



Tivoli Business Systems Manager
Console User's Guide
Version 1.5



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Preface

Welcome to Tivoli Business Systems Manager (TBSM), the system management software of Tivoli Systems Inc. TBSM enables you to monitor the status of all the systems, subsystems, applications, and other technical resources within your data enterprise. TBSM also enables you to define your applications, resources, and subsystems as resources and create customized views of those resources so you can monitor only what is important to you. The TBSM event management facilities help you to determine and troubleshoot system problems that threaten application and systems availability. TBSM also includes other features, which we describe in this document.

Who Should Read This Document

This document is intended for anyone who uses the TBSM product, including operators and administrators.

What This Document Contains

This Tivoli Business Systems Manager Console User's Guide describes how to use the Tivoli Business Systems Manager (TBSM) product.

About Tivoli Business Systems Documentation

The Tivoli Business Systems Manager Console User's Guide introduces TBSM and explains the commands and features of the product. The Tivoli Business Systems Manager Installation and Configuration Guide describes how to install and configure the TBSM product. The Tivoli Business Systems Manager Administration Guide includes information about administering TBSM, its various components, and operating environments. User assistance is available within the TBSM workstation and provides you with instructions for commands. TBSM documentation assumes you are familiar with the basic skills necessary to operate within the designated environments.

In this release of TBSM, documentation includes information about both the Enterprise Edition and the Distributed Edition. The TBSM Enterprise Edition includes Source/390, which is a component that resides on OS/390 and collects availability data from a variety of sources. The Distributed Edition is the same product as the Enterprise Edition without the Source/390 component.

Much of the information in the Tivoli Business Systems Manager User's Guide applies to both editions. However, the documentation indicates when the information applies to only the Enterprise Edition or only to the Distributed Edition.

Prerequisite and Related Documents

The following documents are shipped on the Publications CD with the TBSM product:

- *Tivoli Business Systems Manager Installation and Configuration Guide*
- *Tivoli Business Systems Manager Console User's Guide*
- *Tivoli Business Systems Manager Administration Guide*
- *Tivoli Business Systems Manager Distributed - Overview*

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- *Tivoli Business Systems Manager TSD Integration/Configuration*
 - *Tivoli Business Systems Manager TSD OS/390 Integration/Configuration/Installation Guide*
 - *Tivoli Business Systems Manager CA-7 Release Notes*
 - *Tivoli Business Systems Manager RODM Release Notes*
 - *Tivoli Business Systems Manager Messages Guide*
 - *Tivoli Business Systems Manager SMS Release Notes*
 - *Tivoli Business Systems Manager TMON (MVS, DB2, CICS/ESA) Release Notes*
 - *Tivoli Business Systems Manager MainView (CICS, DB2, IMS, OS/390) Release Notes*
 - *Tivoli Business Systems Manager WebSphere for OS/390 Release Notes*
 - *Tivoli Business Systems Manager CICSplex SM Release Notes*
 - *Tivoli Business Systems Manager DB2 and DB2 PM Release Notes*
 - *Tivoli Business Systems Manager IMS Release Notes*
 - *Tivoli Business Systems Manager Operation and Planning and Control Release Notes*
 - *Tivoli Business Systems Manager RMF Release Notes*
 - *Tivoli Business Systems Manager Systems Automation for OS/390 Release Notes*
 - *Tivoli Business Systems Manager User's Guide*

Depending on your TBSM task, the following is a list of related publications:

- *Tivoli Manager for OS/390 Enterprise Business Systems Management (redbook)*
- *Tivoli Business Systems Manager CICSplex SM Instrumentation Program Directory*
- *Tivoli Business Systems Manager DB2 for OS/390 Instrumentation Program Directory*
- *Tivoli Business Systems Manager Program Directory*
- *Tivoli Business Systems Manager Program Directory Distributed Edition*
- *Tivoli Business Systems Manager Tivoli Ready Enablement Program Directory*
- *Tivoli Business Systems Manager Product Release Information*
- *Tivoli Global Enterprise Manager CICSplex SM Instrumentation Program Directory*
- *Tivoli Global Enterprise Manager DB2 for OS/390 Instrumentation Program Directory*
- *Tivoli Global Enterprise Manager Tivoli Ready Enablement Program Directory*
- *Tivoli Distributed Monitoring User's Guide*
- *Tivoli Software Distribution User's Guide*
- *Tivoli Task Library Language Developer's Guide*
- *IBM TCP/IP User's Guide*
- *Tivoli Enterprise Console library*
- *Tivoli Management Framework library*
- *Tivoli NetView for OS/390 library*

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- IBM CICSplex System Manager for MVS/ESA library
 - IBM DB2 PM for OS/390 library
 - IBM DB2 UDB for OS/390 library
 - The DB2 UDB for Windows NT (or OS/2 V6) on-line books

For instrumentation, familiarity with the Application Management Specification (AMS), an industry-endorsed specification for creating management-ready applications, is required. A copy of the AMS can be found at www.tivoli.com/products/index/module_designer/

Conventions Used in This Guide

The guide uses several typeface conventions for special terms and actions. These conventions have the following meaning:

Bold	Commands, keywords, file names, authorization roles, URLs, or other information that you must use literally appear like this , in bold . Names of windows, dialogs, and other controls also appear like this , in bold .
<i>Italics</i>	Variables and values that you must provide appear like <i>this</i> , in <i>italics</i> . Words and phrases that are emphasized also appear like <i>this</i> , in <i>italics</i> .
Monospace	Code examples, output, and system messages appear like <code>this</code> , in a monospace font.

Contacting Tivoli Customer Support

For support for this or any other Tivoli product, you can contact Tivoli Customer Support in one of the following ways:

- Visit our Web site at www.tivoli.com/support
- Send e-mail to support@tivoli.com

Customers in the United States can also call 1-800-TIVOLI8 (1-800-848-6548). International customers should consult the Web site for customer support telephone numbers. You can also review the Customer Support Handbook, which is available at: www.tivoli.com/support/handbook/

When you contact Tivoli Customer Support, be prepared to provide identification information for your company, so that support personnel can assist you more readily. Company identification information may also be needed to access various online services available on the Web site.

