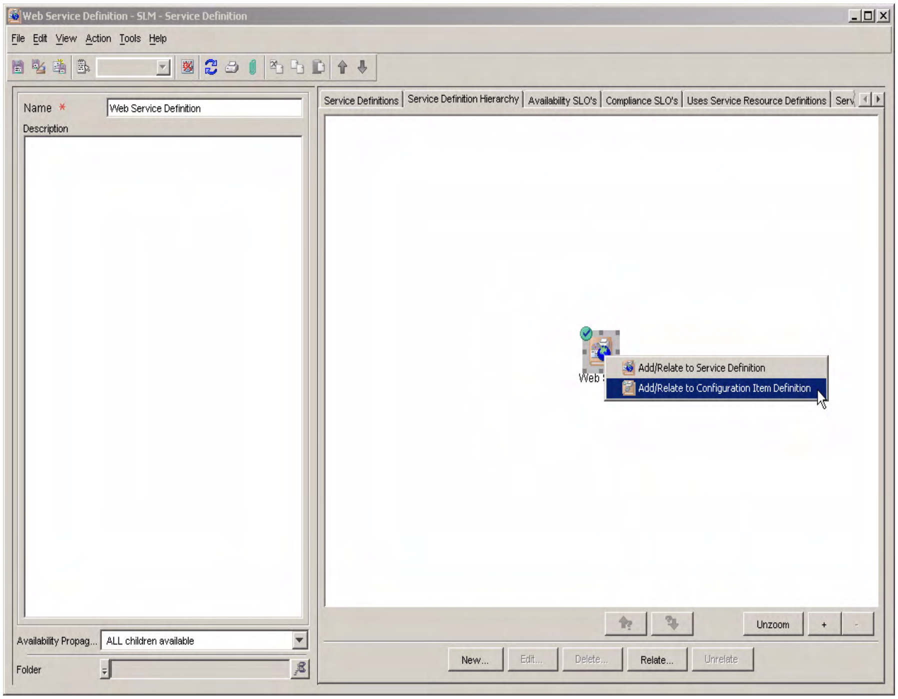
Availability Propag...

ALL children available

AT LEAST ONE child available

When the service designer saves the new service definition and switches to the Service Definition Hierarchy tab page, the current service definition hierarchy is displayed. At this stage, the hierarchy consists of the service definition itself. The service designer right-clicks it and selects the command to add a configuration item definition representing the load balancer:

**Figure 7-16 Initial Service Definition Hierarchy**

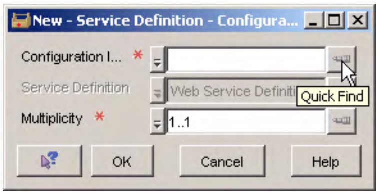

Web Service Definition - SLM - Service Definition
File
Edit
View
Action
Tools
Help
Description
Service Definitions
Service Definition Hierarchy
Availability SLO's
Compliance SLO's
Uses Service Resource Definitions
Serv
Web
Add/Relate to Service Definition
Add/Relate to Configuration Item Definition
Unzoom
+
-
Folder
New...
Edit...
Delete...
Relate...
Unrelate

Name * Web Service Definition

Availability Propag... ALL children available

The following dialog box appears:

**Figure 7-17 The Configuration Item Definition Relation Dialog Box**



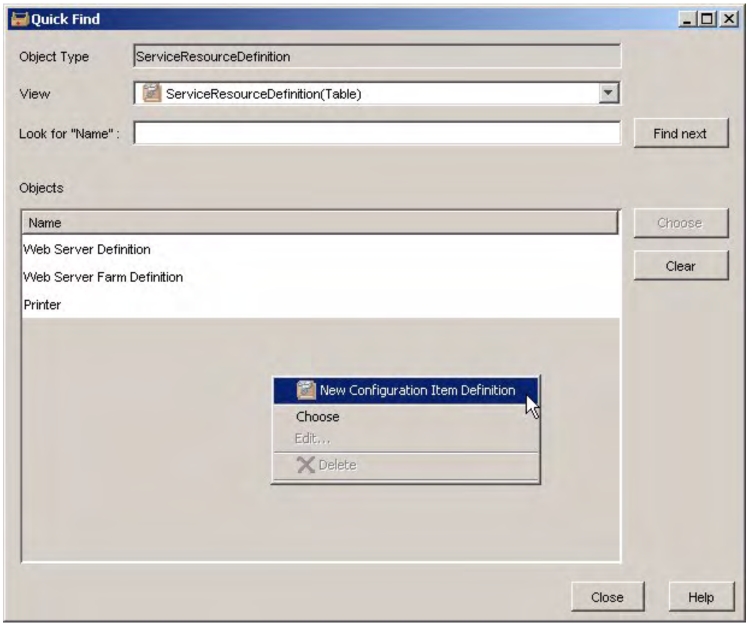
Configuration I... *

Service Definition Web Service Definiti

Multiplicity * 1..1

The service designer clicks the Quick Find button next to the Configuration Item Definition field. The Quick Find dialog box appears displaying a list of available configuration item definitions. The load balancer definition has not been created, so the service designer right-clicks in the Objects list and selects the command to create a new configuration item definition:

**Figure 7-18** **Creating the Load Balancer**



Object Type: ServiceResourceDefinition

View: ServiceResourceDefinition(Table)

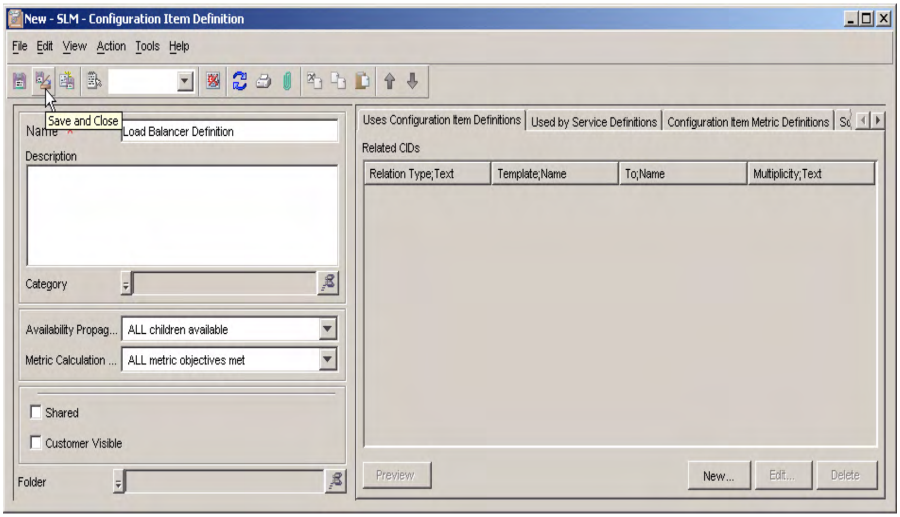
Look for "Name" :

Objects

| Name |
|---|
| Web Server Definition |
| Web Server Farm Definition |
| Printer |

The service designer provides basic details of the load balancer definition in the form, then saves the definition:

**Figure 7-19 Specifying Basic Load Balancer Details**



New - SLM - Configuration Item Definition

Name: Load Balancer Definition

Description

Category

Availability Propag...: ALL children available

Metric Calculation ...: ALL metric objectives met

☐ Shared

☐ Customer Visible

Folder

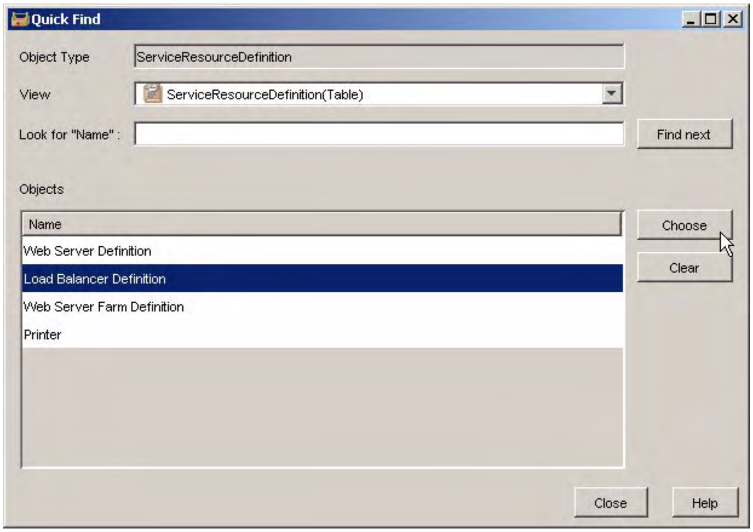
Related CIDs

| Relation Type;Text | Template;Name | To;Name | Multiplicity;Text |
|---|---|---|---|

File
Edit
View
Action
Tools
Help
Save and Close
Uses Configuration Item Definitions
Used by Service Definitions
Configuration Item Metric Definitions
Sc
Preview
New...
Edit...
Delete

In the Quick Find dialog box, the service designer can now choose the load balancer definition in the list:

**Figure 7-20 Selecting the Load Balancer**



Quick Find

Object Type: ServiceResourceDefinition

View: ServiceResourceDefinition(Table)

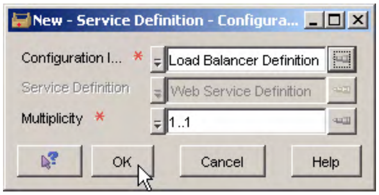
Look for "Name" :

Objects

| Name |
|---|
| Web Server Definition |
| Load Balancer Definition |
| Web Server Farm Definition |
| Printer |

The service designer confirms the configuration item definition relation settings:

**Figure 7-21 Confirming the Definition Relation Settings**



New - Service Definition - Configura...

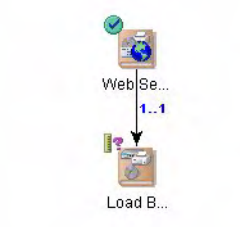
Configuration I... * Load Balancer Definition

Service Definition Web Service Definition

Multiplicity * 1..1

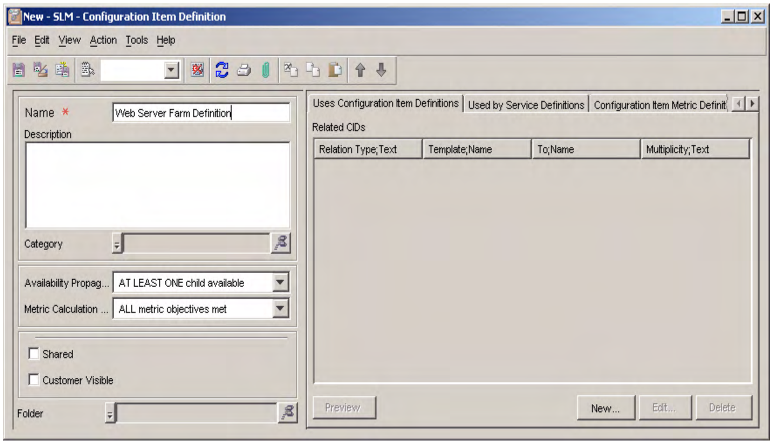
The load balancer configuration item definition is automatically added to the service definition hierarchy:

**Figure 7-22 The Service Definition Hierarchy Including the Load Balancer**



The configuration item definition representing a web server farm is added in the same way. The availability propagation rule selected for the web server farm requires at least one used component (in this case, a web server) to be available:

**Figure 7-23 The Web Server Farm Configuration Item Definition**



New - SLM - Configuration Item Definition

Name * Web Server Farm Definition

Description

Category

Availability Propag... AT LEAST ONE child available

Metric Calculation ... ALL metric objectives met

□ Shared

□ Customer Visible

Folder

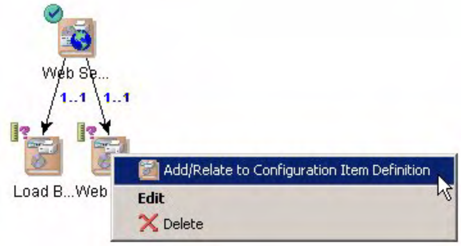
Uses Configuration Item Definitions | Used by Service Definitions | Configuration Item Metric Definit

Related CIDs

| Relation Type;Text | Template;Name | To;Name | Multiplicity;Text |
|---|---|---|---|

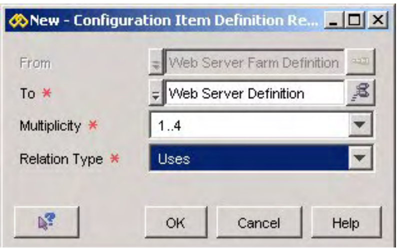
The service designer now issues the command to relate a web server to the web server farm:

**Figure 7-24** **The Hierarchy Including the Web Server Farm**



In the dialog box that appears, the service designer selects a multiplicity range of 1...*. This indicates that service hierarchies based on this service definition must include at least one web server configuration item, but can include an unlimited number. The required configuration item definition is selected in the To field. The service designer chooses a relation type of Uses:

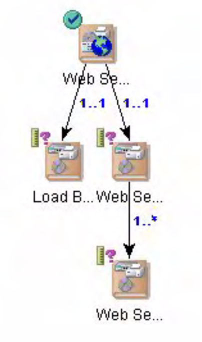
**Figure 7-25** **Adding the Web Server as a Used Configuration Item Definition**



From: Web Server Farm Definition
To *: Web Server Definition
Multiplicity *: 1..4
Relation Type *: Uses

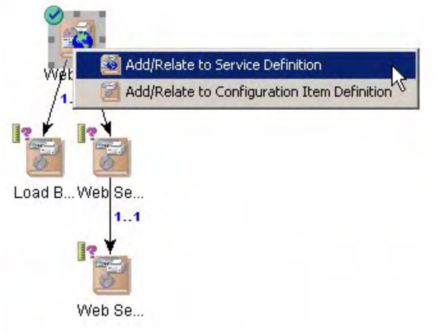
The following figure displays the service definition hierarchy created so far:

**Figure 7-26** **The Service Definition Hierarchy With the Web Server Added**



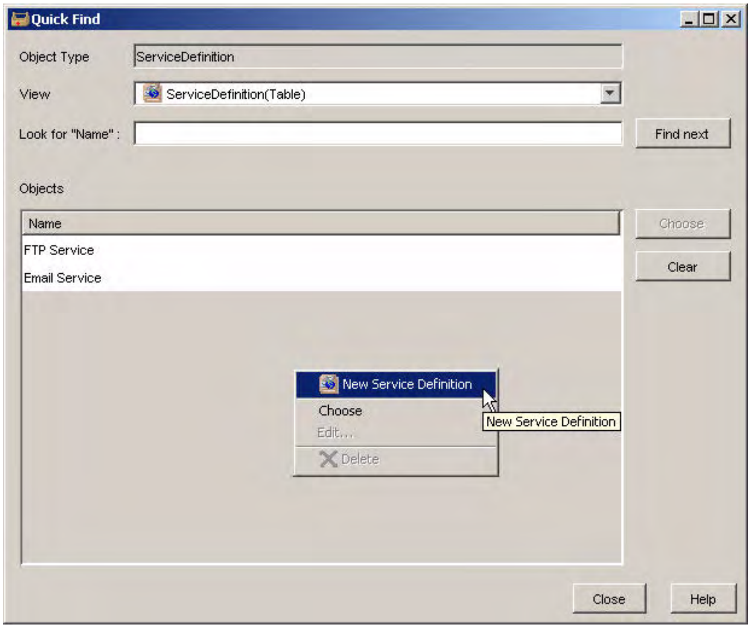
Finally, the service designer issues the command to add a used service definition to represent the database service to be provided by a different department:

**Figure 7-27** **Adding the Used Service Definition**


Add/Relate to Service Definition
Add/Relate to Configuration Item Definition
Load B...
Web Se...
1..1
Web Se...

The used service definition doesn't exist yet, so the service designer right-clicks in the Quick Find dialog box and selects the command to create it:

**Figure 7-28** **Selecting the Used Service Definition**



Quick Find

Object Type: ServiceDefinition

View: ServiceDefinition(Table)

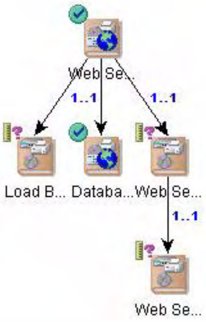
Look for "Name" :

Objects

| Name |
|---|
| FTP Service |
| Email Service |

Once the service definition has been saved with its basic details specified, the service designer can select it in the Quick Find dialog box. The completed service definition hierarchy is displayed in the following figure:

**Figure 7-29** **The Completed Service Definition Hierarchy**

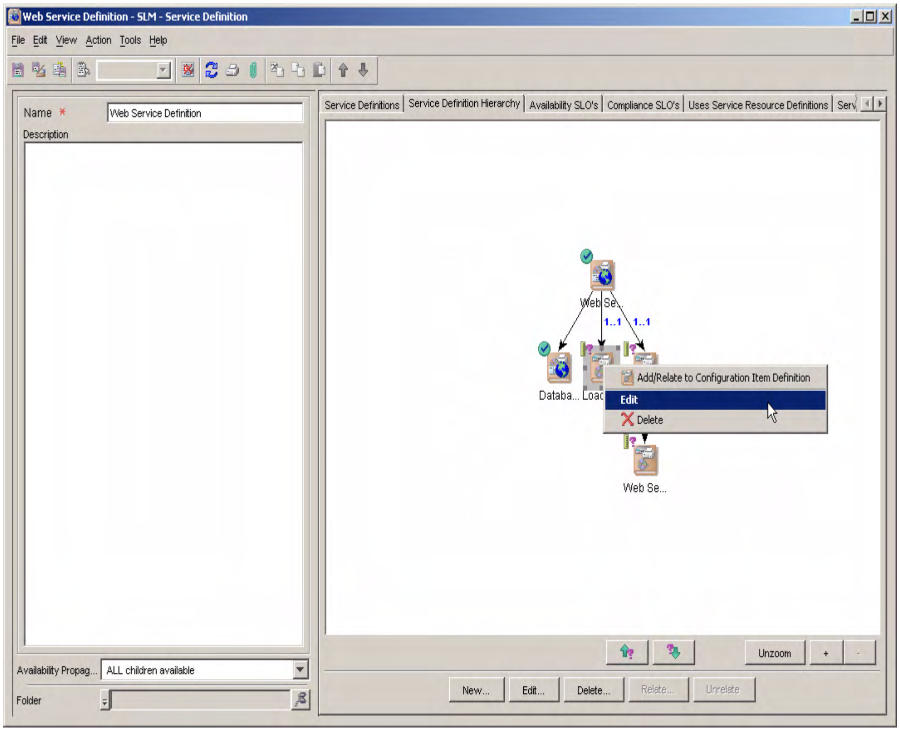


## Adding Metric Definitions

The service designer now considers how objects based on the definitions in the hierarchy should be measured. The service designer can use any of the metric definitions that are available as a result of the metric discovery process. In addition, the service designer can use any manually created OVSD metric definitions, which measure various aspects of service performance including MTBF (mean time between failure).

Load balancers are to be measured by the OVIS ICMP Availability metric definition. The service designer clicks the load balancer configuration item definition in the hierarchy and selects the command to edit it:

**Figure 7-30** **Editing the Load Balancer**



Name * Web Service Definition

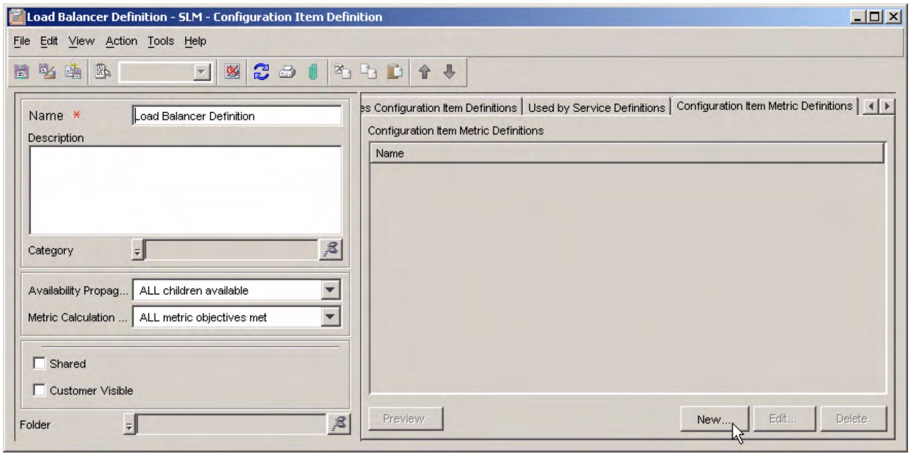
Description

Availability Propag... ALL children available

Folder

In the configuration item definition form, the service designer navigates to the tab page that lists the metric definitions, and clicks the New button to add a new configuration item metric definition:

**Figure 7-31** **Displaying the List of Configuration Item Metric Definitions**



Load Balancer Definition - SLM - Configuration Item Definition

Name * Load Balancer Definition

Availability Propag... ALL children available

Metric Calculation ... ALL metric objectives met

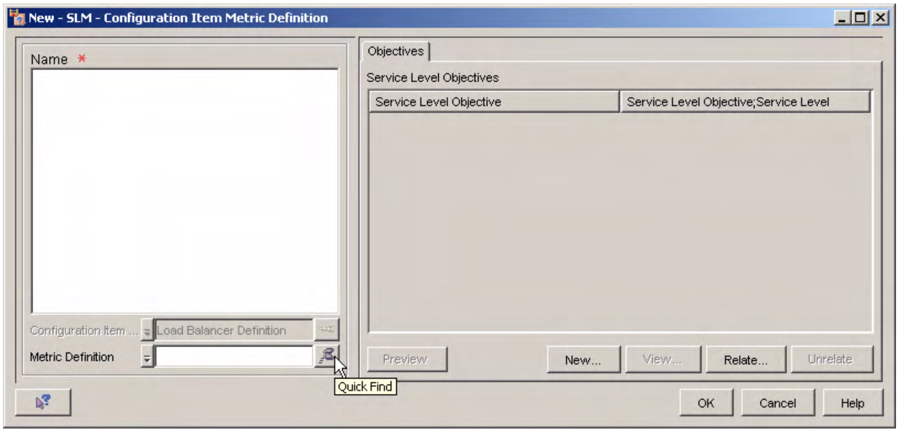
□ Shared

□ Customer Visible

File
Edit
View
Action
Tools
Help
Description
Category
Folder
es Configuration Item Definitions
Used by Service Definitions
Configuration Item Metric Definitions
Configuration Item Metric Definitions
Name
Preview
New...
Edit...
Delete

In the Configuration Item Metric Definition form, the service designer clicks the Quick Find button next to the Metric Definition field:

**Figure 7-32** **Opening the Dialog Box to Select a Metric Definition**

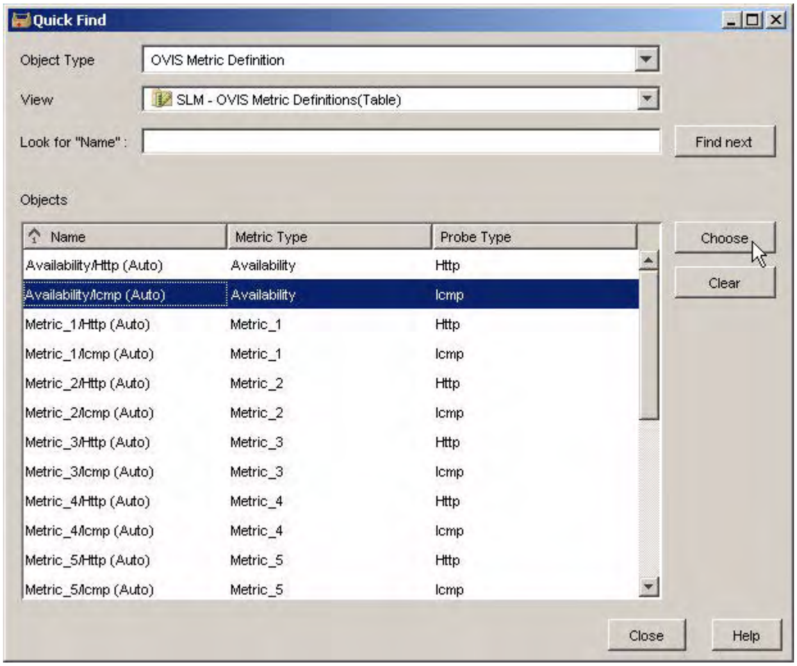


New - SLM - Configuration Item Metric Definition

Configuration Item ... Load Balancer Definition

The Quick Find dialog box opens. In the Object Type field, the service designer selects the type of metric definition required, and then chooses the OVIS ICMP Availability metric definition from the list:

**Figure 7-33 Selecting the Availability/ICMP Metric Definition**



Object Type: OVIS Metric Definition

View: SLM - OVIS Metric Definitions(Table)

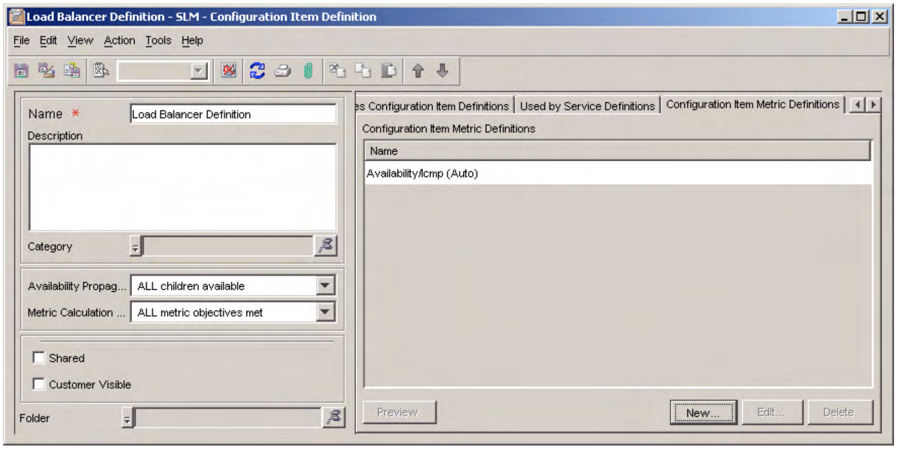
Look for "Name" :

Objects

| Name | Metric Type | Probe Type |
|---|---|---|
| Availability/Http (Auto) | Availability | Http |
| Availability/Icmp (Auto) | Availability | Icmp |
| Metric_1/Http (Auto) | Metric_1 | Http |
| Metric_1/Icmp (Auto) | Metric_1 | Icmp |
| Metric_2/Http (Auto) | Metric_2 | Http |
| Metric_2/Icmp (Auto) | Metric_2 | Icmp |
| Metric_3/Http (Auto) | Metric_3 | Http |
| Metric_3/Icmp (Auto) | Metric_3 | Icmp |
| Metric_4/Http (Auto) | Metric_4 | Http |
| Metric_4/Icmp (Auto) | Metric_4 | Icmp |
| Metric_5/Http (Auto) | Metric_5 | Http |
| Metric_5/Icmp (Auto) | Metric_5 | Icmp |

The configuration item metric definition is added to the list:

**Figure 7-34 The Availability/ICMP Metric Definition Added to the Form**


Load Balancer Definition - SLM - Configuration Item Definition
File
Edit
View
Action
Tools
Help
es Configuration Item Definitions
Used by Service Definitions
Configuration Item Metric Definitions
Preview
New...
Edit...
Delete

Name *: Load Balancer Definition

Description:

Category:

Availability Propag...: ALL children available

Metric Calculation ...: ALL metric objectives met

☐ Shared

☐ Customer Visible

Folder:

Configuration Item Metric Definitions

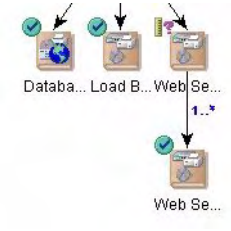
| Name |
|---|
| Availability/Icmp (Auto) |

The service designer repeats the same process to add an OVIS HTTP Availability metric definition to measure web servers.

The service designer chooses not to add a metric definition for the web server farm. Configuration items based on this definition are to have their availability calculated according to their availability propagation rule, which is set to "AT LEAST ONE child available" (see Figure 7-23). As long as one web server is available, the web server farm is also calculated as being available.

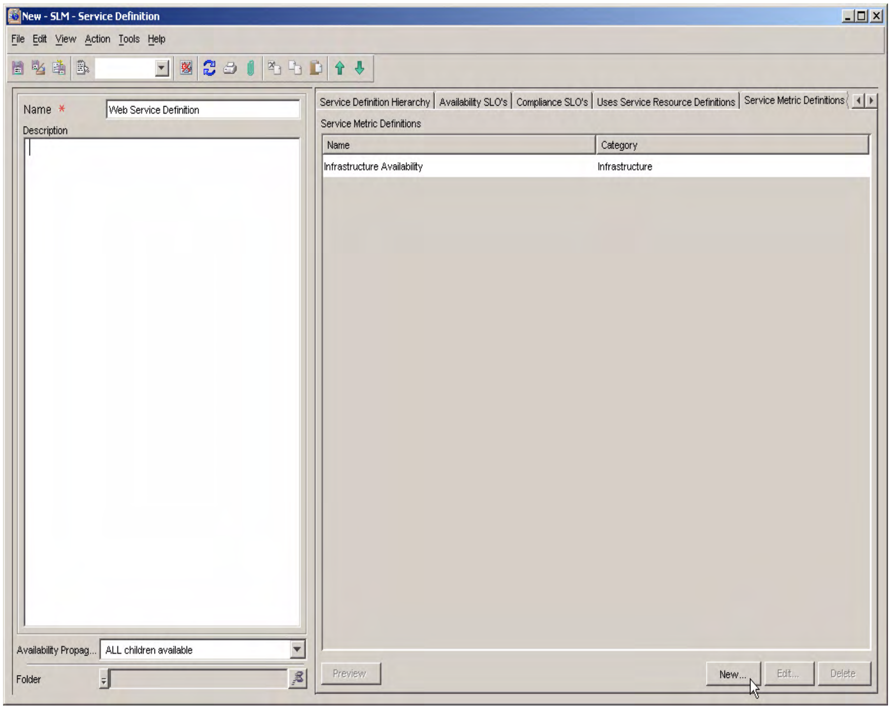
The visual aids in the service hierarchy confirm that all configuration item definitions apart from the web server farm have metric definitions added:

**Figure 7-35 The Definition Hierarchy with Metric Definitions Added**



The next step is to specify how the service definition itself should be measured. An infrastructure availability metric definition is automatically added as part of the service definition creation process:

Figure 7-36 **Displaying the List of Service Metric Definitions**


New - SLM - Service Definition
File Edit View Action Tools Help
Service Definition Hierarchy
Availability SLO's
Compliance SLO's
Uses Service Resource Definitions
Service Metric Definitions
Preview
New...
Edit...
Delete

Name * Web Service Definition

Description

Availability Propag... ALL children available

Folder

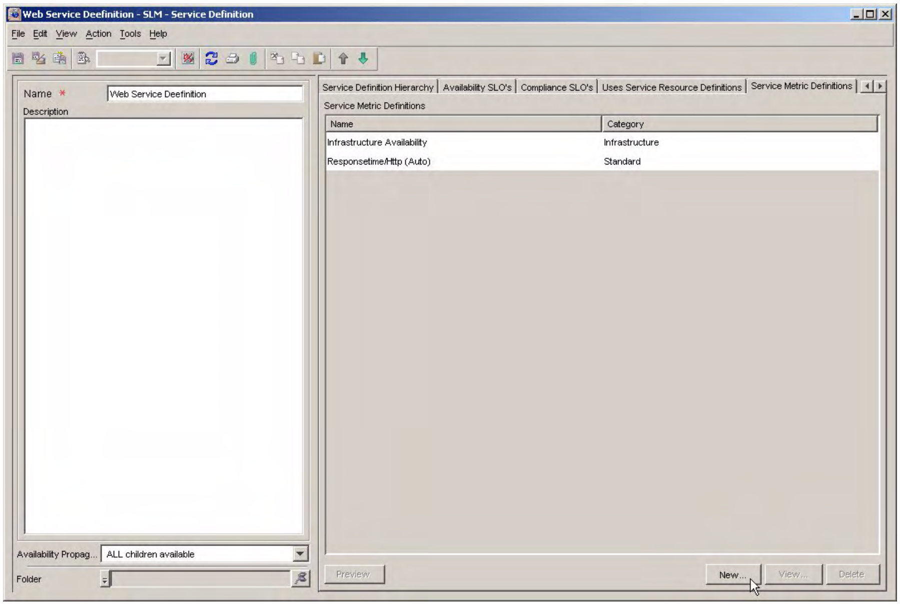
Service Metric Definitions

| Name | Category |
|---|---|
| Infrastructure Availability | Infrastructure |

The service designer decides additionally to use the OVIS HTTP Response Time metric definition, which is added in the same way as configuration item metric definitions.

