



**Tivoli® Enterprise Portal Data Source for
IBM® Tivoli Business Systems Manager (3.1.0.1-TIV-BSM-LA0111)**

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About 3.1.0.1-TIV-BSM-LA0111

This document provides information about 3.1.0.1-TIV-BSM-LA0111. This limited availability fix provides support for the Tivoli Enterprise Portal as a new data source into IBM Tivoli Business Systems Manager. The specific data sources supported include OMEGAMON® XE/DE (Candle Management Server® v350, CandleNet Portal® Server v196), and IBM Tivoli Monitoring, Version 6.1. Both products use the Tivoli Enterprise Portal framework.

Become familiar with the information in this document before you install 3.1.0.1-TIV-BSM-LA0111.

Prerequisites

The following are prerequisites for 3.1.0.1-TIV-BSM-LA0111:

- Tivoli Business Systems Manager 3.1
- Tivoli Business Systems Manager 3.1 fix pack 1
- Internet Explorer 6.0 or later

Corequisites

A database run-time client is a corequisite for 3.1.0.1-TIV-BSM-LA0111. Use either IBM DB2® Run-Time Client or Microsoft® SQL™ Server Run-Time Client.

For more information about how the database run-time client works with 3.1.0.1-TIV-BSM-LA0111, see Installation on page 18.

Tivoli Enterprise Portal data source for Tivoli Business Systems Manager

IBM Tivoli Monitoring products monitor and manage system and network applications of a variety of platforms. In addition, IBM Tivoli Monitoring products keep track of the availability and performance of all parts of an enterprise.

- IBM Tivoli Monitoring, Version 6.1 has a Browser and Java Console user interface. In addition, IBM Tivoli Monitoring, Version 6.1 utilizes IBM Tivoli Monitoring and IBM Tivoli OMEGAMON agent products. The utilization involves a Tivoli Enterprise Portal Management Server, Tivoli Enterprise Portal Server, and a Tivoli Enterprise Portal user interface. IBM Tivoli Monitoring, Version 6.1 provides workspace views of resource monitors and allows these monitors to be profiled into logical Navigation views.
- The OMEGAMON XE (eXtended Edition) product set has a Browser and Java Console user interface. In addition, OMEGAMON XE utilizes OMEGAMON Classic, OMEGAMON II, and distributed agent products. The utilization involves a CandleNet Portal Server and Candle Management Server.
- OMEGAMON DE (Dashboard Edition) is installed on top of OMEGAMON XE. OMEGAMON DE allows Resource Monitors to be profiled into logical Navigation Views.

- The OMEGAMON II product set has a CUA 3270 user interface. The OMEGAMON II product set utilizes OMEGAMON Classic products.
- The OMEGAMON Classic product set has powerful features with a 3270 user interface.

IBM Tivoli Monitoring, Version 6.1 is the next generation of Tivoli Monitoring and is based on the same proven architecture as OMEGAMON XE/DE. This common architecture is now referenced as the Tivoli Enterprise Portal architecture.

Tivoli Business Systems Manager Feed Options

For customers who only have legacy OMEGAMON Classic or OMEGAMON II range of products, the Tivoli Business Systems Manager OMEGAMON Classic Feed (available since Tivoli Business Systems Manager, Version 1.0) can be used to bring OMEGAMON Classic events into Tivoli Business Systems Manager. Bring OMEGAMON Classic events into Tivoli Business Systems Manager involves screen scraping the OMEGAMON Classic 3270 screens.

For customers who have IBM Tivoli Monitoring, Version 6.1, OMEGAMON XE, or OMEGAMON DE, the new Tivoli Enterprise Portal Data Source for Tivoli Business Systems Manager can be used to combine the strengths of both the Tivoli Enterprise Portal and Tivoli Business Systems Manager.

- The Tivoli Enterprise Portal helps the Technical Support Staff troubleshoot problems by providing a lot of technical details.
- The Tivoli Business Systems Manager Console helps the Operations Support Staff view resources that are involved in the Business Systems. The detail shown to the Technical Support Staff is omitted as it is not necessary for the Operations Support Staff to complete their work.
- The Tivoli Business Systems Manager Executive Dashboard is designed for people who are concerned about business impact. The users of the dashboard are not involved in troubleshooting activities so the information is not provided.
- A manager may want to know when a Service Level is broken. The manager does not want to see the low-level details, such as buffer pool statistics, that the technical staff needs.
- Business Systems that have been discovered from OMEGAMON DE groupings can easily be placed in the Dashboard at a top level, or at a nested level.

Tivoli Enterprise Portal data source function

The Tivoli Enterprise Portal data source provides the following functions:

1. Discovery of managed system resources into Tivoli Business Systems Manager (physical tree).
2. Discovery of logical views into Tivoli Business Systems Manager (business systems).
3. Context-sensitive console launch from Tivoli Business Systems Manager into Tivoli Enterprise Portal browser console.
4. Tivoli Enterprise Portal events into Tivoli Business Systems Manager.

5. Tivoli Enterprise Portal acknowledge/close reflected into Tivoli Business Systems Manager.
6. Tivoli Business Systems Manager ownership/close reflected back to Tivoli Enterprise Portal.

Discovery of managed system resources (physical tree)

All Tivoli Enterprise Portal managed systems have corresponding resources in Tivoli Business Systems Manager. You can view these resources from the Tivoli Business Systems Manager console by right clicking a high-level resource, such as an enterprise, and then opening the Tivoli Enterprise Portal Resources view. Figure 1 shows a sample Tivoli Enterprise Portal Resources view.

Alert Stat	Name	Type	Managed System	Product	Managing System	Management Server	Portal Server	Location
Red	C5HUB3:OMO3:STORAGE	Generic Object	C5HUB3:OMO3:STORAGE	S3	C5OMO3:CMS	C5OMO3:CMS	pthtiv18	ABC Com
Red	MARKPRES	NT Server	Primary:MARKPRES:NT	NT	HUB_MARKPRES	HUB_MARKPRES	markpres	ABC Com
Red	SYSPLEXO:MVS:SYSPLEX	Generic Object	SYSPLEXO:MVS:SYSPLEX	OS	C5OMO3:CMS	C5OMO3:CMS	pthtiv18	ABC Com
Yellow	IMN1:CTL	IMS TM/DB	IMN1:OMO3:IMS	I3	XEIMS:OMO3:MVS	C5OMO3:CMS	pthtiv18	ABC Com
Green	@7C	DB2 Subsystem	@7C:OMO3:DB2	D3	XEDB2:OMO3	C5OMO3:CMS	pthtiv18	ABC Com
Green	@7C	DB2 Subsystem	@7C:OMO4:DB2	D3	XEDB2:OMO4	C5OMO4:CMS	pthtiv18	ABC Com
Green	@7C	DB2 Subsystem	@7C:TIC2:DB2	D3	XEDB2:TIC2	TIC2:CMS	markpres	ABC Com
Green	C5D2	Generic Object	C5D2	WO	OMO3:K035MVAP:KWOSDI	C5OMO3:CMS	pthtiv18	ABC Com
Green	C5DSST:OMO4:STORAGE	Generic Object	C5DSST:OMO4:STORAGE	S3	C5OMO4:CMS	C5OMO4:CMS	pthtiv18	ABC Com
Green	C5I2	Generic Object	C5I2	WO	OMO3:K035MVAP:KWOSDI	C5OMO3:CMS	pthtiv18	ABC Com
Green	C5IMN1	Generic Object	C5IMN1	WO	OMO3:K035MVAP:KWOSDI	C5OMO3:CMS	pthtiv18	ABC Com
Green	C5IMP1	Generic Object	C5IMP1	WO	OMO3:K035MVAP:KWOSDI	C5OMO3:CMS	pthtiv18	ABC Com
Green	C5N3:OMO3:KN3AGENT	Generic Object	C5N3:OMO3:KN3AGENT	N3	C5OMO3:CMS	C5OMO3:CMS	pthtiv18	ABC Com

Figure 1. Example Tivoli Business Systems Manager console view of Tivoli Enterprise Portal Resources

From the Tivoli Enterprise Portal Resources view, you can drag and drop resources into business systems. Two other methods of putting resources into business systems are automatic business systems (ABS) and XML profiling.

Product and *Managing System* are attributes used in Tivoli Enterprise Portal. You can view these attributes in Tivoli Enterprise Portal from the **Managed System Status** workspace.

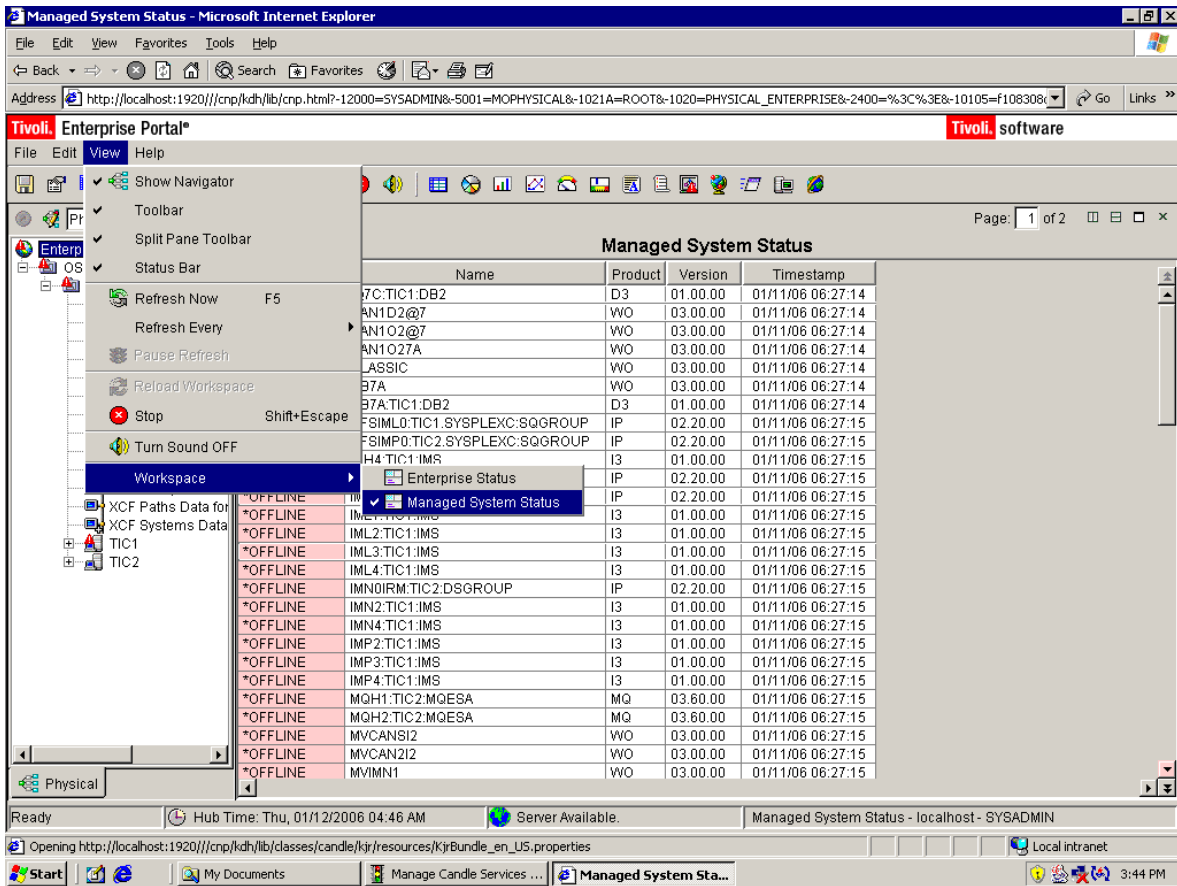


Figure 2. Example Tivoli Enterprise Portal Managed System Status workspace

The Tivoli Enterprise Portal data source discovery process maps Tivoli Enterprise Portal *Managed Systems* to the appropriate Tivoli Business Systems Manager object class, based on the naming conventions used for the product codes that identify the different IBM Tivoli Monitoring and OMEGAMON components and agents.

IBM Tivoli Monitoring product codes	Tivoli Business Systems Manager object classes
M2, M3, ME, MH, OM, OS, ZM	z/OS® resources – OS
ID, IP, I2, I3, I5, OI, ZI	IMS resources – IMSS, IMTM, IMDB
DB, DP, D2, D3, D5, H2, O2	DB2 resources – D2SS, D2DG
CP, C2, C3, C5, OC, ZC	CICS® resources – CICS
NT	Windows NT® resources – NTSR
UX, LZ	UNIX resources - UNIX
all others	Generic resources – GOBJ

All mainframe-related resources are placed under the appropriate operating system resource. In the case that the operating system does not exist, and the site has OMEGAMON for z/OS, the operating system resource is automatically created using the following logic:

```

IF there are no existing OS objects that match the TEP OS name THEN
  IF no existing Machine objects that match the TEP sysplex name THEN
    Locate Enterprise object where the TEP anchor is located.
    Create Complex with the sysplex name, under the Enterprise object.
    Create Machine with the sysplex name, under the Complex object.
    Create LPAR with the OS name, under the Machine with the sysplex name.
    Create OS with the OS name, under the LPAR.
Place the OS into the Sysplexes Business System structure.