The Web site offers extensive information, including a guide to support services (the Customer Support Handbook); frequently asked questions (FAQs); and documentation for all Tivoli products, including Release Notes, Redbooks, and Whitepapers. The documentation sets for some product releases are available in both PDF and HTML formats. Translated documents are also available for some product releases.

You can order documentation by e-mail at swdist@tivoli.com. Please provide the part number or order number of the desired document; alternatively, you can provide the document's title, version number, and date of publication.

We are very interested in hearing about your experience with Tivoli products and documentation. We also welcome your suggestions for improvements. If you have comments or suggestions about our documentation, please contact us in one of the following ways:

- Send e-mail to: **pubs@tivoli.com**
- Fill out our customer feedback survey at: **www.tivoli.com/support/feedback**

1

What Is TBSM?

TBSM is a business systems management tool that enables you to perform distributed management, OS/390 management, or both. Even when a business system spans multiple platforms, TBSM enables you to graphically monitor and control interconnected business components and operating system resources. A business component and its resources are referred to as a Line of Business (LOB). Using the LOB concept TBSM helps you plan, define, and control your business system. TBSM, together with other Tivoli management components, helps you manage the dependencies between business components and their underlying infrastructure.

What Is a Line of Business?

A Line of Business (LOB) consists of:

- All business components that together perform a specific business function.
- The defined relationships between business components.
- The measures that determine whether the LOB is functioning properly.

In today's environment an LOB may span both the mainframe and distributed platforms and may contain a collection of applications or business components that run on a variety of platforms. For example, a banking system LOB designed to support transactions over the Web typically includes the following:

- A Web server running outside the company's intranet and connected directly to the Internet.
- A firewall that provides secure connectivity to a machine running a custom business component, such as loan processing.

The loan processing business component usually runs on a distributed platform and interfaces to business components running on a mainframe computer. The mainframe handles all the bank transactions. This LOB presents challenges to a systems manager because it crosses the typically isolated environments of host and distributed systems.

Another example of an LOB is an e-mail system. An e-mail LOB includes all the instances of e-mail business components that are being used in the network. You could have a mix of Lotus Notes servers and clients, POP mail or Microsoft Exchange servers and clients, and other e-mail business components. An e-mail LOB includes definitions that tell whether each entity in the LOB is a server, a client, or both. It also includes definitions of the monitors that collect status information for each business component in the LOB, as well as definitions of the relationships between business components in an LOB.

Opening an LOB View

To open an LOB view, double-click the LOB in the navigation area.

Understanding LOB Views

You can assemble and view resources that are of interest to a user or group of users for monitoring as a collection called a Line of Business View (LOB View). An LOB view is a tree view that displays resources. Tree views include icons for each registered resource that is contained within the view. You can create, save, and later access LOB views. You can also open windows that contain different LOB views, enabling you to monitor different resources and their various relationships on one workstation.

You can base LOB views on an actual Line of Business as well as on the following:

- An application or set of applications
- A department
- A vertical area of responsibility
- A geographic region

Examples of LOB views are:

- Property & Casualty (Line of Business)
- Health Claims, Policy Easy-Access, Order Entry, Help Desk (applications)
- Human Resources (department)
- DASD Management (vertical areas of responsibility)
- Far East Operations (geographical region)

The LOB view displays the resources and subsystems that are part of a business. The following illustration is a TBSM window, showing different elements of the TBSM screen, including a property sheet and menu items.

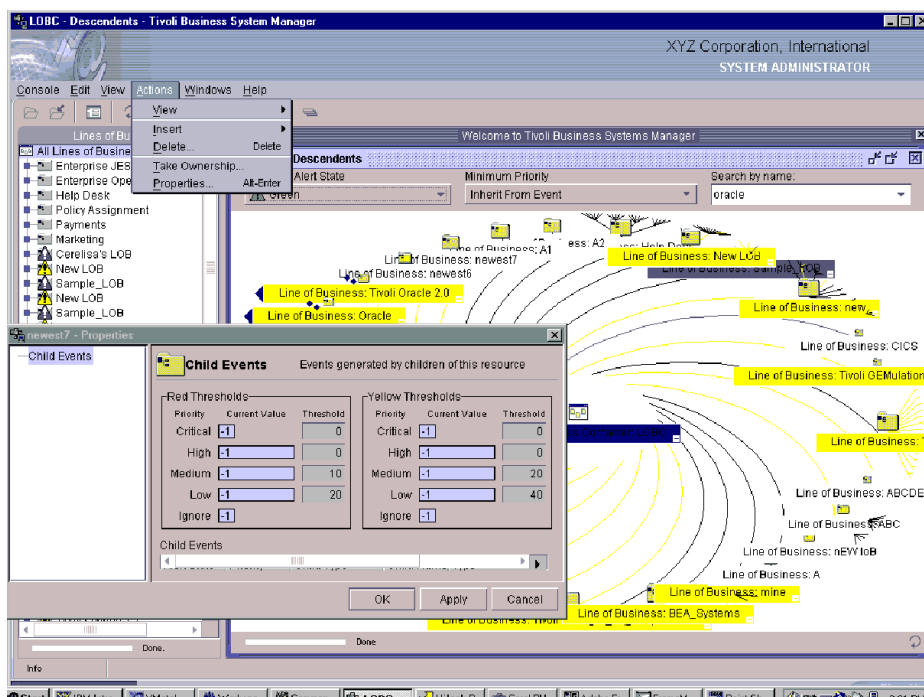


Figure 1. Line of Business Views

The concept of using LOB views to monitor critical information is a powerful and important feature of TBSM. LOB views provide users with different interests and skill levels their own customized views of the resources that are important to them.

Understanding Resources and the All Resources View

Resources are the applications, subsystems, and technical resources (such as routers, server machines, and other physical devices) that you want TBSM to monitor for availability. Resources are located in the TBSM repository with identifying information that helps differentiate between the various resources that you define to TBSM. Identifying information includes the resource name, the resource type, and additional attributes specific to the resource's type. The repository entry for a resource also includes links to other data such as schedules, filters, and exceptions.