The service designer also decides to use the Service Desk metric that measures the mean time between failure, and clicks the New button to open a new service metric definition in a form:

**Figure 7-37** **Adding an OVSD Service Metric Definition**



Web Service Deefinition - SLM - Service Definition
File Edit View Action Tools Help
Service Definition Hierarchy | Availability SLO's | Compliance SLO's | Uses Service Resource Definitions | Service Metric Definitions
Preview
New...
View...
Delete

Name * Web Service Deefinition

Description

Availability Propag... ALL children available

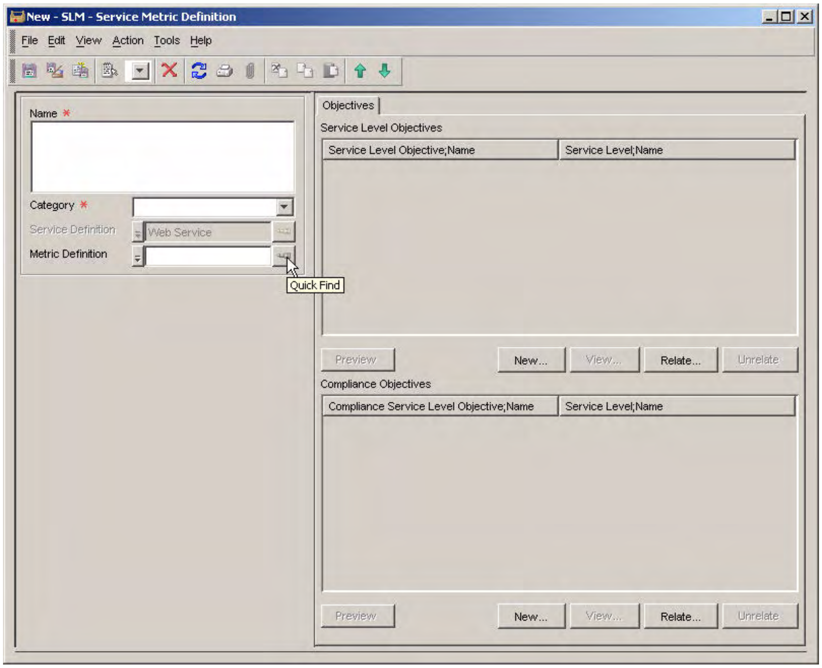
Folder

Service Metric Definitions

| Name | Category |
|---|---|
| Infrastructure Availability | Infrastructure |
| Responsetime/Http (Auto) | Standard |

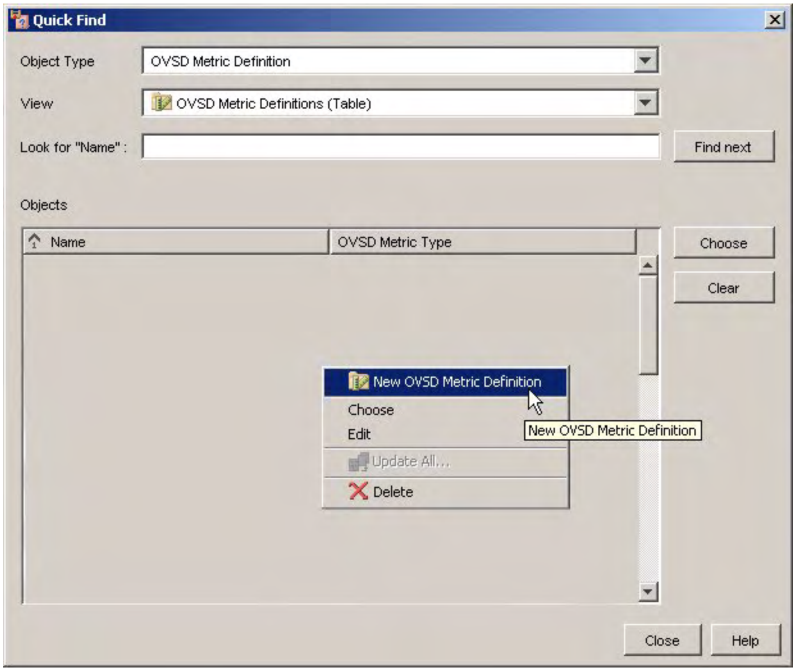
In the service metric definition form, the service designer clicks the Quick Find button next to the Metric Definition field:

**Figure 7-38 Opening the Dialog Box to Select a Metric Definition**



The Quick Find dialog box opens. In the Object Type field, the service designer selects the type of metric definition to be used. No Service Desk metric definitions are currently defined, so the service designer right-clicks in the Objects panel and selects the command to create a new one:

**Figure 7-39 Creating the MTBF Metric Definition**



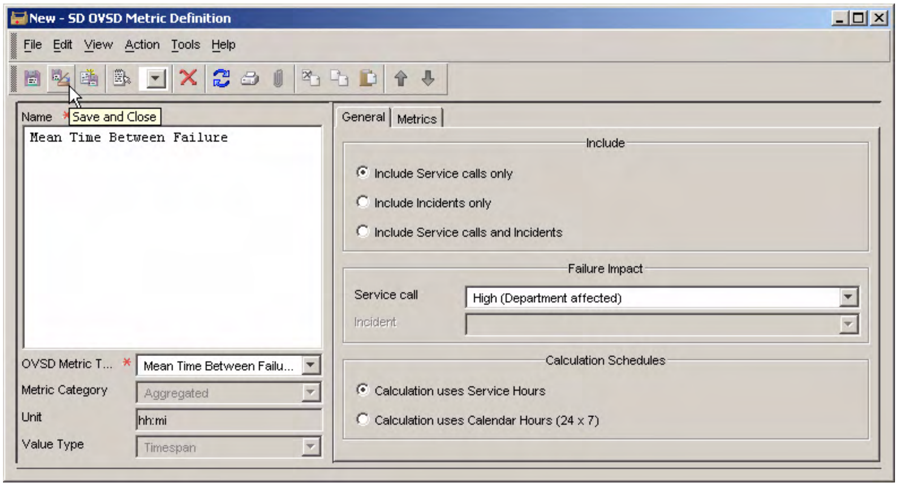
Object Type: OVSD Metric Definition

View: OVSD Metric Definitions (Table)

Look for "Name" :

The new OVSD metric definition opens in a form. The service designer provides a name, selects Mean Time Between Failure as the metric type, and other options that define the basis of the type of measurement:

**Figure 7-40 The OVSD Metric Definition Form**


New - SD OVSD Metric Definition
File Edit View Action Tools Help
Save and Close
General
Metrics

Name: Mean Time Between Failure

OVSD Metric T... *: Mean Time Between Failu...

Metric Category: Aggregated

Unit: hh:mi

Value Type: Timespan

Include

● Include Service calls only

○ Include Incidents only

○ Include Service calls and Incidents

Failure Impact

Service call: High (Department affected)

Incident:

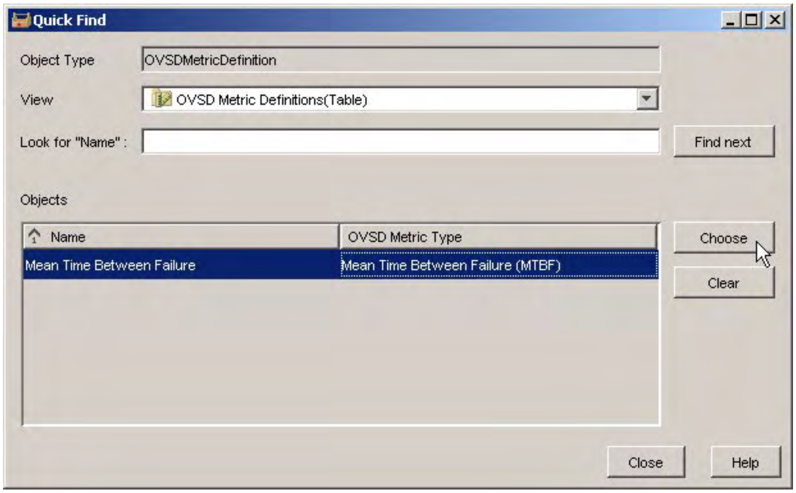
Calculation Schedules

● Calculation uses Service Hours

○ Calculation uses Calendar Hours (24 x 7)

The service designer saves the metric definition, closes the form, and can now choose it in the list displayed in the Quick Find dialog box:

**Figure 7-41 Selecting the MTBF Metric Definition**



Object Type: OVSDMetricDefinition

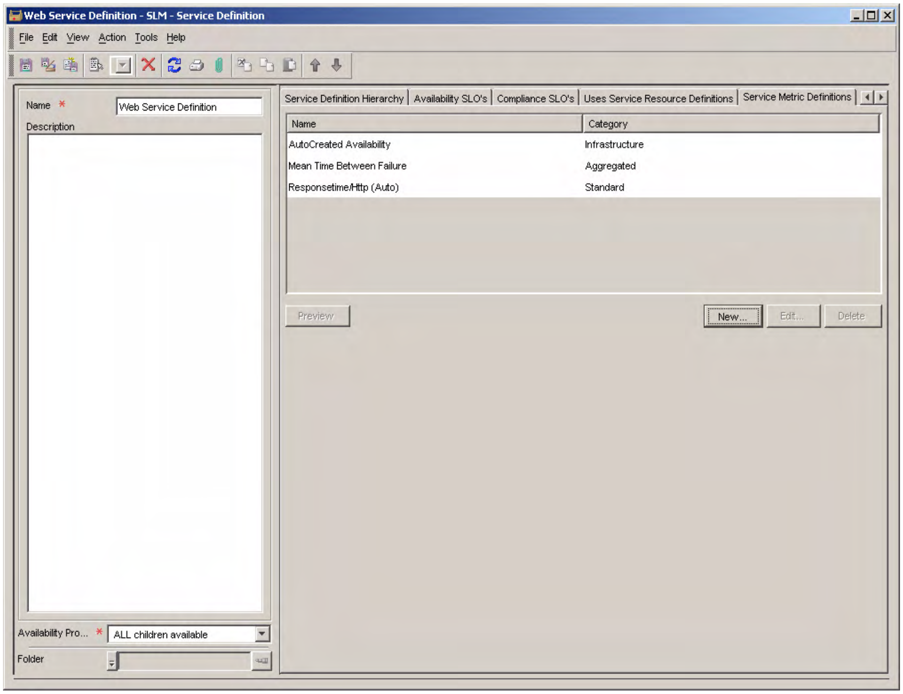
View: OVSD Metric Definitions(Table)

Look for "Name" :

| Name | OVSD Metric Type |
|---|---|
| Mean Time Between Failure | Mean Time Between Failure (MTBF) |

The selected service metric definition appears in the list. Figure 7-42 displays the three service metric definitions:

**Figure 7-42** **The OVSD Service Metric Definition Added to the List**



Web Service Definition - SLM - Service Definition
File Edit View Action Tools Help
Service Definition Hierarchy
Availability SLO's
Compliance SLO's
Uses Service Resource Definitions
Service Metric Definitions
Preview
New...
Edit...
Delete

Name * Web Service Definition

Description

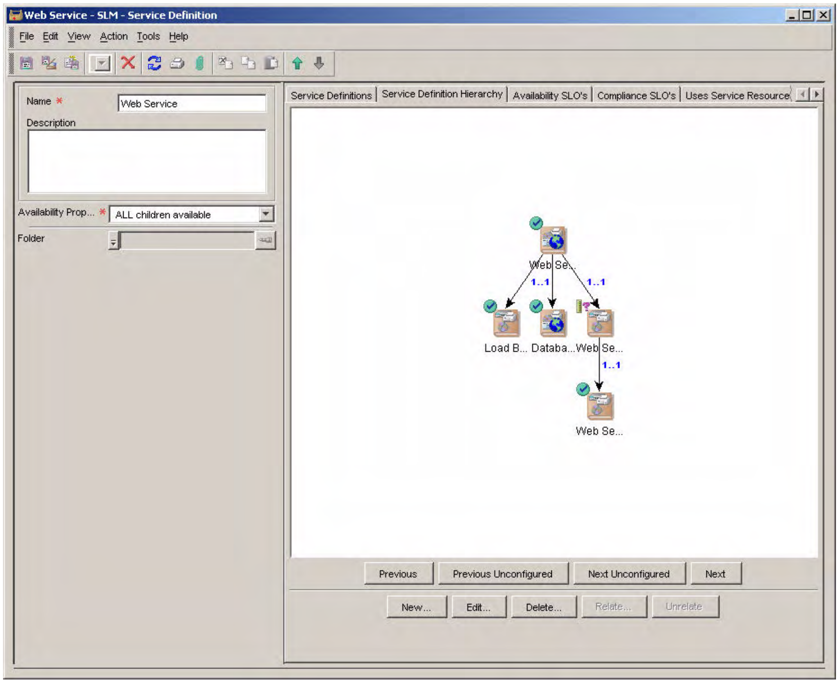
| Name | Category |
|---|---|
| AutoCreated Availability | Infrastructure |
| Mean Time Between Failure | Aggregated |
| Responsetime/Http (Auto) | Standard |

Availability Pro... * ALL children available

Folder

At this stage, the service definition hierarchy is built, and the metric definitions are specified throughout the hierarchy apart from the web server farm (see explanation in section “Adding Metric Definitions” on page 123).

**Figure 7-43** **The Hierarchy Complete with Metric Definitions**



Name * Web Service

Description

Availability Prop... * ALL children available

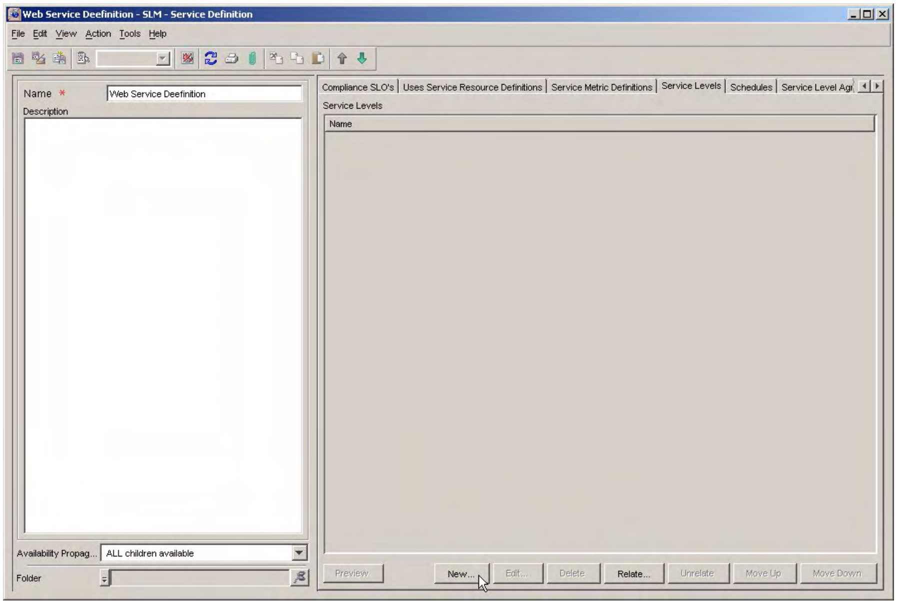
Folder

## Adding Service Levels

To cater for customers with a range of different service quality expectations, the service designer decides to offer the web service at three different service levels: Gold, Silver, and Bronze.

The service designer navigates to the tab page that lists the service levels related to the service definition, and clicks the New button:

Figure 7-44 **Adding a Service Level**


Web Service Deefinition - SLM - Service Definition

Name * Web Service Deefinition

Description

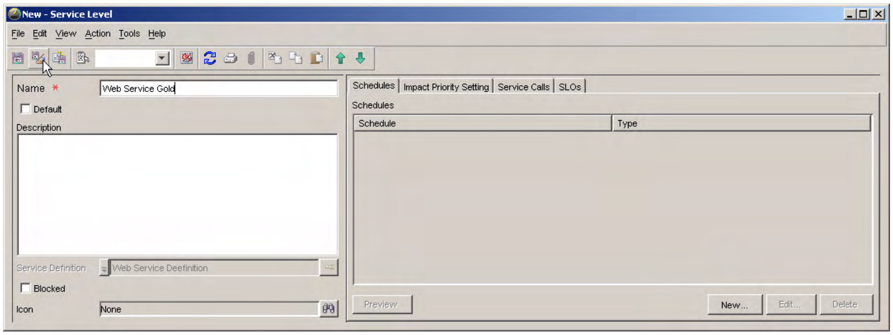
Availability Propag... ALL children available

Folder

Service Levels

In the Service Level form, the Service Definition field is automatically pre-filled with related service definition. The service designer provides a name for the service level and saves it:

Figure 7-45 **Providing Basic Service Level Details**


New - Service Level

Name * Web Service Gold

☐ Default

Description

Service Definition Web Service Deefinition

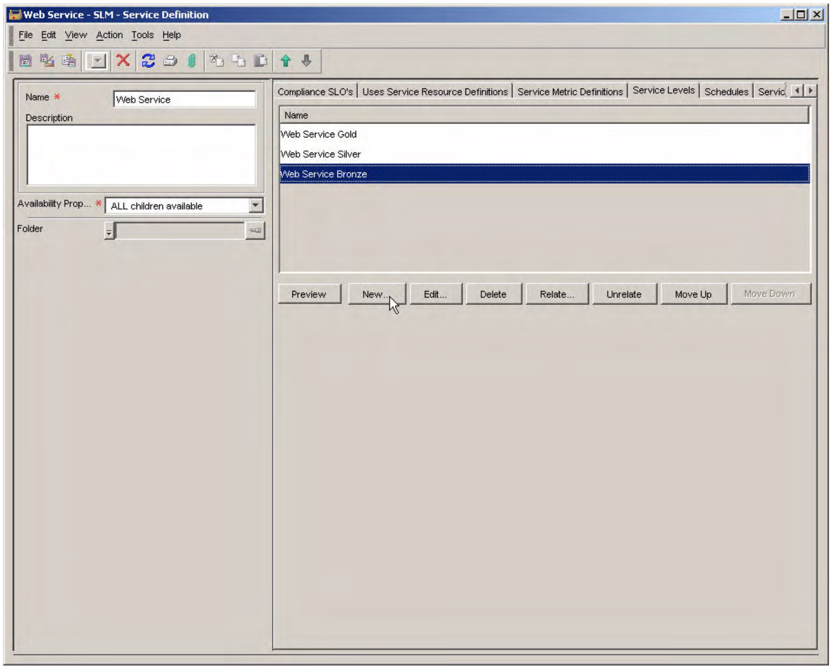
☐ Blocked

Icon None

Schedules

The service designer repeats the task for each service level in turn. Figure 7-46 shows the service levels that have been related to the service definition:

**Figure 7-46** **The Service Levels**


Web Service - SLM - Service Definition
File Edit View Action Tools Help
Compliance SLO's
Uses Service Resource Definitions
Service Metric Definitions
Service Levels
Schedules
Servic
Preview
New...
Edit...
Delete
Relate...
Unrelate
Move Up
Move Down

Name * Web Service

Description

Availability Prop... * ALL children available

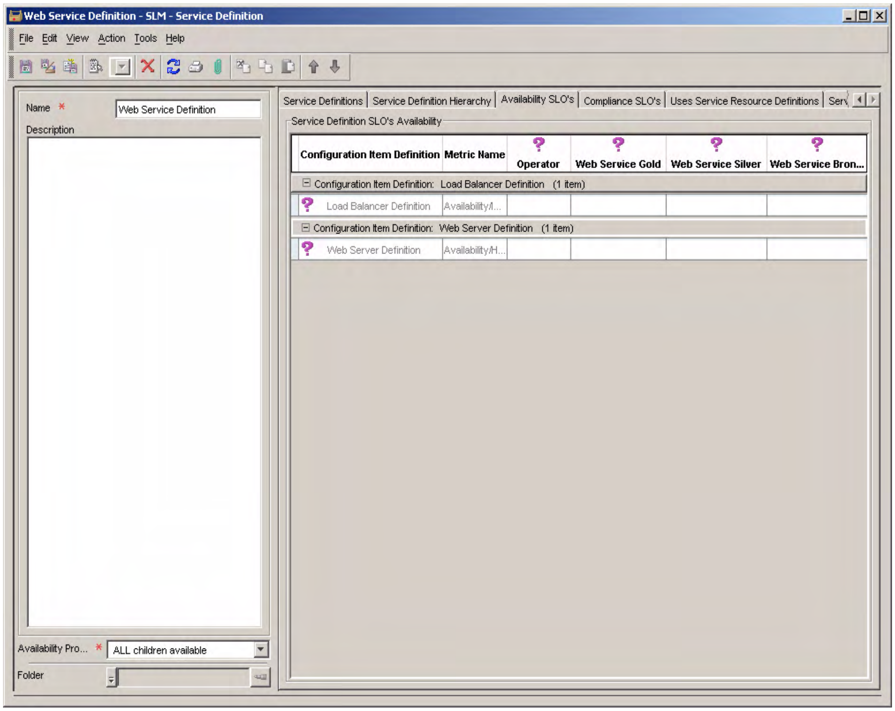
Folder

| Name |
|---|
| Web Service Gold |
| Web Service Silver |
| Web Service Bronze |

## Adding Availability Objectives

The service designer now decides which availability objectives to add. The Availability SLOs Table initially displays an empty table of objectives. The table includes a column for each service level that has been added (see “Adding Service Levels” on page 133), and a row for each configuration item metric definition (see “Adding Metric Definitions” on page 123). Metric definitions are grouped under their configuration item definition:

**Figure 7-47** **The Availability SLOs Table**


Web Service Definition - SLM - Service Definition
File
Edit
View
Action
Tools
Help
Service Definitions
Service Definition Hierarchy
Availability SLO's
Compliance SLO's
Uses Service Resource Definitions
Serv
Service Definition SLO's Availability

Name * Web Service Definition

Description

Availability Pro... * ALL children available

Folder

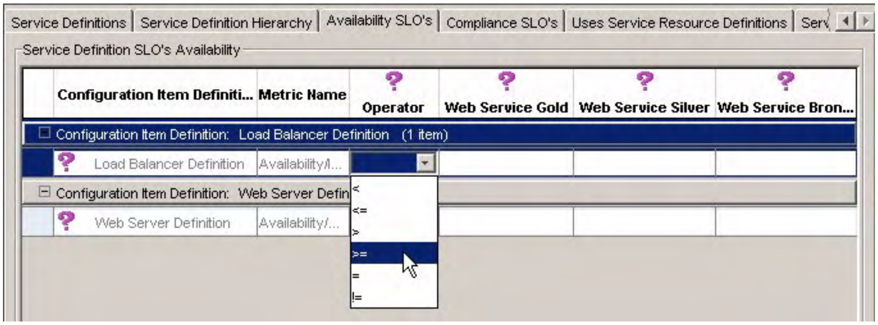
| Configuration Item Definition | Metric Name | Operator | Web Service Gold | Web Service Silver | Web Service Bron... |
|---|---|---|---|---|---|
| ⊟ Configuration Item Definition: Load Balancer Definition (1 item) | | | | | |
| Load Balancer Definition | Availability/I... | | | | |
| ⊟ Configuration Item Definition: Web Server Definition (1 item) | | | | | |
| Web Server Definition | Availability/H... | | | | |

Because the OVIS ICMP and HTTP availability metrics return values of 0 or 1, the service designer decides to specify an objective operator of “greater than or equal to” and a value of 1 for each metric definition. Selecting the “greater than” operator and a value of 0.5 would have the same effect:

- If a metric data value of 1 is received, the objective is achieved
- If a metric data value of 0 is received, the objective is not achieved

The service designer selects the required operator from the drop-down list in the Operator column:

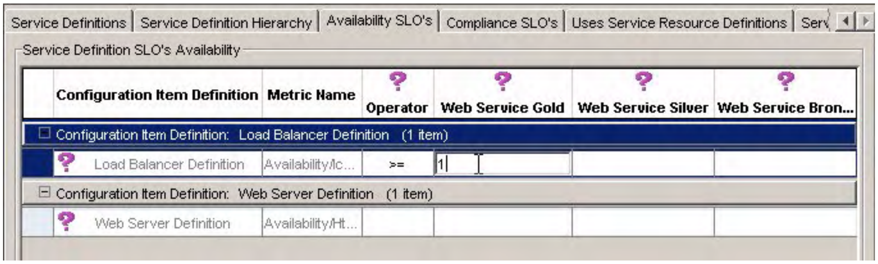
**Figure 7-48** **Selecting an Availability Objective Operator**


Service Definitions
Service Definition Hierarchy
Availability SLO's
Compliance SLO's
Uses Service Resource Definitions
Serv
Service Definition SLO's Availability
<
<=
>
>=
=
!=

| | Configuration Item Definiti... | Metric Name | ? Operator | ? Web Service Gold | ? Web Service Silver | ? Web Service Bron... |
|---|---|---|---|---|---|---|
| Configuration Item Definition: Load Balancer Definition (1 item) | | | | | | |
| ? | Load Balancer Definition | Availability/I... | | | | |
| Configuration Item Definition: Web Server Defin | | | | | | |
| ? | Web Server Definition | Availability/... | | | | |

The service designer types an objective value into each table cell:

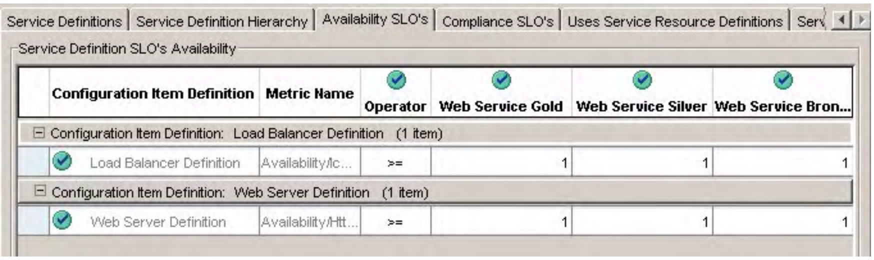
**Figure 7-49** **Specifying an Objective Value**


Service Definitions
Service Definition Hierarchy
Availability SLO's
Compliance SLO's
Uses Service Resource Definitions
Serv
Service Definition SLO's Availability

| | Configuration Item Definition | Metric Name | ? Operator | ? Web Service Gold | ? Web Service Silver | ? Web Service Bron... |
|---|---|---|---|---|---|---|
| Configuration Item Definition: Load Balancer Definition (1 item) | | | | | | |
| ? | Load Balancer Definition | Availability/Ic... | >= | 1 | | |
| Configuration Item Definition: Web Server Definition (1 item) | | | | | | |
| ? | Web Server Definition | Availability/Ht... | | | | |

The following figure shows the table with all the operators and values added:

**Figure 7-50** **The Completed Availability SLOs Table**


Service Definitions
Service Definition Hierarchy
Availability SLO's
Compliance SLO's
Uses Service Resource Definitions
Serv
Service Definition SLO's Availability

| | Configuration Item Definition | Metric Name | ✓ Operator | ✓ Web Service Gold | ✓ Web Service Silver | ✓ Web Service Bron... |
|---|---|---|---|---|---|---|
| Configuration Item Definition: Load Balancer Definition (1 item) | | | | | | |
| ✓ | Load Balancer Definition | Availability/Ic... | >= | 1 | 1 | 1 |
| Configuration Item Definition: Web Server Definition (1 item) | | | | | | |
| ✓ | Web Server Definition | Availability/Htt... | >= | 1 | 1 | 1 |

## Adding Compliance Objectives

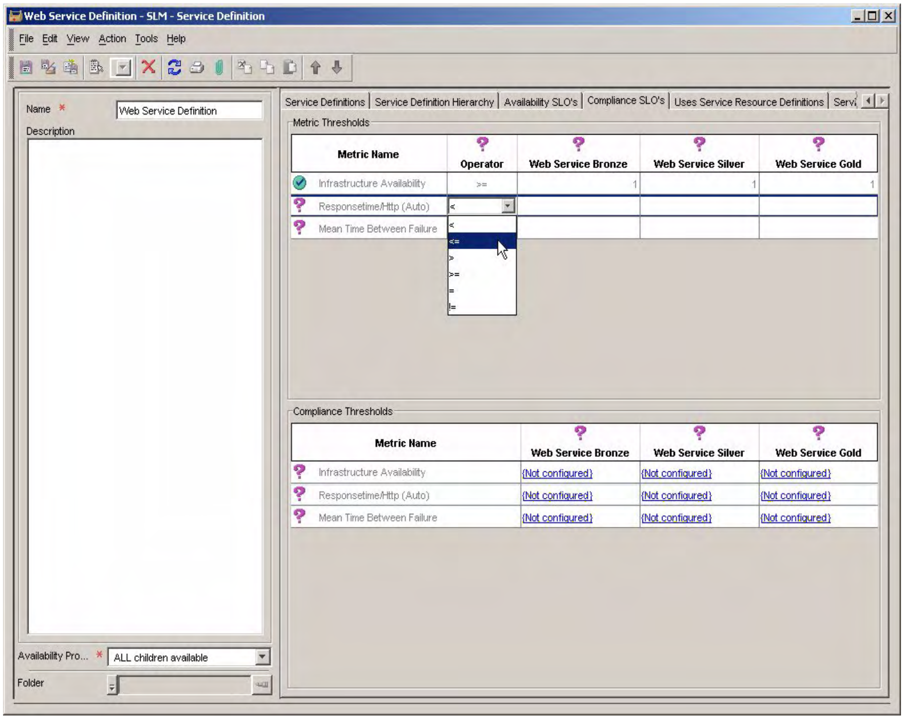
The service designer now starts to specify compliance objectives. Different compliance criteria can be specified for each service level. If a table cell remains blank for a particular combination of metric and service level, the metric is excluded from compliance calculations. The service designer chooses the following compliance calculation scheme for the web service definition:

- Services offered at service level Gold must satisfy the objectives of all three metrics (infrastructure availability, OVIS HTTP response time, and OVSD MTBF).
- Services offered at service level Silver must satisfy the objectives of the infrastructure availability and OVIS HTTP response time metrics. The OVSD MTBF metric is to be disregarded in compliance calculations.
- Services offered at service level Bronze must satisfy the objective of the infrastructure availability metric. The OVIS HTTP response time metric and the OVSD MTBF metric are to be disregarded in compliance calculations.

Initially, the Compliance SLOs tab page displays pre-defined compliance objective thresholds for the automatically created infrastructure availability metric. The objective operator and values for the OVIS HTTP Response Time and OVSD MTBF metrics need to be specified.

The service designer selects an operator from the drop-down list in the Operator column. In the case of the OVIS HTTP Response Time metric, an operator of “less than or equal to” is appropriate. This means that the objective status is achieved if the measured response time is less than its objective threshold value:

Figure 7-51 **Selecting a Compliance Objective Operator**


Web Service Definition - SLM - Service Definition
File Edit View Action Tools Help
Service Definitions
Service Definition Hierarchy
Availability SLO's
Compliance SLO's
Uses Service Resource Definitions
Servi

Name * Web Service Definition

Description

Availability Pro... * ALL children available

Folder

Metric Thresholds

| Metric Name | Operator | Web Service Bronze | Web Service Silver | Web Service Gold |
|---|---|---|---|---|
| ✓ Infrastructure Availability | >= | 1 | 1 | 1 |
| ? Responsetime/Http (Auto) | < | | | |
| ? Mean Time Between Failure | | | | |

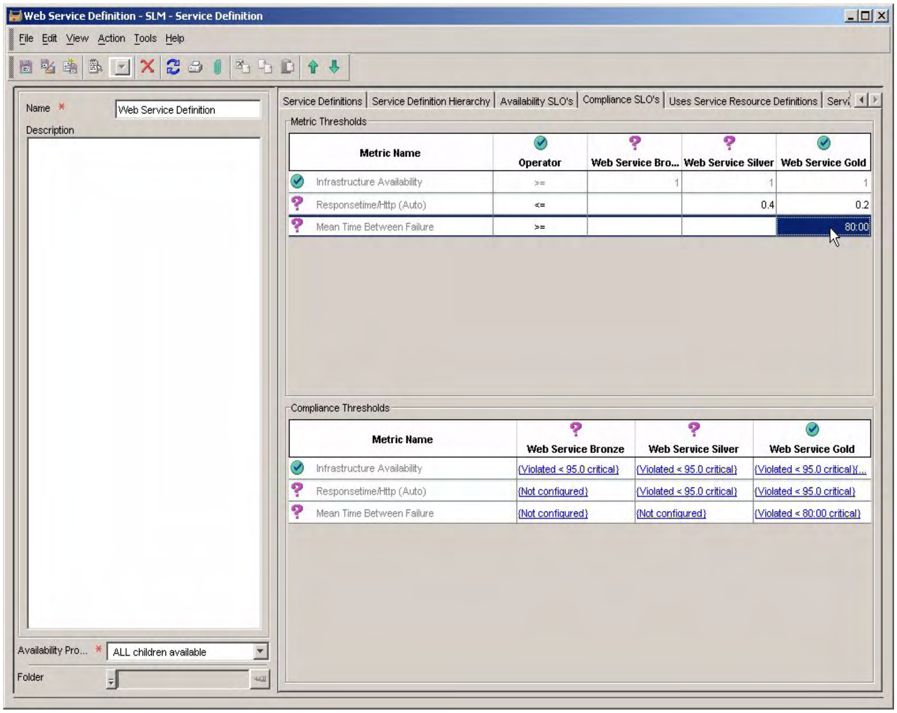
Compliance Thresholds

| Metric Name | Web Service Bronze | Web Service Silver | Web Service Gold |
|---|---|---|---|
| ? Infrastructure Availability | {Not configured} | {Not configured} | {Not configured} |
| ? Responsetime/Http (Auto) | {Not configured} | {Not configured} | {Not configured} |
| ? Mean Time Between Failure | {Not configured} | {Not configured} | {Not configured} |

For the OVSD MTBF metric, an operator of “greater than or equal to” is appropriate. This means that the objective status is achieved if the measured mean time between failure is greater than its objective threshold value.