```

If this logic creates Complex, Machine, and LPAR resources, these can be renamed later from the Tivoli Business Systems Manager console. Alternatively you can manually create operating system objects elsewhere in the physical tree, delete the auto-created objects, and run the TEP Discovery SQL job again. The Discovery job maps to the operating system that you manually created and auto-creates objects under the operating system as appropriate.

The Tivoli Enterprise Portal naming conventions for IMS Subsystems, DB2 Subsystems, and CICS Regions all contain the operating system name (DB7A:MVS1:DB2). The Tivoli Business Systems Manager Tivoli Enterprise Portal data source discovery process is sensitive to the **Participates in Sysplex** property:

```

IF the target object is found under the OS THEN
  Map to the object.
ELSE IF the target object is found under an OS in the same Sysplex
and it has the participates in sysplex property set THEN
  Map to the object.
ELSE IF the related OS is found THEN
  Create an IMS/DB2/CICS object under the OS.
ELSE
  Create a GOBJ object (using the generic mapping rule).

```

In cases where the previously described mappings could not find or create an object, a Generic Object (GOBJ) is created, and is linked internally to the *anchor_physical* Aggregate object specified during customization. (For more information about *tep_setup*, see Configuration on page 20.)

Discovery of logical views (business systems)

OMEGAMON DE and IBM Tivoli Monitoring, Version 6.1 both allow Managed System objects to be logically grouped into navigation views. The discovery process creates corresponding Tivoli Business Systems Manager views from these logical views.

Typically Tivoli Enterprise Portal logical views are used to group related infrastructure resources, and such groups are ideal for business system shortcuts. For example, you can drag a business system into other business systems and exploit the powerful propagation

control settings in Tivoli Business Systems Manager.

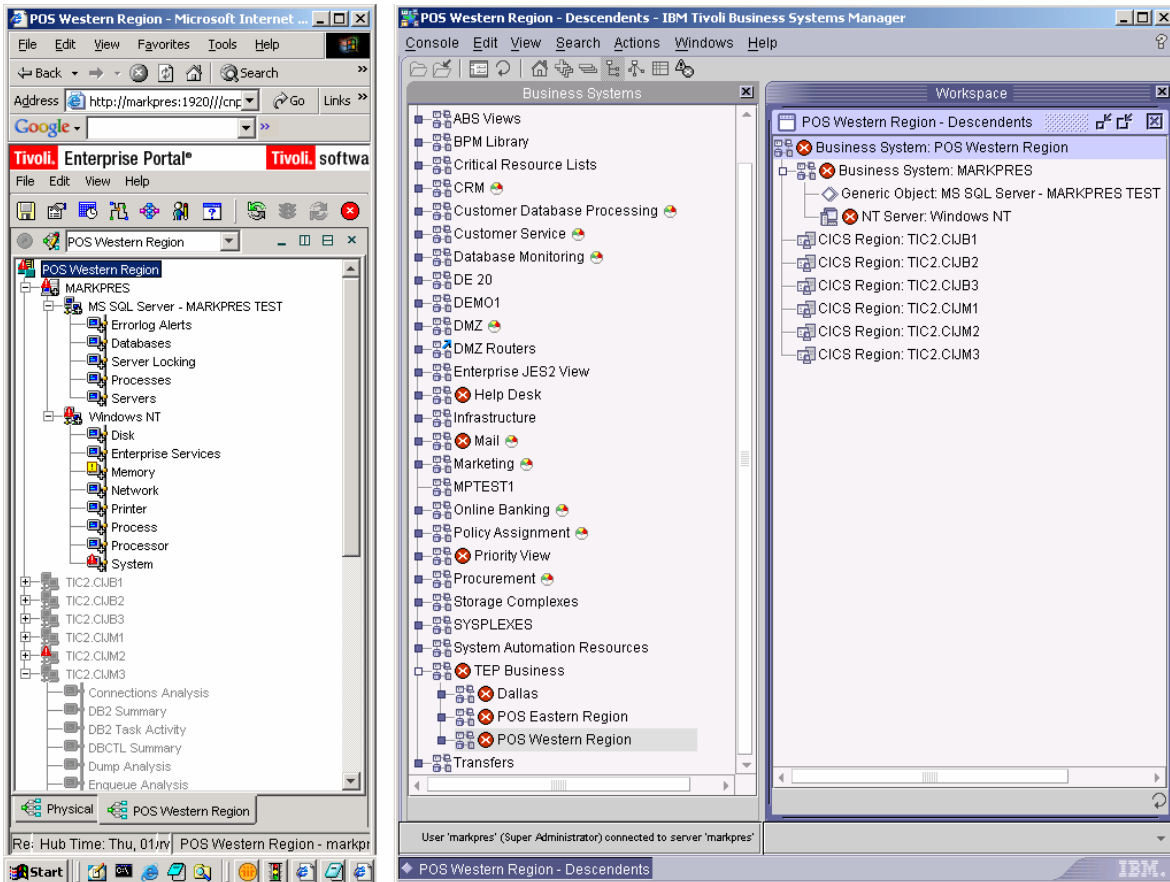


Figure 3. Example showing Tivoli Enterprise Portal logical discovery in Tivoli Business Systems Manager (business systems)

Context-sensitive console launch

Resources that were discovered (mapped and created) by the Tivoli Enterprise Portal discovery process have a menu item for launching the Tivoli Enterprise Portal. This launch opens the corresponding resource in the Tivoli Enterprise Portal browser console.

When the Tivoli Enterprise Portal browser is started, you are prompted for your Tivoli Enterprise Portal userid and password.

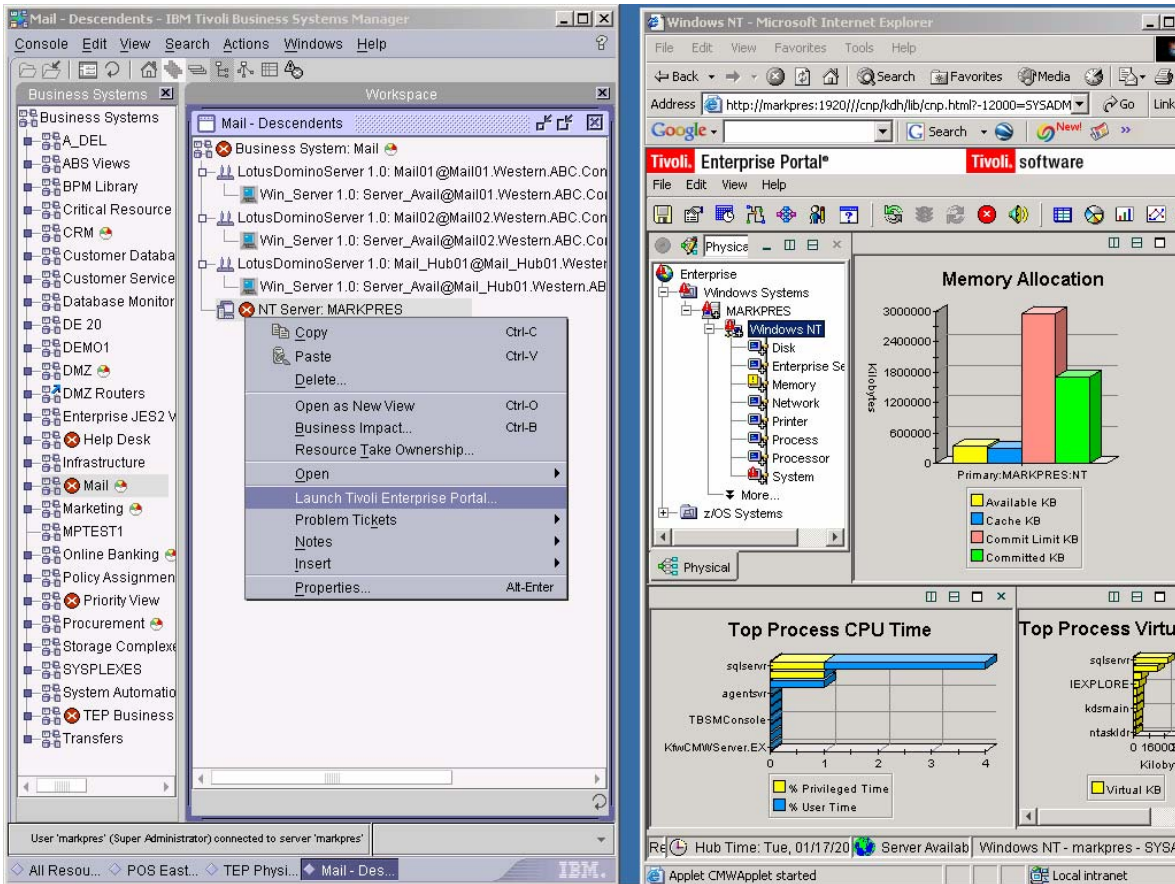


Figure 4. Example launch Tivoli Enterprise Portal from Tivoli Business Systems Manager

Events from Tivoli Enterprise Portal

In Tivoli Enterprise Portal, events are raised when defined situation conditions are detected. From the Tivoli Enterprise Portal console, the event details can be seen when you rest the mouse pointer over an alert icon, or from the Situation Event console.

Remember:

- All Events propagate to the top level.
- Events can be assigned a severity of Critical (Red), Warning (Yellow), or Informational (Pink).
- Display Item can be used for more granular (concurrent) events.

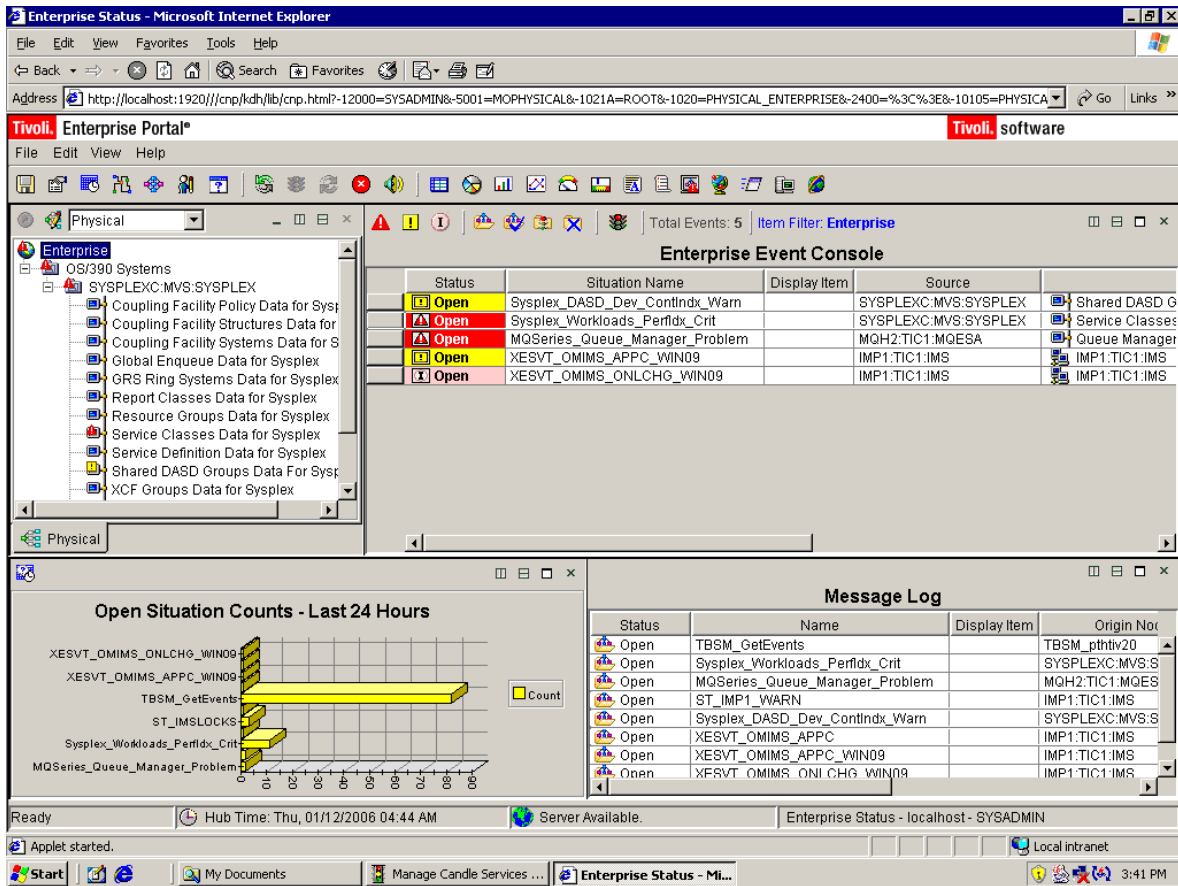


Figure 5. Example event information as displayed in Tivoli Enterprise Portal

Tivoli Business Systems Manager constructs an Exception name for Tivoli Enterprise Portal events in the following format:

- <situation_name>_<severity>_TEP
- <situation_name>_<severity>_<display_item>_TEP

For example, for Tivoli Enterprise Portal situation name “ST_OMII_IMS_APPC_STATUS” (shown in Figure 5), the Tivoli Business Systems Manager exception name is “ST_OMII_IMS_APPC_STATUS_Critical_TEP” because the Status for the event is Critical.