The All Resources view lets you access all of the resources that you've defined to TBSM. The view contains resource-specific icons within a tree representing each resource recognized by TBSM. You can choose other view styles for the All Resources view to better fit your needs. Besides the tree view, you can choose a table view of the data or a hyperview where the resources are presented in an interactive, topological-like structure. From any view you can access detailed attribute information quickly by opening the properties of the resource you're interested in. The All Resources view is accessed from the **Open Resources** selection on the **Console** menu.

The All Resources view is a representation of the physical model of the Enterprise and is the base resource collection. A set of rules governs the creation, modification, and management of this view and the resources contained within it. The basis of this rule set is the physical and logical containment properties of the systems, subsystems, and resources within your company's enterprise.

Because of the relative positioning of resources within the All Resources view, parent-child relationships can exist between resources of different types. When discussing resources, it is common to refer to a resource of one type as having child resources or children. For example, a CICS resource may have several transactions, files, logical units (LUs), and database connections that are children of that CICS.

Monitoring for Availability



TBSM monitors resources for state changes and performance characteristics that reflect availability. If the availability of a resource or resources is threatened, TBSM alerts you by putting an alert icon adjacent to the resource or subsystem resource icon.

Notification of alerts and events management are primary tasks of TBSM. By observing the All Resources view or other views, you can discern whether the system, subsystem, or resource is available and performing correctly.

Administrators maintain resources contained in the All Resources view. An operator can view resources on the All Resources view showing the status and monitoring results. However an operator is more likely to monitor only specific resources that are of interest or importance to the operator.




Status Indicators


TBSM informs you of availability problems by notifying the resources that represent your systems, applications, and resources. As events that threaten availability occur within your environment, TBSM notifies you by displaying an alert adjacent to that resource. Resources appear with the following types of alerts:

Alert Type	Description
	Warning (Yellow) alert. It informs you that the resource is performing but its availability is in jeopardy. This may be due to a system being overloaded, or could be part of the normal operations of your data center.
	Critical (Red) alert. It informs you that the resource is not available or its availability is at serious risk. This requires problem determination on your part and possibly a correction.

Activity Images for Resource Icons

TBSM informs you of activities that occur for resources. As activities occur within your environment, TBSM notifies you by displaying an icon adjacent to that resource's icon within the Tree and Table views. These icons and what they represent are:

Icon	Description
	The resource has a problem opened against it.
	The resource has an automation running.
	The resource has an automation that has abended.

Icon	Description
	<p>The resource has one or more change records. Change record types are:</p> <ul style="list-style-type: none">■ Approved■ Pending■ Disapproved■ Initial■ Deferred

2

The TBSM Console

This chapter introduces you to the Tivoli Business Systems Manager (TBSM) interface, gives instructions for starting TBSM, logging on, and exiting TBSM. The chapter also explains what's on the TBSM console.

Starting TBSM

The TBSM console executes on Microsoft Windows, AIX, Linux, and Solaris.

- On a machine running Windows/NT, you can start the TBSM workstation one of two ways. You may double-click the icon on your desktop, or select **Start-->Programs-->TBSM Console**
- On a machine running Linux, click the icon and then select **Applications-->TBSM Console**.
- On a machine running Solaris, open File Manager-->opt/TBSM and double-click TBSM Console. For options, use -host. For arguments use <hostname>.

A dialog box opens, requesting you to type in your User Name and Password. To log on to TBSM, type your user name and password and then click **OK**.

When you initially log in to TBSM, a workspace that a TBSM Administrator set up opens. This workspace contains the resources you are monitoring. The workspace is essentially your desktop within TBSM. You can save this view in a workspace file. When you subsequently log into TBSM, this view automatically opens.

Understanding the TBSM Console

The TBSM Console is a role-based user interface for performing tasks using TBSM. The Console presents only the tasks that are relevant to your role. Roles in TBSM are **Operator** and **Administrator**. The TBSM console includes a navigation area that contains Lines of Business. The Lines of Business navigation area is located on the left side of the TBSM Console.

Following are the key components of the TBSM Console.

title bar

The bar at the top of the TBSM Console that includes the title of the TBSM Console and the title of the task window that is displayed in the work area.

banner area

The area that is located below the title bar is an optional area that can serve as a Web browser. The banner area can be customized by a system administrator to include relevant information for a particular organization. For example, in the banner

area, an organization might want to include the role descriptor for the particular user, the company logo, and links to Internet and intranet sites.

menu bar

The bar that is located below the banner area (or below the title bar if the banner area is not shown) and contains the available menus for the task window that is displayed in the work area.

toolbar

The bar that is located below the menu bar and contains the available tools for the task window that is displayed in the work area.

navigation area

The area in which Lines of Business are located. Double-click a Line of Business to display it in the work area.

Tivoli Assistant

The place to go for answers to your questions. The Tivoli Assistant is represented by the question mark on the far right of the toolbar and in the upper right of any detached window. To open the Tivoli Assistant, click the question mark on the far right of the toolbar or in the upper right of any detached window. When it is open, the Tivoli Assistant displays within the TBSM Console to the right of the work area.

The Tivoli Assistant provides help for the tasks that you are performing at any given moment. This includes help for all Tivoli management software that is installed at your location.

Lines of Business

The Lines of Business that are within the TBSM Console.

work area

The area in which windows are displayed. This area does not include Lines of Business or the Tivoli Assistant.

status bar

The bar that is located below the work area and is divided into two sections. The section on the left contains information about the Line of Business over which the mouse pointer is hovering at any given moment. The section on the right contains a progress indicator or status information about what's happening in the work area. To lengthen one section of the status bar and shorten the other, drag the sectional divider to the left or to the right.

taskbar

The bar that is located below the status bar. It displays open Lines of Business. When you right-click on a Line of Business in the taskbar, a menu opens and you can choose to show or close that Line of Business.