The service designer types objective threshold values directly into each table cell. Different values are specified for each service level:

**Figure 7-52** **Entering a Compliance Objective Value**


Web Service Definition - SLM - Service Definition
File Edit View Action Tools Help
Service Definitions
Service Definition Hierarchy
Availability SLO's
Compliance SLO's
Uses Service Resource Definitions
Servi

Name * Web Service Definition

Description

Availability Pro... * ALL children available

Folder

Metric Thresholds

| | Metric Name | ✓<br>Operator | ?<br>Web Service Bro... | ?<br>Web Service Silver | ✓<br>Web Service Gold |
|---|---|---|---|---|---|
| ✓ | Infrastructure Availability | >= | 1 | 1 | 1 |
| ? | Responsetime/Http (Auto) | <= | | 0.4 | 0.2 |
| ? | Mean Time Between Failure | >= | | | 80:00 |

Compliance Thresholds

| | Metric Name | ?<br>Web Service Bronze | ?<br>Web Service Silver | ✓<br>Web Service Gold |
|---|---|---|---|---|
| ✓ | Infrastructure Availability | {Violated < 95.0 critical} | {Violated < 95.0 critical} | {Violated < 95.0 critical}{... |
| ? | Responsetime/Http (Auto) | {Not configured} | {Violated < 95.0 critical} | {Violated < 95.0 critical} |
| ? | Mean Time Between Failure | {Not configured} | {Not configured} | {Violated < 80:00 critical} |

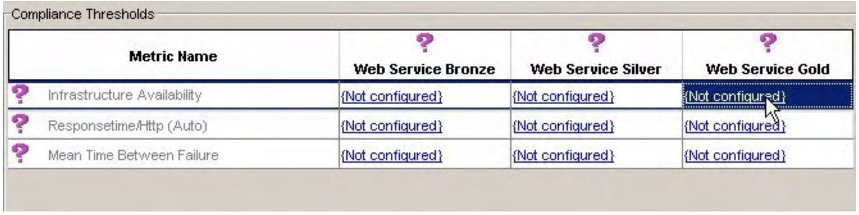
The service designer now specifies compliance violation thresholds.

For infrastructure and standard metric definitions, compliance violation thresholds specify the minimum percentage amount of time an objective status needs to be achieved (compared with the total amount of service hours during an evaluation period). If the percentage threshold is breached, the compliance status of the objective is violated.

For aggregated metric definitions such as OVSD MTBF, the violation threshold is identical to the objective status threshold, with the operator reversed. For example, if the OVSD MTBF objective value is 80 hours and the operator is “greater than”, the violation threshold value is automatically set to 80, and the operator is automatically set to “less than”. Conversely, if the OVSD MTTR (mean time to repair) objective value is 2 hours and the operator is “less than”, the violation threshold value is automatically set to 2, and the operator is automatically set to “greater than”.

The service designer starts with the infrastructure availability metric for the Gold service level, and double-clicks the relevant cell in the Compliance Thresholds table:

### Figure 7-53 Accessing the Compliance Threshold Form

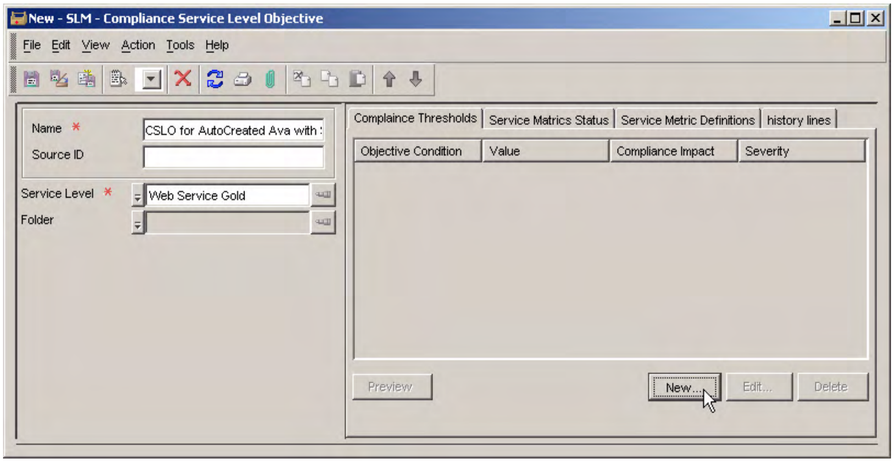


Compliance Thresholds

| Metric Name | Web Service Bronze | Web Service Silver | Web Service Gold |
|---|---|---|---|
| Infrastructure Availability | {Not configured} | {Not configured} | {Not configured} |
| Responsetime/Http (Auto) | {Not configured} | {Not configured} | {Not configured} |
| Mean Time Between Failure | {Not configured} | {Not configured} | {Not configured} |

The Compliance Service Level Objective form opens. To specify a violation threshold, the service designer clicks the New button in the list of thresholds:

### Figure 7-54 Adding a Compliance Violation Threshold

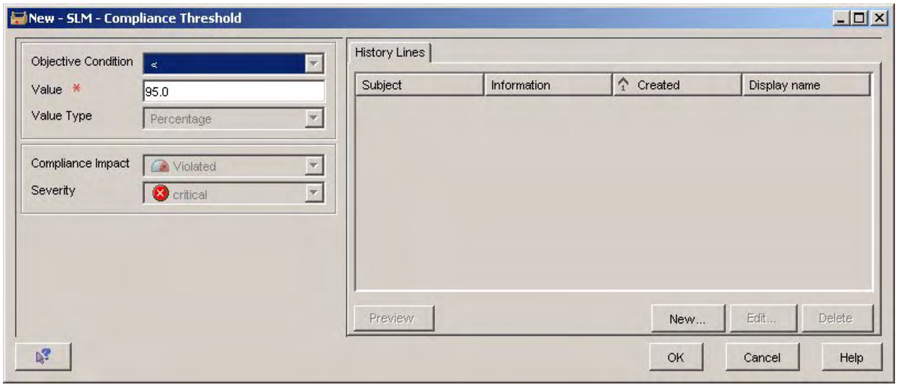


New - SLM - Compliance Service Level Objective

| | |
|---|---|
| Name * | CSLO for AutoCreated Ava with : |
| Source ID | |
| Service Level * | Web Service Gold |
| Folder | |

The Compliance Threshold form opens. The service designer is not permitted to specify a jeopardy threshold until a compliance violation threshold is defined. The service designer specifies a value of 95%:

**Figure 7-55** **Entering a Violation Threshold Value**

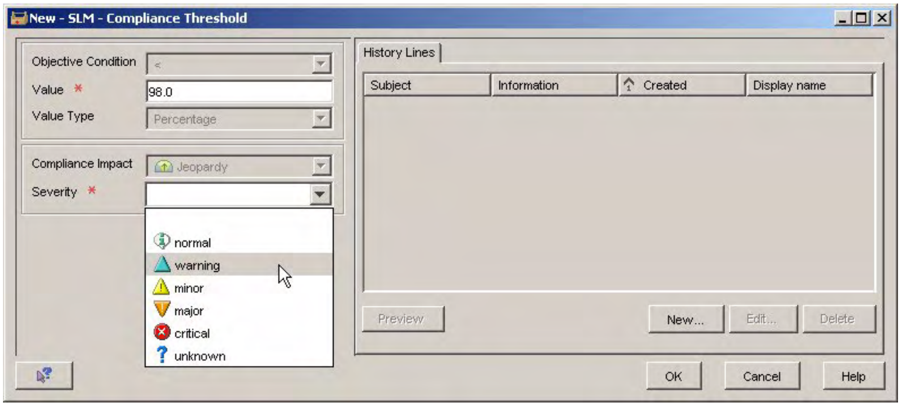


New - SLM - Compliance Threshold

Objective Condition: <
Value *: 95.0
Value Type: Percentage
Compliance Impact: Violated
Severity: critical

The service designer decides to specify a jeopardy threshold value of 98%, and selects a severity of “warning”. Additional jeopardy thresholds can be specified, each with a different percentage value and severity code.

**Figure 7-56** **Entering a Jeopardy Threshold Value**

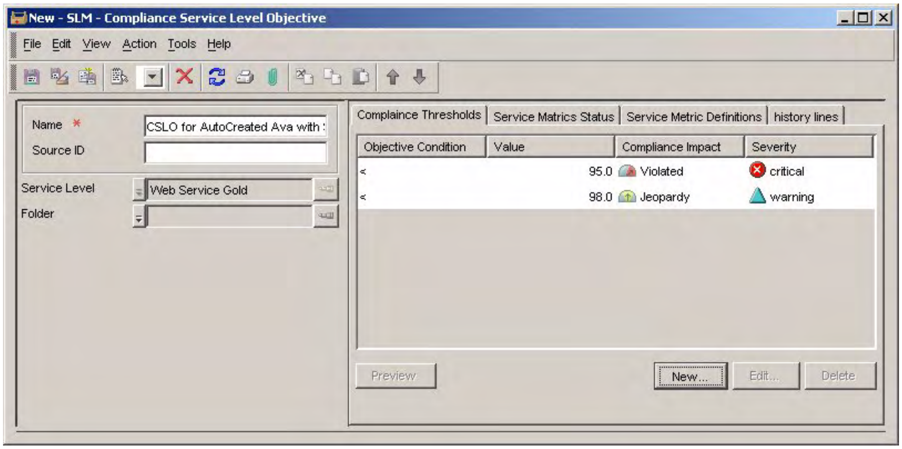


New - SLM - Compliance Threshold

Objective Condition: <
Value *: 98.0
Value Type: Percentage
Compliance Impact: Jeopardy
Severity *:

Figure 7-57 displays the completed Compliance Service Level Objective form. If the availability objective fails to be reached for 2% of service hours during the evaluation period, the compliance status of the infrastructure availability objective drops to jeopardy. If the objective fails to be reached for 5% of service hours, the infrastructure availability objective is violated. This would be enough to cause the compliance status of the service to be violated.

Figure 7-57 **The Completed Compliance Service Level Objective Form**

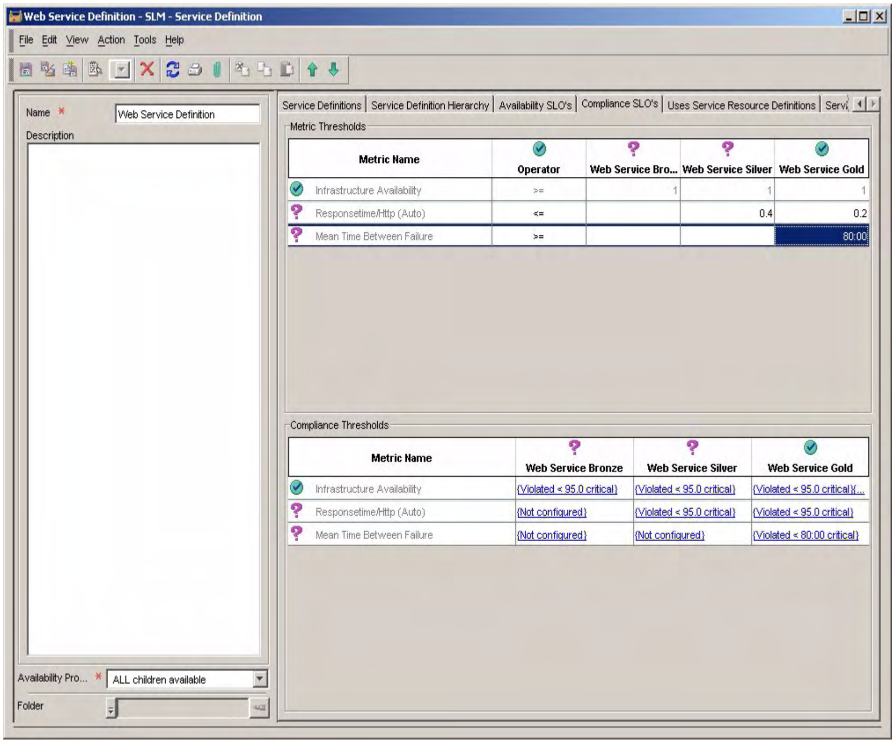


|  |  |
|---|---|
| Name * | CSLO for AutoCreated Ava with : |
| Source ID |  |
| Service Level | Web Service Gold |
| Folder |  |

| Objective Condition | Value | Compliance Impact | Severity |
|---|---|---|---|
| < | 95.0 | Violated | critical |
| < | 98.0 | Jeopardy | warning |

The process of specifying violation and jeopardy thresholds is repeated for each combination of metric and service level for which a metric is to contribute to compliance calculations (see the explanation of the compliance calculation scheme at the beginning of this section “Adding Compliance Objectives” on page 138):

**Figure 7-58** **The Completed Compliance SLOs Table**


Web Service Definition - SLM - Service Definition
File Edit View Action Tools Help
Service Definitions
Service Definition Hierarchy
Availability SLO's
Compliance SLO's
Uses Service Resource Definitions
Servi

Name * Web Service Definition

Description

Availability Pro... * ALL children available

Folder

Metric Thresholds

| Metric Name | ✓ Operator | ? Web Service Bro... | ? Web Service Silver | ✓ Web Service Gold |
|---|---|---|---|---|
| ✓ Infrastructure Availability | >= | 1 | 1 | 1 |
| ? Responsetime/Http (Auto) | <= | | 0.4 | 0.2 |
| ? Mean Time Between Failure | >= | | | 80:00 |

Compliance Thresholds

| Metric Name | ? Web Service Bronze | ? Web Service Silver | ✓ Web Service Gold |
|---|---|---|---|
| ✓ Infrastructure Availability | {Violated < 95.0 critical} | {Violated < 95.0 critical} | {Violated < 95.0 critical}{... |
| ? Responsetime/Http (Auto) | {Not configured} | {Violated < 95.0 critical} | {Violated < 95.0 critical} |
| ? Mean Time Between Failure | {Not configured} | {Not configured} | {Violated < 80:00 critical} |

The service designer saves and closes the service definition. The service manager can now use it to create a monitored service (see “Scenario 3: Creating a Monitored Service based on a Service Definition” on page 145).

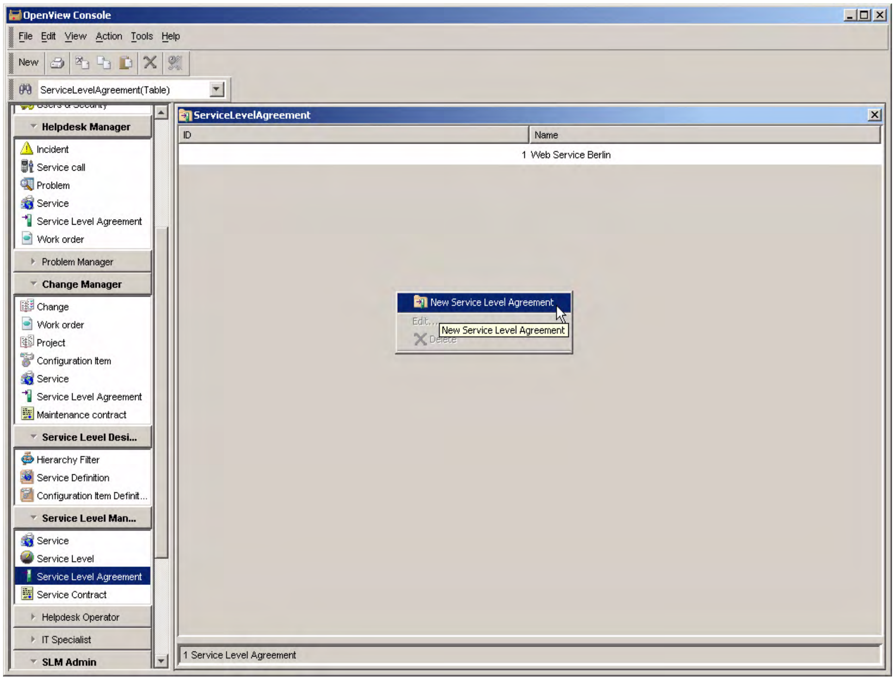
# Scenario 3: Creating a Monitored Service based on a Service Definition

This scenario illustrates how the service manager creates a monitored service based on the service definition for the web service created in “Scenario 2: Designing a Service Definition” on page 113.

## Specifying SLA Details

The service manager starts by creating a new service level agreement for the used database service:

**Figure 7-59** **Creating a New Service Level Agreement for the Used Service**

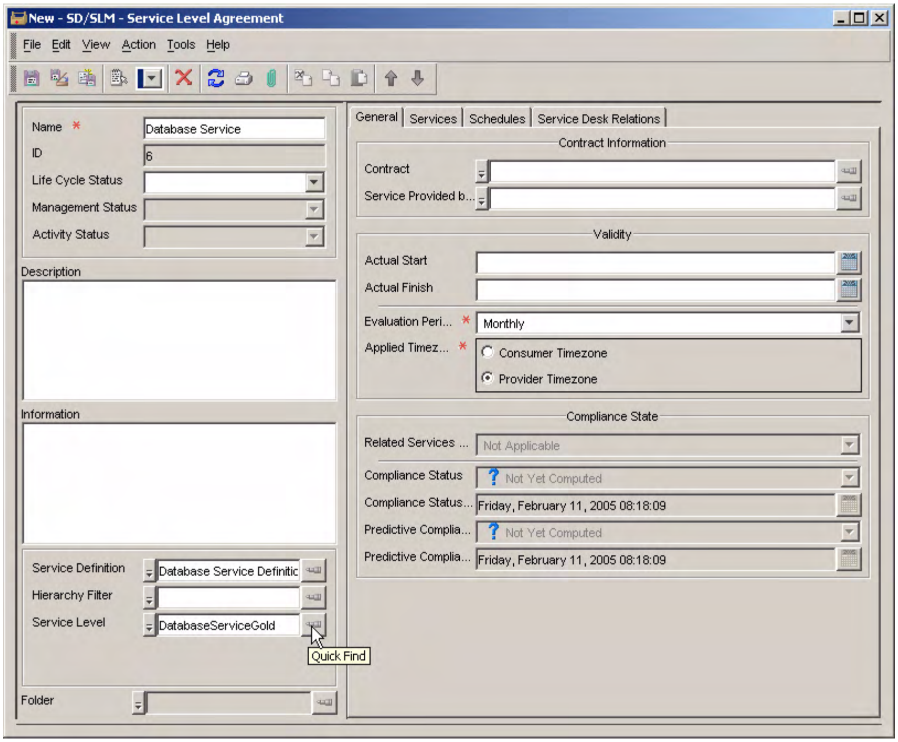


| ID | Name |
|---|---|
| 1 | Web Service Berlin |

1 Service Level Agreement

The service manager selects the service definition for the database service, and selects the Gold service level:

**Figure 7-60** **Basic SLA Details**



Name * Database Service

ID 6

Life Cycle Status

Management Status

Activity Status

Description

Information

Service Definition: Database Service Definitic

Hierarchy Filter

Service Level: DatabaseServiceGold

Folder

Contract Information

Contract

Service Provided b...

Validity

Actual Start

Actual Finish

Evaluation Peri... * Monthly

Applied Timez... * ○ Consumer Timezone ● Provider Timezone

Compliance State

Related Services ... Not Applicable

Compliance Status ? Not Yet Computed

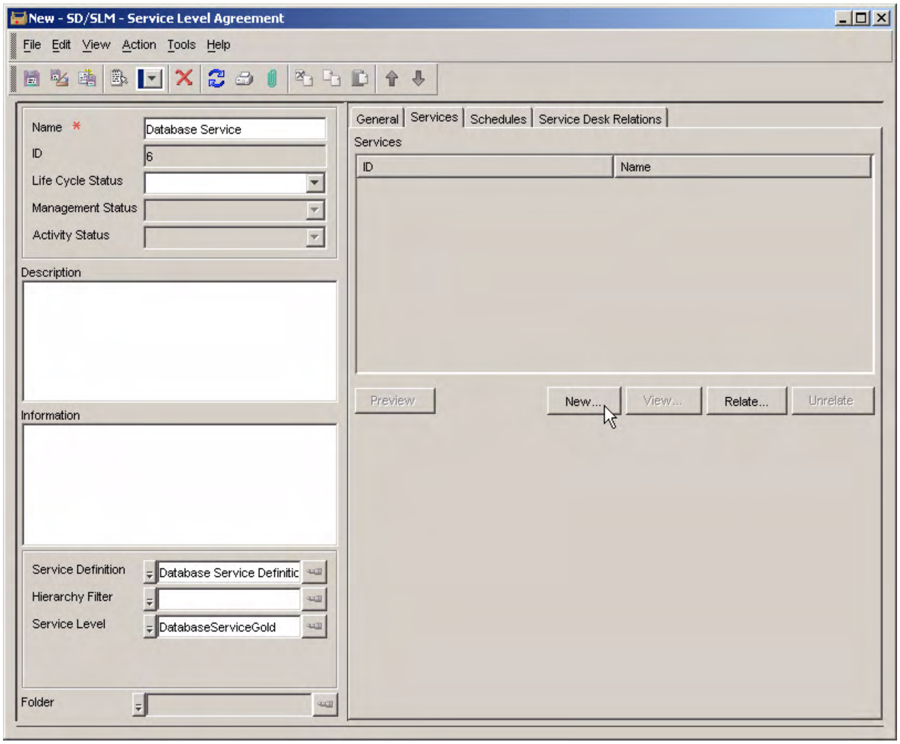
Compliance Status... Friday, February 11, 2005 08:18:09

Predictive Complia... ? Not Yet Computed

Predictive Complia... Friday, February 11, 2005 08:18:09

The service manager navigates to the list of related services, and clicks the New button to create a new service:

**Figure 7-61** **Creating a New Database Service**

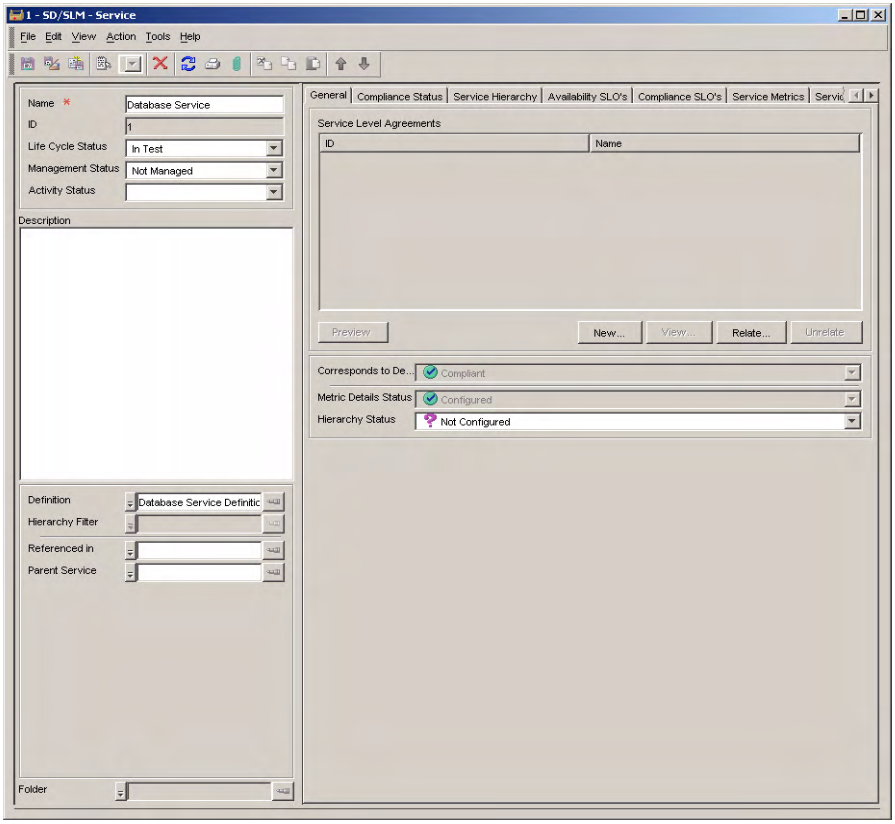


New - SD/SLM - Service Level Agreement

Name * Database Service
ID 6
Life Cycle Status
Management Status
Activity Status
Service Definition Database Service Definitic
Hierarchy Filter
Service Level DatabaseServiceGold
Folder

In the service form, the service manager specifies basic details:

**Figure 7-62 Basic Service Details**



Name * Database Service

ID 1

Life Cycle Status In Test

Management Status Not Managed

Activity Status

Description

Definition Database Service Definitic

Hierarchy Filter

Referenced in

Parent Service

Folder

Service Level Agreements

| ID | Name |
|---|---|

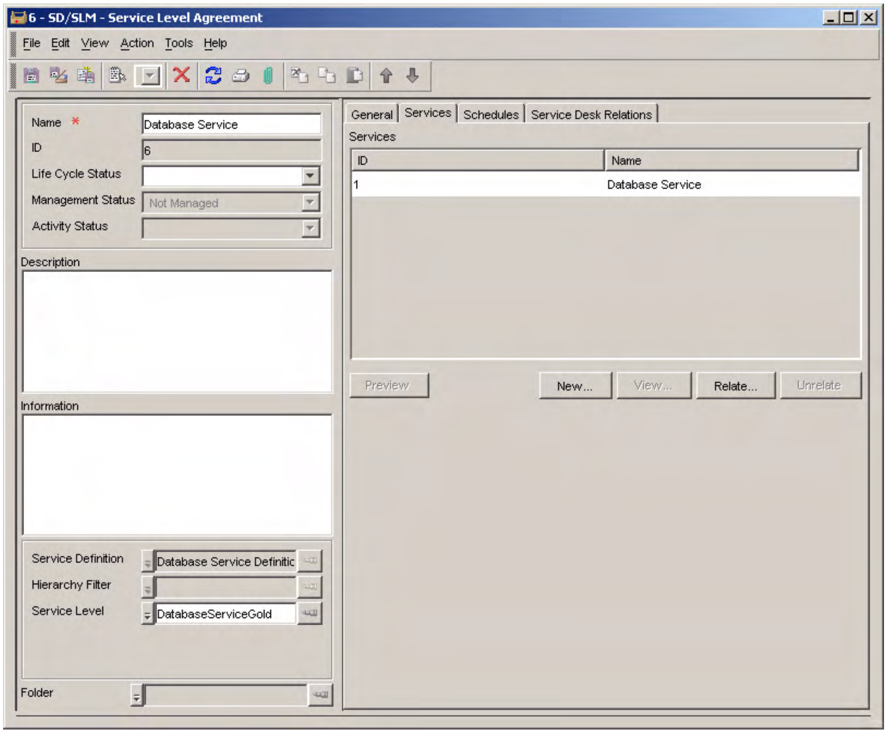
Corresponds to De... Compliant

Metric Details Status Configured

Hierarchy Status Not Configured

When the service is saved, it is automatically added to the list of related services:

**Figure 7-63** **The Database Service Listed in the SLA**



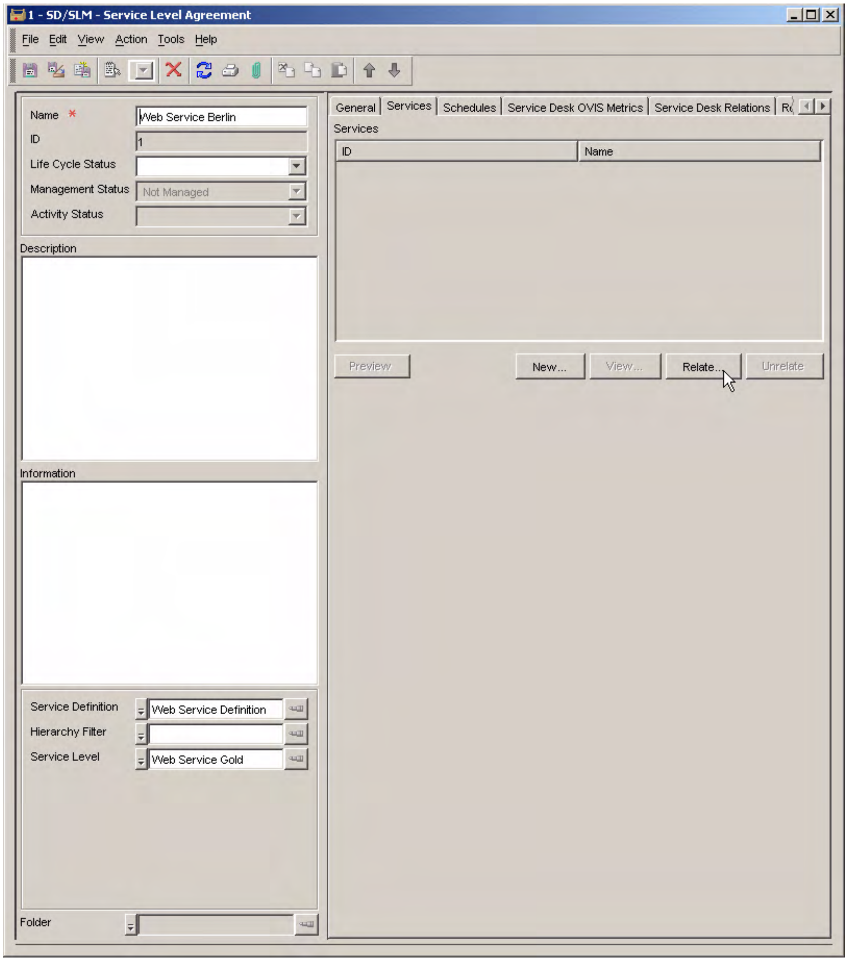
| | |
|---|---|
| Name * | Database Service |
| ID | 6 |
| Life Cycle Status | |
| Management Status | Not Managed |
| Activity Status | |
| Description | |
| Information | |
| Service Definition | Database Service Definitic |
| Hierarchy Filter | |
| Service Level | DatabaseServiceGold |
| Folder | |

Services

| ID | Name |
|---|---|
| 1 | Database Service |

The service manager now creates a new service level agreement for the web service based on the Web Service definition. The customer is interested in the Web Service Gold service level:

**Figure 7-64 The SLA for the Web Service**

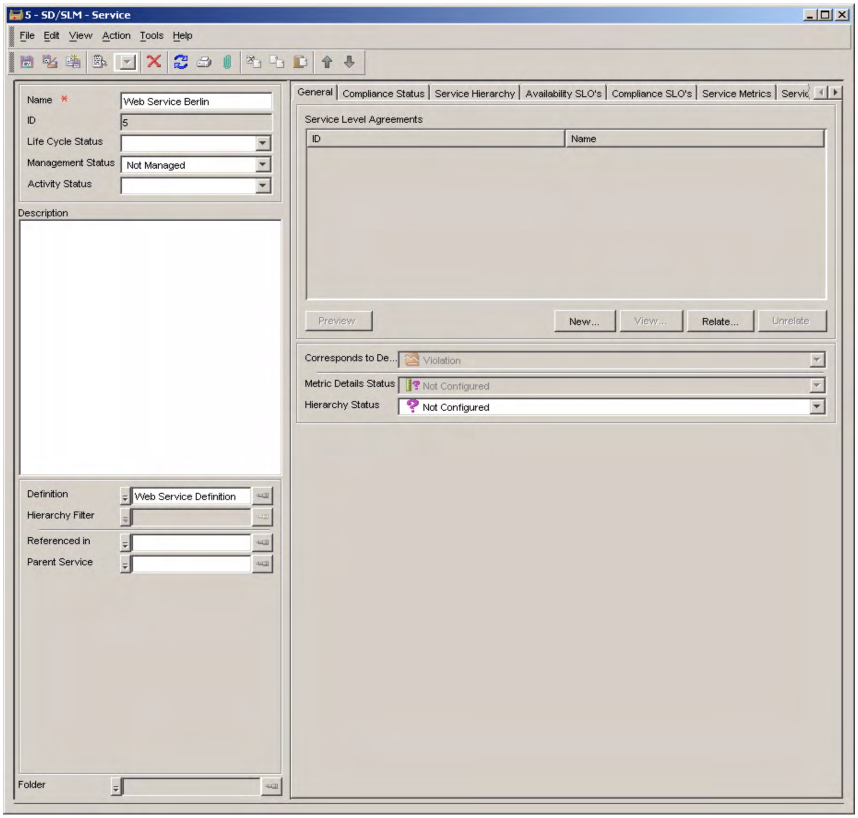


1 - SD/SLM - Service Level Agreement

Name: Web Service Berlin
ID: 1
Life Cycle Status:
Management Status: Not Managed
Activity Status:
Description:
Information:
Service Definition: Web Service Definition
Hierarchy Filter:
Service Level: Web Service Gold
Folder:

The web service to be provided to the customer is created and related to the same service definition as the SLA:

**Figure 7-65** **Web Service Basic Details**



Name * Web Service Berlin
ID 5
Life Cycle Status
Management Status Not Managed
Activity Status
Description
Definition Web Service Definition
Hierarchy Filter
Referenced in
Parent Service
Folder

Service Level Agreements

| ID | Name |
|---|---|

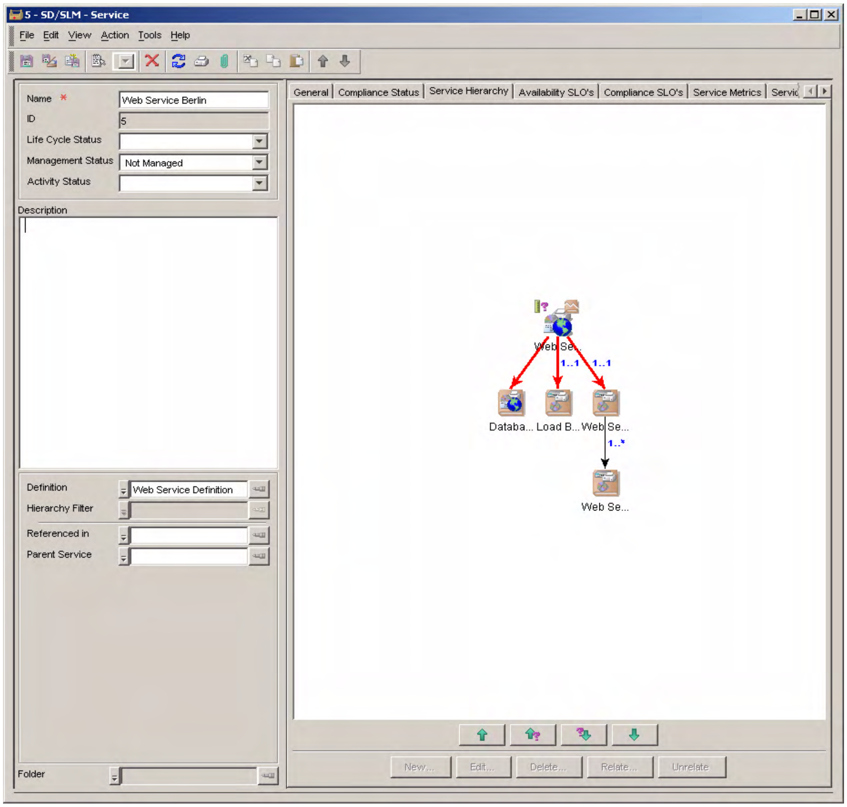
Corresponds to De... Violation
Metric Details Status Not Configured
Hierarchy Status Not Configured

The service manager can now start the process of replacing each definition in the hierarchy with a service or configuration item.