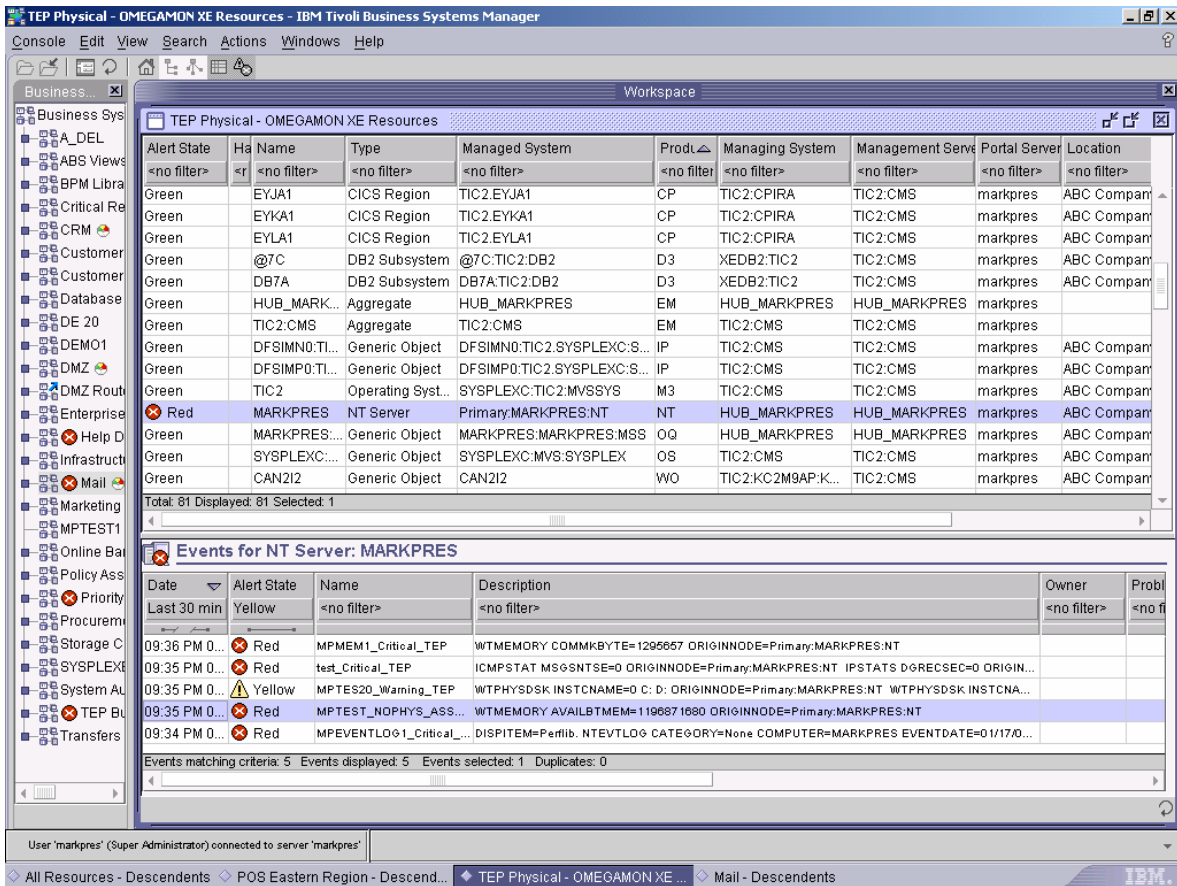


Figure 6. Example resources and events displayed on a Tivoli Business Systems Manager console

Classes that can receive Tivoli Enterprise Portal events have wildcard Exception definitions that determine the Tivoli Business Systems Manager exception priority and alert state. These definitions can be customized using the Open Resource Types view. In addition, SQI can be used for specific event definitions that have preference over the wildcard definition. For example, a CICS response event can be set up to have different Priority and AlertState properties.

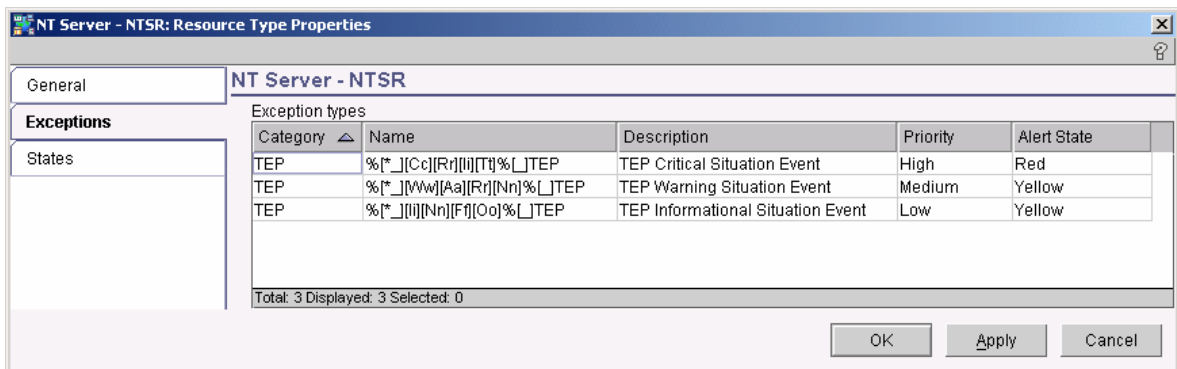


Figure 7. Example resource-type properties displayed on Tivoli Business Systems Manager console

Tivoli Enterprise Portal status (Critical, Warning, Informational) is part of the generated Exception name and conforms to the wildcard Exception definition.

Most Tivoli Enterprise Portal shipped Situation event definitions already have the Tivoli Enterprise Portal status as part of the name (for example, CICSplex_DSALow_Warning), or an abbreviated Status (for example, Sysplex_GlobalEnq_Wait_Crit). The wildcard Exception definition handles both cases.

To avoid duplicating the status information in the exception name that Tivoli Business Systems Manager constructs, the status is included only if the Situation name does not already include it. For example the Tivoli Enterprise Portal Situation **Sysplex_GlobalEnq_Wait_Crit** becomes **Sysplex_GlobalEnq_Wait_Crit_TEP** in Tivoli Business Systems Manager, not Sysplex_GlobalEnq_Wait_Crit_Critical_TEP.

Acknowledging and closing events from Tivoli Enterprise Portal

In Tivoli Enterprise Portal, you can acknowledge or close an event.

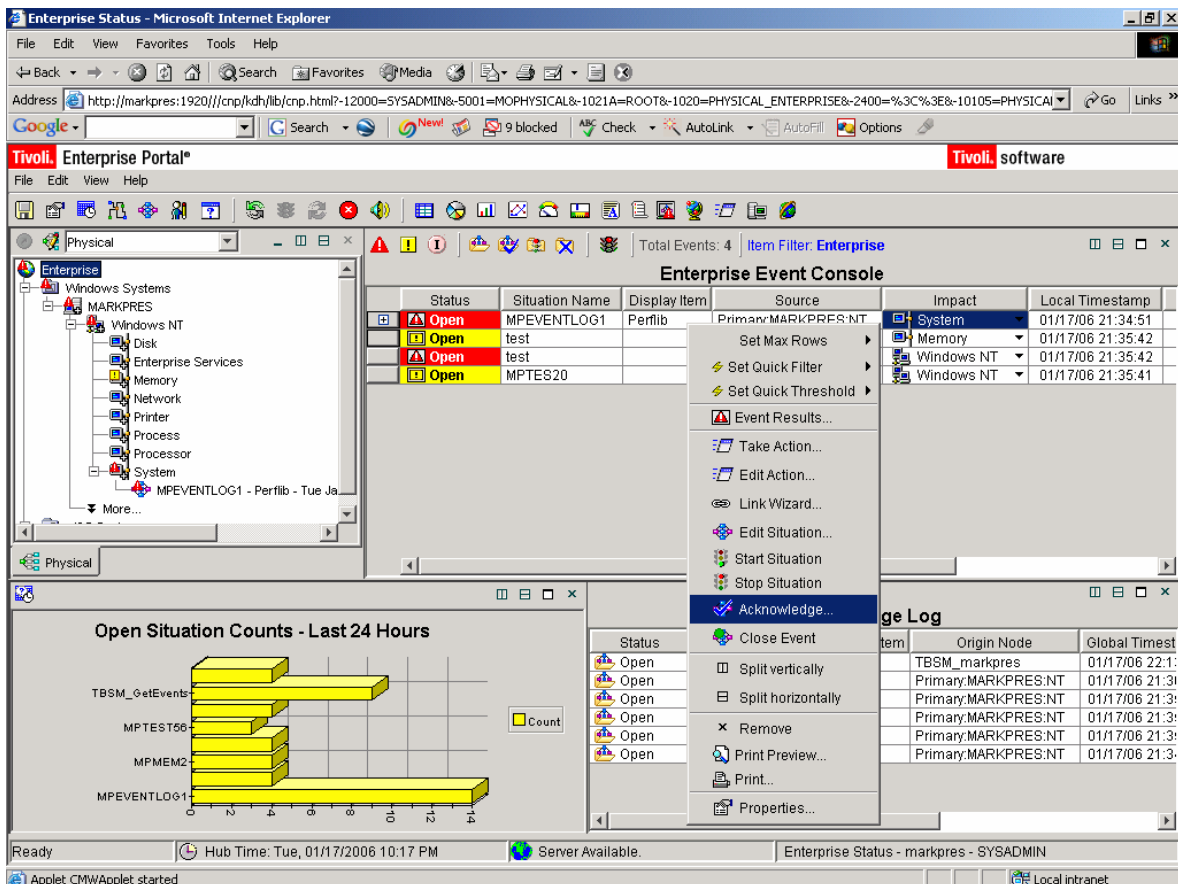


Figure 8. Example of acknowledging an event in Tivoli Enterprise Portal

When an event is closed in Tivoli Enterprise Portal, it is processed as a resolution event in Tivoli Business Systems Manager.

When an event is acknowledged in Tivoli Enterprise Portal, it is processed as ownership in Tivoli Business Systems Manager.

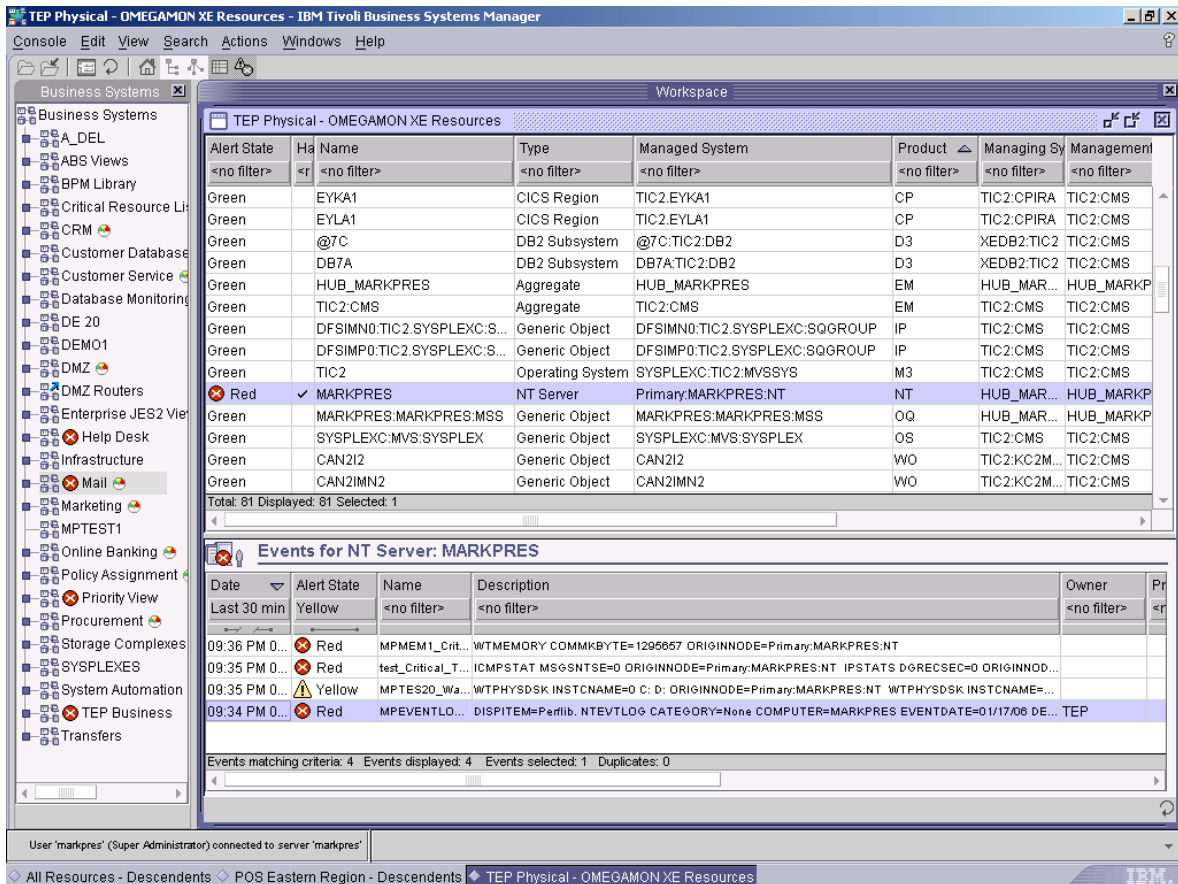


Figure 9. Example acknowledged Tivoli Enterprise Portal event has ownership in Tivoli Business Systems Manager

In Tivoli Enterprise Portal, an acknowledge event can expire or the acknowledge event can be removed. When Tivoli Enterprise Portal detects an acknowledge event has expired, or an acknowledge event has been removed, a resolution event is processed, followed by a new event.