Using the Console Menu

The **Console** menu contains the following items:

New Line of Business

Select to create a new line of business.

Task Monitor

Select to display a list of tasks that are currently running.

Open Workspace

Select to open workspaces that have been saved.

Open Resources

Select to open a windows that displays all resources.

Close Workspace

Select to close the current workspace.

Save Workspace

Select to save changes to an existing workspace or to save a new workspace.

Save Workspace As

Select to save the current workspace with a different name.

Preferences

Select to set console preferences.

Setting Console Preferences

To set Console preferences:

1. Choose **Preferences** from the Console menu.
2. Choose **General**, **View**, or **Trace** to open a dialog to set your preferences.

Use the dialog that opens to specify preferences. Console preferences are saved with the workspace.

General Console preferences you can specify are:

Date format

Click the arrow button and then choose a format for how you want dates to display throughout the TBSM Console. For example, you might want dates to display with the name of the month or you might want dates to display with the number of the month.

Time format

Click the arrow button and then choose a format for how you want the time to display throughout the TBSM Console. For example, you might want to use a 24-hour clock and display seconds or you might want only the hour and minutes to display.

Web browser

The Web browser is used to display such things as Active Documentation, Reporting System information and Runbook information, such information is available from the context menu of a resource. (Runbooks are documents that the Customer develops on site to give procedural information about what to do when a specific resource (or resource type) goes bad. Runbooks are installed on the base TBSM servers, and appear on the appropriate resource's context menu. When **Runbooks** is selected, a Web browser displays the runbook for that resource.)

If you are on a Windows 9x/NT/2000 platform, the recommendation is to keep the system default Web browser. Otherwise, you need to specify the fully-qualified path to a Web browser. Click the **Test** button in the dialog to verify that the Web browser is working.

Use the **View** Console preferences dialog to specify non-status indicator options. The status indicator (Yellow triangle or Red circle) always displays to the left of the resource label. You can control the placement of the non-status indicators, for example the ownership indicator is a non-status indicator. Preferences for non-status indicators are:

Display to the Left of the resource

Non-status indicators are displayed to the left of the resource label, between the resource label and the status indicator.

Display to the Right of the resource label

Non-status indicators are displayed to the right of the resource label.

Do not display non-status indicators

Non-status indicators are not displayed.

Trace Console preferences should only be modified at the request of Tivoli support to capture trace logs. Tracing options are:

- Disable tracing
- Enable error tracing
- Enable debug tracing
- Enable all tracing

Using the Edit Menu

The **Edit** menu contains the following items:

Copy Use to copy an enterprise or a resource.

Paste Use to paste a copied resource.

Delete Use to delete the selected resource.

Resource Types

Select to display an overview of existing events and exceptions. From here you can then do things such as sort the events and exceptions in ascending or descending order or open their properties pages.

Using Copy and Paste Functions in TBSM

Administrators can use **Copy** and **Paste** to build Line of Business views as an alternative to dragging and dropping resources. For example, an administrator can select a resource from the All Resources view and then select **Edit -> Copy**. Then in the Line of business view, the administrator selects the parent resource and then selects **Edit -> Paste**. The resource is added as a child of the selected parent resource.

Copy and **Paste** functions are available from the **Edit** menu as well as from a resource's context menu. **Edit --> Copy** (or Ctrl plus C) copies the selected resource to the clipboard. **Edit --> Paste** (or Ctrl plus V) pastes the resource that is in the clipboard as a child of the selected resource.

Please note the following:

1. All Resources view supports **Copy**. The **Paste** option is disabled.
2. Table view and Hyperview support **Copy**.
3. If a view contains more than one table (for example, the CICS File Status view), **Copy** is disabled on the **Edit** menu because it is unclear which selected resource from which table is to be copied. However, Copy is available from the resource's context menu.

Using the View Menu

Selections on the **View** menu determine how information in your work area is displayed.

View menu choices are:

Refresh

Updates the view in the work area

Resource label

Choices are:

Long Displays the name of the Line of Business name and the name of the resource

Medium

Displays the acronym **LOB** and the name of the resource

Short Displays the name of the resource

Icon size

Choose from four available sizes:

- Large
- Medium
- Small
- Tiny

Text size

Choose from five available sizes:

- Largest
- Large
- Medium
- Small
- Tiny

Tree orientation

This selection is available for Tree view. Orientation choices are:

Radial

Selected resource displayed in the center

Right to Left

Selected resource displayed on the right side

Left to right

Selected resource displayed on the left side

Bottom up

Selected resource displayed on bottom

Top down

Selected resource displayed on top

Home Takes you to the original resource you selected

Expand all

This selection is available for Tree view. Expands to display all branches

Collapse all

This selection is available for Tree view. Collapses to display selected resource

Show Banner

If selected, displays the banner. The banner is located below the title bar. The banner may include the role descriptor for the particular user, the company logo, and links to Internet and intranet sites.

Show Tool bar

If selected, displays the tool bar. The tool bar is located below the menu bar and contains the available tools for the task window that is displayed in the work area.

Show Status bar

If selected, displays the status bar. The status bar is located below the work area and is divided into two sections. The section on the left contains information about the Line of Business over which the mouse pointer is hovering at any given moment. The section on the right contains a progress indicator or status information about what's happening in the work area. To lengthen one section of the status bar and shorten the other, drag the sectional divider to the left or to the right.

Using the Actions Menu

Items on the **Actions** menu are the same as the items on a resource's context menu and the items vary depending upon the resource that is selected. The **Actions** menu may contain the following items:

View Depending on the selected resource, the following items may be listed for viewing:

- **Notes**
- **CICS Status Summary**
- **CICS / File Status**
- **File Status**
- **Batch Management Summary**
- **Transaction Status**
- **Hyperview**
- **Problem Ticket**
- **Disk Devices**
- **Disk Volumes**
- **Logical Volumes**
- **Uncategorized MVS Resources**
- **Business Impact**
- **FCT Times**
- **Managed Objects**
- **IMS Resources**
- **Reporting System**

Launch

For SNA resources, the sub-menu item under **Launch** is NMC... For DB2 resources, the sub-menu items under **Launch** are DB2 Control Center... and DB2 PM Console... .