## Replacing Definitions

Initially, the service hierarchy displays the definitions inherited from the service definition hierarchy. Each definition connected by a solid red line must be replaced by a service or a configuration item:

**Figure 7-66** **The Initial Service Hierarchy**

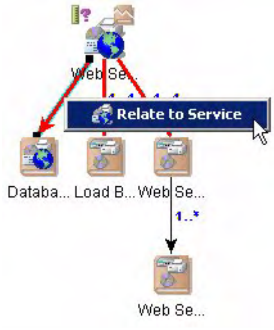


5 - SD/SLM - Service

| | |
|---|---|
| Name * | Web Service Berlin |
| ID | 5 |
| Life Cycle Status | |
| Management Status | Not Managed |
| Activity Status | |
| Description | |
| Definition | Web Service Definition |
| Hierarchy Filter | |
| Referenced in | |
| Parent Service | |
| Folder | |

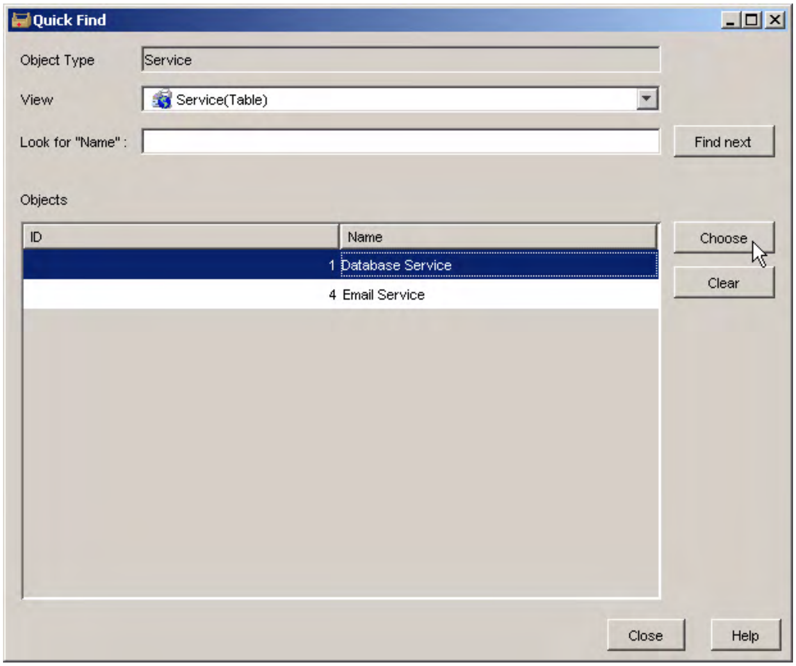
The service manager right-clicks the line connecting the service with the database service definition, and selects the command to relate a service:

**Figure 7-67** **Replacing the Database Service Definition**



In the Quick Find dialog box, the service manager selects the service that is to replace the service definition:

**Figure 7-68** **Selecting the Database Service**



Object Type: Service

View: Service(Table)

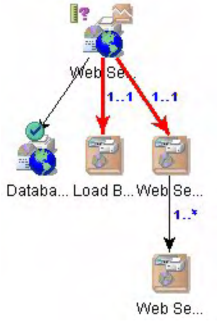
Look for "Name" :

Objects

| ID | Name |
|---|---|
| 1 | Database Service |
| 4 | Email Service |

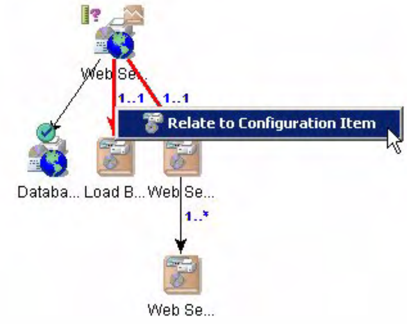
The service hierarchy automatically displays the database service in place of the database service definition, and the connector line changes from red to black:

**Figure 7-69** **The Database Service Displayed in the Hierarchy**



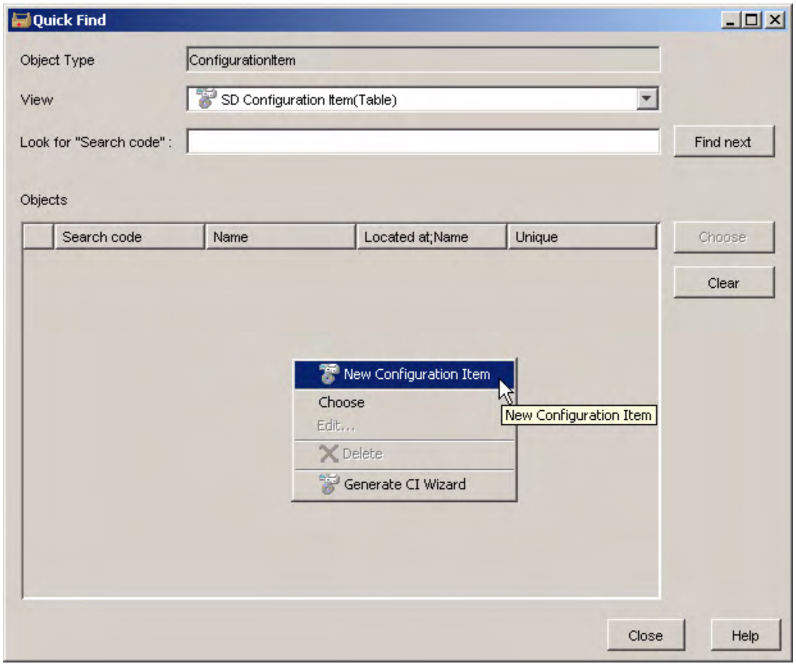
The service manager right-clicks the line connecting the service with the load balancer configuration item definition, and selects the command to relate a configuration item:

**Figure 70** **Replacing the Load Balancer Configuration Item Definition**



The Quick Find dialog box displays an empty list, indicating that no configuration item based on the load balancer definition currently exists. The service manager right-clicks in the dialog box and selects the command to create a new configuration item:

**Figure 7-71** **Creating a Load Balancer Configuration Item**



Quick Find

Object Type: ConfigurationItem

View: SD Configuration Item(Table)

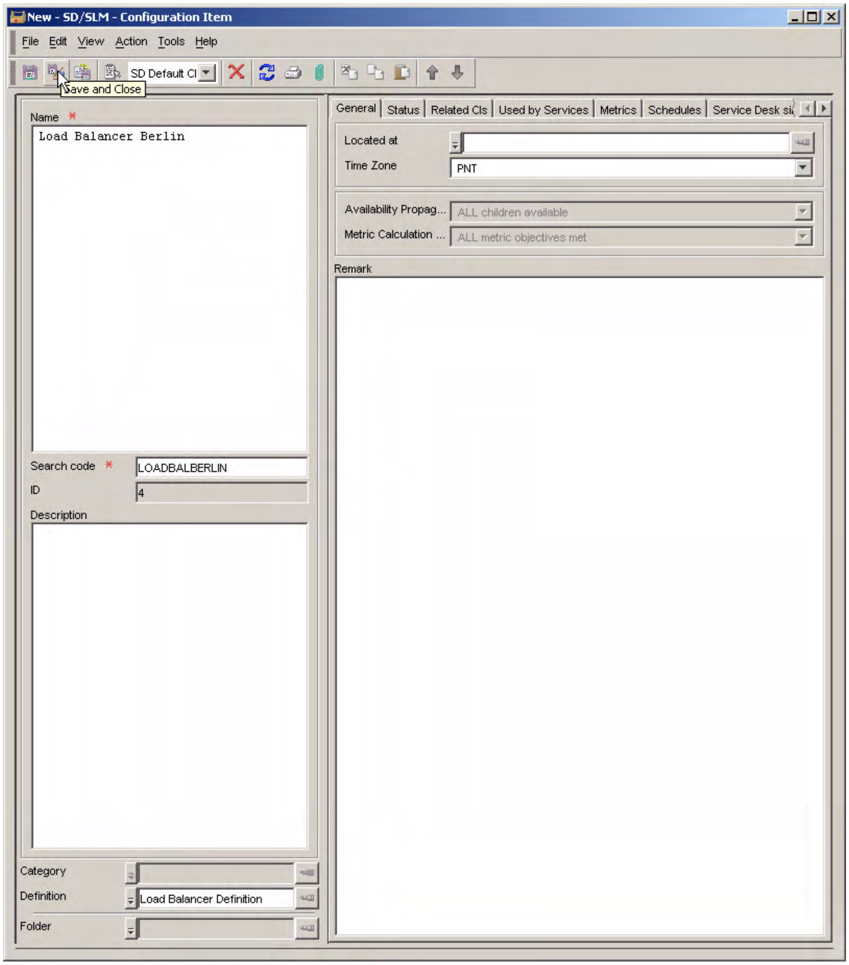
Look for "Search code" :

Objects

| | Search code | Name | Located at;Name | Unique |
|---|---|---|---|---|

In the configuration item form, the service manager provides basic details about the configuration item, relates it to the correct definition, and saves it:

**Figure 7-72** **Load Balancer Basic Details**



New - SD/SLM - Configuration Item

Name *: Load Balancer Berlin

Search code *: LOADBALBERLIN

ID: 4

Description:

Category:

Definition: Load Balancer Definition

Folder:

Located at:

Time Zone: PNT

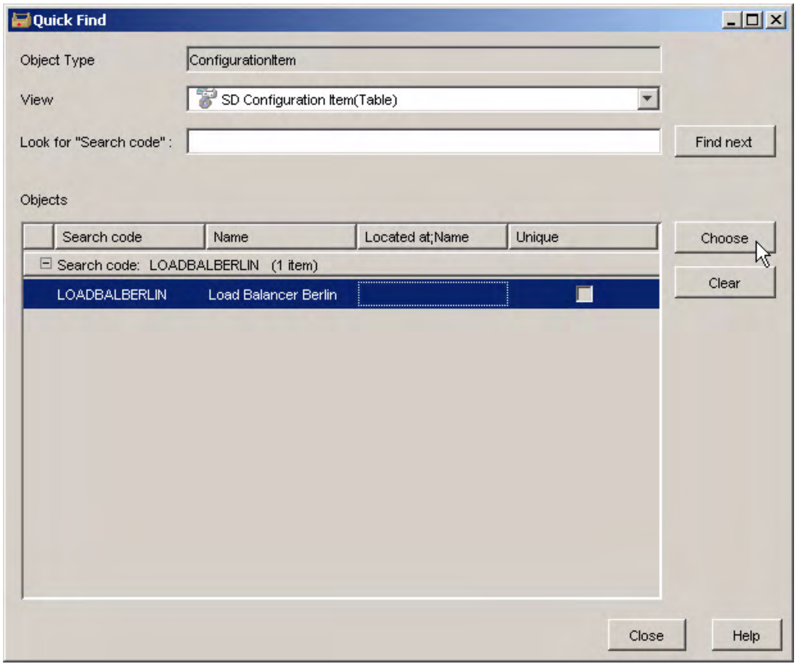
Availability Propag...: ALL children available

Metric Calculation ...: ALL metric objectives met

Remark:

In the Quick Find dialog box, the service manager selects the newly created configuration item:

Figure 7-73 **Selecting the Load Balancer Configuration Item**



Quick Find

Object Type: ConfigurationItem

View: SD Configuration Item(Table)

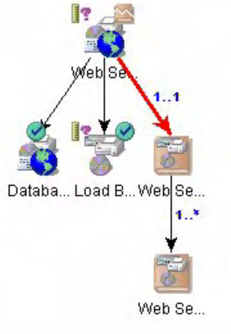
Look for "Search code" :

Objects

| | Search code | Name | Located at;Name | Unique |
|---|---|---|---|---|
| ⊟ | Search code: LOADBALBERLIN (1 item) | | | |
| | LOADBALBERLIN | Load Balancer Berlin | | □ |

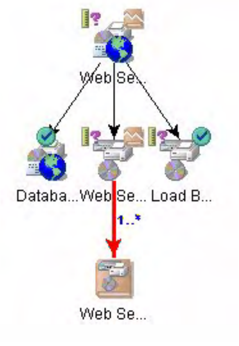
The service hierarchy automatically displays the configuration item in place of its definition:

Figure 7-74 **The Configuration Item Displayed in the Hierarchy**



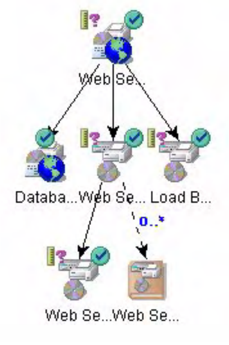
The service manager replaces the web server farm definition with a configuration item in the same way:

Figure 7-75 **The Web Server Farm CI Displayed in the Hierarchy**



When the service manager replaces the web server configuration item definition, the icon for the definition remains in the hierarchy. The multiplicity indicator changes from 1...* to 0...*, and the solid red line is replaced by a dashed black line to indicate that it is possible but not necessary to replace the web server definition with additional configuration items. In this instance, the service manager decides not to add further web servers. The definitions are now all replaced by services and configuration items:

Figure 7-76 **The Hierarchy Containing One Web Server Configuration Item**



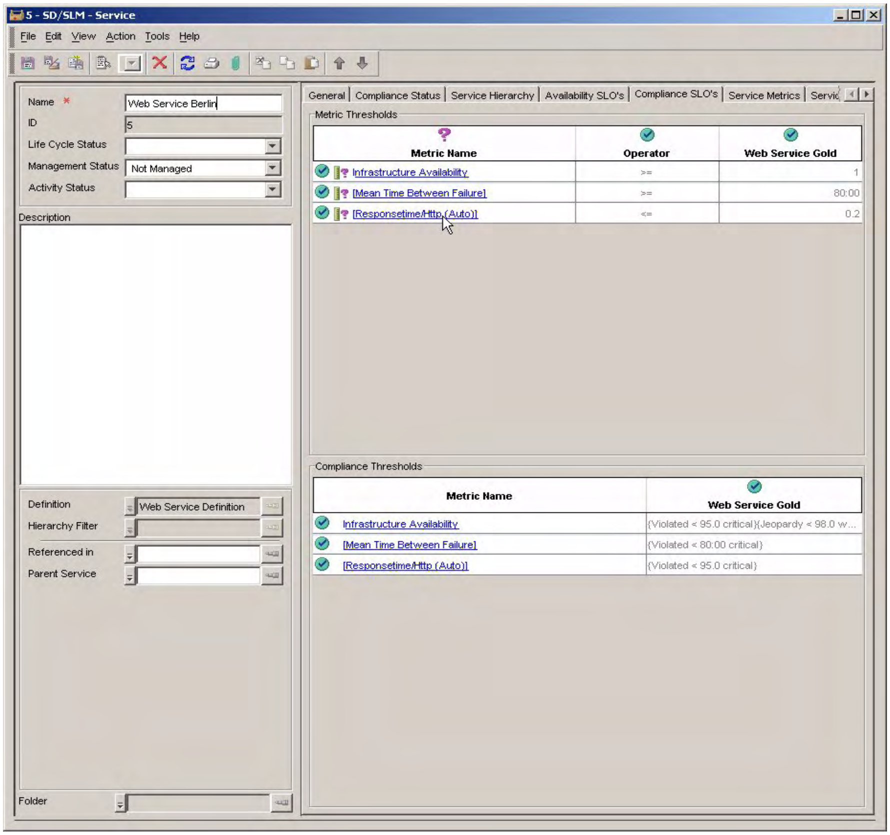
## Specifying Metric Sources

The service manager is now ready to specify the metrics that define the sources of metric data values. This needs to be done for each service metric (except for the automatically created infrastructure availability metric), and for each configuration item metric in the service hierarchy.

OVIS, OVPM, and OVSN metrics are usually available as a result of metric discovery (see “Scenario 1: Metric Configuration and Discovery” on page 100). OVSD metrics are usually created manually.

To specify metric sources for service metrics, the service manager navigates to the tab page displaying the Compliance SLOs tables. The service manager double-clicks the OVIS HTTP response time metric name:

**Figure 7-77 Accessing the List of Metric Sources for Service Metrics**



| | |
|---|---|
| Name * | Web Service Berlin |
| ID | 5 |
| Life Cycle Status | |
| Management Status | Not Managed |
| Activity Status | |
| Description | |
| Definition | Web Service Definition |
| Hierarchy Filter | |
| Referenced in | |
| Parent Service | |
| Folder | |

Metric Thresholds

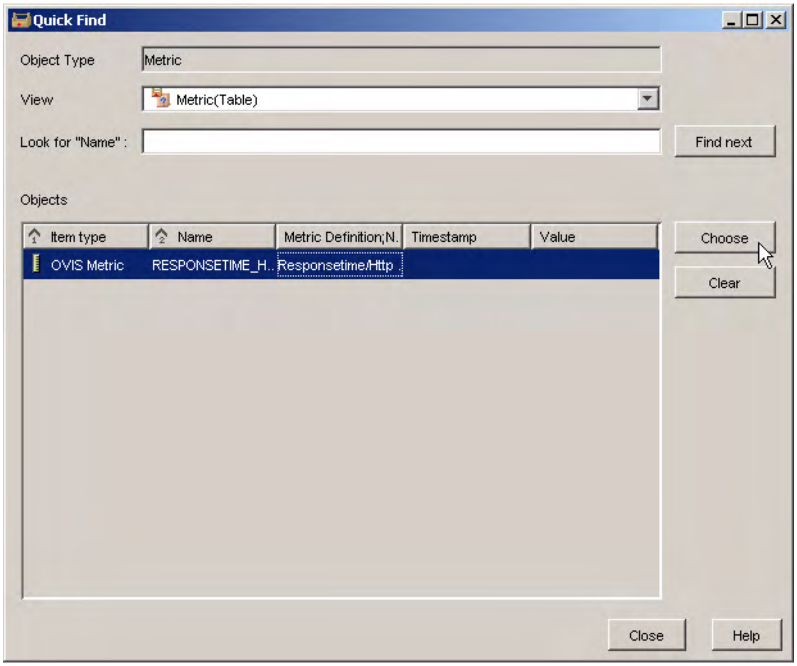
| Metric Name | Operator | Web Service Gold |
|---|---|---|
| Infrastructure Availability | >= | 1 |
| [Mean Time Between Failure] | >= | 80:00 |
| [Responsetime/Http (Auto)] | <= | 0.2 |

Compliance Thresholds

| Metric Name | Web Service Gold |
|---|---|
| Infrastructure Availability | {Violated < 95.0 critical}{Jeopardy < 98.0 w... |
| [Mean Time Between Failure] | {Violated < 80:00 critical} |
| [Responsetime/Http (Auto)] | {Violated < 95.0 critical} |

The service manager selects from the metrics displayed in the list. The metrics are available for selection as a result of the metric discovery process (see “Scenario 1: Metric Configuration and Discovery” on page 100):

**Figure 7-78** **Selecting the Metric Data Source from the List**



Object Type: Metric

View: Metric(Table)

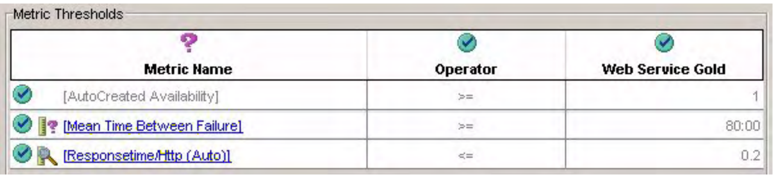
Look for "Name" :

Objects

| Item type | Name | Metric Definition;N.. | Timestamp | Value |
|---|---|---|---|---|
| OVIS Metric | RESPONSETIME_H.. | Responsetime/Http | | |

The visual aids on the table of metric thresholds is updated to indicate that the OVIS HTTP response time metric is configured, but the OVSD MTBF metric still needs to be configured:

**Figure 7-79** **Updated Metric Thresholds Table**

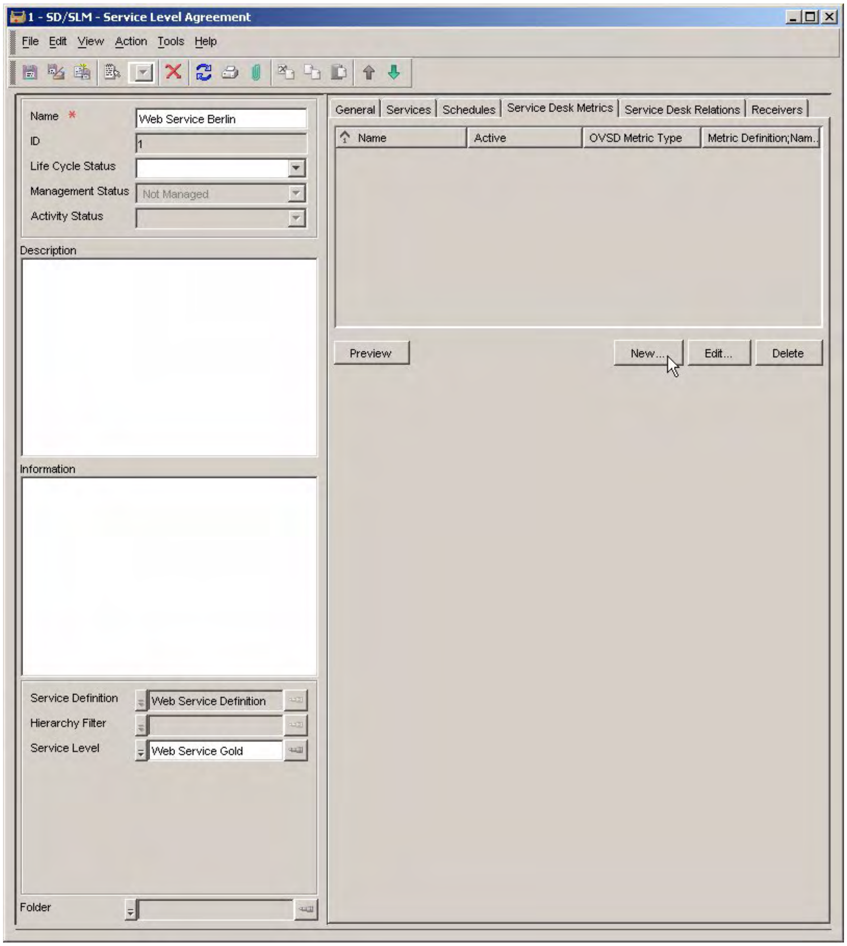


Metric Thresholds

| ? Metric Name | ✓ Operator | ✓ Web Service Gold |
|---|---|---|
| ✓ [AutoCreated Availability] | >= | 1 |
| ✓ [Mean Time Between Failure] | >= | 80:00 |
| ✓ [Responsetime/Http (Auto)] | <= | 0.2 |

Before configuring the OVSD MTBF metric, the collection and calculation of MTBF data must be configured. The service manager opens the service level agreement in a form, navigates to the tab page that lists the Service Desk metrics, and clicks the New button to create a new metric:

**Figure 7-80** **Service Desk Metrics in the SLA**



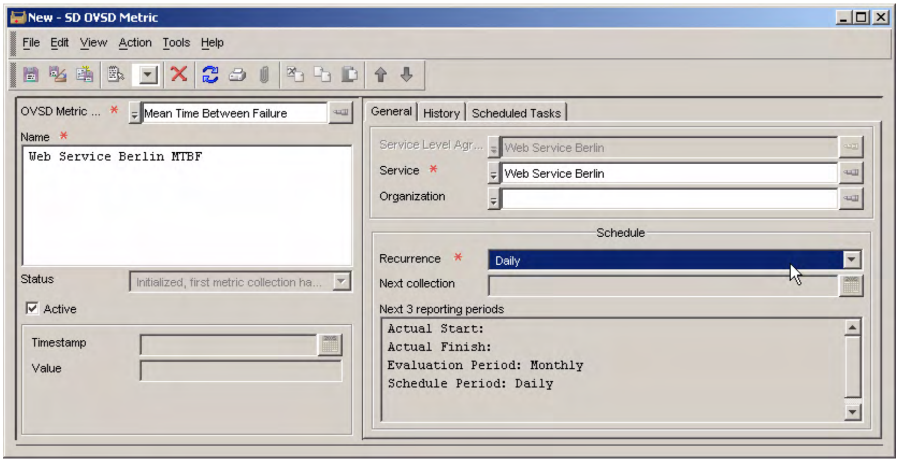
1 - SD/SLM - Service Level Agreement

Name * Web Service Berlin
ID 1
Life Cycle Status
Management Status Not Managed
Activity Status
Description
Information
Service Definition Web Service Definition
Hierarchy Filter
Service Level Web Service Gold
Folder

| Name | Active | OVSD Metric Type | Metric Definition;Nam... |
|---|---|---|---|

The OVSD Metric form opens. The service manager relates the metric to the MTBF metric definition created during the service definition creation process (see “Scenario 2: Designing a Service Definition” on page 113). and provides basic details such as a name. The selected daily recurrence schedule specifies that MTBF data is collected and calculated each day. Each collection is cumulative, starting from the moment the evaluation period begins:

**Figure 7-81 Specifying OVSD Metric Collection Details**

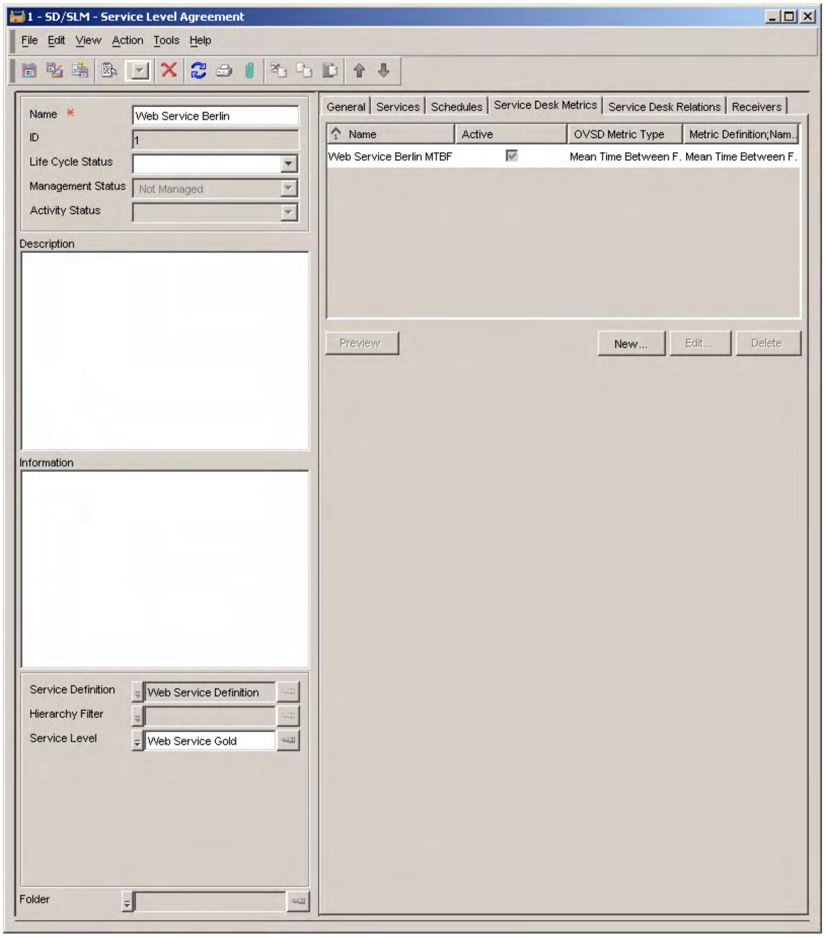


OVSD Metric ... * Mean Time Between Failure
Name * Web Service Berlin MTBF
Status Initialized, first metric collection ha...
☑ Active
Timestamp
Value
Service Level Agr... Web Service Berlin
Service * Web Service Berlin
Organization
Recurrence * Daily
Next collection
Next 3 reporting periods

```
Actual Start:
Actual Finish:
Evaluation Period: Monthly
Schedule Period: Daily
```

The created metric is added to the list of Service Desk metrics in the service level agreement:

**Figure 7-82 The OVSD Metric Listed in the SLA**

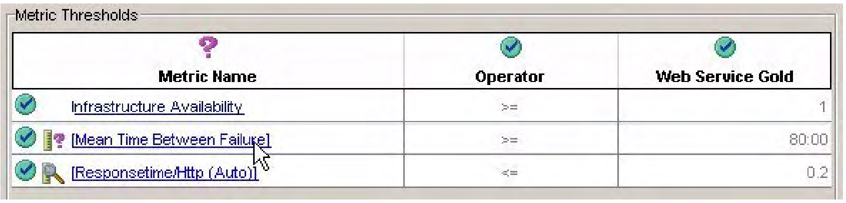


| | |
|---|---|
| Name * | Web Service Berlin |
| ID | 1 |
| Life Cycle Status | |
| Management Status | Not Managed |
| Activity Status | |
| Description | |
| Information | |
| Service Definition | Web Service Definition |
| Hierarchy Filter | |
| Service Level | Web Service Gold |
| Folder | |

| Name | Active | OVSD Metric Type | Metric Definition;Nam.. |
|---|---|---|---|
| Web Service Berlin MTBF | ☑ | Mean Time Between F. | Mean Time Between F. |

The service manager can now configure the OVSD MTBF metric source. Returning to the table of metric thresholds in the service form, the service manager double-clicks the metric name:

**Figure 7-83** **Specifying the OVSD MTBF Metric Source**

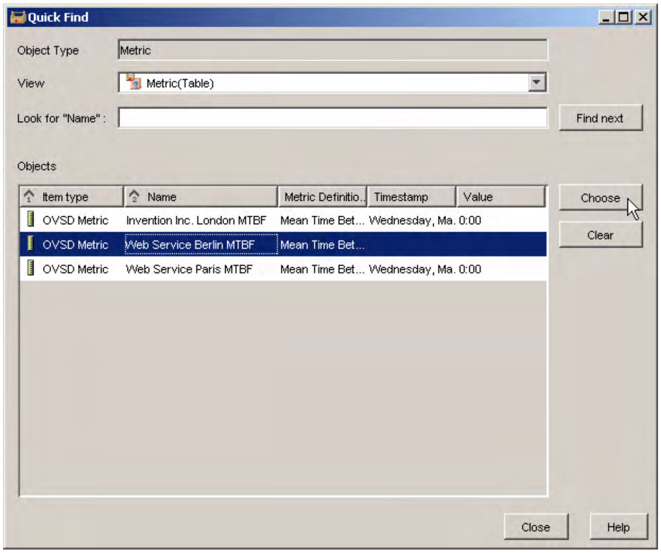


Metric Thresholds

| Metric Name | Operator | Web Service Gold |
|---|---|---|
| Infrastructure Availability | >= | 1 |
| [Mean Time Between Failure] | >= | 80:00 |
| [Responsetime/Http (Auto)] | <= | 0.2 |

The service manager selects the OVSD metric in the list:

**Figure 7-84** **Selecting the OVSD MTBF Metric**



Quick Find

Object Type: Metric

View: Metric(Table)