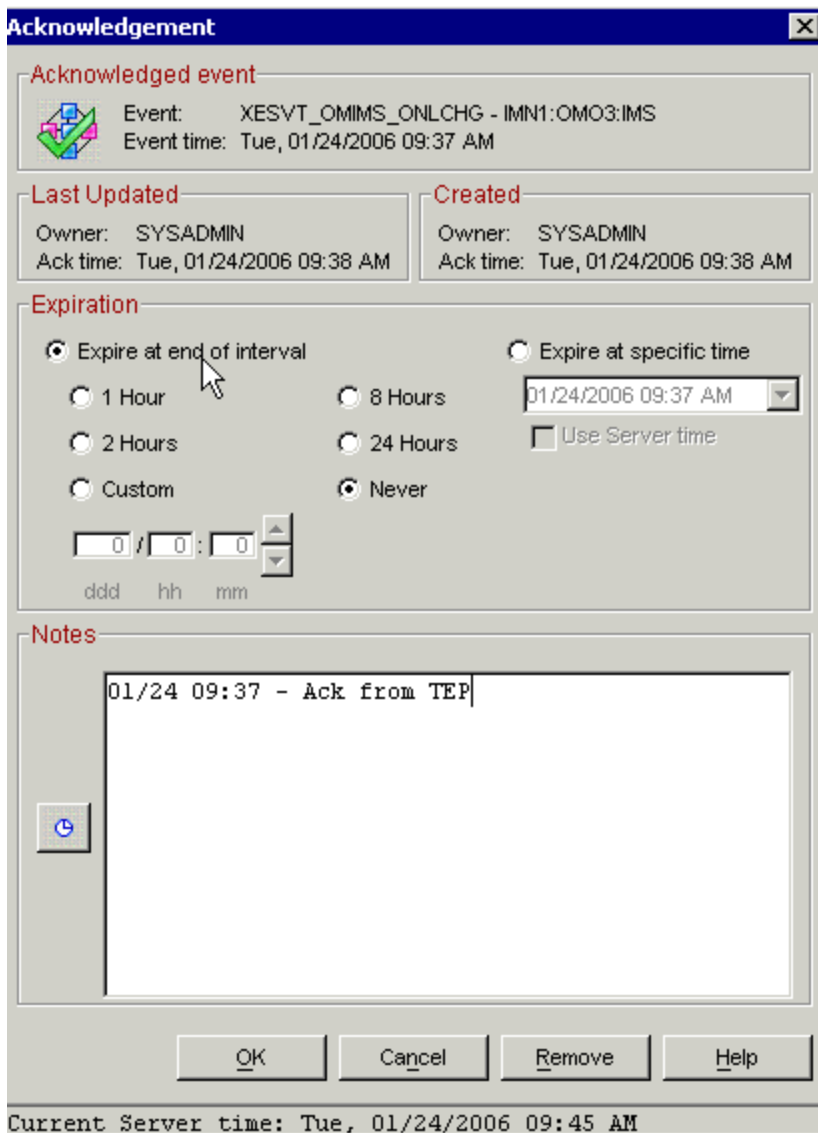


Figure 10. Example acknowledgement of a Tivoli Enterprise Portal event

Taking ownership and close reflected back to Tivoli Enterprise Portal

When an exception that has a name ending with **_TEP** is closed (Close Out or Close Ownership Note) in Tivoli Business Systems Manager, the corresponding event is closed in Tivoli Enterprise Portal.

If you are using IBM Tivoli Monitoring 6.1, you are probably familiar with pure and sampled events. A pure event occurs automatically. Situations written to notify you of pure events remain true until they are manually closed or automatically closed by an UNTIL clause.

A sampled event occurs when a situation becomes true. Situations sample data at regular intervals. When the situation is true, an event is opened. The event is automatically closed

when the situation returns to false.

Because pure, not sampled, events can be closed manually, an event close option is offered for pure events. For sampled situations, the close option is not provided. As such, you need to stop the situation and then close the event.

When an exception that has a name ending with **_TEP** is owned (Take Ownership) in Tivoli Business Systems Manager, the corresponding event is acknowledged in Tivoli Enterprise Portal.

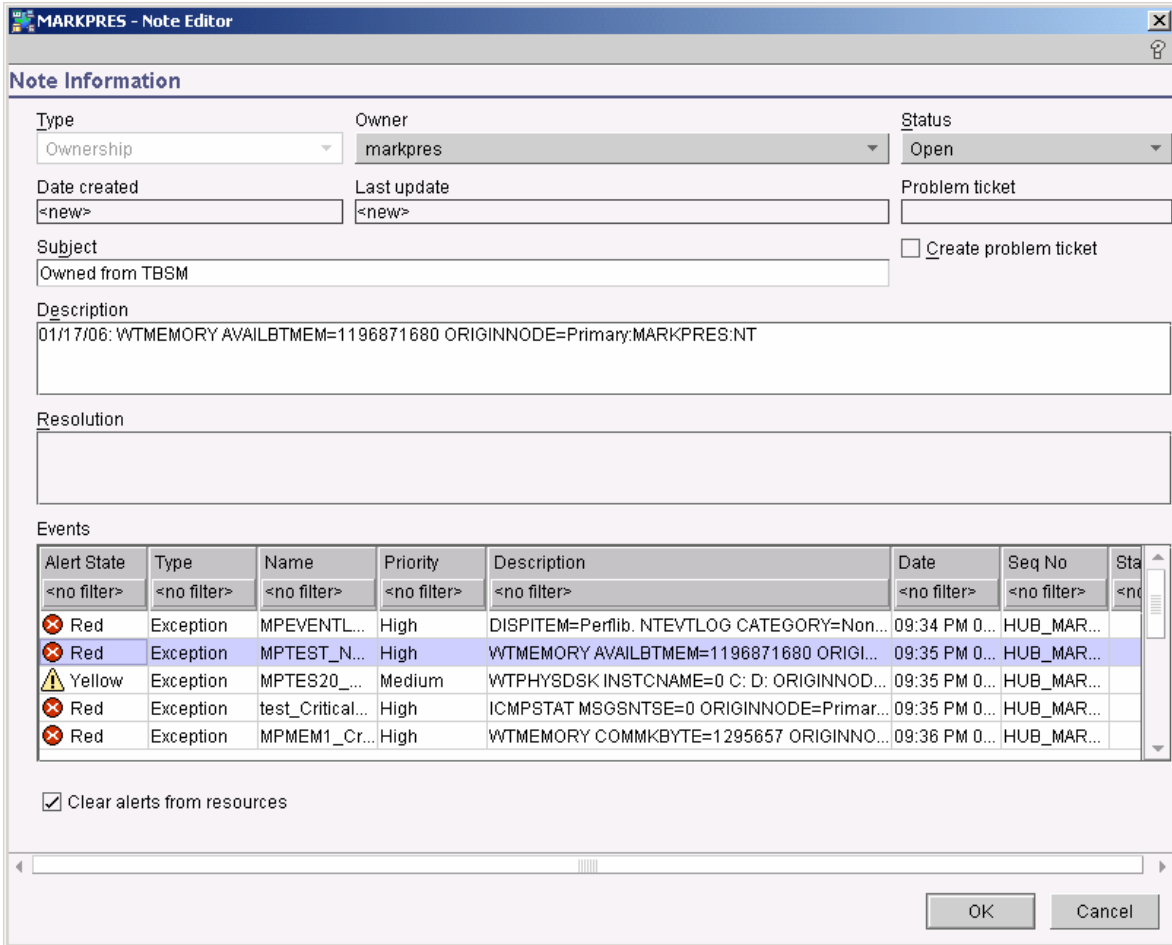


Figure 11. Example Tivoli Enterprise Portal acknowledged event shown with owner in Tivoli Business Systems Manager

Installation and customization

The Tivoli Enterprise Portal data source for Tivoli Business Systems Manager supports IBM Tivoli Monitoring (Version 6.1 and above) and OMEGAMON XE/DE (Candle Management Server® v350, CandleNet Portal® Server v196).

The following table shows abbreviations that are in later sections of this document. These abbreviations are used in various labels, tables, and code samples. The abbreviations do not

represent product names. The terms in the table are equivalent in the Tivoli Enterprise Portal framework:

New Terms	Old Terms
Tivoli Enterprise Portal (TEP)	CandleNet Portal (CNP)
Tivoli Enterprise Portal Server (TEPS)	CandleNet Portal Server (CNPS)
Tivoli Enterprise Management Server (TEMS)	Candle Management Server (CMS)

Component architecture

In a Tivoli Enterprise Portal environment the Hub Tivoli Enterprise Monitoring Server is a central point for all events, and the Tivoli Enterprise Portal Server database contains event definitions and logical group information.

Tivoli Business Systems Manager communicates with the Hub Tivoli Enterprise Monitoring Server through a Tivoli Enterprise Monitoring Server SOAP Server (often referred to as Web Services), and the Tivoli Enterprise Portal Server database through a DB2 Run-Time Client or an Microsoft SQL Client OLE database session.

Tivoli Business Systems Manager code is not installed in Tivoli Enterprise Portal.

Figures 12 and 13 illustrate, respectively, component architecture for direct and indirect SOAP communications to the Hub Tivoli Enterprise Monitoring Server.

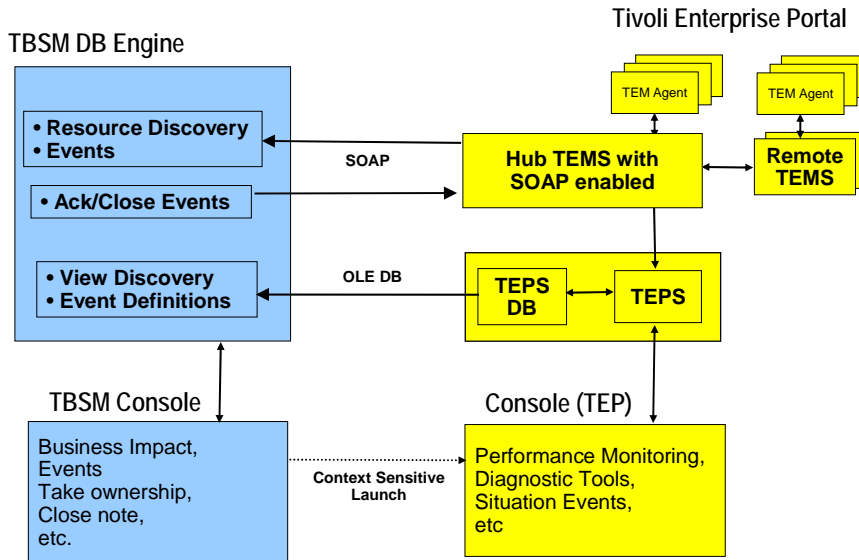


Figure 12. Component architecture for direct SOAP communications to the Hub Tivoli Enterprise Monitoring Server

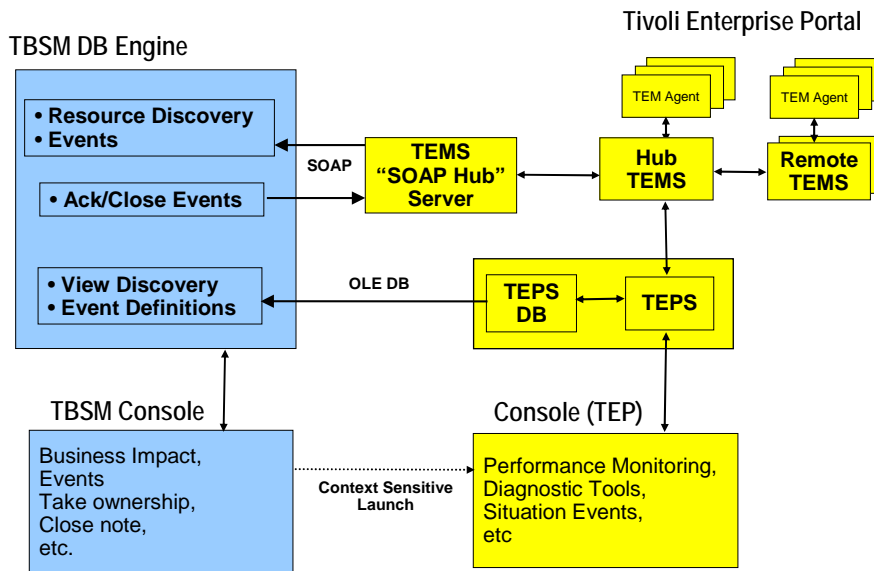


Figure 13. Component architecture for communications to the Hub Tivoli Enterprise Monitoring Server through a Tivoli Enterprise Monitoring Server “SOAP Hub” Server

Configuring Tivoli Business Systems Manager to work with SOAP depends on what you are connecting to. There are four possible configurations:

1. Hub Tivoli Enterprise Monitoring Server running on Windows
2. Hub Tivoli Enterprise Monitoring Server running on z/OS or UNIX
3. Candle Management Server running on Windows
4. Candle Management Server running on z/OS or UNIX

If the Hub Tivoli Enterprise Monitoring Server is running on Windows, z/OS, or UNIX, for IBM Tivoli Monitoring, Version 6.1, SOAP is, by default, enabled. You do not need extra Tivoli Enterprise Management Servers. When you directly connect to Tivoli Enterprise Management Server, you do not need to specify an alias in `tep_setup`. By default, the alias is defined as `@soap_alias='soap'`.