When the sub-menu item is selected, the TBSM Console invokes the selected application on the local machine.

In addition, for NMC data is passed to the launched application that allows it to bring up a view of the selected resource. If the launched application is not currently running, the logon screen appears and the user must logon before the view can be presented by the launched application.

Insert Depending on the resource that is selected, you may insert the following items:

- **Note**
- **Problem Ticket**
- **Aggregate**
- **Batch Schedule Set**
- **CICSplex**
- **Complex**
- **Generic Object**
- **IMS Sysplex**
- **IP Network**
- **Network Region**
- **SNA/APPN Network**
- **Storage Complex**
- **Network Subnet**

Delete Use to delete the selected resource.

Source/390

You can perform the following actions for Source/390:

- Initialize source/390
- Register Objects
- Send File Status Request
- Set Dynamic Maps
- Set TDQ Message Capture
- **RODM**
 - Register All Objects
 - Unregister All Objects
 - Reregister All Objects
- Send RFA Registrations

Take Ownership

Select to take ownership of an event.

Properties

Select to open a resource's Properties page.

Using the Windows Menu

The **Windows** menu contains the following items:

Tile Displays all open windows in the workspace.

Cascade

Displays all open windows with their titles visible in a stack in the workspace.

Minimize All

Minimizes all open windows.

Maximize All

Maximizes all open windows. Only the window on top is in the workspace view.

A listing of open windows

A tick mark is displayed next to the currently selected window.

Using the Help Menu

The **Help** menu contains the following items:

Help Topics

Opens User Assistance for TBSM.

About Tivoli Business Systems Manager

Contains copyright information for TBSM.

TBSM comes with User Assistance, a complete online reference tool that includes procedures you can follow as well as reference information about using TBSM commands and source-based exceptions.

You can access user assistance by clicking the question mark (?) icon located in the upper right of the screen. User assistance opens with information about the window from which you clicked the question mark. Once User assistance is open you can choose additional assistance from a table of contents, an index, or by using the search facility.

Sample TBSM Screen

The following illustration shows a sample TBSM screen.

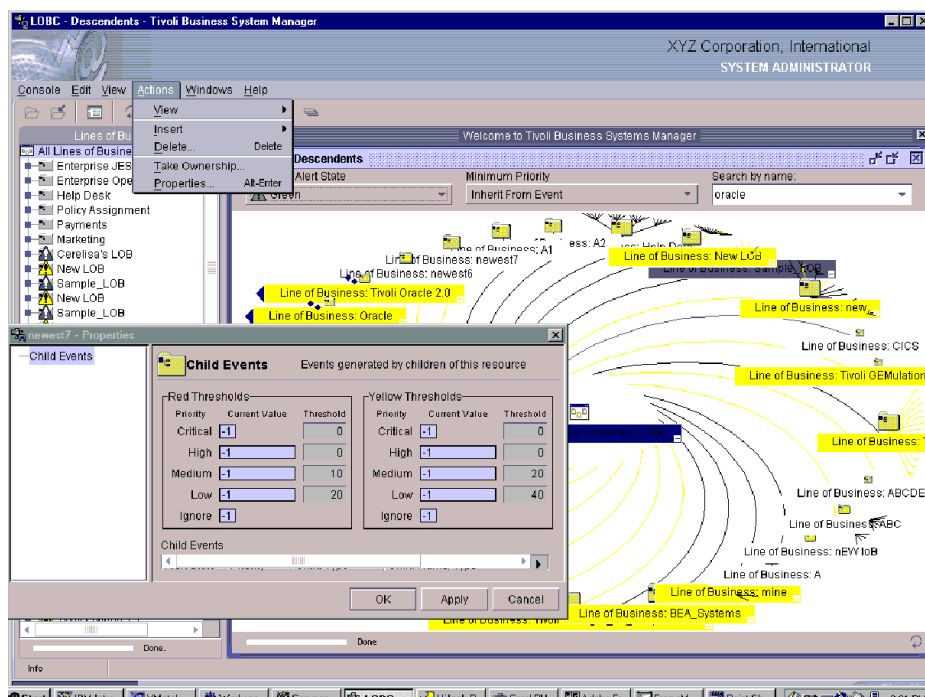


Figure 2. Different elements of the TBSM screen, including a Property Sheet

Opening and Closing Workspaces

The TBSM Console, when running, has only one active Workspace. The active Workspace is everything you see in the view at the right.

Open Workspace Scenario

The following scenario explains how opening and closing workspaces works in TBSM.

1. You open Workspace A, which contains two views.
2. Next you open Workspace B, which contains two views. The **Close current workspace** checkbox has been deselected in the **Open Workspace** window.

Result:

You now have a single workspace that has four views in it. This workspace is called **Workspace B** because that's the last workspace you opened.

If you select **Close Workspace**, all open views will close. If you press **Save**, Workspace B will now have all four views in it.

Recommendation:

Keep the **Close current workspace** check box selected. (It is selected by default.) The **Close current workspace** checkbox is provided as a convenience to allow you to open multiple workspace files and view them simultaneously.

Example of Changing Views

If you are looking at a Line of Business Tree and want to view it as a Table that includes ALL the resources in that Line of Business:

-
1. Fully expand the Tree by selecting **View-->Expand-->All** from the menu bar. This retrieves all the resources in that Line of Business.
 2. Select **View-->Table** to convert the view type to a Table.

Saving Your Workspace

To save your workspace:

1. On the **Console** menu, click **Save workspace as**.
2. Enter the workspace name.
3. Click **OK**.

Closing a View and Exiting TBSM

When you finish working in TBSM, you can close the previously opened views and exit TBSM by clicking **Console-->Exit**.

3

Understanding TBSM Views

The All Resources view is a tree representation of resources that are registered in Tivoli Business Systems Manager (TBSM). Either a TBSM Administrator registers resources or they are dynamically registered through discovery.