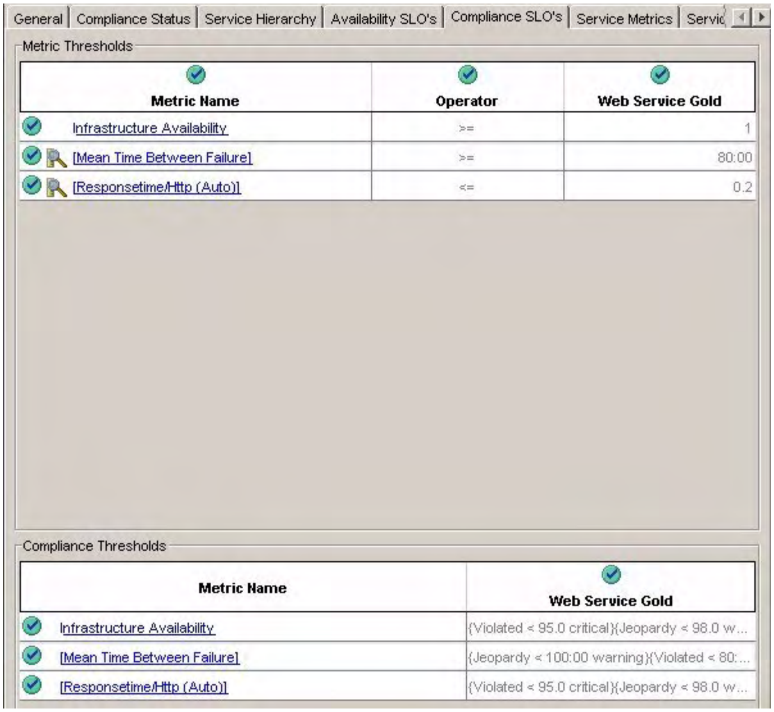
Look for "Name" :

Objects

| Item type | Name | Metric Definitio.. | Timestamp | Value |
|---|---|---|---|---|
| OVSD Metric | Invention Inc. London MTBF | Mean Time Bet... | Wednesday, Ma. 0:00 | |
| OVSD Metric | Web Service Berlin MTBF | Mean Time Bet... | | |
| OVSD Metric | Web Service Paris MTBF | Mean Time Bet... | Wednesday, Ma. 0:00 | |

The visual aids on the table of metric thresholds are updated to indicate that all metrics are configured:

**Figure 7-85** **The Completed Compliance SLOs Tables**



Metric Thresholds

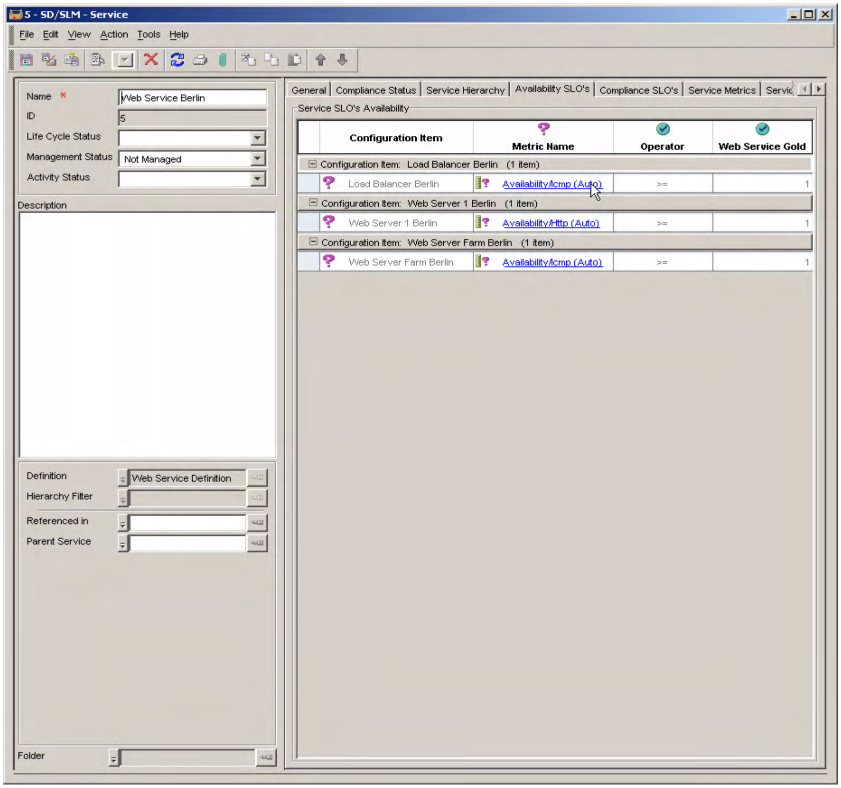
| Metric Name | Operator | Web Service Gold |
|---|---|---|
| Infrastructure Availability | >= | 1 |
| [Mean Time Between Failure] | >= | 80:00 |
| [Responsetime/Http (Auto)] | <= | 0.2 |

Compliance Thresholds

| Metric Name | Web Service Gold |
|---|---|
| Infrastructure Availability | {Violated < 95.0 critical}{Jeopardy < 98.0 w... |
| [Mean Time Between Failure] | {Jeopardy < 100:00 warning}{Violated < 80:... |
| [Responsetime/Http (Auto)] | {Violated < 95.0 critical}{Jeopardy < 98.0 w... |

To specify metric sources for configuration item metrics, the service manager first navigates to the tab page that displays the Availability SLOs table and then double-clicks a metric name:

**Figure 7-86 Accessing the List of Sources for Configuration Item Metrics**



Name * Web Service Berlin
ID 5
Life Cycle Status
Management Status Not Managed
Activity Status
Description

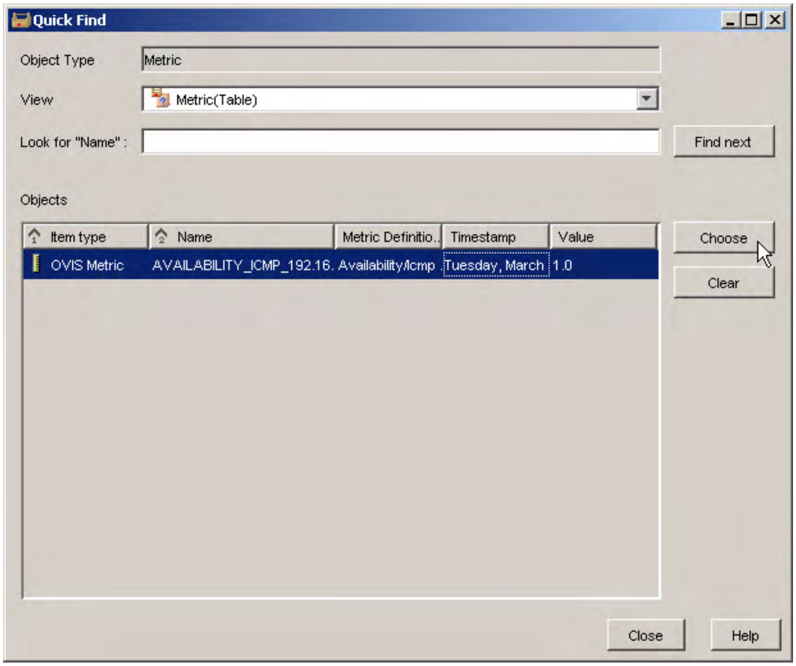
Definition Web Service Definition
Hierarchy Filter
Referenced in
Parent Service
Folder

Service SLO's Availability

| Configuration Item | Metric Name | Operator | Web Service Gold |
|---|---|---|---|
| Configuration Item: Load Balancer Berlin (1 item) | | | |
| Load Balancer Berlin | Availability/Icmp (Auto) | >= | 1 |
| Configuration Item: Web Server 1 Berlin (1 item) | | | |
| Web Server 1 Berlin | Availability/Http (Auto) | >= | 1 |
| Configuration Item: Web Server Farm Berlin (1 item) | | | |
| Web Server Farm Berlin | Availability/Icmp (Auto) | >= | 1 |

To service manager selects from the metrics displayed in the list:

**Figure 7-87** **Selecting the Metric Data Source from the List**



Object Type: Metric

View: Metric(Table)

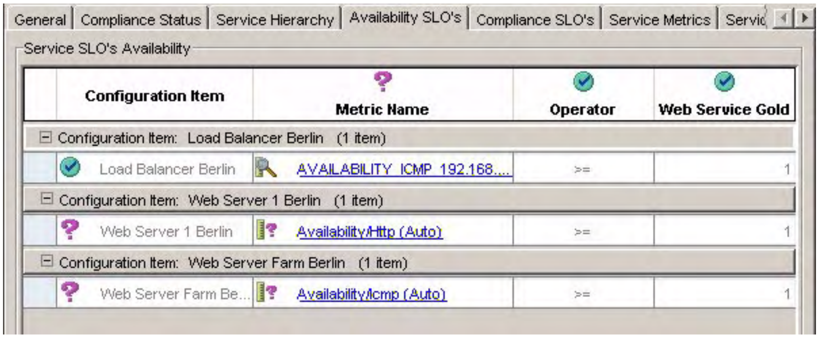
Look for "Name" :

Objects

| Item type | Name | Metric Definitio.. | Timestamp | Value |
|---|---|---|---|---|
| OVIS Metric | AVAILABILITY_ICMP_192.16. | Availability/Icmp | Tuesday, March | 1.0 |

The visual aids in the Availability SLO table is automatically updated to indicate that the availability metric for the load balancer is configured:

**Figure 7-88** **The Updated Table of Availability Objectives**

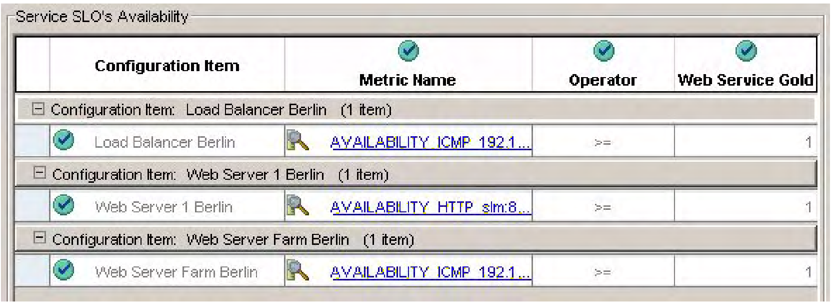


Service SLO's Availability

| | Configuration Item | Metric Name | Operator | Web Service Gold |
|---|---|---|---|---|
| ⊟ Configuration Item: Load Balancer Berlin (1 item) | | | | |
| ✓ | Load Balancer Berlin | AVAILABILITY_ICMP_192.168.... | >= | 1 |
| ⊟ Configuration Item: Web Server 1 Berlin (1 item) | | | | |
| ? | Web Server 1 Berlin | Availability/Http (Auto) | >= | 1 |
| ⊟ Configuration Item: Web Server Farm Berlin (1 item) | | | | |
| ? | Web Server Farm Be... | Availability/Icmp (Auto) | >= | 1 |

The service manager repeats the process for the other availability objectives:

**Figure 7-89 The Completed Table of Availability Objectives**

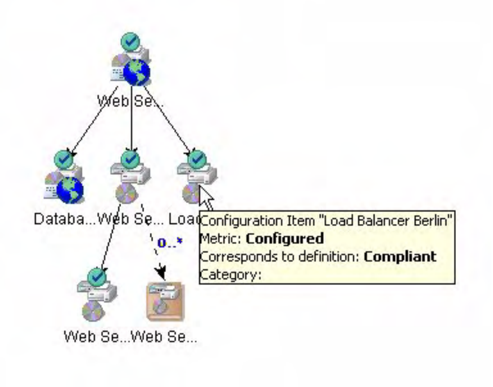


Service SLO's Availability

| | Configuration Item | Metric Name | Operator | Web Service Gold |
|---|---|---|---|---|
| ⊟ Configuration Item: Load Balancer Berlin (1 item) | | | | |
| | ✓ Load Balancer Berlin | AVAILABILITY_ICMP_192.1... | >= | 1 |
| ⊟ Configuration Item: Web Server 1 Berlin (1 item) | | | | |
| | ✓ Web Server 1 Berlin | AVAILABILITY_HTTP_slm:8... | >= | 1 |
| ⊟ Configuration Item: Web Server Farm Berlin (1 item) | | | | |
| | ✓ Web Server Farm Berlin | AVAILABILITY_ICMP_192.1... | >= | 1 |

The visual aids in the service hierarchy confirm that all objects in the hierarchy conform to their definitions, and all metrics are fully configured:

**Figure 7-90 The Fully Configured Hierarchy**

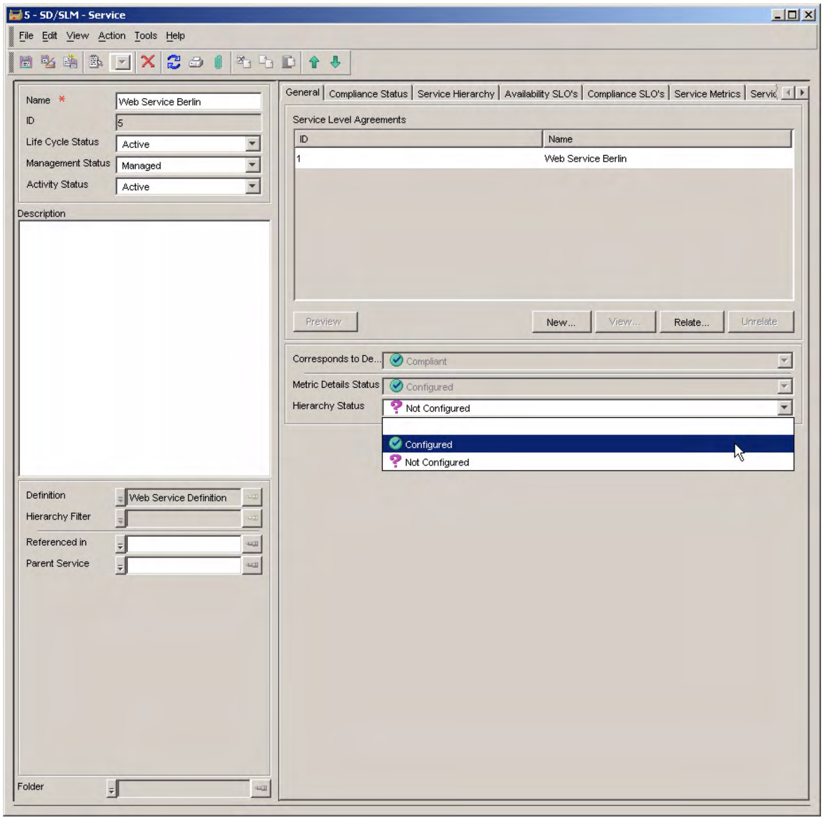


Configuration Item "Load Balancer Berlin"
Metric: **Configured**
Corresponds to definition: **Compliant**
Category:

## Managing the Service Level Agreement

The final step in this scenario is to place the service level agreement under SLM management. In the service form, the service manager selects the appropriate values in the life cycle, management, activity, and hierarchy status fields:

**Figure 7-91** **Managing the Service**



5 - SD/SLM - Service

Name * Web Service Berlin
ID 5
Life Cycle Status Active
Management Status Managed
Activity Status Active
Description

Definition Web Service Definition
Hierarchy Filter
Referenced in
Parent Service
Folder

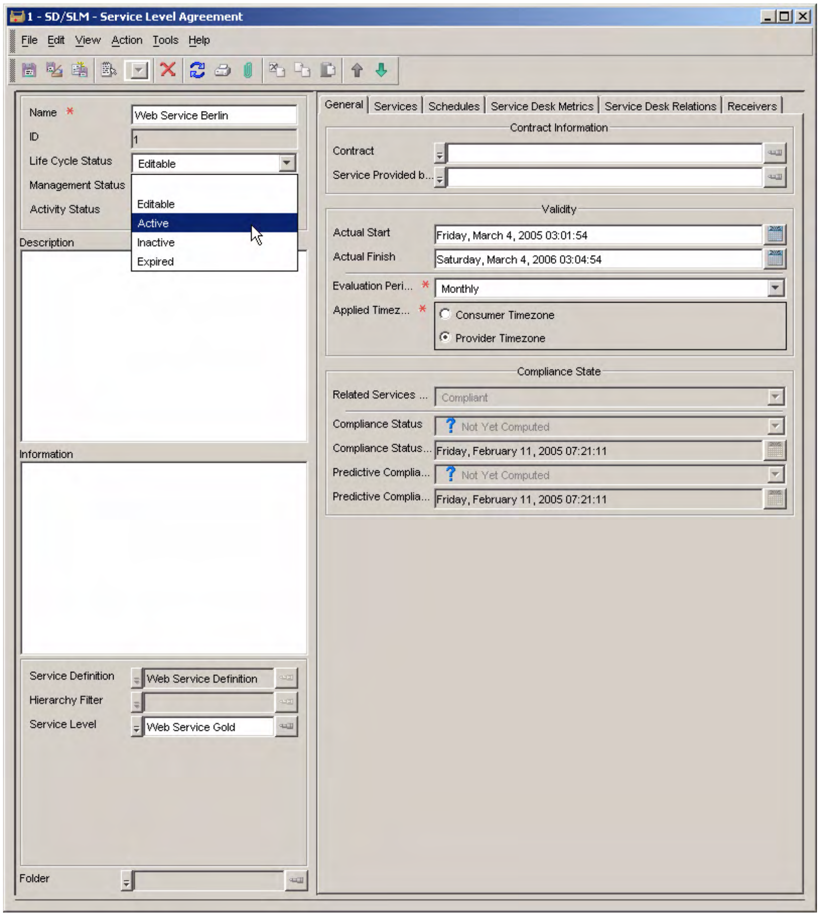
Service Level Agreements

| ID | Name |
|---|---|
| 1 | Web Service Berlin |

Corresponds to De... Compliant
Metric Details Status Configured
Hierarchy Status Not Configured

The life cycle status of the service level agreement needs to be updated to a value that maps to a ‘Managed’ management status:

**Figure 7-92 Managing the Service Level Agreement**



Name * Web Service Berlin

ID 1

Life Cycle Status Editable

- Editable
- Active
- Inactive
- Expired

Management Status

Activity Status

Description

Information

Service Definition Web Service Definition

Hierarchy Filter

Service Level Web Service Gold

Folder

Contract Information

Contract

Service Provided b...

Validity

Actual Start Friday, March 4, 2005 03:01:54

Actual Finish Saturday, March 4, 2006 03:04:54

Evaluation Peri... * Monthly

Applied Timez... * ○ Consumer Timezone ● Provider Timezone

Compliance State

Related Services ... Compliant

Compliance Status ? Not Yet Computed

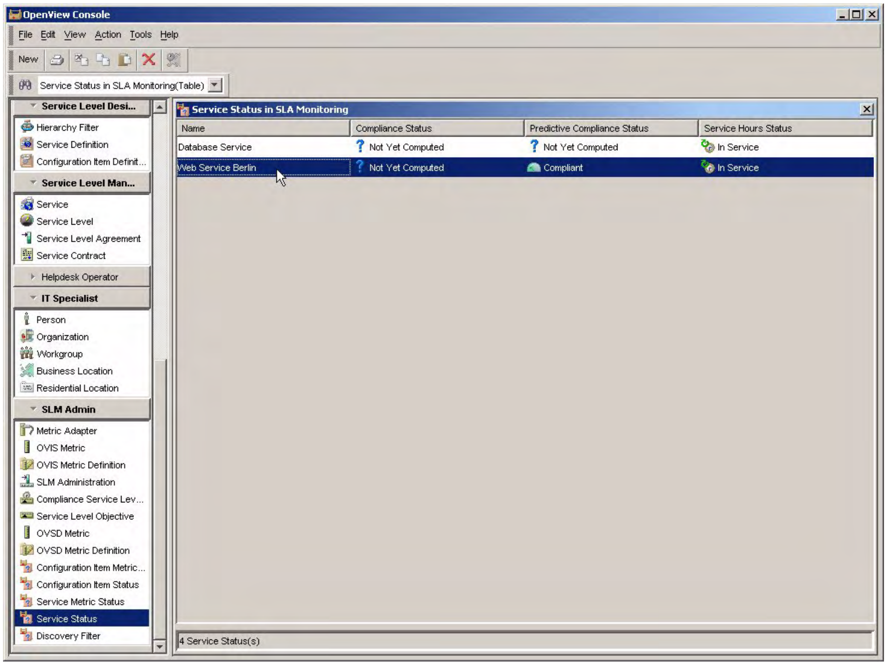
Compliance Status... Friday, February 11, 2005 07:21:11

Predictive Complia... ? Not Yet Computed

Predictive Complia... Friday, February 11, 2005 07:21:11

The service manager navigates to the Service Status workspace. The monitored service has been automatically added to the list. This confirms that the service is under SLM management. Compliance and availability calculations start automatically as soon as the SLA start date arrives:

**Figure 7-93** **Viewing the Status of the Managed Service**



| Name | Compliance Status | Predictive Compliance Status | Service Hours Status |
|---|---|---|---|
| Database Service | ? Not Yet Computed | ? Not Yet Computed | In Service |
| Web Service Berlin | ? Not Yet Computed | Compliant | In Service |

4 Service Status(s)

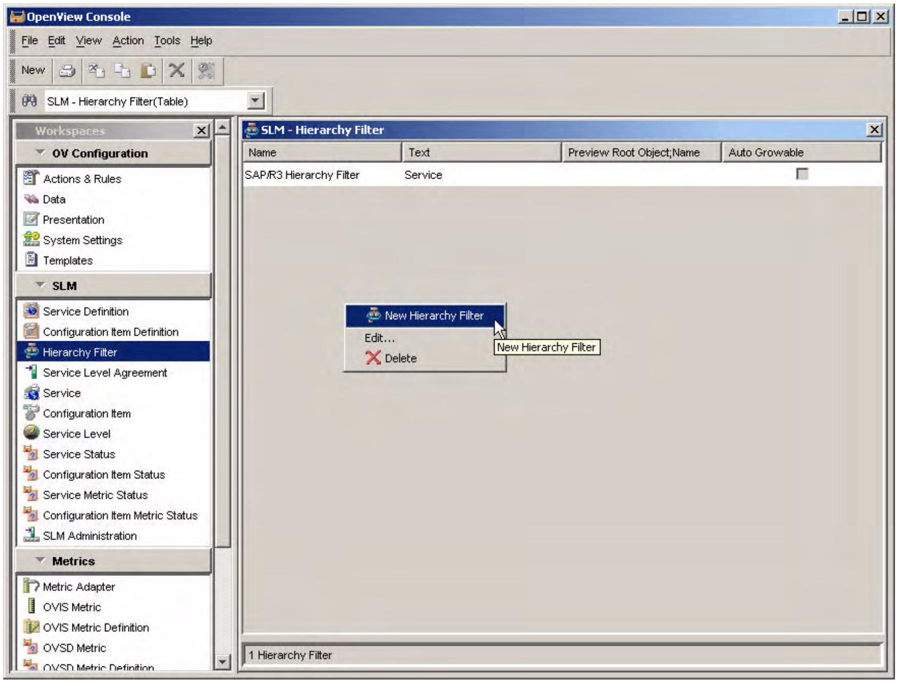
# Scenario 4: Creating a Hierarchy Filter

This scenario demonstrates the creation of a hierarchy filter. “Scenario 5: Creating a Monitored Service based on a Hierarchy Filter” on page 188 demonstrates the creation of a monitored service based on the hierarchy filter. Both scenarios assume that a CMDB with related services and configuration items already exists.

## Entering Basic Hierarchy Filter Details

The service designer accesses the Hierarchy Filter workspace, right-clicks in the view, and chooses the command to create a new hierarchy filter:

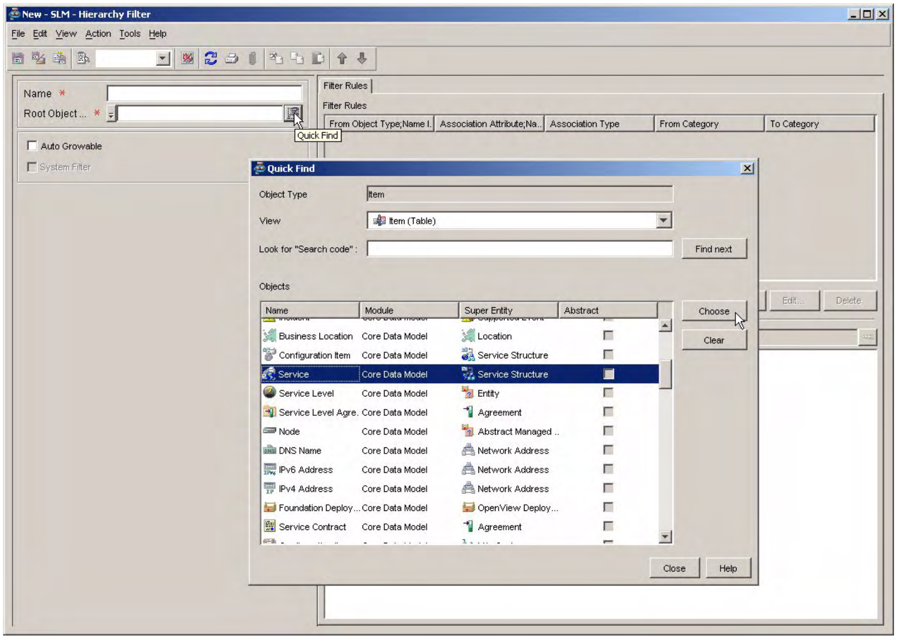
**Figure 7-94** **Creating a New Hierarchy Filter**



| Name | Text | Preview Root Object;Name | Auto Growable |
|---|---|---|---|
| SAP/R3 Hierarchy Filter | Service | | □ |

In the form, the service designer must first specify the type of object at the top of the hierarchy. In this scenario, the hierarchy must have a service as its root object. The service designer clicks the Quick Find button next to the Root Object field, and chooses Service from the list of objects:

**Figure 7-95** **Specifying the Root Object Type**



New - SLM - Hierarchy Filter

Name *
Root Object ... *

□ Auto Growable
□ System Filter

Filter Rules

| From Object Type;Name I. | Association Attribute;Na.. | Association Type | From Category | To Category |
|---|---|---|---|---|

Quick Find

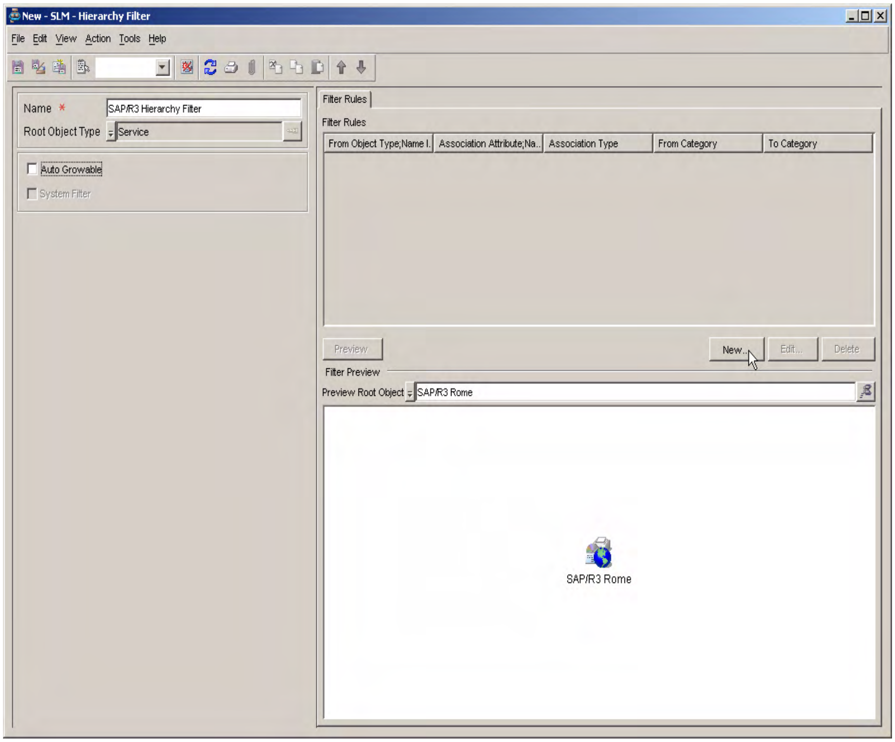
Object Type: Item
View: Item (Table)
Look for "Search code" :

Objects

| Name | Module | Super Entity | Abstract |
|---|---|---|---|
| Business Location | Core Data Model | Location | □ |
| Configuration Item | Core Data Model | Service Structure | □ |
| Service | Core Data Model | Service Structure | □ |
| Service Level | Core Data Model | Entity | □ |
| Service Level Agre. | Core Data Model | Agreement | □ |
| Node | Core Data Model | Abstract Managed .. | □ |
| DNS Name | Core Data Model | Network Address | □ |
| IPv6 Address | Core Data Model | Network Address | □ |
| IPv4 Address | Core Data Model | Network Address | □ |
| Foundation Deploy... | Core Data Model | OpenView Deploy... | □ |
| Service Contract | Core Data Model | Agreement | □ |

The service designer specifies additional basic details such as the name of the filter. In the Preview Root Object field, the service designer selects the service that is to be provided to the customer. Because no filter rules are currently specified, no objects are retrieved and displayed in the preview panel other than the service itself:

**Figure 7-96 Entering Basic Hierarchy Filter Details**



New - SLM - Hierarchy Filter

Name * SAP/R3 Hierarchy Filter

Root Object Type Service

□ Auto Growable

□ System Filter

Filter Rules

| From Object Type;Name I.. | Association Attribute;Na.. | Association Type | From Category | To Category |
|---|---|---|---|---|

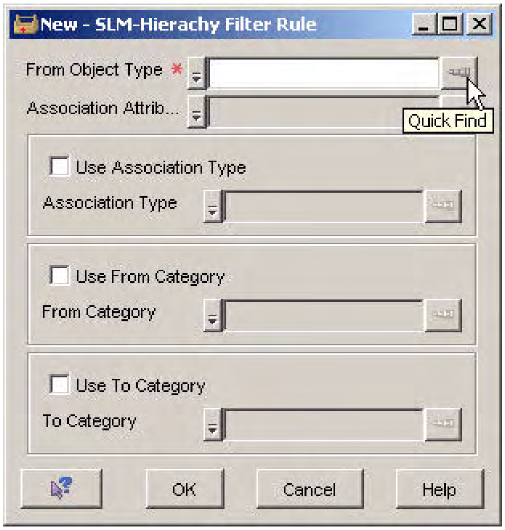
Filter Preview

Preview Root Object SAP/R3 Rome

## Building the List of Filter Rules

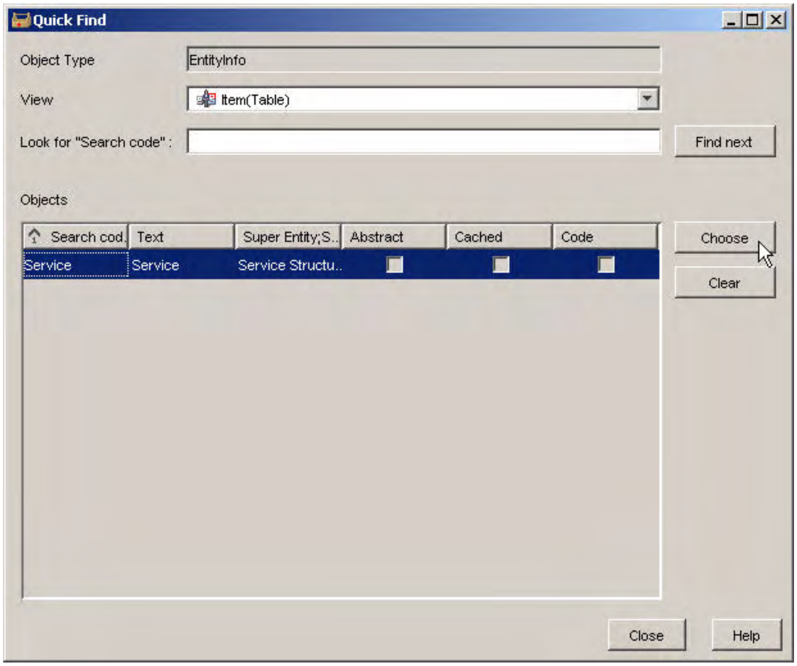
The service designer is now ready to start adding filter rules. The first rule is to retrieve all used services. The service designer clicks the New button under the Filter Rules list to access the Hierarchy Filter Rule dialog box, and then clicks the Quick Find button next to the From Object Type field:

**Figure 7-97 Searching for the 'From' Object Type**



The service designer selects Service from the list:

Figure 7-98 **Selecting Services as the ‘From’ Object Type**



Object Type: EntityInfo

View: Item(Table)

Look for "Search code" :

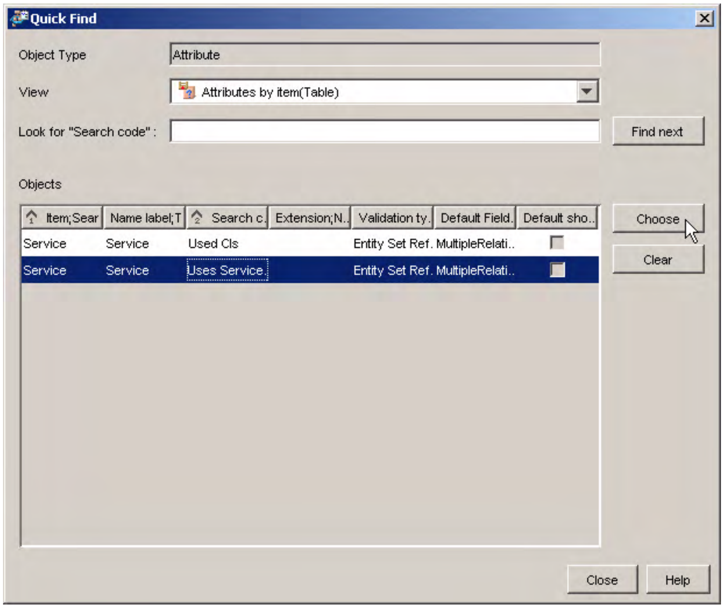
Objects

| Search cod. | Text | Super Entity;S.. | Abstract | Cached | Code |
|---|---|---|---|---|---|
| Service | Service | Service Structu.. | □ | □ | □ |

At this stage, Service is the only option. Once a filter rule has been added that retrieves other object types, the list is extended with those object types.