If the Candle Management Server runs on Windows, you can connect in one of the following ways:

- Directly: `hub_cms` should be enabled, there is no need for an alias specification in `tep_setup`
- Indirectly: Use the gateway to `hub_cms`. For more information about this configuration, see Appendix B – OMEGAMON XE SOAP Hub Server on page 30.

If the Candle Management Server runs on z/OS or UNIX, you need to create a gateway to `hub_cms`. For more information about this configuration, see Appendix B – OMEGAMON XE SOAP Hub Server on page 30.

Installation

3.1.0.1-TIV-BSM-LA0111

The new Tivoli Enterprise Portal data source for Tivoli Business Systems Manager is comprised of code updates to the Tivoli Business Systems Manager database and console.

The console code updates are included in Tivoli Business Systems Manager, Version 3.1 fix pack 1. This fix pack must be installed on the Tivoli Business Systems Manager database server, application server and all consoles.

The database code updates are packaged in 3.1.0.1-TIV-BSM-LA0111. Fix installation is an InstallShield® process that runs on the Tivoli Business Systems Manager database server. This process stops and restarts the Staged Event Loader service.

The capabilities offered with the Tivoli Business Systems Manager Tivoli Enterprise Portal Feed are dependent on the Tivoli Business Systems Manager components you have licensed from IBM. The InstallShield program prompts you to specify the components that you have licensed:

- Tivoli Business Systems Manager, Version 3.1, Distributed System Components
- Tivoli Business Systems Manager, Version 3.1, Distributed System Components and z/OS Components

If you are not licensed for z/OS components, all Tivoli Enterprise Portal z/OS related Managed Systems (for example, OMEGAMON for IMS) are suppressed for Discovery and Event monitoring.

It is violation of the license agreement to select the “Tivoli Business Systems Manager, Version 3.1, Distributed System Components and z/OS Components” option if you are not licensed for Tivoli Business Systems Manager z/OS Components.

DB2 Run-Time Client

If DB2 is the Tivoli Enterprise Portal Server database, the DB2 Run-Time Client must be installed on the Tivoli Business Systems Manager database server. The DB2 Run-Time Client can be downloaded from:

http://www-306.ibm.com/software/data/db2/udb/support/downloadv8_windows32bit.html

Tips:

- The DB2 Run-Time Client needs to be installed, not the DB2 Administrator Client.
- After installing the DB2 Run-Time Client, there is no need to do any further DB2 customization.
- There are several fix pack versions of the DB2 Run-Time client and, in some instances, these fix pack versions only work if the DB2 Server is running the same fix pack. If tep_setup fails to access the Tivoli Enterprise Portal Server database due to incompatibility of DB2 fix packs, compare the IBMDADB2.DLL file directory date stamp on the Tivoli Business Systems Manager database server (DB2 Client) and the Tivoli Enterprise Portal Server (DB2 Server). If they do not match,

install the appropriate DB2 Run-time Client fix pack to match the Server fix pack version. The following are some common date stamps for IBMDADB2.DLL:

- 24-OCT-2002 = DB2 v8 GA
 - 02-FEB-2003 = DB2 v8 FP1
 - 09-MAY-2003 = DB2 v8 FP2
 - 23-JAN-2004 = DB2 v8 FP4a
 - 20-FEB-2004 = DB2 v8 FP5
 - 15-SEP-2004 = DB2 v8 FP6a
 - 20-MAY-2005 = DB2 v8 FP6c
 - 21-MAY-2005 = DB2 v8 FP7b
 - 26-MAY-2005 = DB2 v8 FP9a
 - 07-SEP-2005 = DB2 v8 FP10
- If Tivoli Business Systems Manager is set up to access multiple Tivoli Enterprise Portal Server DB2 databases, then these databases may need to be upgraded to have a compatible maintenance level with the DB2 Run-Time Client that is installed on Tivoli Business Systems Manager.

Microsoft SQL Run-Time Client

If Microsoft SQL is the Tivoli Enterprise Portal Server database, there is no need to explicitly install the Microsoft SQL Run-Time Client. It is already installed on the Tivoli Business Systems Manager database server. To ensure optimal performance, the Microsoft SQL Client should be configured with TCP/IP as the first protocol.

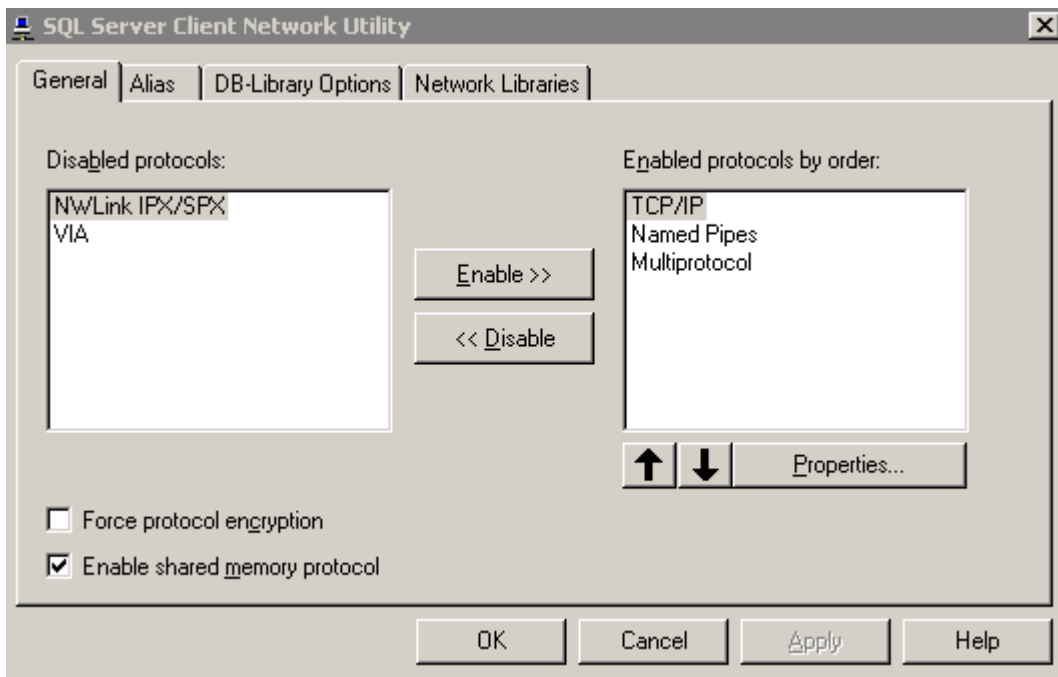


Figure 14. Example showing TCP/IP configured as the first protocol for the Microsoft SQL Client

Security

Security access may be required to issue SOAP requests and query Tivoli Enterprise Portal Server database tables. The userid and passwords are specified with the tep_setup

procedure. This procedure is explained in the Configuration section.

It is recommended that new userids with non-expiring passwords be defined for this purpose. If your site does not allow non-expiring passwords, change the password as required using the following command:

```
tep_setup @action='PASSWORD'
```

The userid for SOAP requests must be defined on the Hub Tivoli Enterprise Monitoring Server environment. For example, if the SOAP Server is on Windows, and the Hub Tivoli Enterprise Monitoring Server is on a mainframe, then the SOAP userid needs to be defined on the mainframe. This userid does not need any other special access (such as TSO access), just enough to be authenticated as a valid userid and password.

The userid for Tivoli Enterprise Portal Server database access must be defined on the Windows environment where the Tivoli Enterprise Portal Server database is located, and also defined to the database, DB2 or Microsoft SQL, as appropriate. No updates to the database are performed; only access to query the Tivoli Enterprise Portal Server database tables is needed.

The passwords are stored with encryption in the Tivoli Business Systems Manager database by the setup program (tep_setup). However the SOAP password is decrypted and sent in clear text in HTTP packets to comply with a Tivoli Enterprise Monitoring Server SOAP interface requirement. This communication is between the Tivoli Business Systems Manager database server and the Tivoli Enterprise Monitoring Server SOAP Server. Appropriate network security should be put in place to ensure the network traffic is not exposed to network sniffing tools that could capture the password.

Configuration

tep_setup is the primary administration utility for the Tivoli Enterprise Portal Feed. This feed is run from SQL Analyzer to define:

1. The Tivoli Enterprise Monitoring Server SOAP server, used for Discovery of Managed System resources (physical tree), Receiving events, and Sending Ack/Close.
2. The Tivoli Enterprise Portal Server, used for Discovery of Logical Views (business systems), Event definitions, and context-sensitive launch.

tep_setup 'ADD' must be used to define each hub Tivoli Enterprise Monitoring Server environment to Tivoli Business Systems Manager.

Remote Tivoli Enterprise Monitoring Servers are not defined using tep_setup; only the Hub Tivoli Enterprise Monitoring Server is defined. Remote Tivoli Enterprise Monitoring Server Discovery and Events are automatically handled through the Hub Tivoli Enterprise Monitoring Server.

Before using tep_setup, you should:

1. If necessary, install the DB2 Run-Time Client on the Tivoli Business Systems

Manager database server. For more information, see DB2 Run-Time Client on page 18.

2. If necessary, configure an OMEGAMON XE Candle Management Server to be an OMEGAMON SOAP Server for Web Services. For more information, see Appendix B – OMEGAMON XE SOAP Hub Server on page 30.
3. Define userids for SOAP and Tivoli Enterprise Portal Server database access. For more information, see Security on page 19.
4. Review the Tivoli Business Systems Manager SystemConfiguration table settings and customize these as desired. For information, see Appendix A – SystemConfiguration settings on page 27.

If there is more than one enterprise, you must:

1. Specify the anchor_physical parameter in tep_setup
2. Manually insert the aggregate object under the target enterprise resource.

If you do not complete these steps, tep_setup fails with the following error messages:

- If no anchor_physical parameter is specified, but multiple enterprise resources are defined in Tivoli Business Systems Manager, the following message is displayed:
 Msg 50000, Level 3, State 50000
 ERROR: Cannot create anchor_physical Aggregate object 'TEP Physical' since there are multiple Enterprise objects.

To resolve this problem, from the Tivoli Business Systems Manager console, manually insert the anchor_physical aggregate object 'TEP Physical' under one of the Enterprise objects.

- If anchor_physical parameter="ITM 6.1 – Test" is specified, but not manually inserted:

Msg 50000, Level 3, State 50000
 ERROR: Cannot create anchor_physical Aggregate object 'ITM 6.1 – Test' since there are multiple Enterprise objects.

To resolve this problem, from the Tivoli Business Systems Manager console, manually insert the anchor_physical aggregate object 'ITM 6.1 – Test' under one of the Enterprise objects.

Parameters for tep_setup

The following tables specify the parameters used with the tep_setup command.

The tep_setup @action is parameter is required.

@action value	Description
LIST	Lists the current configuration and diagnosis information.
ADD	Adds a new definition for a Hub Tivoli Enterprise Monitoring Server and a Tivoli Enterprise Portal Server to be monitored by Tivoli Business Systems Manager.
PASSWORD	Changes password for @soap_uid and @teps_uid.
DELETE	Deletes a previously added definition.
TEST	Tests the current configuration.

REFRESH	Refreshes discovery and events from Tivoli Enterprise Portal.
HELP	Shows help information.