A Line of Business View is a tree representation of a set of resources that make up a specific business system, application, vertical area of responsibility, or geographic area.

The All Resources view contains all of the resources registered within TBSM, making the All Resources view the Physical Tree. On the other hand, resources that reside in a Line of Business (LOB) view are logical resources that are created when the TBSM Administrator makes a copy of registered resources from the All Resources view, or from another Line of Business.

Both the All Resources view and a Line of Business (LOB) view use the same type of Tree or Hyperview to display resources. You can expand or collapse a tree view to display different views of resources, when applicable.

A small box, called an *expansion box*, to the left of a resource indicates whether the resource is expandable or collapsible. If the box is filled or solid, click it to expand the tree branch. If the box is empty or hollow, click it to collapse the tree branch. You can select a resource by positioning the mouse pointer on the resource and clicking it. If you want to perform an action on a particular resource, you must first select that resource.

Following is an illustration of a Tree.

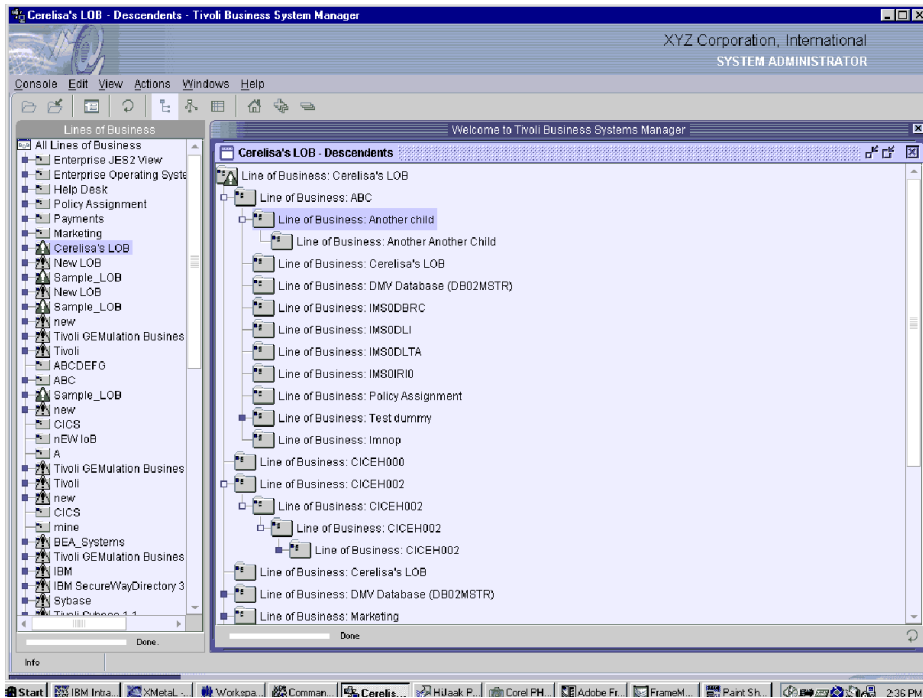


Figure 3. Tree View

The expansion box to the left of a resource indicates whether the resource is expandable or collapsible. If the box is filled or solid, click it to expand the tree branch. If the box is empty or hollow, click it to collapse the tree branch.

Notification of LOB Resource Changes

Resources that are contained in LOB views are linked to resources in the All Resources view. You can also link them to other logical resources contained in other LOB views. However, the links eventually point to a resource in the All Resources view.

It is important that you are aware if these links become disrupted. A particular problem can occur when a resource is no longer being monitored by TBSM and is deleted from the system, and this resource has been placed in LOB views. TBSM notifies you of deleted resources or links by placing the Not sign on a resource when its underlying physical resource has been deleted.

Note: Please see a TBSM Administrator if a resource you are working with has been deleted. You may also refer to the Tivoli Business Systems Manager Administration Guide.

TBSM Views

Using TBSM you can monitor your Enterprise from different perspectives. This section explains views that are available in TBSM and when you might want to use each view.

The following views are available in TBSM:

Tree Displays resources in a tree format. (This is the default view for TBSM.)

Hyperview

Displays resources in an elliptical view from the launch point of the selected resource.

Table Displays resources in a table format that has sorting and filtering capabilities.

Managed Objects View

Displays resources in list or column format that has sorting capabilities.

Business Impact View

Displays resources in a combination pictorial and list view.

Tree

Tree is the default view for TBSM. Notice the expansion boxes to the left of a resource. If the box is filled or solid, click it to expand the tree branch. If the box is empty or hollow, click it to collapse the tree branch.

Following is an illustration of a Tree.