The service designer now clicks the Quick Find button next to the Association Attribute field. In the Quick Find dialog box, the service designer selects the Uses Services association attribute:

**Figure 7-99 Selecting Used Services as the Association Attribute**



Object Type: Attribute

View: Attributes by item(Table)

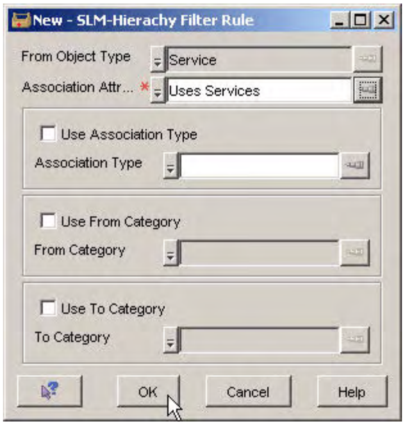
Look for "Search code" :

Objects

| Item;Sear | Name label;T | Search c. | Extension;N.. | Validation ty. | Default Field. | Default sho.. |
|---|---|---|---|---|---|---|
| Service | Service | Used Cls | | Entity Set Ref. | MultipleRelati.. | ☐ |
| Service | Service | Uses Service | | Entity Set Ref. | MultipleRelati.. | ☐ |

After verifying the contents of the Hierarchy Filter Rule dialog box, the service designer clicks OK:

**Figure 7-100 Confirming the Filter Rule for Used Services**



From Object Type: Service

Association Attr... *: Uses Services

☐ Use Association Type

Association Type:

☐ Use From Category

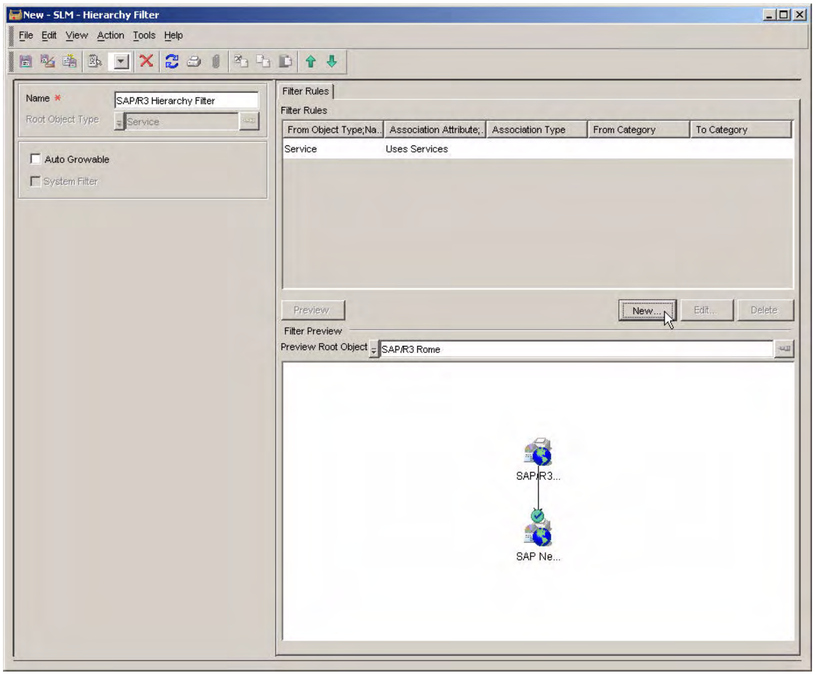
From Category:

☐ Use To Category

To Category:

The filter rule is added to the list in the Hierarchy Filter form, and the used services retrieved by the rule are automatically displayed in the preview panel:

**Figure 7-101** **The Used Service Retrieved by the Filter Rule**



New - SLM - Hierarchy Filter

Name * SAP/R3 Hierarchy Filter

Root Object Type Service

☐ Auto Growable

☐ System Filter

Filter Rules

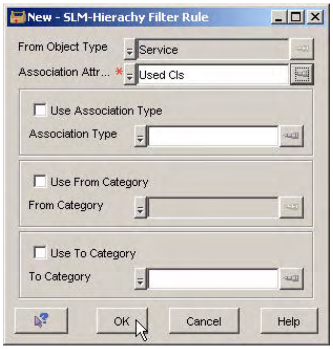
| From Object Type;Na.. | Association Attribute;. | Association Type | From Category | To Category |
|---|---|---|---|---|
| Service | Uses Services | | | |

Filter Preview

Preview Root Object SAP/R3 Rome

The next filter rule to be added is to retrieve used configuration items. Service is again selected as the ‘from’ object type, and Used CIs is selected as the association attribute:

**Figure 7-102** **Confirming the Filter Rule for Used Configuration Items**



New - SLM-Hierachy Filter Rule

From Object Type Service

Association Attr... * Used CIs

☐ Use Association Type

Association Type

☐ Use From Category

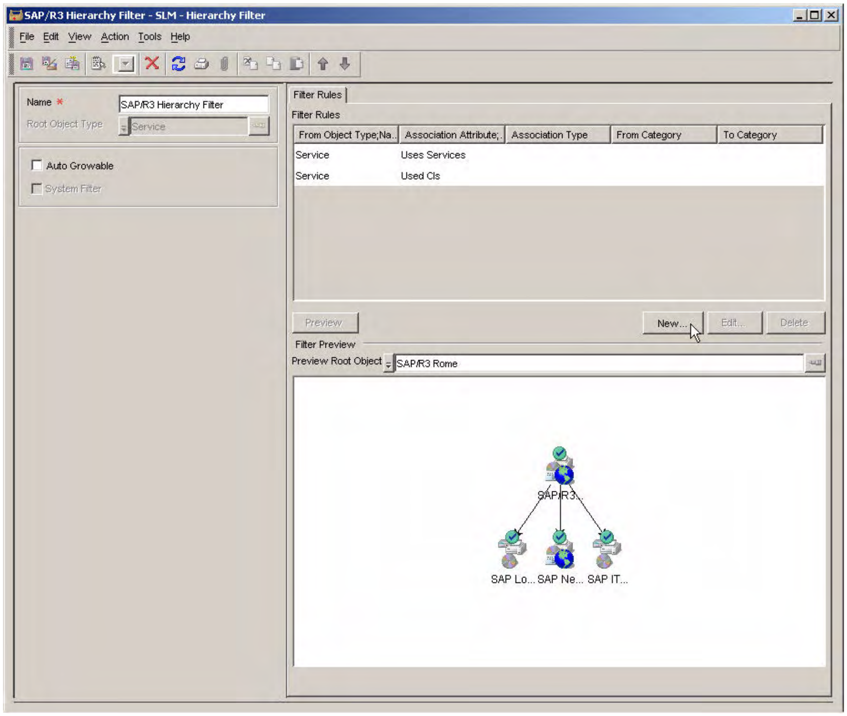
From Category

☐ Use To Category

To Category

The filter rule is added to the list in the Hierarchy Filter form, and the used configuration items retrieved by the rule are automatically displayed in the preview panel:

**Figure 7-103 The Used Services and CIs Retrieved by the Filter Rules**



SAP/R3 Hierarchy Filter - SLM - Hierarchy Filter
File Edit View Action Tools Help
Filter Rules
Preview
New...
Edit...
Delete
Filter Preview
SAP/R3...
SAP Lo... SAP Ne... SAP IT...

Name * SAP/R3 Hierarchy Filter
Root Object Type Service

□ Auto Growable
□ System Filter

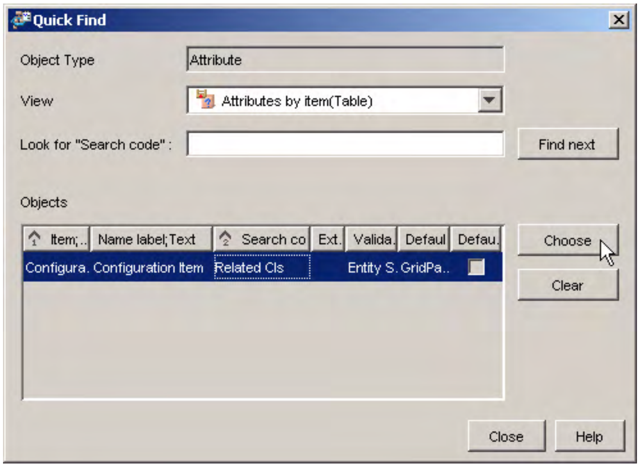
Filter Rules

| From Object Type;Na... | Association Attribute;... | Association Type | From Category | To Category |
|---|---|---|---|---|
| Service | Uses Services | | | |
| Service | Used CIs | | | |

Preview Root Object SAP/R3 Rome

The next filter rule to be added is to retrieve related configuration items with a 'Uses' relation type. This time, Configuration Item is selected as the 'from' object type, and Related CIs is selected as the association attribute:

**Figure 7-104 Selecting Related Configuration Items as the 'From' Object Type**



Quick Find

Object Type: Attribute

View: Attributes by item(Table)

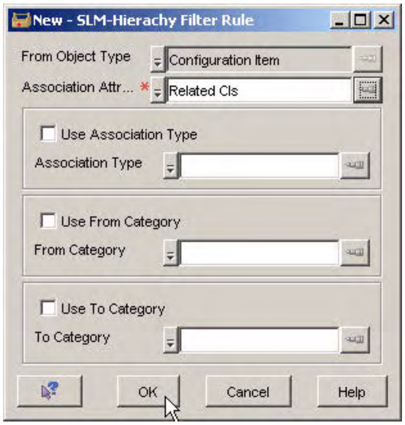
Look for "Search code" :

Objects

| Item;.. | Name label;Text | Search co | Ext. | Valida. | Defaul | Defau. |
|---|---|---|---|---|---|---|
| Configura. | Configuration Item | Related CIs | | Entity S. | GridPa.. | □ |

After verifying the contents of the Hierarchy Filter Rule dialog box, the service designer clicks OK:

**Figure 7-105 Confirming the Filter Rule to Retrieve Related CIs**



New - SLM-Hierachy Filter Rule

From Object Type: Configuration Item

Association Attr... *: Related CIs

□ Use Association Type

Association Type:

□ Use From Category

From Category:

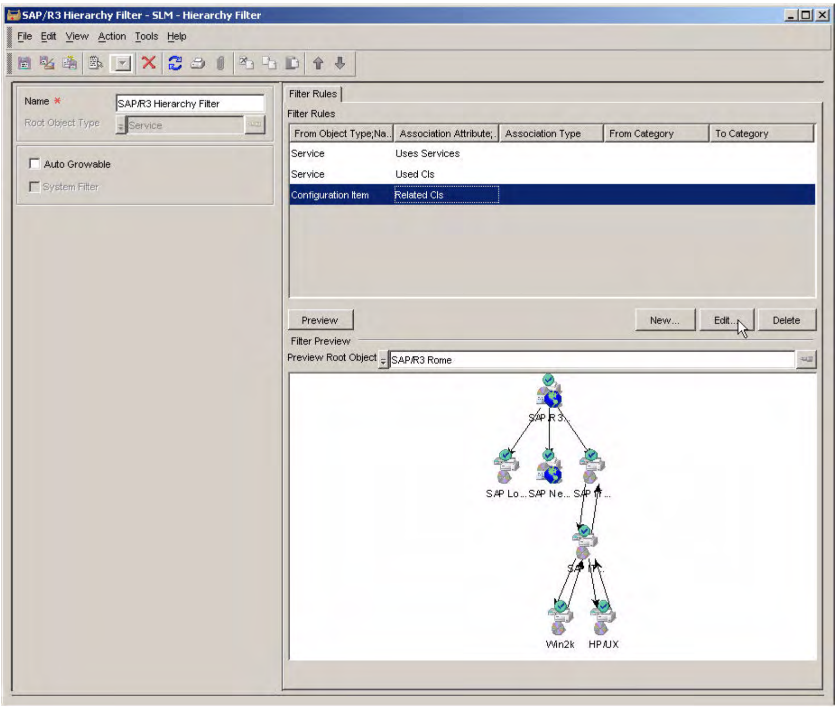
□ Use To Category

To Category:

The filter rule is added to the list in the Hierarchy Filter form, and the related configuration items retrieved by the rule are automatically displayed in the preview panel. Because no association type is specified (in this context, the association type is 'configuration item relation type'), all related configuration items are retrieved.

The lines connecting the related configuration items point in both directions for each relation type that has a reverse relation type. To clarify the situation, the service designer edits the filter rule to specify an association type.

**The Related Configuration Items Retrieved by the Filter Rule**



SAP/R3 Hierarchy Filter - SLM - Hierarchy Filter

Name * SAP/R3 Hierarchy Filter
Root Object Type Service

☐ Auto Growable
☐ System Filter

Filter Rules

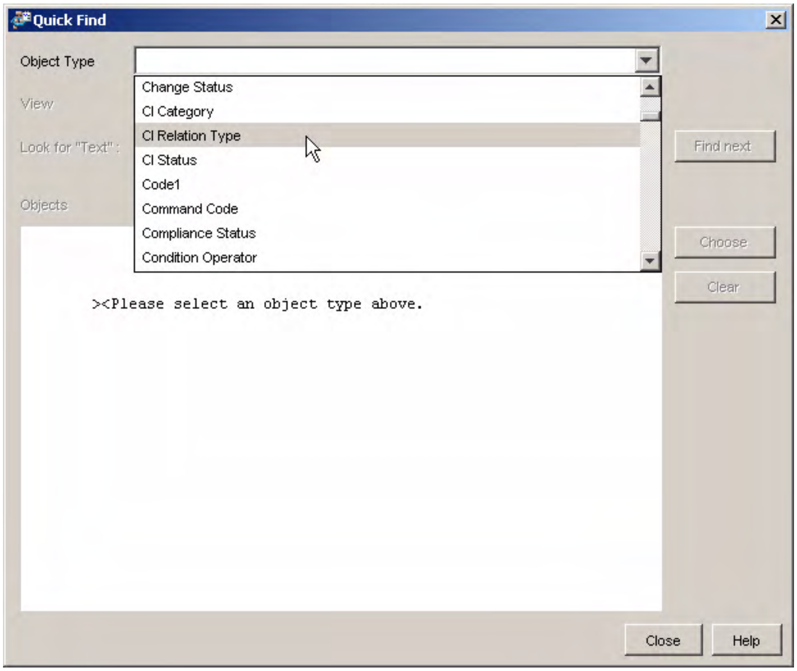
| From Object Type;Na... | Association Attribute;... | Association Type | From Category | To Category |
|---|---|---|---|---|
| Service | Uses Services | | | |
| Service | Used CIs | | | |
| Configuration Item | Related CIs | | | |

Filter Preview
Preview Root Object SAP/R3 Rome

First, the service designer highlights the rule to be edited, and clicks the Edit button. In the Hierarchy Filter Rule dialog box, the service designer clicks the Quick Find button next to the Association Type field.

In the dialog box that opens, the service designer selects CI Relation as the object type:

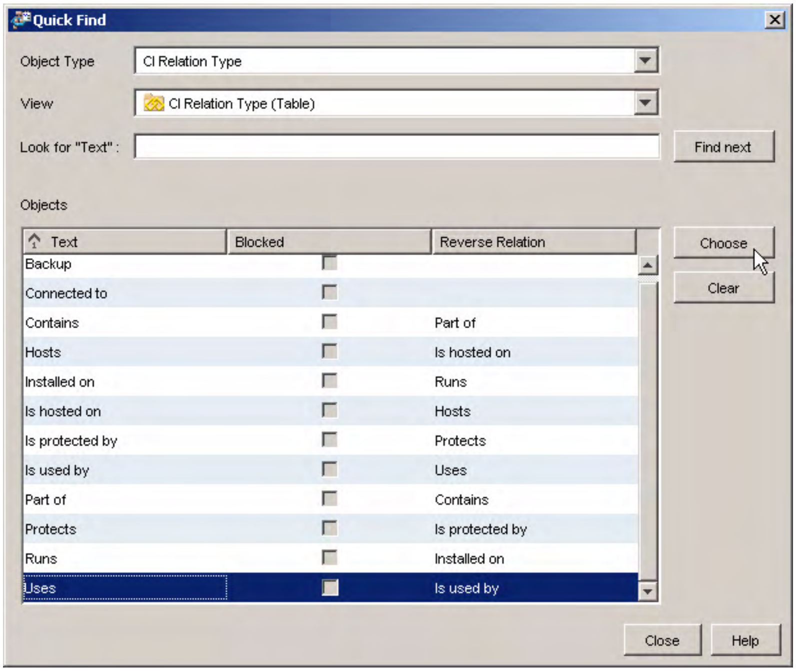
**Figure 7-106 Selecting CI Relation for the Association Type**



><Please select an object type above.

The service designer now selects the Uses configuration item relation type:

Figure 7-107 **Selecting the 'Uses' Association Type**



Quick Find

Object Type: CI Relation Type

View: CI Relation Type (Table)

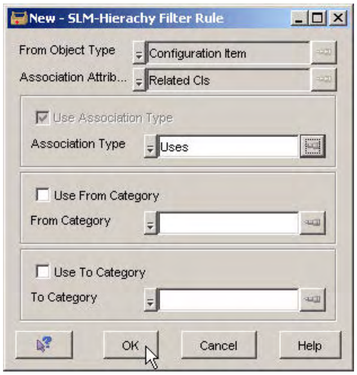
Look for "Text" :

Objects

| Text | Blocked | Reverse Relation |
|---|---|---|
| Backup | ☐ | |
| Connected to | ☐ | |
| Contains | ☐ | Part of |
| Hosts | ☐ | Is hosted on |
| Installed on | ☐ | Runs |
| Is hosted on | ☐ | Hosts |
| Is protected by | ☐ | Protects |
| Is used by | ☐ | Uses |
| Part of | ☐ | Contains |
| Protects | ☐ | Is protected by |
| Runs | ☐ | Installed on |
| Uses | ☐ | Is used by |

After verifying the modified contents of the Hierarchy Filter Rule dialog box, the service designer clicks OK:

Figure 7-108 **Confirming the Change to the Filter Rule for Related CIs**



New - SLM-Hierachy Filter Rule

From Object Type: Configuration Item

Association Attrib...: Related CIs

☑ Use Association Type

Association Type: Uses

☐ Use From Category

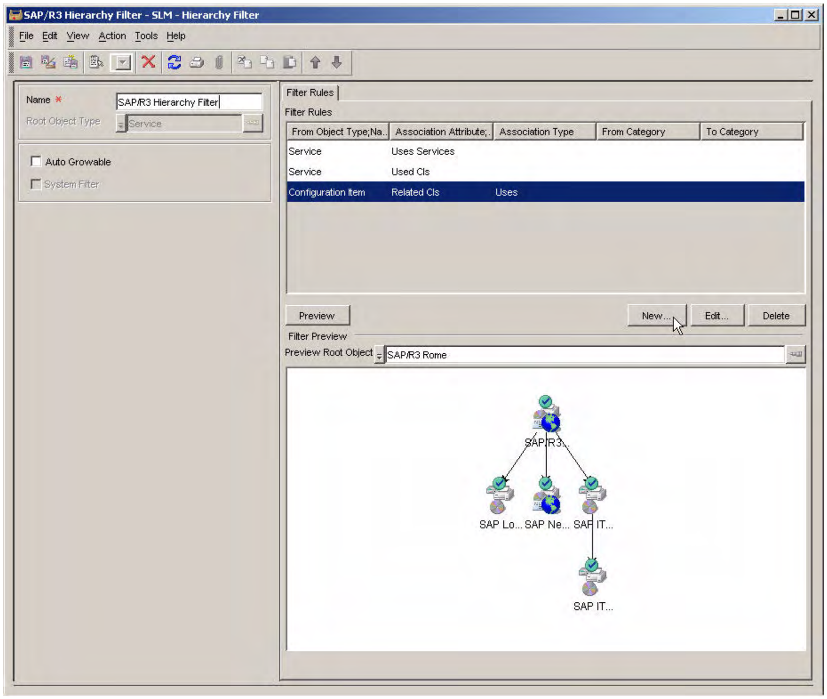
From Category:

☐ Use To Category

To Category:

The preview panel is automatically updated to display only configuration item relations of type Uses:

Figure 7-109 **The Related CIs Retrieved by the Edited Filter Rule**



SAP/R3 Hierarchy Filter - SLM - Hierarchy Filter

Name * SAP/R3 Hierarchy Filter

Root Object Type Service

□ Auto Growable

□ System Filter

Filter Rules

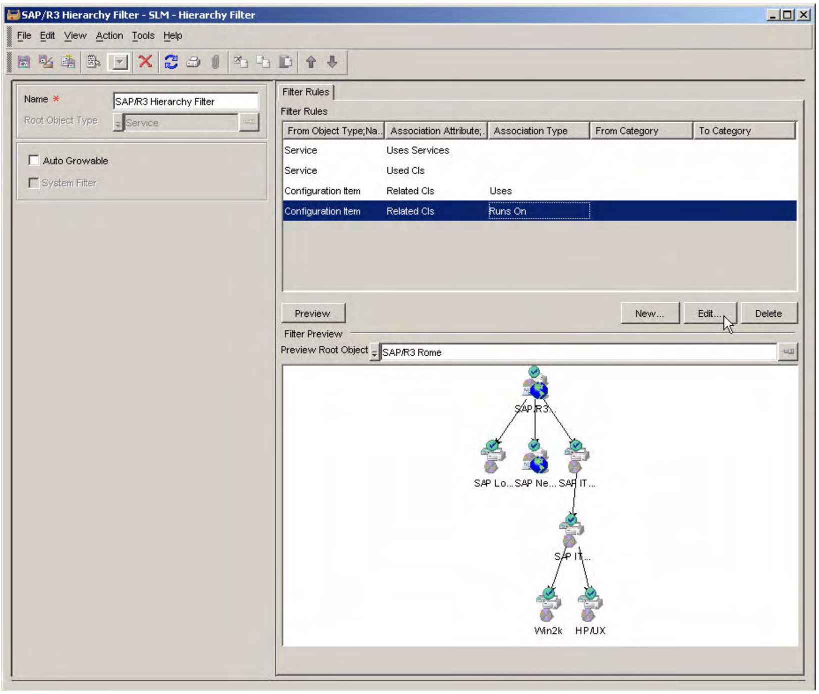
| From Object Type;Na.. | Association Attribute;. | Association Type | From Category | To Category |
|---|---|---|---|---|
| Service | Uses Services | | | |
| Service | Used CIs | | | |
| Configuration Item | Related CIs | Uses | | |

Filter Preview

Preview Root Object SAP/R3 Rome

The service designer now adds a filter rule to retrieve configuration items with a relation type of Runs On:

**Figure 7-110 The Hierarchy with the Retrieved ‘Runs On’ CI Relations**



Name * SAP/R3 Hierarchy Filter

Root Object Type Service

☐ Auto Growable

☐ System Filter

Filter Rules

| From Object Type;Na.. | Association Attribute;. | Association Type | From Category | To Category |
|---|---|---|---|---|
| Service | Uses Services | | | |
| Service | Used CIs | | | |
| Configuration Item | Related CIs | Uses | | |
| Configuration Item | Related CIs | Runs On | | |

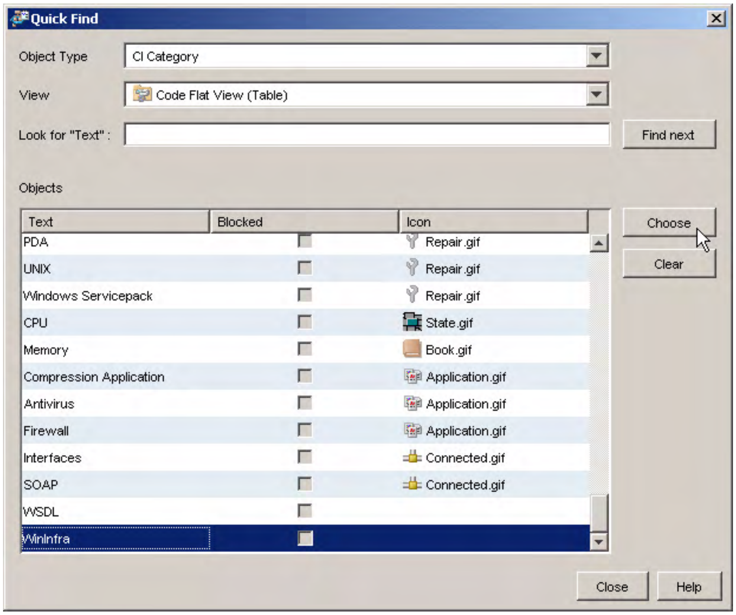
Filter Preview

Preview Root Object SAP/R3 Rome

In this scenario, the service designer wants to exclude the configuration item representing the HP/UX infrastructure, but wants to include the configuration item representing the Windows 2000 infrastructure.

Because each configuration item is assigned a category, the service designer can make the required modification to the hierarchy filter by specifying the ‘To’ category in the filter rule:

**Figure 7-111 Selecting ‘WinInfra’ as the ‘To’ Category**



Quick Find

Object Type: CI Category

View: Code Flat View (Table)

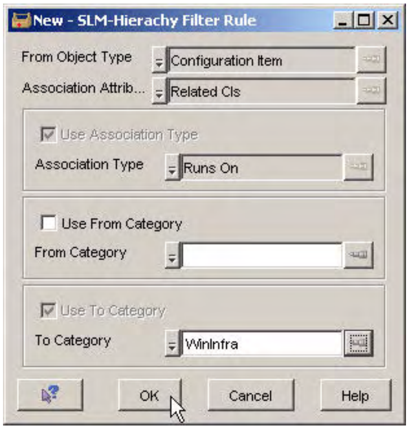
Look for "Text":

Objects

| Text | Blocked | Icon |
|---|---|---|
| PDA | ☐ | Repair.gif |
| UNIX | ☐ | Repair.gif |
| Windows Servicepack | ☐ | Repair.gif |
| CPU | ☐ | State.gif |
| Memory | ☐ | Book.gif |
| Compression Application | ☐ | Application.gif |
| Antivirus | ☐ | Application.gif |
| Firewall | ☐ | Application.gif |
| Interfaces | ☐ | Connected.gif |
| SOAP | ☐ | Connected.gif |
| WSDL | ☐ | |
| WinInfra | ☐ | |

After verifying the modified contents of the Hierarchy Filter Rule dialog box, the service designer clicks OK:

**Figure 7-112 Confirming the Filter Rule with the ‘To’ Category**



New - SLM-Hierachy Filter Rule

From Object Type: Configuration Item

Association Attrib...: Related CIs

☑ Use Association Type

Association Type: Runs On

☐ Use From Category

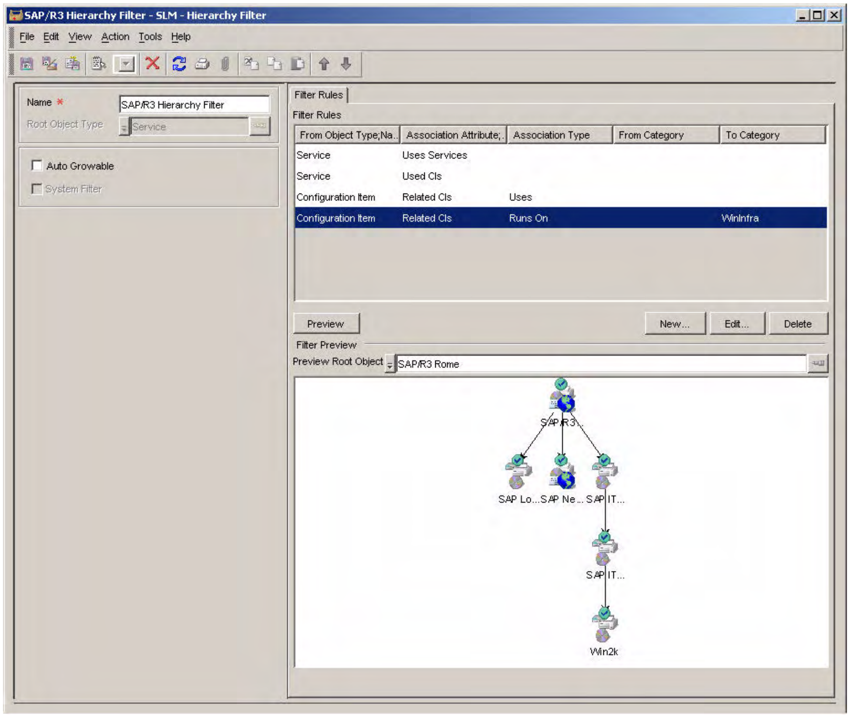
From Category:

☑ Use To Category

To Category: WinInfra

The preview panel is automatically updated to remove the configuration item representing the HP/UX infrastructure:

**Figure 7-113 The Completed Hierarchy Filter**



SAP/R3 Hierarchy Filter - SLM - Hierarchy Filter

Name * SAP/R3 Hierarchy Filter
Root Object Type Service

☐ Auto Growable
☐ System Filter

Filter Rules

Filter Rules

| From Object Type;Na.. | Association Attribute;.. | Association Type | From Category | To Category |
|---|---|---|---|---|
| Service | Uses Services | | | |
| Service | Used CIs | | | |
| Configuration Item | Related CIs | Uses | | |
| Configuration Item | Related CIs | Runs On | | WinInfra |

Filter Preview
Preview Root Object SAP/R3 Rome

The service designer saves and closes the hierarchy filter. The service manager can now use it to create a monitored service.

# Scenario 5: Creating a Monitored Service based on a Hierarchy Filter

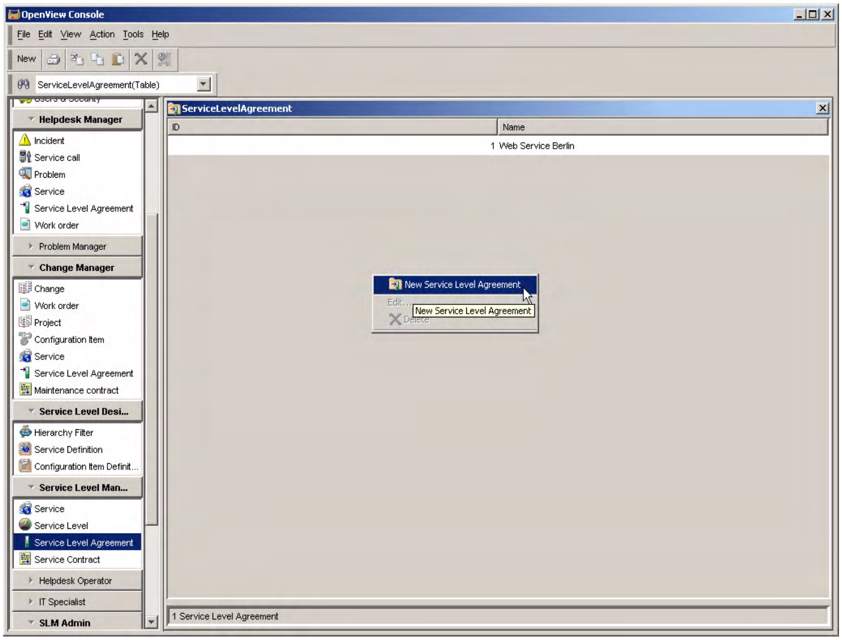
This scenario demonstrates the creation of a monitored service based on the hierarchy filter created in “Scenario 4: Creating a Hierarchy Filter” on page 172. The scenario assumes that a CMDB with related services and configuration items already exists.

## Specifying SLA Details

The service manager starts by creating a new SAP Network service and a service level agreement for the used SAP Network service. The procedure for doing so is similar to the procedure for creating a service and SLA for the database service used by the web service in “Scenario 3: Creating a Monitored Service based on a Service Definition” on page 145.