The following parameters are valid for @action='ADD':

Parameter	Value	Comment
@soap_server	Tivoli Enterprise Monitoring Server SOAP Server tcp/ip name or address.	If the Hub Tivoli Enterprise Monitoring Server supports SOAP, specify the Hub Tivoli Enterprise Monitoring Server TCP/IP name or address. Otherwise, specify the TCP/IP name/address of the Tivoli Enterprise Monitoring Server "SOAP Hub" Server. For more information, see Component architecture on page 16.
@soap_alias	Tivoli Enterprise Monitoring Server SOAP Server Alias.	'soap' is the default. The default should be specified if the Tivoli Enterprise Monitoring Server supports direct SOAP communications. If a Tivoli Enterprise Monitoring Server "SOAP Hub" is used as a gateway to the Hub Tivoli Enterprise Monitoring Server, that SOAP Alias name must be specified here.
@soap_uid	Userid to be used to query Tivoli Enterprise Monitoring Server through SOAP.	Userid to be used to query Tivoli Enterprise Monitoring Server through SOAP. This is only needed if the target Tivoli Enterprise Monitoring Server has been configured with 'Security: Validate User' option On.
@soap_pw	Password for the @soap_uid.	
@soap_port	Tivoli Enterprise Monitoring Server SOAP Server http TCP/IP port.	1920 is the default; matches the Tivoli Enterprise Monitoring Server default.
@teps_server	Tivoli Enterprise Portal Server tcp/ip name or address.	This is used for OLE DB queries, and Console context-sensitive launch.
@teps_type	'DB2' for DB2 Tivoli Enterprise Portal Server database. 'MSSQL' for Microsoft SQL Server Tivoli Enterprise Portal Server database.	
@teps_db	Tivoli Enterprise Portal	For OMEGAMON XE, the database

	Server database name.	name is 'cnps'. For IBM Tivoli Monitoring, the database name can be specified at installation. The default is 'teps'.
@teps_uid	Userid to be used to query Tivoli Enterprise Portal Server tables through OLE database.	
@teps_pw	Password for @teps_uid.	Passwords are case sensitive.
@teps_port	Tivoli Enterprise Portal Server Console TCP/IP port.	1920 is the default; matches the Tivoli Enterprise Portal Server default.
@tec_events	0 means events are received through SOAP. 1 means events are received through Tivoli Enterprise Console instead of SOAP.	0 is the default. Important: For @tec_events=1, SOAP is used for Tivoli Enterprise Portal discovery and this populates CL_IDCache.
@anchor_physical	Name of Aggregate object in physical tree to anchor Tivoli Enterprise Portal discovery.	Default is 'TEP Physical'. If the specified Aggregate object does not already exist, it will be auto-created under the Enterprise object.
@anchor_business	Name of Business System object to anchor Tivoli Enterprise Portal discovery.	Default is 'TEP Business'. If you do not want Tivoli Enterprise Portal Logical View Discovery, specify @anchor_business=". If the specified Business System object does not already exist, it will be auto-created as a top-level Business System.

The following parameters are valid for @action='DELETE'

Parameter	Value	Comment
@soap_server	Tivoli Enterprise Monitoring Server SOAP Server tcp/ip name or address, as defined in previous ADD.	Specify "ALL" to delete the whole Tivoli Business Systems Manager Tivoli Enterprise Portal Feed configuration, including SQL Tasks and Linked Servers (see below).
@soap_alias	Tivoli Enterprise Monitoring Server SOAP Server Alias, as defined in previous ADD.	

Examples:

```
tep_setup @action='ADD'
    , @soap_server='phttiv20.ibm.com', @soap_alias='phttic1'
    , @soap_uid='tbsmsoap', @soap_pw='tbsmsoap'
    , @teps_server='phttiv25', @teps_type='DB2', teps_db='teps'
    , @teps_uid='TEPS', @teps_pw='itm61pw'

tep_setup @action='ADD'
    , @soap_server='markpres', @soap_alias='soap'
    , @soap_uid='tbsmsoap', @soap_pw='tbsmsoap'
    , @teps_server='markpres', @teps_type='MSSQL', @teps_db='cnps'
    , @teps_uid='sa', @teps_pw='sa_markpres'

tep_setup @action='LIST'
tep_setup @action='TEST'
tep_setup @action='REFRESH'
tep_setup @action='PASSWORD', @teps_uid='db2admin', @teps_pw='ibm'
tep_setup @action='DEL', @soap_server='phttiv20'
    , @soap_alias='phttic1'
tep_setup @action='DEL', @soap_server='ALL'
```

tep_setup maintains the configuration in the tep_config table. It also defines the following SQL Tasks:

1. TEP Discovery.
This task performs Discovery of Managed System resources and Logical Views for all Tivoli Enterprise Portal environments defined using tep_setup 'ADD'. By default this task runs every hour. The task does not run every time you start MS SQL. If you want the task to run when you start MS SQL, you can run it manually.
2. TEP Receive Events <soap_server> <soap_alias>.
This task receives events from a soap_server / soap_alias. This task normally always executes, continually retrieving events and waiting for more events. If there is a break in communications to the soap_server, the task ends. By default the task retries communications every minute.
3. TEP Cleanup.
By default this runs everyday at 1:00 AM and purges entries from the tep_debuglog table (this table is an audit trail log) that are more than three days old.

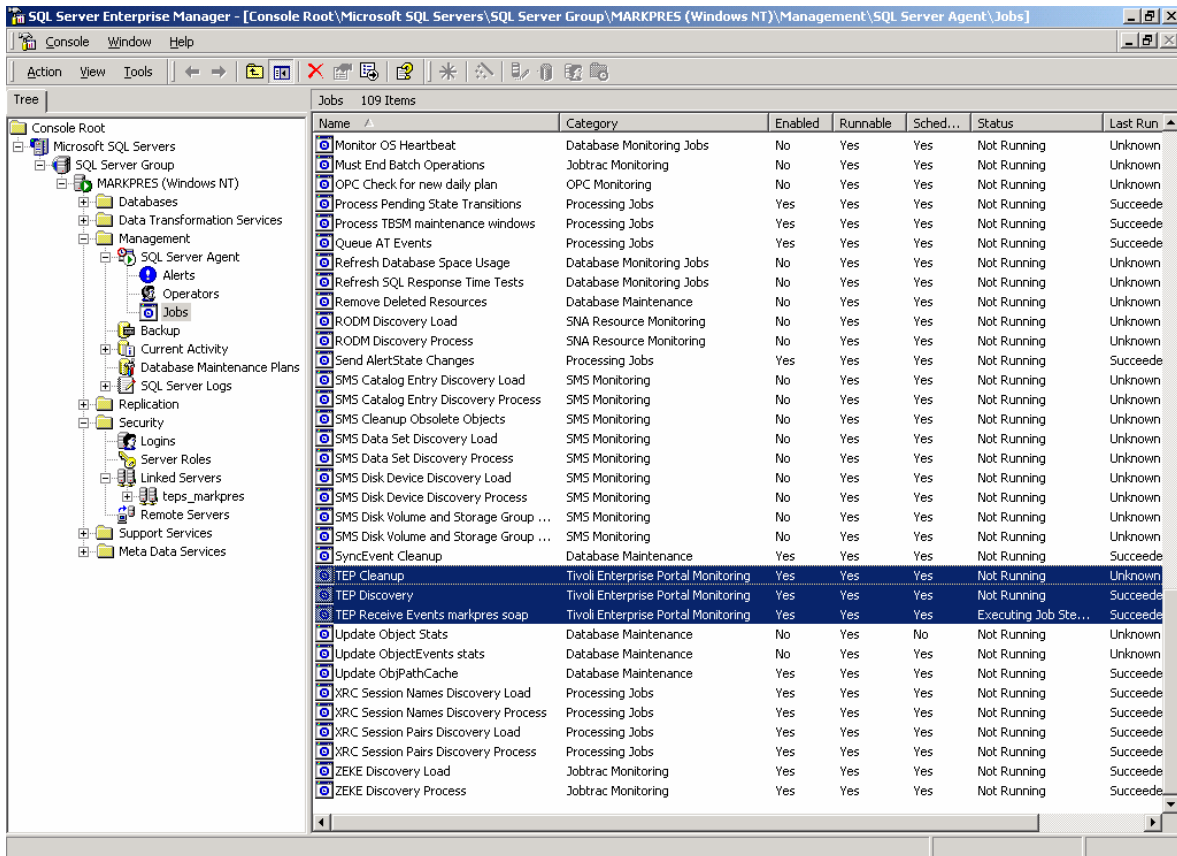


Figure 15. Example of jobs listed in SQL Server Enterprise Manager

For each @teps_server, tep_setup defines an SQL Linked Server with the name teps_<teps_server>.

Problem diagnosis

tep_setup @action='HELP'

Displays help information about tep_setup, including the valid parameters.
tep_setup is run from SQL Analyzer.

tep_setup @action='LIST'

Lists the current tep_config definitions and the tep_debuglog audit log.

IBM Support may request the output from the following commands, for lower-level problem diagnosis:

- tep_setup @action='LIST' ,@verbose=1
- tep_setup @action='LIST' ,@verbose=2

tep_setup @action='TEST'

Tests the tep_config definitions, including SOAP access and OLE DB access.

tep_setup @action='REFRESH'

If Tivoli Enterprise Portal objects/events are not accurately reflected in Tivoli Business Systems Manager (for example, communications problem, objects deleted from Tivoli Business Systems Manager), tep_setup @action='REFRESH' can be used to resynchronize. This will:

1. Perform a discovery
2. Close all previously retrieved/owned XE events
3. Request all events from XE.

Staged Event Loader

The Tivoli Enterprise Portal Receive Events SQL Tasks received events from XE through SOAP and inserts entries into the StagedTepIn table. The Tivoli Business Systems Manager Staged Event Loader (SEL) then processes the events, similar to other SEL tables.

asisp_showprocessing can be issued from SQL Analyzer to show SEL processing, that is, statistics on how many entries are pending and how many were recently processed.

Installation verification

After tep_setup @action='ADD' ... has been run, it may take five minutes for the initial discovery to complete, depending on the size of the OMEGAMON XE environment.

If you specified existing objects in the @anchor_physical and @anchor_business parameters specified in tep_setup, then navigate to these objects in the Tivoli Business Systems Manager console to the appropriate position. If no values were explicitly specified:

- An Aggregate object called “TEP Physical” is created under the Enterprise object.
- A Business System folder called “TEP Business” is created under the Root Business System level.

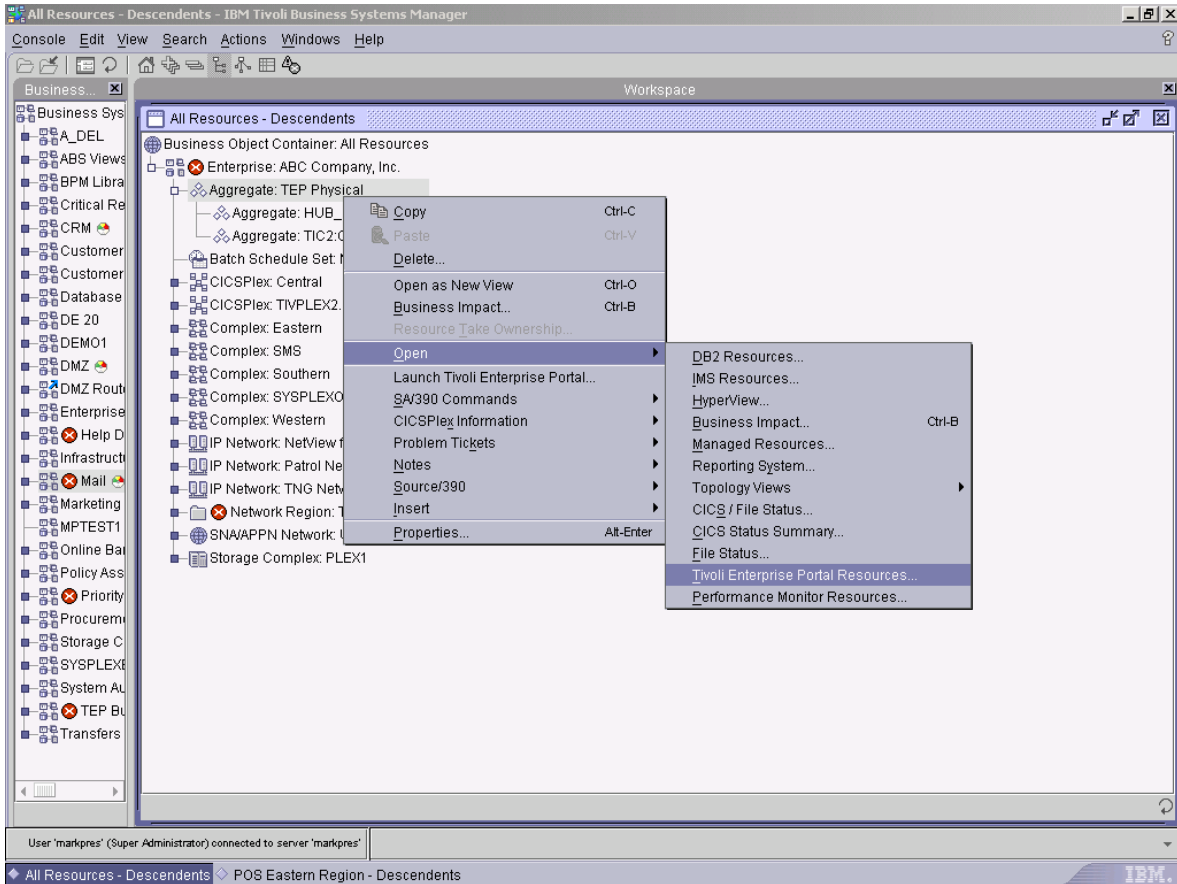


Figure 16. Using context menus to open Tivoli Enterprise Portal resources from Tivoli Business Systems Manager

Right-click the “TEP Physical” Aggregate (or appropriate @anchor_physical object) and Open “Tivoli Enterprise Portal Resources...”. Refer to the “Discovery of Managed System resources (physical tree)” section to use this view and confirm the discovery process has created and located Tivoli Business Systems Manager objects for the corresponding Tivoli Enterprise Portal objects.

Similarly, open the “TEP Business” Business System, or appropriate @anchor_business object, and confirm the discovery process has created and located Tivoli Business Systems Manager objects for the corresponding Tivoli Enterprise Portal Business View hierarchies.