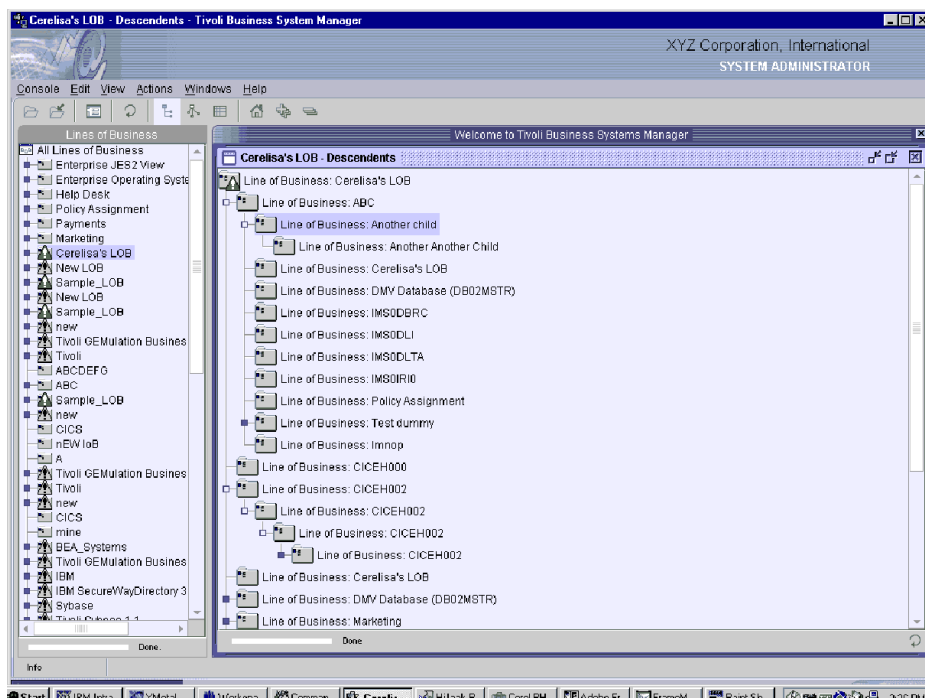


Figure 4. Tree

Hyperview

Hyperview enables you to view many resources at the same time. It displays all resources contained below a selected root node. The Hyperview interface provides you with a navigational tool to view resource history as well as filters for different alert states.

The following illustration displays the Hyperview. In addition to providing a new topological look at your Enterprise, Hyperview displays all the links between resources in the color of the alerts that propagate up the tree.

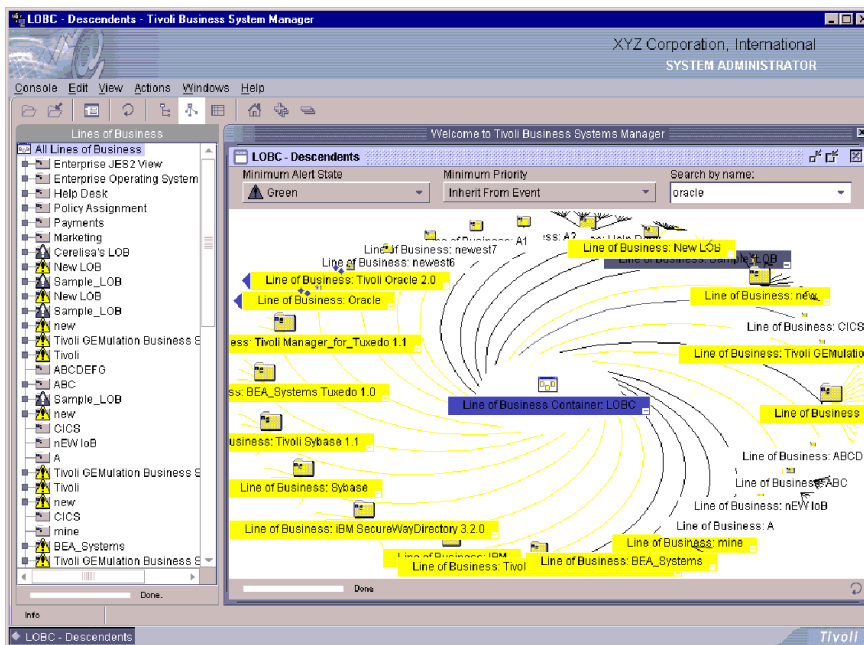


Figure 5. Hyperview of a selected resource complex

To view resources in Hyperview

1. Right-click a resource from the Tree or the Managed Object view.
2. Point to View and click Hyperview.

Understanding the Hyperview Interface

Hyperview displays in elliptical format the entire contents of the selected Line of Business. Clicking with mouse button 1 in Hyperview moves the center of the elliptical view to where you clicked. To get back to the original view with the root node in the center of the view, select **View-->Home** from the menu bar.

To select a resource while in Hyperview, hold down the **Shift** key while clicking the resource. Doing this places a box around the selected resource.

Note: Holding down the **Alt** key while dragging with mouse button 1 changes the spacing between nodes. Doing this can increase the quantity of resources displayed in the view.

You can filter for:

Minimum Alert State

Filter for resources with minimum alert state(s) by selecting the alert state(s) you are looking for from the pull-down menu. Resources with the minimum alert state you selected are displayed

Minimum Priority

Filter for specific priorities by selecting the minimum priority you are looking for from the pull-down menu. Resources with the minimum priority you selected are displayed

Search

Enter search letters in this field and the results are marked with pointers in the view. You can search for a resource using its name or its type

Sometimes you see nodes in the Hyperview with a right arrow instead of an expandable box. This indicates that the node can be expanded but TBSM must first retrieve the information from the database.

Other Ways of Displaying the Tree in Hyperview

To see other orientations while in Hyperview, choose **View-->Tree Orientation** from the menu bar. Menu choices are:

- Radial
- Right to left
- Left to right
- Top down
- Bottom up

Table View

The Table view displays details about resources. When you change the view type from Tree view to Table view or from Hyperview to Table view, all the resources are displayed in the Table.

Sorting Data in Tables

To sort data in a column, move your mouse pointer over the column header for the respective column until you see the **Up** arrow and **Down** arrow icons:

- To sort in ascending order, click the **Up** arrow.
- To sort in descending order, click the **Down** arrow.

Once the data is sorted, the icon that indicates how the data is sorted is shown on the respective column header. For example:

- If the data is sorted in ascending order, the **Up** arrow is shown on the column header.
- If the data is sorted in descending order, the **Down** arrow is shown on the column header.

Filtering Data in Tables

You can filter data in a table to meet your criteria. To filter data:

1. Click the right-pointing arrow at the upper right of the table to access the table menu.
2. From the table menu, select **Show Filter Row** and ensure that the checkbox for this item contains a check. Once this item is selected, the filters that are set for each column in the table are shown under their respective column headers. These filters are initially set to <no filter>.

-
3. Click the filter for the column in which you want to filter data. When you click the filter, you are presented with a window from which you can set the filter. Once you have set the filter, the new setting replaces the previous one that was shown under the column header

A filter is just a particular view of items in a list. Therefore, any items that you select before filtering will remain selected after filtering, and the system will act upon those selected items even if they are not included in the filter.

The following icons indicate the status of filters. The icon is displayed under the filter once the filter has been set.



Indicates that the filter is active. To deactivate the filter, click this icon.