The service manager now creates a new SLA for the SAP/R3 service that is to be based on the SAP R/3 Hierarchy Filter:

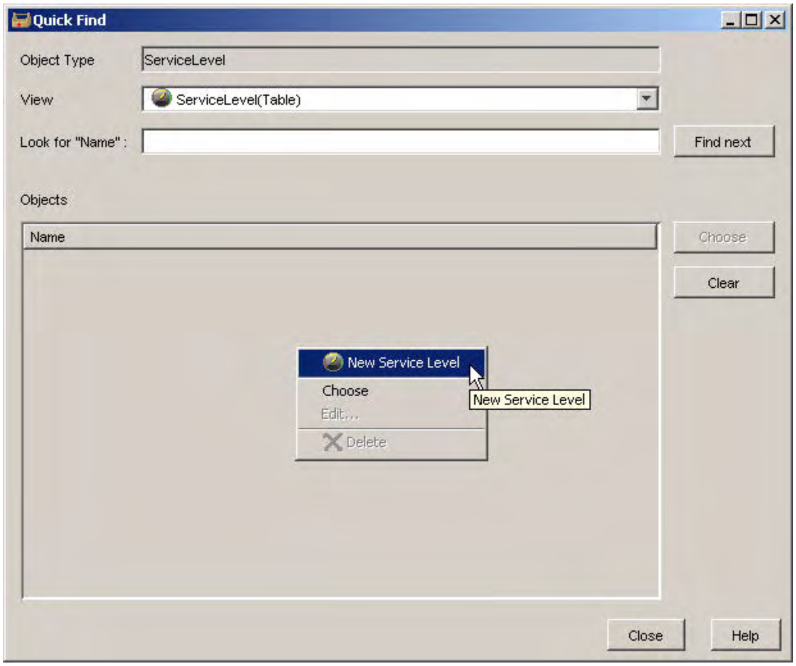
**Figure 7-114** **Creating the Service Level Agreement for the Used Service**



| ID | Name |
|---|---|
| 1 | Web Service Berlin |

The service manager clicks the Quick Find button next to the Service Level field, right-clicks in the Quick Find dialog box, and selects the command to create a new service level:

**Figure 7-115 Relating a New Service Level to the SLA**



Quick Find

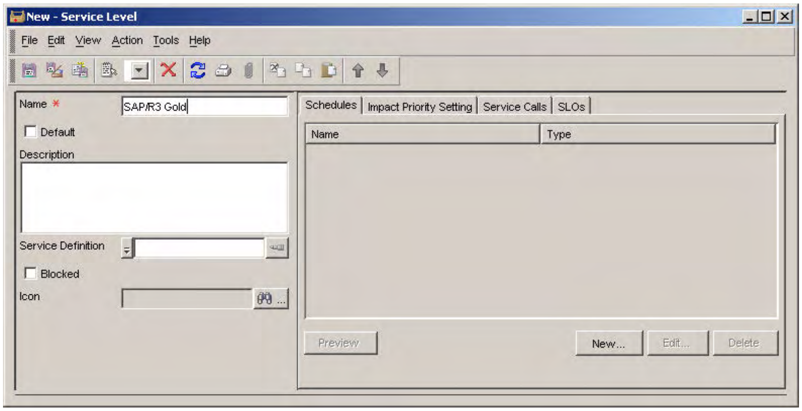
Object Type: ServiceLevel

View: ServiceLevel(Table)

Look for "Name" :

The new service level opens in a form. The service manager specifies basic details:

Figure 7-116 **Specifying Basic Details for the New Service Level**



Name * SAP/R3 Gold

□ Default

Description

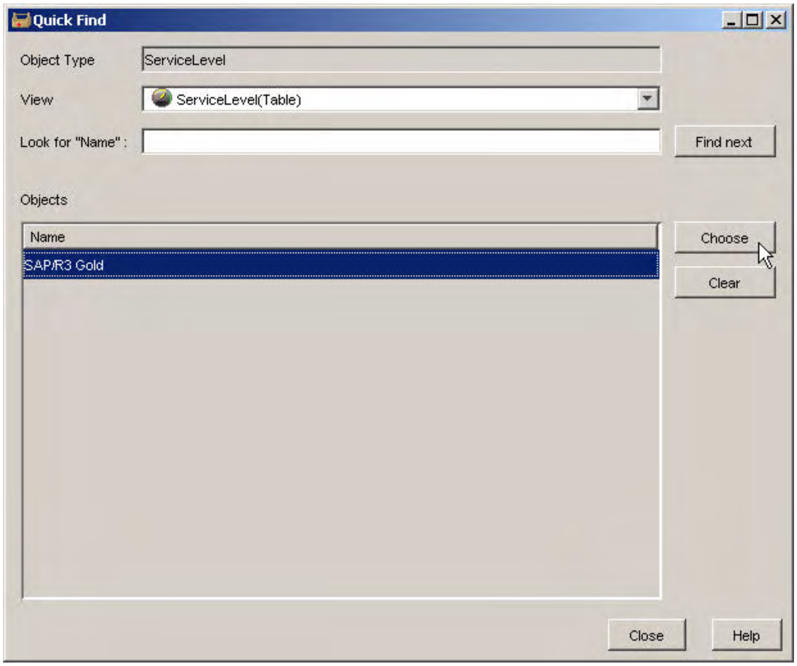
Service Definition

□ Blocked

Icon

The service manager saves the new service level, then selects it in the Quick Find dialog box:

Figure 7-117 **Selecting the New Service Level**



Object Type ServiceLevel

View ServiceLevel(Table)

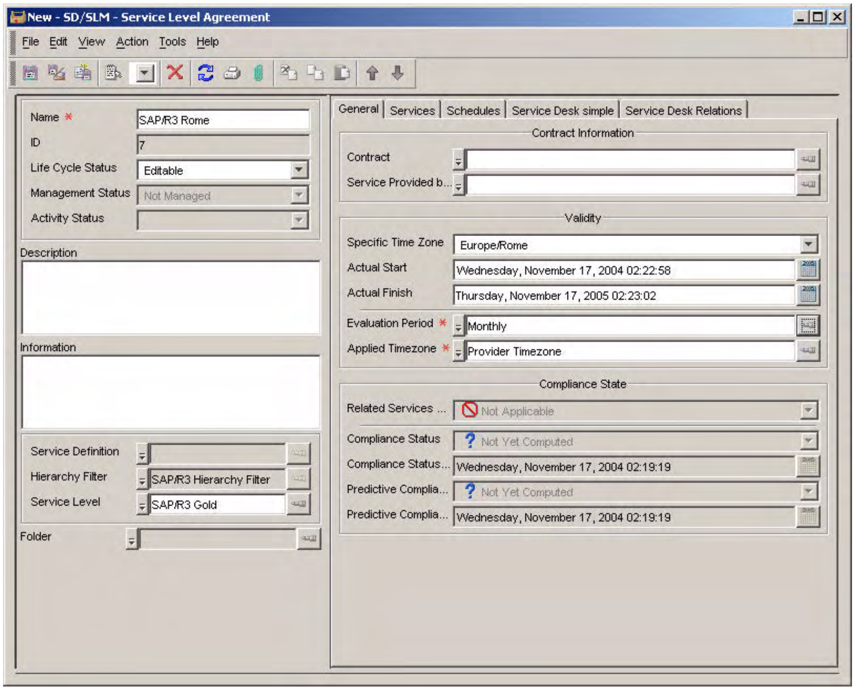
Look for "Name" :

Objects

| Name |
|---|
| SAP/R3 Gold |

The service manager continues to specify basic details in the service level agreement form for the SAP/R3 service:

**Figure 7-118 The SLA for the SAP/R3 Service**



| | |
|---|---|
| Name * | SAP/R3 Rome |
| ID | 7 |
| Life Cycle Status | Editable |
| Management Status | Not Managed |
| Activity Status | |
| Description | |
| Information | |
| Service Definition | |
| Hierarchy Filter | SAP/R3 Hierarchy Filter |
| Service Level | SAP/R3 Gold |
| Folder | |

Contract Information

| | |
|---|---|
| Contract | |
| Service Provided b... | |

Validity

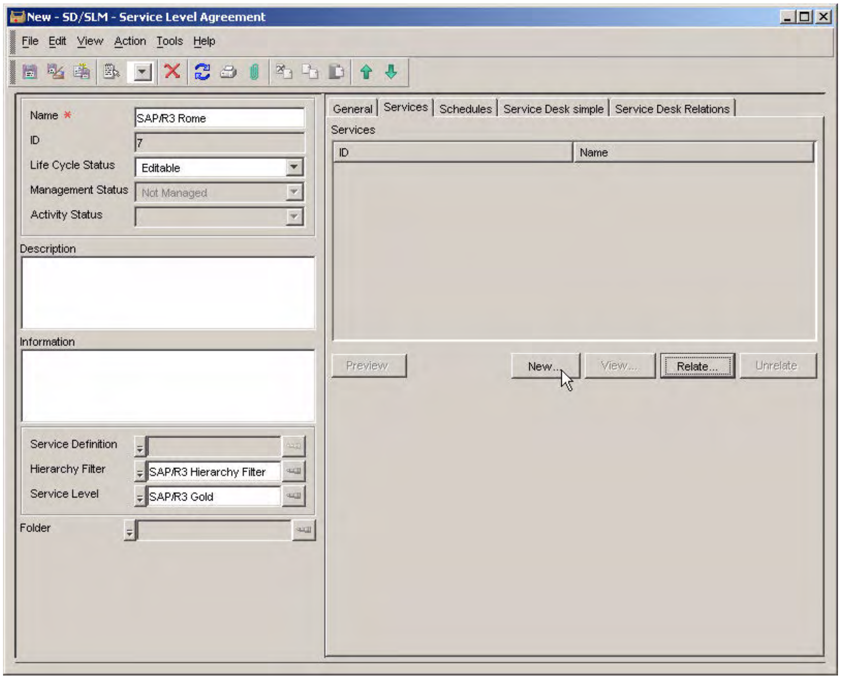
| | |
|---|---|
| Specific Time Zone | Europe/Rome |
| Actual Start | Wednesday, November 17, 2004 02:22:58 |
| Actual Finish | Thursday, November 17, 2005 02:23:02 |
| Evaluation Period * | Monthly |
| Applied Timezone * | Provider Timezone |

Compliance State

| | |
|---|---|
| Related Services ... | Not Applicable |
| Compliance Status | Not Yet Computed |
| Compliance Status... | Wednesday, November 17, 2004 02:19:19 |
| Predictive Complia... | Not Yet Computed |
| Predictive Complia... | Wednesday, November 17, 2004 02:19:19 |

The service manager clicks the New button below the list of related services:

Figure 7-119 **Relating a New Service to the SAP/R3 SLA**



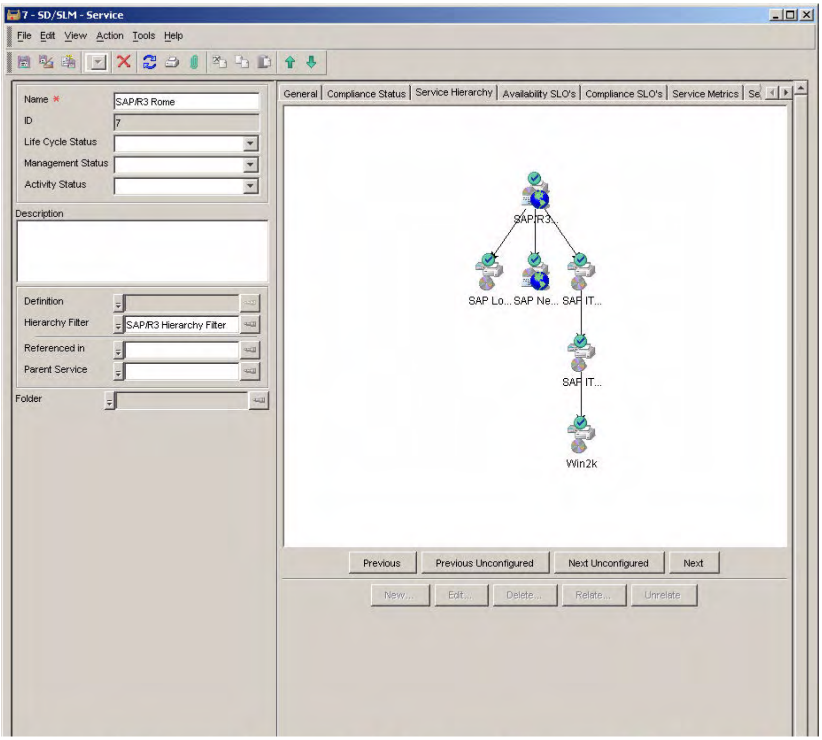
Name * SAP/R3 Rome
ID 7
Life Cycle Status Editable
Management Status Not Managed
Activity Status
Description
Information
Service Definition
Hierarchy Filter SAP/R3 Hierarchy Filter
Service Level SAP/R3 Gold
Folder

Services

| ID | Name |
|---|---|

The new service opens in a form. The service manager relates the same hierarchy filter to the service as was related to the service level agreement, and then saves the new service. As soon as the service manager navigates to the Service Hierarchy tab page, the hierarchy inherited from the filter appears:

**Figure 7-120 The Service Hierarchy Inherited from the Hierarchy Filter**



7 - SD/SLM - Service

Name * SAP/R3 Rome

ID 7

Life Cycle Status

Management Status

Activity Status

Description

Definition

Hierarchy Filter SAP/R3 Hierarchy Filter

Referenced in

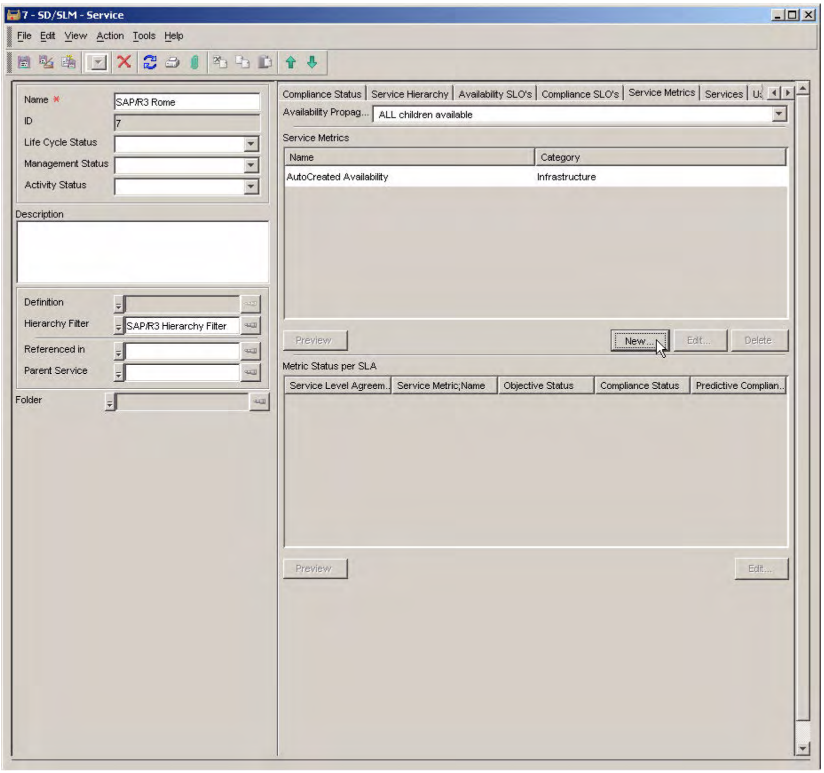
Parent Service

Folder

## Adding Service Metrics to the Hierarchy

The service manager now considers how the service should be measured for compliance. An infrastructure availability metric is automatically added when the service is created. The service manager decides to add an additional OVIS metric of type SAP Response Type, and so clicks the New button below the list of service metrics:

Figure 7-121 **Adding a New Service Metric to the Service**



Name * SAP/R3 Rome
ID 7
Hierarchy Filter SAP/R3 Hierarchy Filter
Availability Propag... ALL children available

Service Metrics

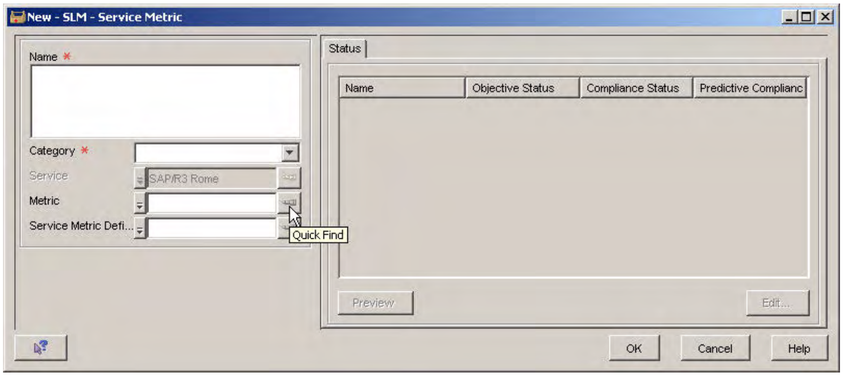
| Name | Category |
|---|---|
| AutoCreated Availability | Infrastructure |

Metric Status per SLA

| Service Level Agreem... | Service Metric;Name | Objective Status | Compliance Status | Predictive Complian... |
|---|---|---|---|---|

In the service metric form, the service manager clicks the Quick Find button next to the Metric field:

Figure 7-122 **Searching for a Metric**

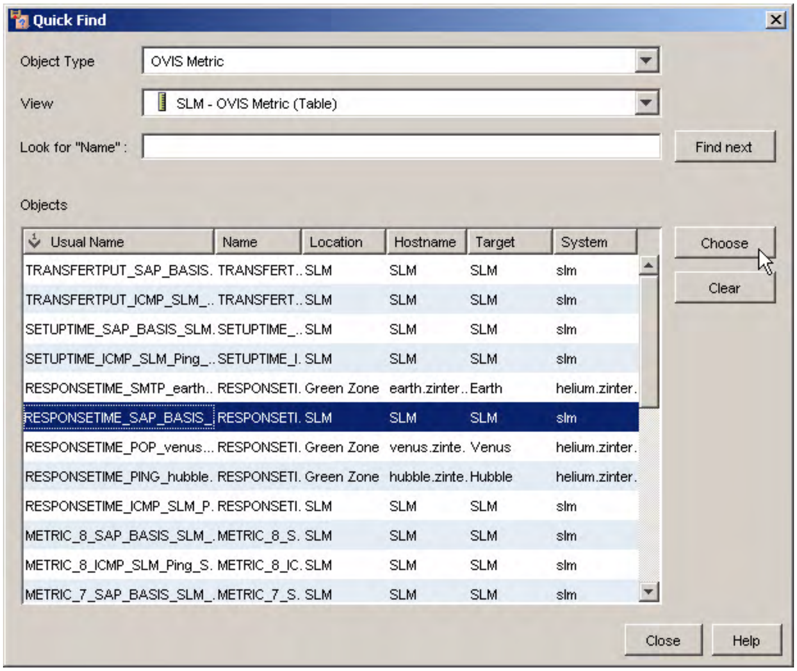


Service SAP/R3 Rome

| Name | Objective Status | Compliance Status | Predictive Complianc |
|---|---|---|---|

The Quick Find dialog box opens. In the Object type field, the service manager selects the type of metric required, and then chooses a metric to measure the SAP response time from the list. Note that each metric specifies not only the type of measurement but also the source of metric data values:

**Figure 7-123** **Selecting the Metric**



Object Type: OVIS Metric

View: SLM - OVIS Metric (Table)

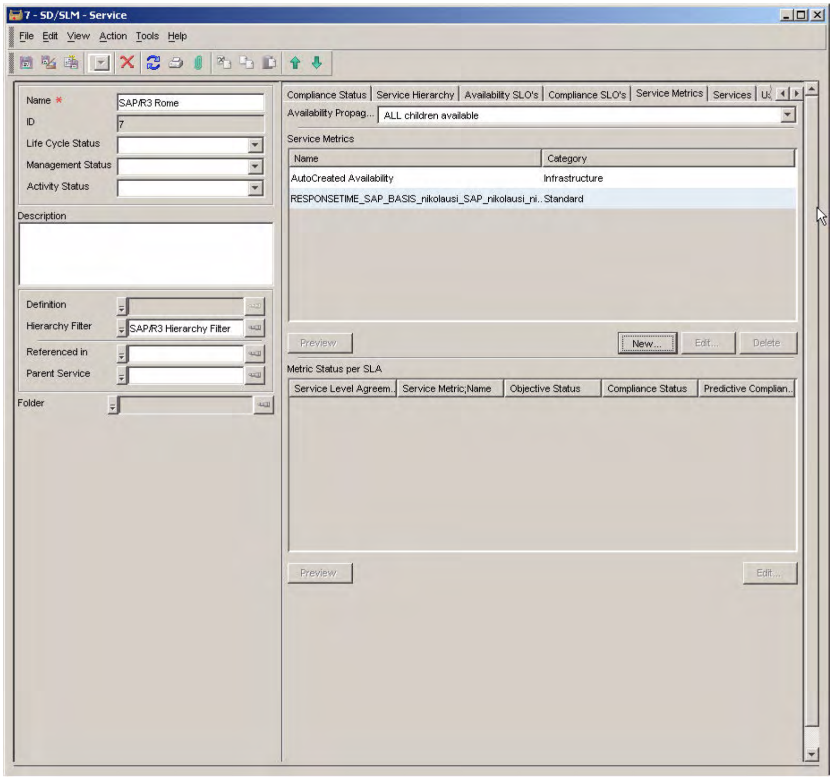
Look for "Name" :

Objects

| Usual Name | Name | Location | Hostname | Target | System |
|---|---|---|---|---|---|
| TRANSFERTPUT_SAP_BASIS. | TRANSFERT.. | SLM | SLM | SLM | slm |
| TRANSFERTPUT_ICMP_SLM_.. | TRANSFERT.. | SLM | SLM | SLM | slm |
| SETUPTIME_SAP_BASIS_SLM. | SETUPTIME_.. | SLM | SLM | SLM | slm |
| SETUPTIME_ICMP_SLM_Ping_.. | SETUPTIME_I. | SLM | SLM | SLM | slm |
| RESPONSETIME_SMTP_earth.. | RESPONSETI. | Green Zone | earth.zinter.. | Earth | helium.zinter. |
| RESPONSETIME_SAP_BASIS_ | RESPONSETI. | SLM | SLM | SLM | slm |
| RESPONSETIME_POP_venus... | RESPONSETI. | Green Zone | venus.zinte. | Venus | helium.zinter. |
| RESPONSETIME_PING_hubble. | RESPONSETI. | Green Zone | hubble.zinte. | Hubble | helium.zinter. |
| RESPONSETIME_ICMP_SLM_P. | RESPONSETI. | SLM | SLM | SLM | slm |
| METRIC_8_SAP_BASIS_SLM_. | METRIC_8_S. | SLM | SLM | SLM | slm |
| METRIC_8_ICMP_SLM_Ping_S. | METRIC_8_IC. | SLM | SLM | SLM | slm |
| METRIC_7_SAP_BASIS_SLM_. | METRIC_7_S. | SLM | SLM | SLM | slm |

The selected service metric is added to the list.

**Figure 7-124 The New Service Metric Added to the List**



Name * SAP/R3 Rome
ID 7
Life Cycle Status
Management Status
Activity Status
Description
Definition
Hierarchy Filter SAP/R3 Hierarchy Filter
Referenced in
Parent Service
Folder

Availability Propag... ALL children available

Service Metrics

| Name | Category |
|---|---|
| AutoCreated Availability | Infrastructure |
| RESPONSETIME_SAP_BASIS_nikolausi_SAP_nikolausi_ni.. | Standard |

Metric Status per SLA

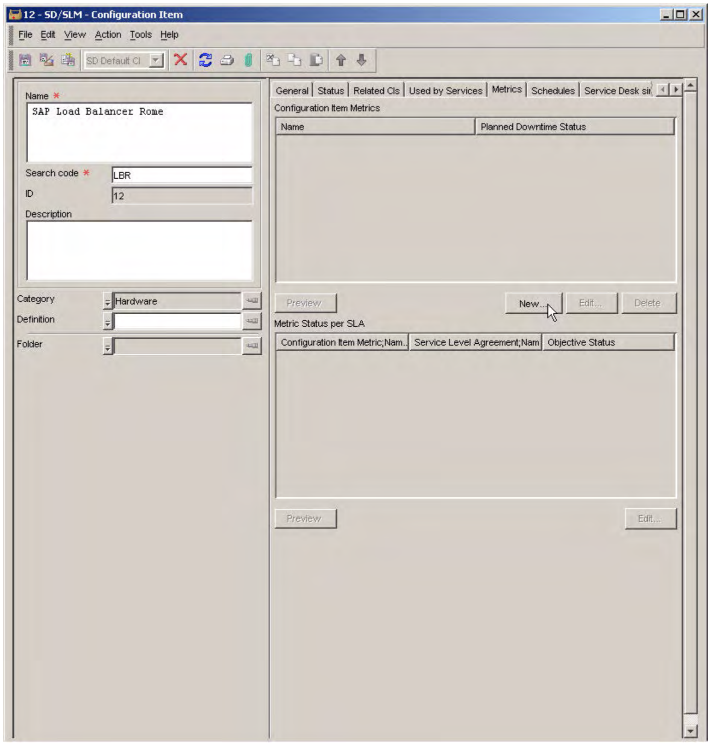
| Service Level Agreem.. | Service Metric;Name | Objective Status | Compliance Status | Predictive Complian.. |
|---|---|---|---|---|

## Adding Configuration Item Metrics to the Hierarchy

The service manager now considers how each configuration item in the hierarchy should be measured. Any of the metrics that are available as a result of the metric discovery process can be used.

The service manager decides to measure the SAP load balancer using the OVIS ICMP Availability probe. The service manager clicks the SAP load balancer configuration item in the hierarchy and selects the command to edit it. In the configuration item form, the service manager navigates to the tab page that lists the metrics, and clicks the New button:

**Figure 7-125 Adding a New Configuration Item Metric**



12 - SD/SLM - Configuration Item

Name: SAP Load Balancer Rome

Search code: LBR

ID: 12

Description:

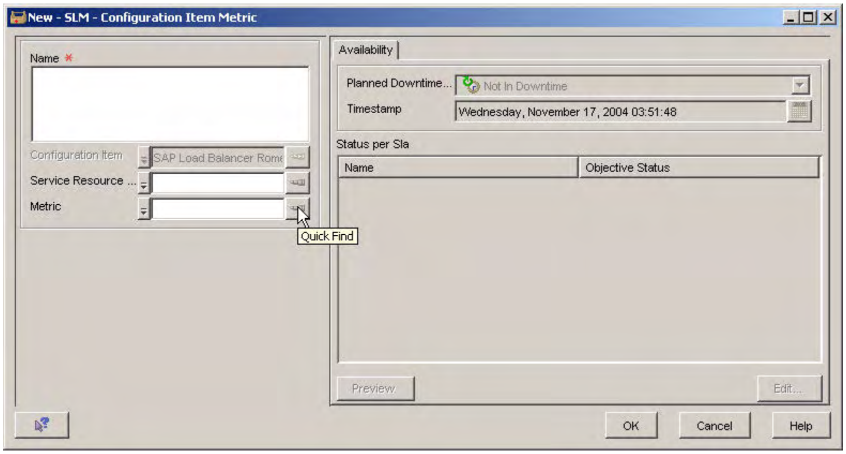
Category: Hardware

Definition:

Folder:

In the configuration item metric form, the service manager clicks the Quick Find button next to the Metric field:

**Figure 7-126 Searching for a Metric**



Name *

Configuration Item: SAP Load Balancer Rom

Service Resource ...:

Metric:

Planned Downtime...: Not In Downtime

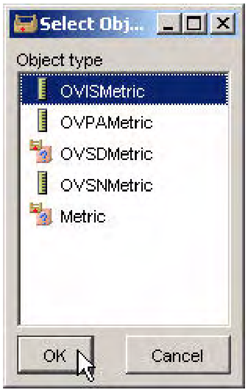
Timestamp: Wednesday, November 17, 2004 03:51:48

Status per Sla

| Name | Objective Status |
|---|---|

In the dialog box that opens, the service manager selects the type of metric required:

**Figure 7-127 Selecting the Metric Type**

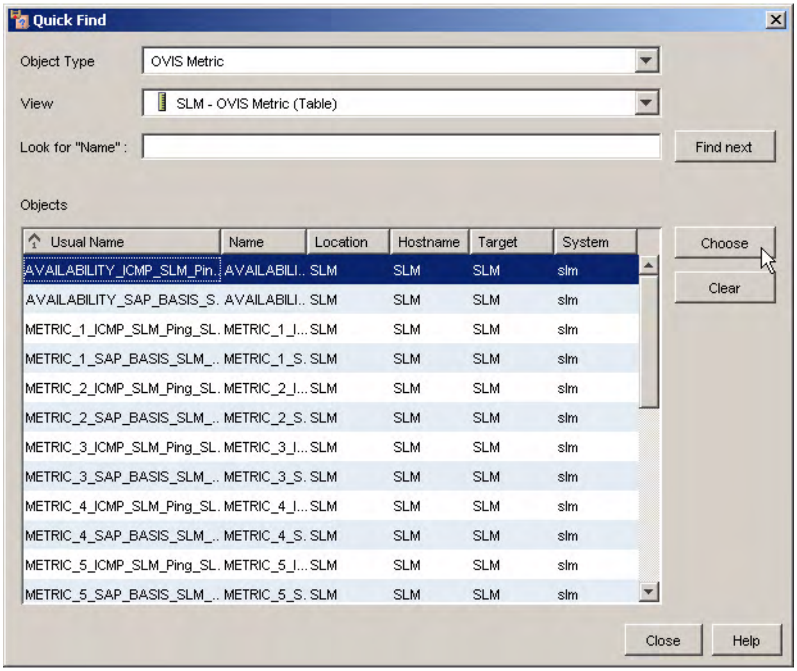


Object type

- OVISMetric
- OVPAMetric
- OVSDMetric
- OVSNMetric
- Metric

In the Quick Find dialog box, the service manager selects the required metric to measure availability. Note that each metric specifies not only the type of measurement but also the source of metric data values:

Figure 7-128 **Selecting a Metric for the Configuration Item**



Quick Find

Object Type: OVIS Metric

View: SLM - OVIS Metric (Table)

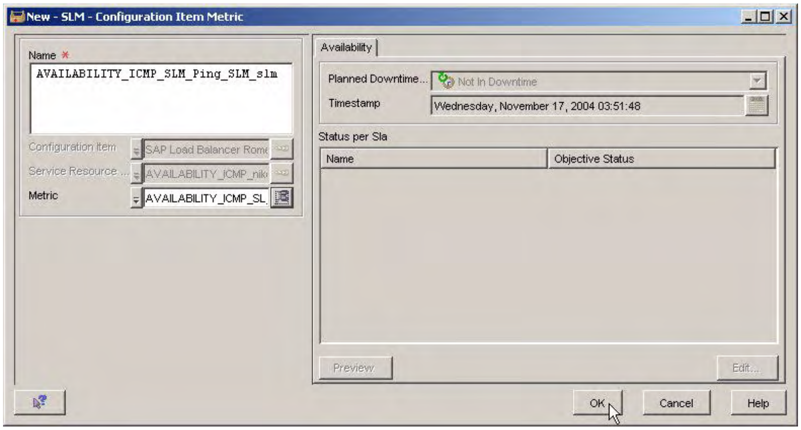
Look for "Name" :

Objects

| Usual Name | Name | Location | Hostname | Target | System |
|---|---|---|---|---|---|
| AVAILABILITY_ICMP_SLM_Pin.. | AVAILABILI.. | SLM | SLM | SLM | slm |
| AVAILABILITY_SAP_BASIS_S. | AVAILABILI.. | SLM | SLM | SLM | slm |
| METRIC_1_ICMP_SLM_Ping_SL. | METRIC_1_I... | SLM | SLM | SLM | slm |
| METRIC_1_SAP_BASIS_SLM_.. | METRIC_1_S. | SLM | SLM | SLM | slm |
| METRIC_2_ICMP_SLM_Ping_SL. | METRIC_2_I... | SLM | SLM | SLM | slm |
| METRIC_2_SAP_BASIS_SLM_.. | METRIC_2_S. | SLM | SLM | SLM | slm |
| METRIC_3_ICMP_SLM_Ping_SL. | METRIC_3_I... | SLM | SLM | SLM | slm |
| METRIC_3_SAP_BASIS_SLM_.. | METRIC_3_S. | SLM | SLM | SLM | slm |
| METRIC_4_ICMP_SLM_Ping_SL. | METRIC_4_I... | SLM | SLM | SLM | slm |
| METRIC_4_SAP_BASIS_SLM_.. | METRIC_4_S. | SLM | SLM | SLM | slm |
| METRIC_5_ICMP_SLM_Ping_SL. | METRIC_5_I... | SLM | SLM | SLM | slm |
| METRIC_5_SAP_BASIS_SLM_.. | METRIC_5_S. | SLM | SLM | SLM | slm |

The selected metric appears in the configuration item metric form. The configuration item metric is automatically given a name based on the selected metric:

Figure 7-129 **The Selected Metric in the Configuration Item Metric Form**



New - SLM - Configuration Item Metric

Name *: AVAILABILITY_ICMP_SLM_Ping_SLM_slm

Configuration item: SAP Load Balancer Rome

Service Resource ...: AVAILABILITY_ICMP_niki

Metric: AVAILABILITY_ICMP_SL

Availability

Planned Downtime...: Not In Downtime

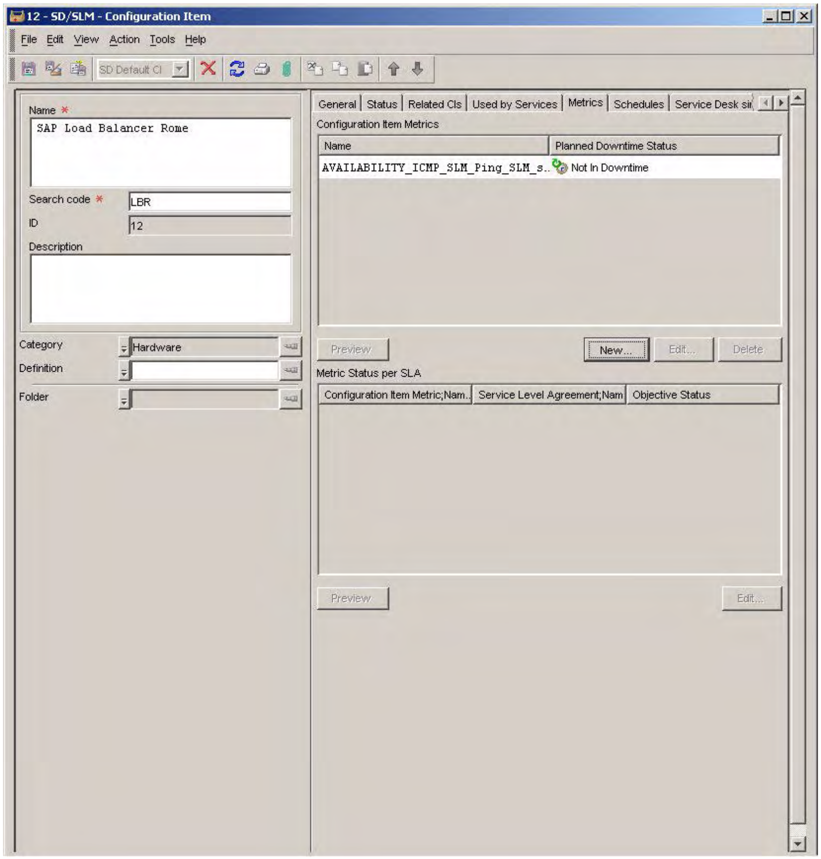
Timestamp: Wednesday, November 17, 2004 03:51:48

Status per Sla

| Name | Objective Status |
|---|---|

When the service manager closes the form, the configuration item metric is added to the list in the configuration item form:

**Figure 7-130 The Selected Configuration Item Metric Added to the List**



Name *: SAP Load Balancer Rome

Search code *: LBR

ID: 12

Description:

Category: Hardware

Definition:

Folder:

Configuration Item Metrics

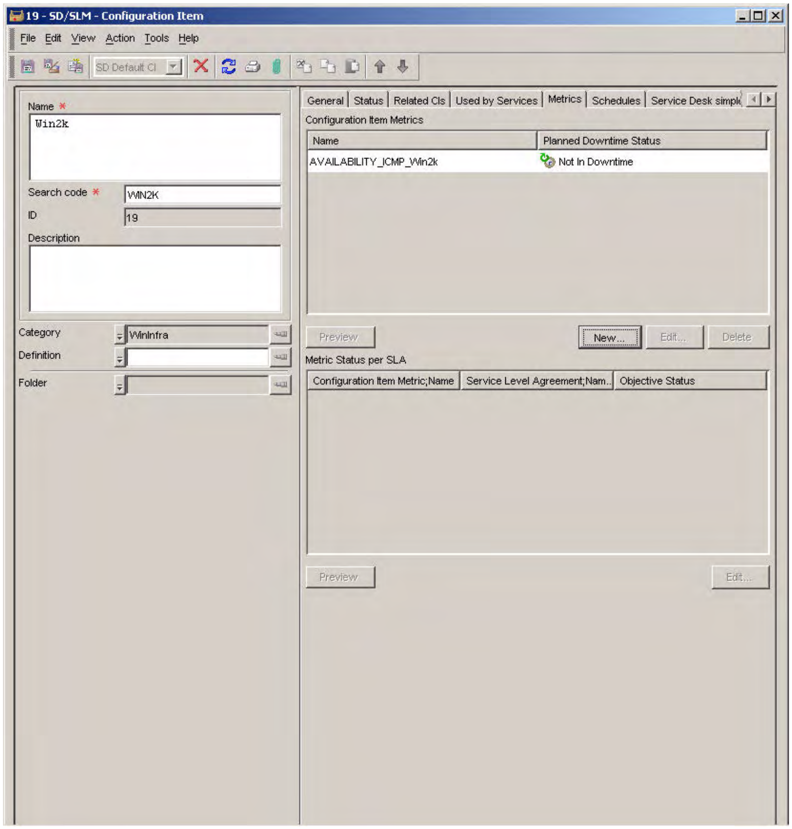
| Name | Planned Downtime Status |
|---|---|
| AVAILABILITY_ICMP_SLM_Ping_SLM_s.. | Not In Downtime |

Metric Status per SLA

| Configuration Item Metric;Nam.. | Service Level Agreement;Nam | Objective Status |
|---|---|---|

The service manager repeats the process to add a configuration item metric to the Win2k configuration item:

**Figure 7-131** **A Configuration Item Metric Added to the Win2k CI**



Name * Win2k

Search code * WIN2K

ID 19

Description

Category WinInfra

Definition

Folder

Configuration Item Metrics

| Name | Planned Downtime Status |
|---|---|
| AVAILABILITY_ICMP_Win2k | Not In Downtime |

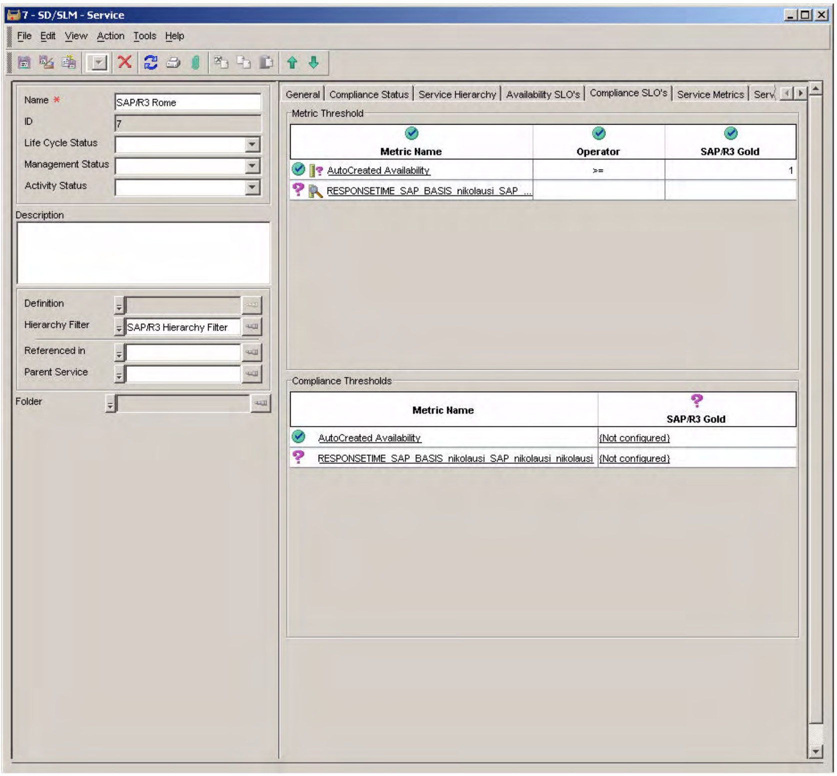
Metric Status per SLA

| Configuration Item Metric;Name | Service Level Agreement;Nam... | Objective Status |
|---|---|---|

## Adding Compliance Objectives to the Hierarchy

The service manager now decides which compliance objectives to add. The automatically created infrastructure availability metric has an operator and value pre-defined for its compliance objective threshold:

**Figure 7-132 The Compliance SLOs Tables**



7 - SD/SLM - Service
File Edit View Action Tools Help
General | Compliance Status | Service Hierarchy | Availability SLO's | Compliance SLO's | Service Metrics | Serv

Name * SAP/R3 Rome

ID 7

Life Cycle Status

Management Status

Activity Status

Description

Definition

Hierarchy Filter SAP/R3 Hierarchy Filter

Referenced in

Parent Service

Folder

Metric Threshold

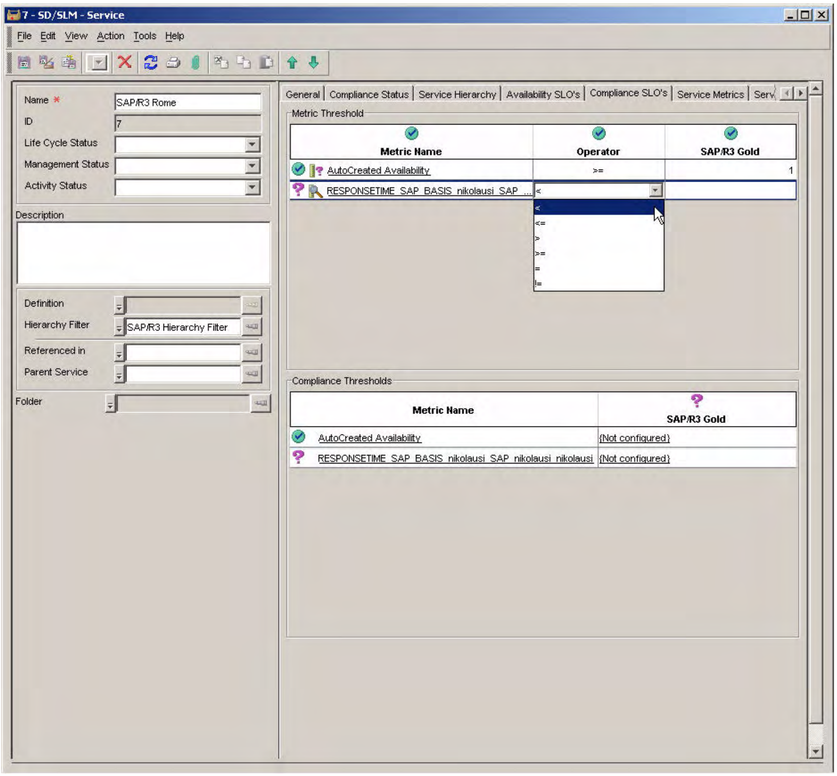
| Metric Name | Operator | SAP/R3 Gold |
|---|---|---|
| AutoCreated Availability | >= | 1 |
| RESPONSETIME_SAP_BASIS_nikolausi_SAP_... | | |

Compliance Thresholds

| Metric Name | SAP/R3 Gold |
|---|---|
| AutoCreated Availability | {Not configured} |
| RESPONSETIME_SAP_BASIS_nikolausi_SAP_nikolausi_nikolausi | {Not configured} |

For the metric measuring SAP response time, the service manager selects an objective operator from the drop-down list in the Operator column:

**Figure 7-133 Specifying a Compliance Objective Threshold Operator**



Name * SAP/R3 Rome
ID 7
Life Cycle Status
Management Status
Activity Status
Description
Definition
Hierarchy Filter SAP/R3 Hierarchy Filter
Referenced in
Parent Service
Folder

Metric Threshold

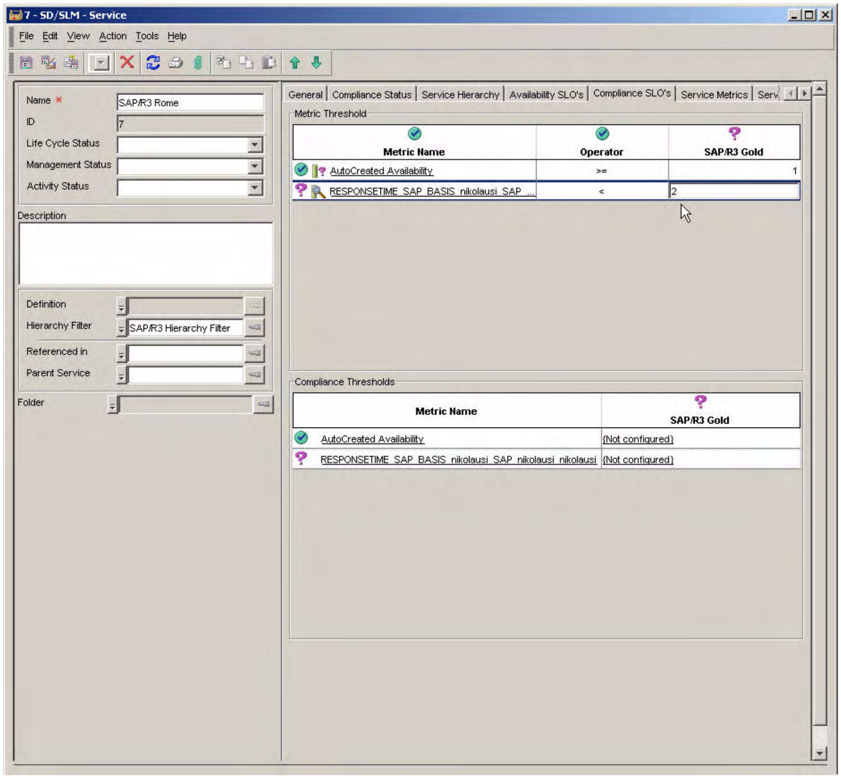
| Metric Name | Operator | SAP/R3 Gold |
|---|---|---|
| AutoCreated Availability | >= | 1 |
| RESPONSETIME_SAP_BASIS_nikolausi_SAP_... | < | |

Compliance Thresholds

| Metric Name | SAP/R3 Gold |
|---|---|
| AutoCreated Availability | {Not configured} |
| RESPONSETIME_SAP_BASIS_nikolausi_SAP_nikolausi_nikolausi | {Not configured} |

The service manager types an objective value directly into the table cell:

**Figure 7-134 Specifying a Compliance Objective Threshold Value**



Name * SAP/R3 Rome
ID 7
Life Cycle Status
Management Status
Activity Status
Description
Definition
Hierarchy Filter SAP/R3 Hierarchy Filter
Referenced in
Parent Service
Folder

Metric Threshold

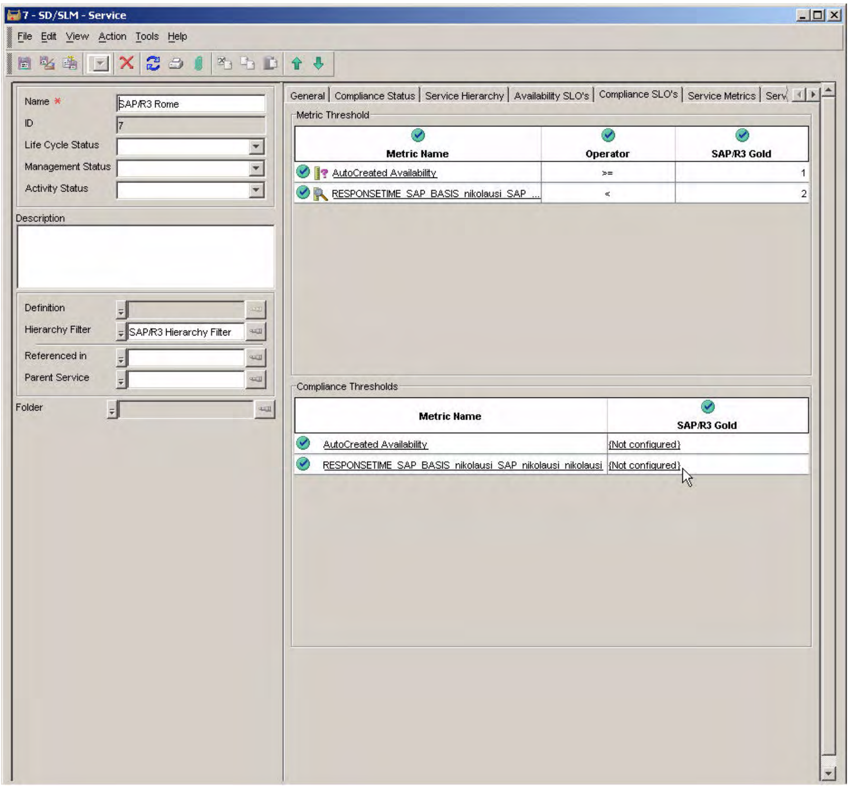
| | Metric Name | Operator | SAP/R3 Gold |
|---|---|---|---|
| ✓ | AutoCreated Availability | >= | 1 |
| ? | RESPONSETIME_SAP_BASIS_nikolausi_SAP_... | < | 2 |

Compliance Thresholds

| | Metric Name | SAP/R3 Gold |
|---|---|---|
| ✓ | AutoCreated Availability | (Not configured) |
| ? | RESPONSETIME_SAP_BASIS_nikolausi_SAP_nikolausi_nikolausi | (Not configured) |

The service manager now specifies compliance violation thresholds and compliance jeopardy thresholds, beginning with the metric measuring SAP response time. To do so, the service designer double-clicks the relevant cell in the Compliance Thresholds table:

**Figure 7-135 Adding a New Compliance Violation Threshold**



|  |  |
|---|---|
| Name * | SAP/R3 Rome |
| ID | 7 |
| Life Cycle Status |  |
| Management Status |  |
| Activity Status |  |
| Description |  |
| Definition |  |
| Hierarchy Filter | SAP/R3 Hierarchy Filter |
| Referenced in |  |
| Parent Service |  |
| Folder |  |

Metric Threshold

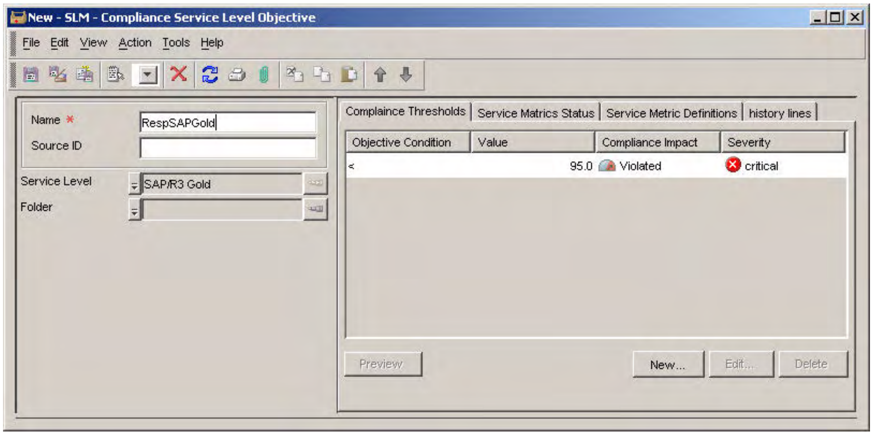
| Metric Name | Operator | SAP/R3 Gold |
|---|---|---|
| AutoCreated Availability | >= | 1 |
| RESPONSETIME_SAP_BASIS_nikolausi_SAP ... | < | 2 |

Compliance Thresholds

| Metric Name | SAP/R3 Gold |
|---|---|
| AutoCreated Availability | {Not configured} |
| RESPONSETIME_SAP_BASIS_nikolausi_SAP_nikolausi_nikolausi | {Not configured} |

The service manager provides a name for the compliance violation threshold, and decides to leave the default violation threshold value of 95% unchanged:

**Figure 7-136 Specifying Basic Details for the Compliance Violation Threshold**



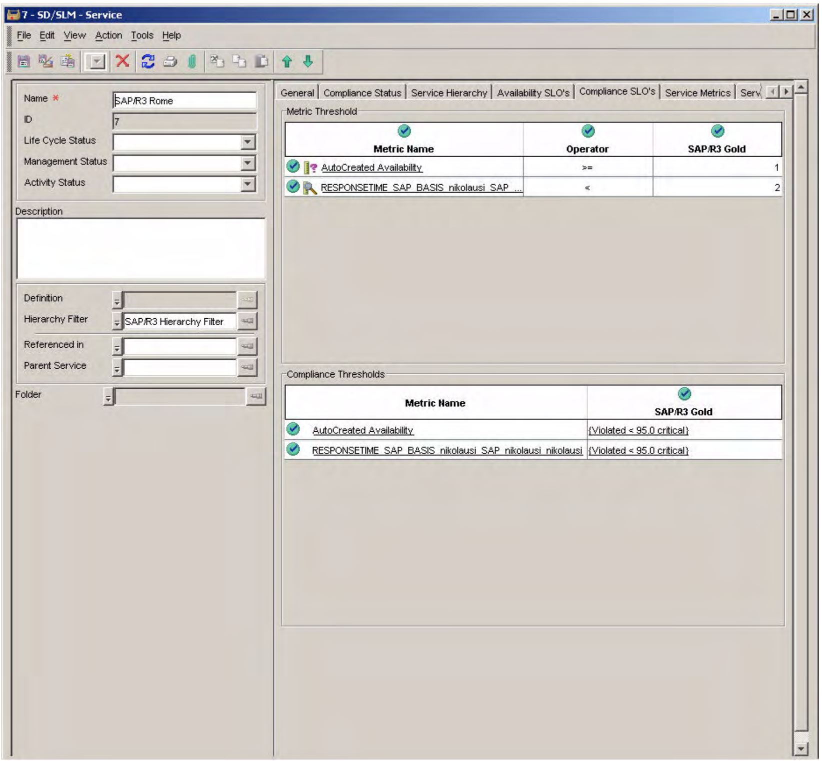
New - SLM - Compliance Service Level Objective

| | |
|---|---|
| Name * | RespSAPGold |
| Source ID | |
| Service Level | SAP/R3 Gold |
| Folder | |

| Objective Condition | Value | Compliance Impact | Severity |
|---|---|---|---|
| < | 95.0 | Violated | critical |

When the service manager saves and closes the form, the violation threshold information is displayed in the Compliance Thresholds table. The following figure shows the completed Compliance Thresholds table:

**Figure 7-137** **The Completed Compliance Thresholds Table**



| | |
|---|---|
| Name * | SAP/R3 Rome |
| ID | 7 |
| Life Cycle Status | |
| Management Status | |
| Activity Status | |
| Description | |
| Definition | |
| Hierarchy Filter | SAP/R3 Hierarchy Filter |
| Referenced in | |
| Parent Service | |
| Folder | |

Metric Threshold

| Metric Name | Operator | SAP/R3 Gold |
|---|---|---|
| AutoCreated Availability | >= | 1 |
| RESPONSETIME_SAP_BASIS_nikolausi_SAP ... | < | 2 |

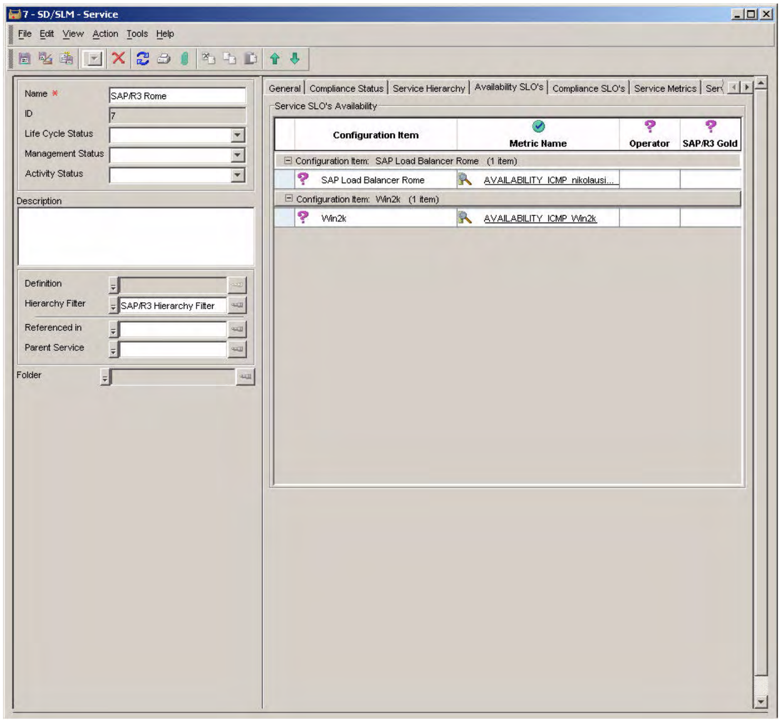
Compliance Thresholds

| Metric Name | SAP/R3 Gold |
|---|---|
| AutoCreated Availability | {Violated < 95.0 critical} |
| RESPONSETIME_SAP_BASIS_nikolausi_SAP_nikolausi_nikolausi | {Violated < 95.0 critical} |

## Adding Availability Objectives to the Hierarchy

The service manager now decides which availability objectives to add. The Availability SLOs Table initially displays an empty table of objectives:

**Figure 7-138** **The Availability SLOs Table**



Name * SAP/R3 Rome
ID 7
Life Cycle Status
Management Status
Activity Status
Description
Definition
Hierarchy Filter SAP/R3 Hierarchy Filter
Referenced in
Parent Service
Folder

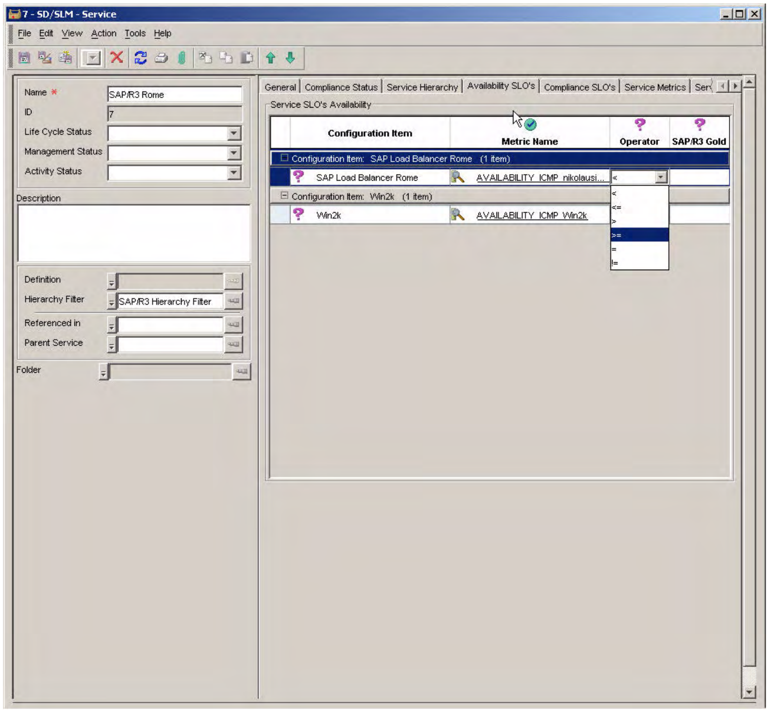
Service SLO's Availability

| Configuration Item | Metric Name | Operator | SAP/R3 Gold |
|---|---|---|---|
| ⊟ Configuration Item: SAP Load Balancer Rome (1 item) | | | |
| SAP Load Balancer Rome | AVAILABILITY_ICMP_nikolausi... | | |
| ⊟ Configuration Item: Win2k (1 item) | | | |
| Win2k | AVAILABILITY_ICMP_Win2k | | |

Knowing that the OVIS ICMP availability metric returns values of 0 or 1, the service manager decides to specify an objective operator of "greater than or equal to" for each metric definition, and a value of 1. Specifying the "greater than" operator and a value of 0.5 would have the same effect.

The service manager selects the required operator from the drop-down list in the Operator column:

**Figure 7-139** **Selecting an Availability Objective Operator**



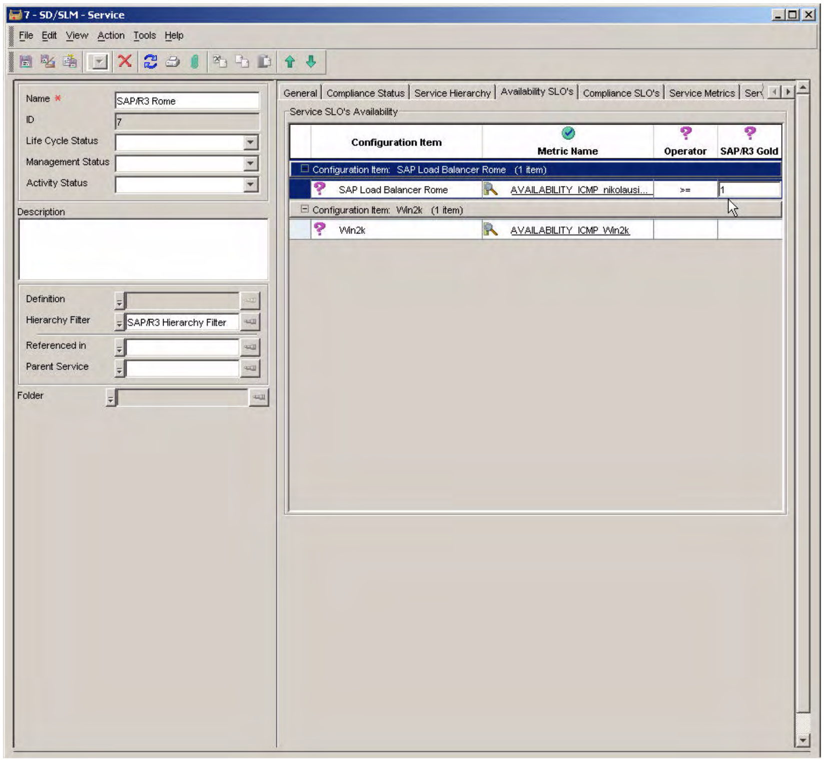
Name * SAP/R3 Rome
ID 7
Life Cycle Status
Management Status
Activity Status
Description
Definition
Hierarchy Filter SAP/R3 Hierarchy Filter
Referenced in
Parent Service
Folder

Service SLO's Availability

| Configuration Item | Metric Name | Operator | SAP/R3 Gold |
|---|---|---|---|
| ⊟ Configuration Item: SAP Load Balancer Rome (1 item) | | | |
| SAP Load Balancer Rome | AVAILABILITY_ICMP_nikolausi... | < | |
| ⊟ Configuration Item: Win2k (1 item) | | | |
| Win2k | AVAILABILITY_ICMP_Win2k | | |

The service manager types the required value into each table cell:

**Figure 7-140 Specifying the Objective Value**



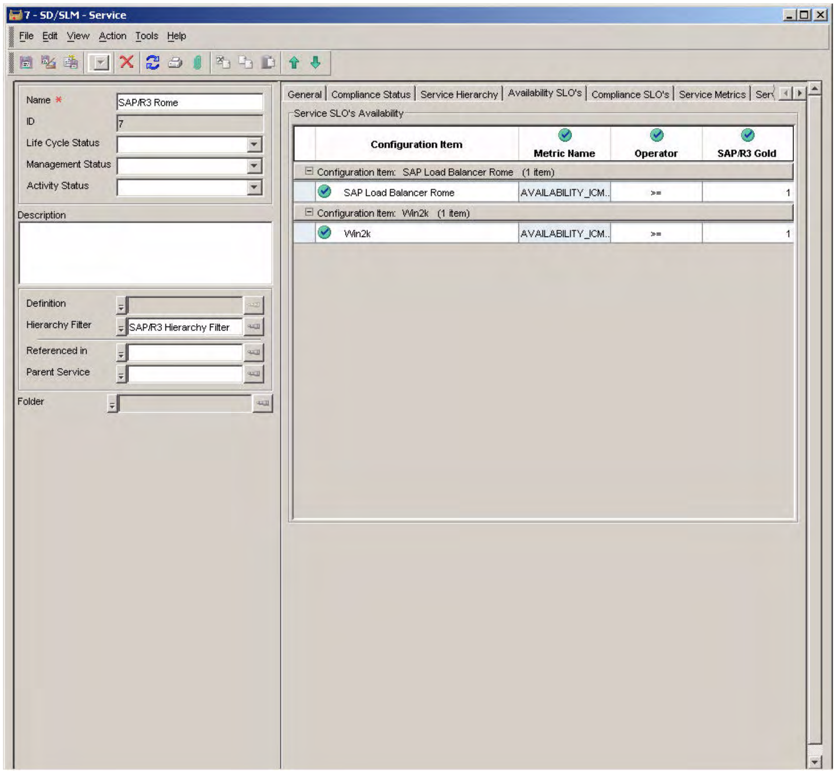
Name * SAP/R3 Rome
ID 7
Life Cycle Status
Management Status
Activity Status
Description
Definition
Hierarchy Filter SAP/R3 Hierarchy Filter
Referenced in
Parent Service
Folder

Service SLO's Availability

| | Configuration Item | Metric Name | Operator | SAP/R3 Gold |
|---|---|---|---|---|
| ⊟ Configuration Item: SAP Load Balancer Rome (1 item) | | | | |
| | SAP Load Balancer Rome | AVAILABILITY_ICMP_nikolausi... | >= | 1 |
| ⊟ Configuration Item: Win2k (1 item) | | | | |
| | Win2k | AVAILABILITY_ICMP_Win2k | | |

The following figure shows what the table looks like after all the operators and values are added:

Figure 7-141 **The Completed Availability SLOs Table**



Name * SAP/R3 Rome
ID 7
Life Cycle Status
Management Status
Activity Status
Description
Definition
Hierarchy Filter SAP/R3 Hierarchy Filter
Referenced in
Parent Service
Folder

| Configuration Item | Metric Name | Operator | SAP/R3 Gold |
|---|---|---|---|
| Configuration Item: SAP Load Balancer Rome (1 item) | | | |
| ✓ SAP Load Balancer Rome | AVAILABILITY_ICM.. | >= | 1 |
| Configuration Item: Win2k (1 item) | | | |
| ✓ Win2k | AVAILABILITY_ICM.. | >= | 1 |

## Managing the Service Level Agreement

Finally, the service manager places the service level agreement under SLM management. See “Managing the Service Level Agreement” on page 169 for an example of how to do this.

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