Right click a Tivoli Business Systems Manager object that represents a Tivoli Enterprise Portal object to show an open “Launch Tivoli Enterprise Portal...” window. Select this for a context-sensitive launch Tivoli Enterprise Portal for the resource.

Appendices

Appendix A – SystemConfiguration settings

In addition to Feed settings though tep_setup, the following entries in the SystemConfiguration table can be customized as desired.

<i>propertyname</i>	<i>Default propertyvalue</i>
TBSM_ACKNOWLEDGE_TEXT	Tivoli Business Systems Manager operator acknowledged
TEP_NOTE_SUBJECT	Tivoli Enterprise Portal operator owned
TEP_NOTE_OWNER	Tivoli Enterprise Portal
SOAP_TIMEOUT	30
GETEVENT_TIMEOUT	300
GETEVENT_SITNAME	TBSM_GetEvents
GETEVENT_SITSOURCE	TBSM_@@SERVERNAME

To display the settings, from SQL Analyzer run:

```
USE Object
SELECT * FROM SystemConfiguration
WHERE groupname = 'TEP'
```

Example SQL to update a value:

```
UPDATE SystemConfiguration
SET propertyvalue = 'ITM'
WHERE groupname = 'TEP'
AND propertyname = 'TEP_NOTE_OWNER'
```

The TEP_NOTE_SUBJECT, TEP_NOTE_OWNER and TBSM_ACKNOWLEDGE_TEXT propertyvalues are used in the following processing.

When Tivoli Business Systems Manager Receives an Acknowledge from Tivoli Enterprise Portal, the following happens:

- IF the event is not already Owned in Tivoli Business Systems Manager THEN
 - A TakeOwnership is performed with:
 - the Subject set to the TEP_NOTE_SUBJECT propertyvalue
 - the Owner Userid set to the TEP_NOTE_OWNER propertyvalue
 - the Description set to the TEP Userid that last updated the Acknowledge text and the Acknowledge text.
- ELSE if the existing Ownership Note has the Subject of the TEP_NOTE_SUBJECT propertyvalue (meaning the Ownership was originally created by the above Acknowledge processing) THEN
 - The Note Description is replaced with to the Tivoli Enterprise Portal Userid that last updated the Acknowledge text, and the Acknowledge text.
- ELSE (the Ownership was originally created through a Tivoli Business Systems Manager user TakeOwnership)
 - The acknowledge text from Tivoli Enterprise Portal is ignored because a Tivoli Business Systems Manager user originally took ownership; updates to the Note can be completed from Tivoli Business Systems Manager, not Tivoli Enterprise Portal.

When a Tivoli Business Systems Manager user Takes Ownership for a Tivoli

Enterprise Portal event from the Tivoli Business Systems Manager console, the following happens:

- An Acknowledge is sent to Tivoli Enterprise Portal with the TBSM_ACKNOWLEDGE_TEXT propertyvalue followed by the Userid, Subject and Note text.

When Tivoli Business Systems Manager user updates an Ownership Note for a Tivoli Enterprise Portal event from the Tivoli Business Systems Manager console, the following happens:

- IF the Ownership Note does not have the Subject of the TEP_NOTE_SUBJECT propertyvalue (meaning the Ownership was not created through an Acknowledge in Tivoli Enterprise Portal) THEN
 - An Acknowledge is sent to Tivoli Enterprise Portal with the TBSM_ACKNOWLEDGE_TEXT propertyvalue followed by the Userid, Subject and Note text.

The SOAP_TIMEOUT value is used for SOAP packets used in Discovery, Acknowledgements, and Closing events.

The GETEVENTS_TIMEOUT, GETEVENT_SITNAME and GETEVENT_SITSOURCE propertyvalues are used by the “TEP Receive Events” SQL jobs. The job continually executes, receiving events from Tivoli Enterprise Monitoring Server unless there is a break in communications.

- A SOAP request is sent to the hub Tivoli Enterprise Monitoring Server requesting events, include ack and close, since the last timestamp. If there are events since the last timestamp, the hub Tivoli Enterprise Monitoring Server replies to the SOAP request immediately. Otherwise the Tivoli Enterprise Monitoring Server waits, and, likewise, the SQL job waits, for new events before responding. This way Tivoli Business Systems Manager is notified of events as soon as possible. The GETEVENTS_TIMEOUT value is the maximum number of seconds for the SQL job waits for a reply from the Tivoli Enterprise Monitoring Server. The default is 300 seconds.
- Before the first SOAP request for events, and after any timeout, a “heartbeat” Situation Event is sent to the hub Tivoli Enterprise Monitoring Server to confirm the hub Tivoli Enterprise Monitoring is active. The default name of the event is TBSM_GetEvents and default source is TBSM_@@SERVERNAME; the @@SERVERNAME is resolved to the TBSM database server name. The name and source can be changed by the GETEVENTS_SITNAME and GETEVENT_SITSOURCE settings. If the hub Tivoli Enterprise Monitoring Server responds to the “heartbeat” correctly, the job goes into a continual loop requesting new events and waiting for the Tivoli Enterprise Monitoring Server to reply with the events. If the hub Tivoli Enterprise Monitoring Server does not reply correctly, the job terminates with an error message.

Appendix B – OMEGAMON XE SOAP Hub Server

If the Hub Tivoli Enterprise Monitoring Server to be monitored supports SOAP (for example, IBM Tivoli Monitoring, Version 6.1, and OMEGAMON XE Tivoli Enterprise Monitoring Server on Windows), it is recommended that you use SOAP directly to the Hub Tivoli Enterprise Monitoring Service. In this case, the @soap_alias parameter should be specified as 'soap' (the default) on the tep_setup 'ADD'.

If the Hub Tivoli Enterprise Monitoring Server to be monitored does not support SOAP, a Tivoli Enterprise Monitoring Server SOAP Hub Server needs to be setup on a Windows server and this is used as a gateway to the hub Tivoli Enterprise Monitoring Server. The Alias name defined in the SOAP Hub Server is specified in the @soap_alias parameter on the tep_setup 'ADD'.

The following steps walk through how to install a Tivoli Enterprise Monitoring SOAP Hub Server on a Windows Server. (For when this install is needed, see Configuration on page 20.) This install requires:

- Installing the OMEGAMON XE Candle Management Server NT Service.
- Configuring the Candle Management Server as a Hub, and “SOAP Server” option checked ON.
- Configure SOAP Server HUBs.

Step 1: Install Candle Management Server software:

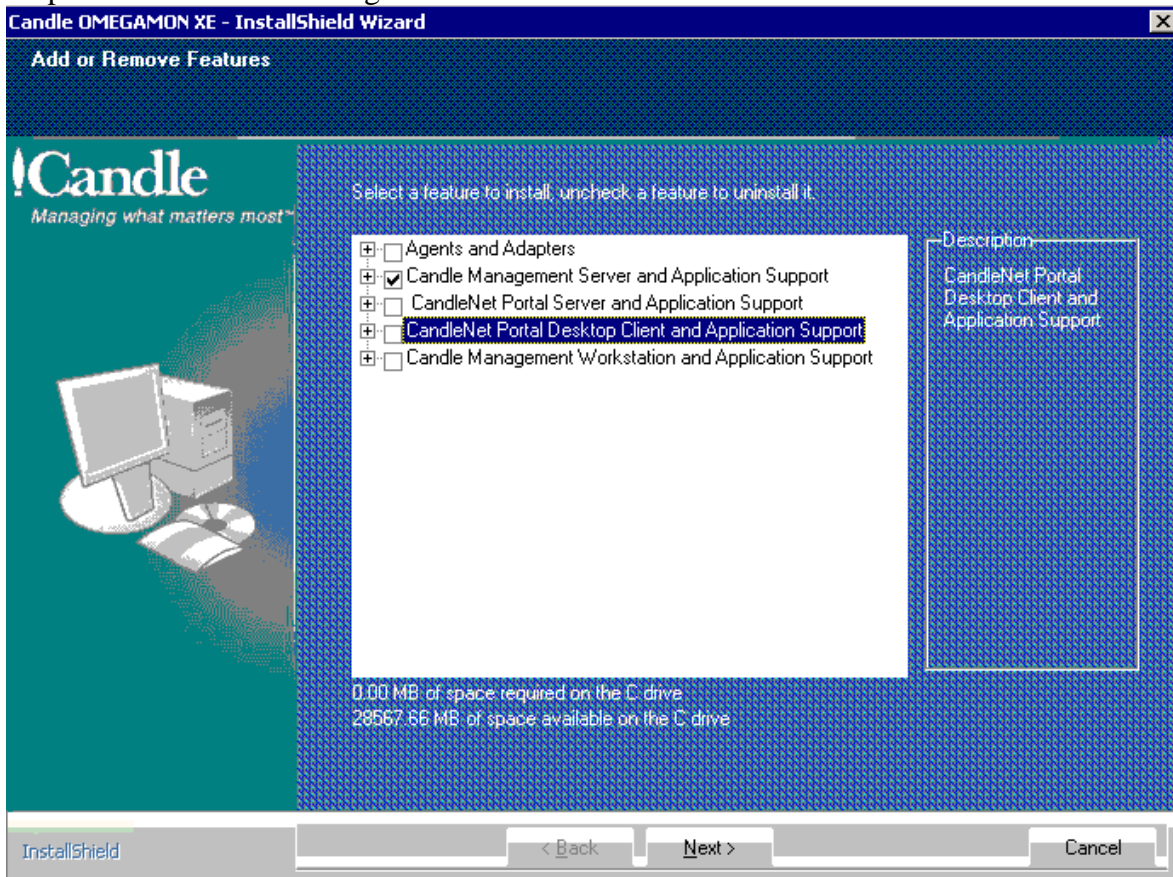


Figure 17. InstallShield screen for installing features

Step 2: Configure Candle Management Server:

- Set Candle Management Server Type to Hub.
- Check OMEGAMON SOAP Server option ON.
- Specify a Candle Management Server Name. This name is not used by Tivoli Business Systems Manager, but is required for Candle Management Server. The default is HUB_<computer name>.
- Specify a Protocol for the Candle Management Server communication. The Protocols must match the protocols used to communicate with other Candle Management Servers (specified later in the SOAP configuration). Where possible, we recommend using IP.PIPE for better performance and robustness.

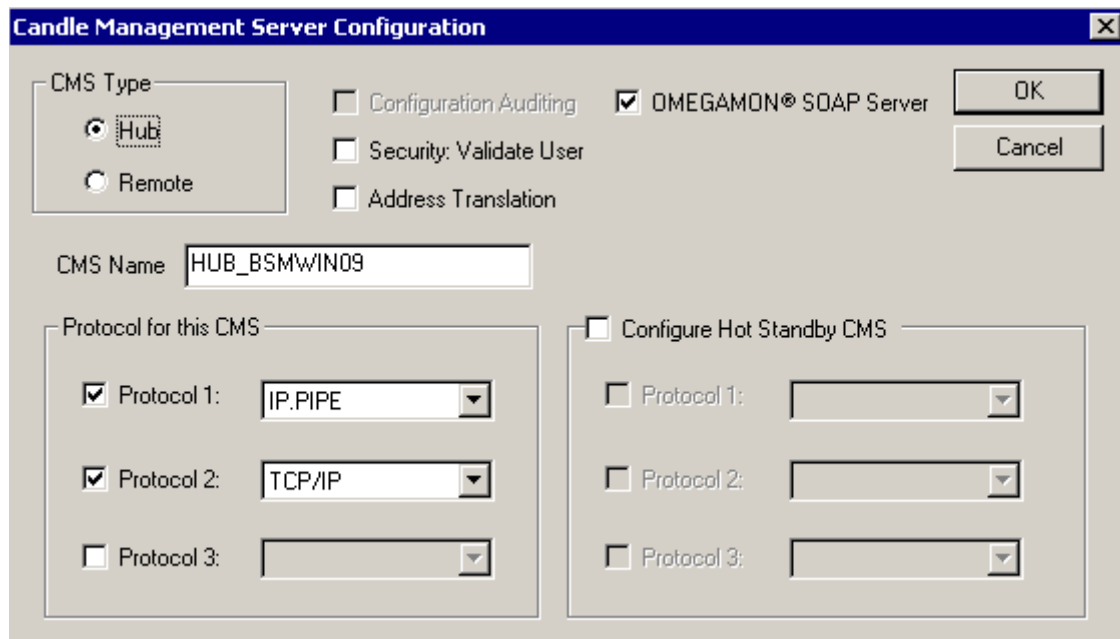


Figure 18. Candle Management Server Configuration screen

After clicking OK, another screen appears to specify the Ports. Usually 1918 is used for Candle Management Server to Candle Management Server communication.

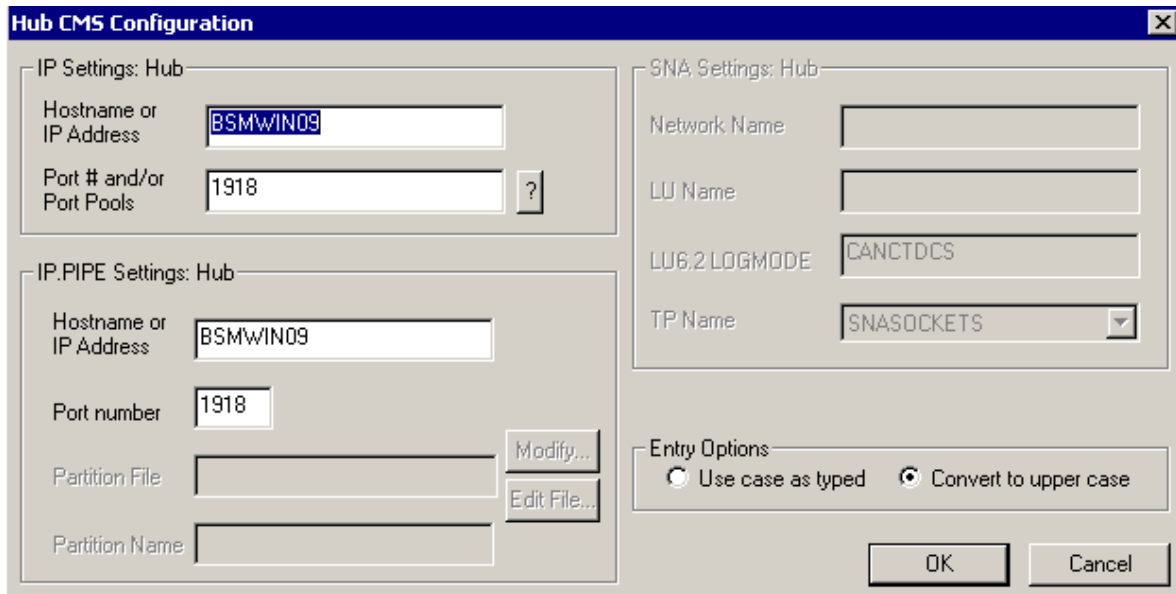


Figure 19. Hub Candle Management Server Configuration screen

After clicking OK, there may be several prompts to Seed the Candle Management Server. Cancel these prompts. There is no need to Seed the Candle Management Server for the various XE agents because this Candle Management Server is not used as a real Hub. The SOAP Server feature of the Candle Management Server is used. If Seeding was inadvertently performed, do nothing. The seeding is benign.

Step 3: Configure SOAP Server HUBs:

On the Desktop, there is a short cut to “Manage Candle Services”. Launch this, and navigate to the “Configure SOAP Server Hubs” screen.

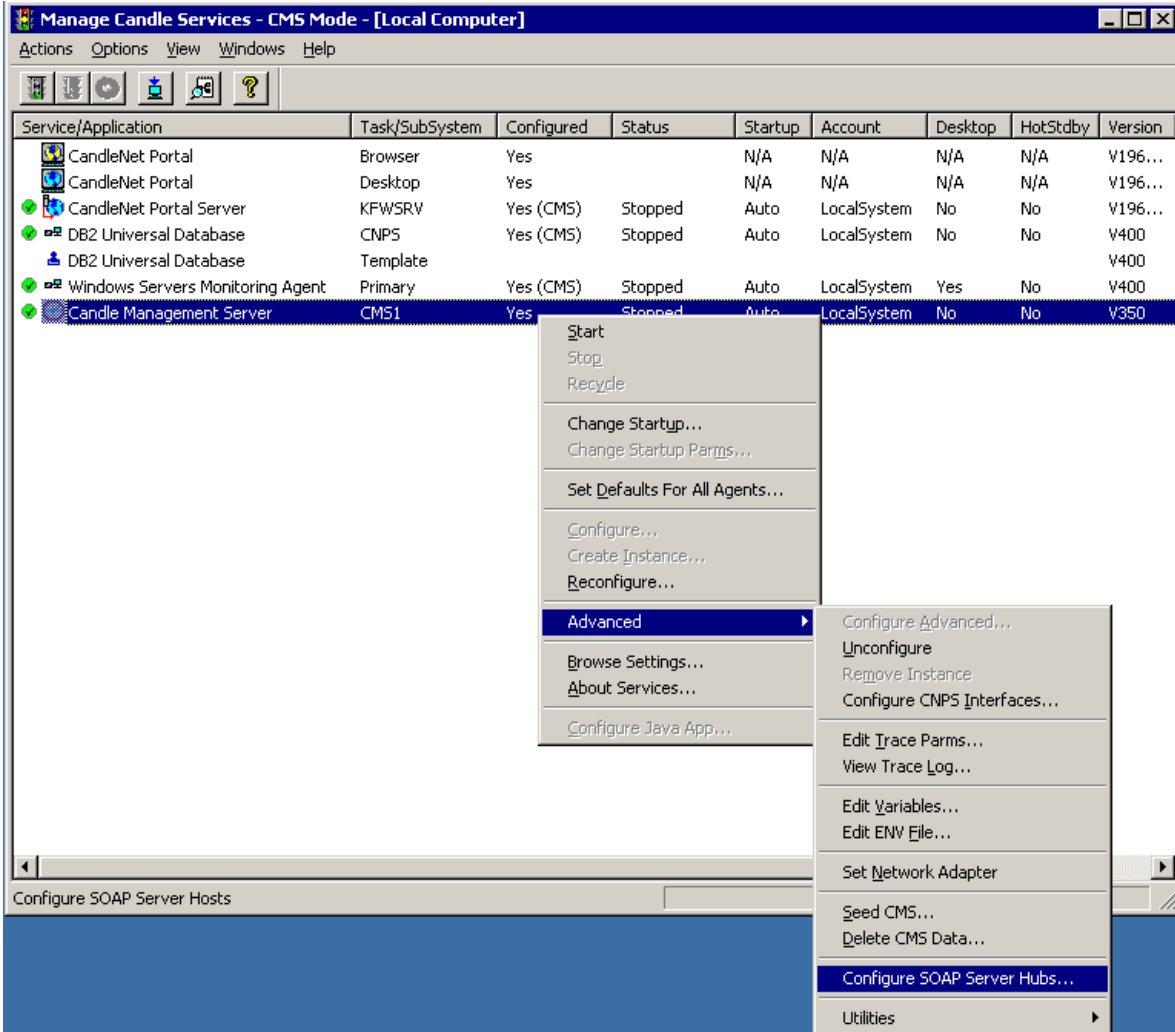


Figure 20. Configuring SOAP Server Hubs from Candle Management Server

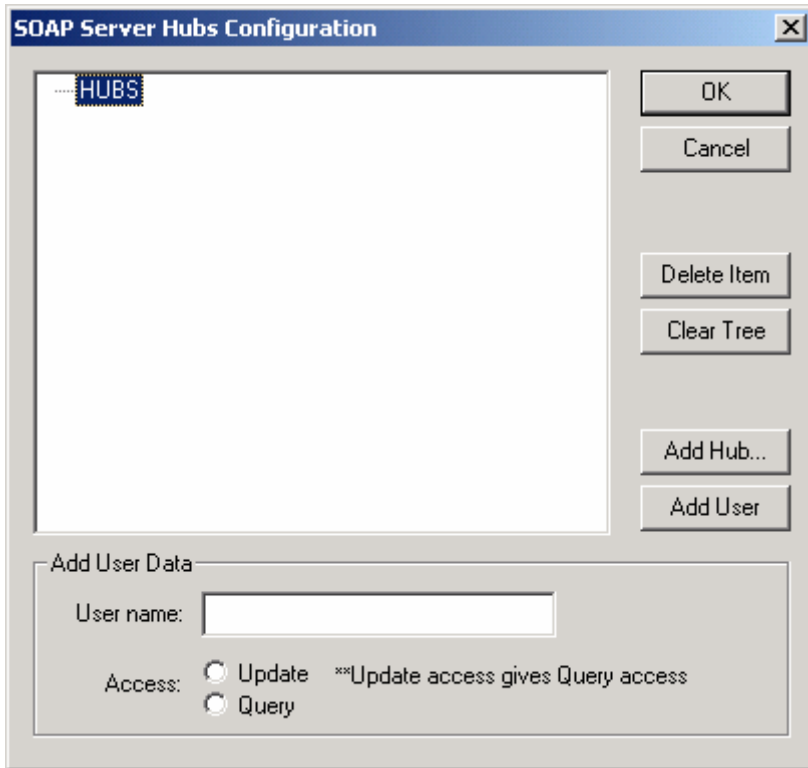


Figure 21. SOAP Server Hubs Configuration screen

Click the Add Hub button, and define the target Hub Candle Management Server.

Tips:

- There is no need to use the Add User button.
- If there are multiple Hub Candle Management Servers, add all of them.
- Do not add Remote Candle Management Servers.
- The target Hub Candle Management Servers do not need to be configured to have a SOAP Server. The SOAP Server uses Candle Management Server to Candle Management Server communication to service the SOAP requests.
- The port number specified here is the port used for Candle Management Server to Candle Management Server communications. This port number must match what ever is defined in the target Hub configuration, usually 1918. Similarly, if the target Hub is defined with IP.PIPE or SNA, the definition must match here.
- You should specify an Alias name that corresponds to the target Hub Candle Management Server. Do not specify the name 'soap' because this conflicts with the inbuild name used by the SOAP Server. The Alias name specified should also be specified in the tep_setup @soap_alias parameter.

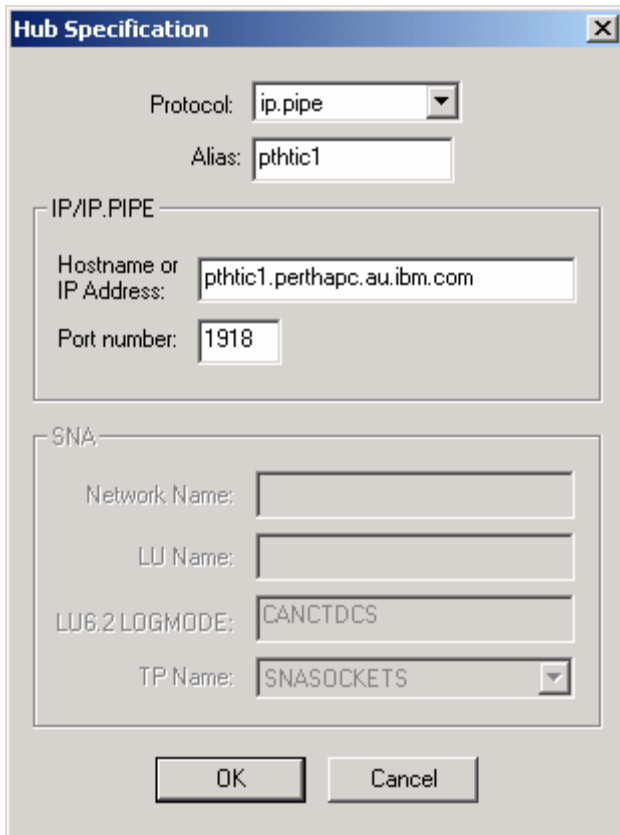


Figure 22. Hub specification screen

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 - Online: Go to the Passport Advantage Web page (http://www.lotus.com/services/passport.nsf/WebDocs/Passport_Advantage_Home) and click the How to Enroll
 - By phone: For the phone number to call in your country, go to the IBM Software Support Web site (<http://techsupport.services.ibm.com/guides/contacts.html>) and click the name of your geographic region.
- For IBM eServer™ software products (including, but not limited to, DB2 and WebSphere products that run in zSeries®, pSeries®, and iSeries™ environments), you can purchase a software maintenance agreement by working directly with an

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If you are not sure what type of software maintenance contract you need, call 1-800-IBMSERV (1-800-426-7378) in the United States or, from other countries, go to the contacts page of the IBM Software Support Handbook on the Web (<http://techsupport.services.ibm.com/guides/contacts.html>) and click the name of your geographic region for phone numbers of people who provide support for your location.

Follow the steps in this topic to contact IBM Software Support:

1. Determine the business impact of your problem.
2. Describe your problem and gather background information.
3. Submit your problem to IBM Software Support.

Determine the business impact of your problem

When you report a problem to IBM, you are asked to supply a severity level. Therefore, you need to understand and assess the business impact of the problem you are reporting. Use the following criteria:

- Severity 1: Critical business impact: You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.
- Severity 2: Significant business impact: The program is usable, but it severely limited.
- Severity 3: Some business impact: The program is usable with less significant features (not critical to operations) unavailable.
- Severity 4: Minimal business impact: The problem causes little impact on operations, or a reasonable circumvention to the problem has been implemented.

Describe your problem and gather background information

When explaining a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently. To save time, know the answers to these questions:

- What software versions were you running when the problem occurred?
- Do you have logs, traces, and messages that are related to the problem symptoms? IBM Software Support is likely to ask for this information.
- Can the problem be recreated? If so, what steps led to the failure?
- Have any changes been made to the system? (For example, hardware, operating system, networking software, and so on.)
- Are you currently using a workaround for this problem? If so, please be prepared to explain it when you report the problem

Submit your problem to IBM Software Support

You can submit your problem in one of two ways:

- Online: Go to the “Submit and track problems” page on the IBM Software Support site (<http://www.ibm.com/software/support/probsub.html>). Enter your information

into the appropriate problem submission tool.

- By phone: For the phone number to call in your country, go to the contacts page of the IBM Software Support Handbook on the Web (techsupport.services.ibm.com/guides/contacts.html) and click the name of your geographic region.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Software Support provides a workaround for you to implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the IBM product support Web pages daily, so that other users who experience the same problem can benefit from the same resolutions.

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