Indicates that the filter is inactive, which means that it is still set but is not applied at the moment. To activate the filter, click this icon



Indicates that the data in the column has been updated and must be recycled through the filter. When data is updated, the system cannot determine whether the data is still relevant to the filter until it has been recycled. To recycle the data through the filter, click this icon

Managed Objects View

The Managed Objects view provides a high-level monitoring window to filter for alert state events. The grid-like viewing area enables you to manage all your physical resources within the Enterprise or individual segments that are important to the health of your overall system - from a single point of reference.

The list view area provides pertinent resource information in a column format with sorting capabilities. Also when you select a resource (a row of information) in this view, you can view and perform operations relative to that resource. Following is an illustration of the Managed Objects View.

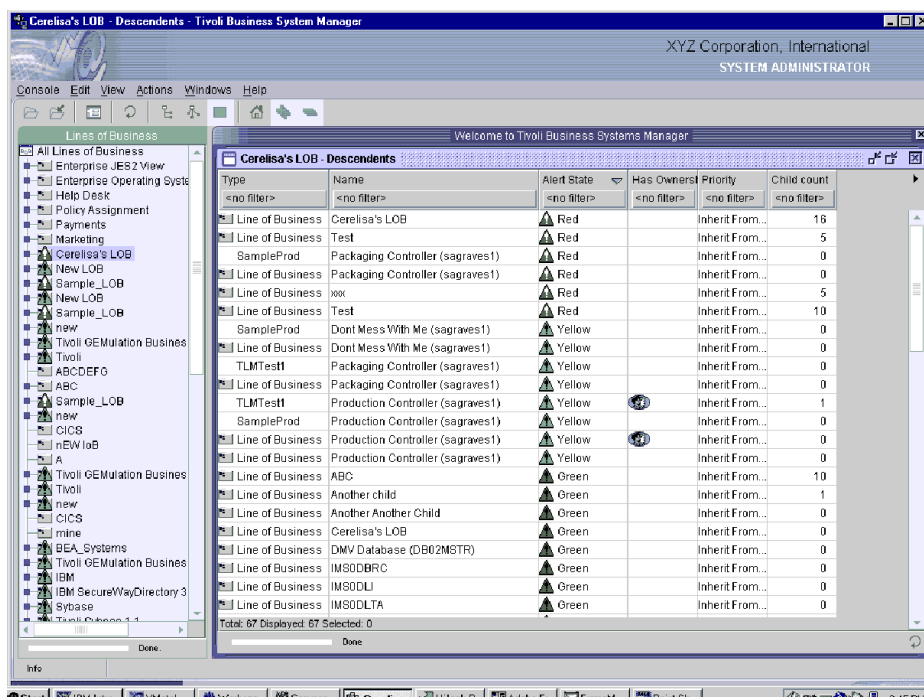


Figure 6. Managed Objects view

Viewing Additional Information from the Managed Objects View

To view additional information about a resource, click on the resource with mouse button 2 and choose **Properties** from the menu to view the resource's Property Sheet. The Property Sheet contains Current Events so you can see the history of a resource.

Business Impact View

The Business Impact view, which uses Hyperview as the visualization method, enables you to focus on resources that share multiple applications and/or business units and provides rapid determination on how an outage affects them. In addition, a TBSM Administrator places resources in multiple LOBs that are not shared to portray these resources differently. As an example, you can view resources on the physical tree by application or by business unit.

To display the Business Impact view:

1. Select a resource from the Tree, Hyperview, or Managed Objects view.
2. Click with mouse button two, choose **View** from the menu, and click **Business Impact**.

4

Investigating Resource Details

Each resource within the Tivoli Business Systems Manager (TBSM) environment contains information called **Properties**, from which you can view or update data pertaining to that resource. Properties contain specific information about that resource -- information such as name, description, state, as well as alert filtering and threshold controls. Once you open the Properties for a resource, you can switch between a set of options with different information and controls.

You can use the Property Sheet of a resource to:

- View various attributes about a resource, such as Name, Description, Current, and Desired states.
- Look into the cause of an alert, by examining currently posted exceptions and console messages.
- View thresholds for propagation and filtering.
- Prioritize incoming exceptions by type and value.
- View and set scheduling information.

Different resource types contain different properties. Therefore properties options differ depending upon resource type. You can add descriptions as information about the file as it becomes available. For example, you can add information about which applications use a particular file or which file needs to be available as long as the region is in the open state.

Resource Types

A Complex is a resource type and is a collection of machines. A Machine is a piece of hardware that TBSM monitors. Because a Complex is an aggregate resource type, a Complex does not receive any events directly. Rather, a Complex receives events only from its children or the resources contained within it. Therefore, a Complex does not contain a table for exceptions such as a CICS resource. Instead, a Complex only receives alerts by the propagation of alerts from its child resources, such as Machines.

Propagation is the escalation of alerts up the hierarchy, from resources on the All Resources view or LOB views, where links to LOB resources exist. Propagation of an alert is controlled by thresholds that are set on a resource or resource level by a TBSM Administrator. You can view these threshold levels from the Exceptions page on the Property Sheet of the resource.

To open a resource's Property Sheet, select the resource, right-click the mouse button, and select Properties from the menu.

Note: Once you open the Properties for a resource, you can leave it in the open state on the desktop. Selecting a different resource opens Properties for the newly selected resource.

You can also open the properties sheet for a resource by using the **Actions** menu.

Examining the Attributes of a Resource

General is the default selection for a resource's properties. All resources have **General** properties, which includes the resource's name and other general properties for that particular resource type. It also contains a description text box in which you can add additional information about a resource. **General** properties information contains a Notes viewing area that includes information about the Notes for that resource.

Changing the Name of a Resource

To change the name of a resource:

1. Click in the Name text box, before the first letter of the name of the resource.
2. Click and hold down the mouse button and drag to the end of the name of the resource so the entire name of the resource is highlighted.
3. Type in the new name for the resource.

Typing a Resource Description

To type a resource description:

1. Click in the Description text box and begin typing the description.
2. If there is a description that you want to remove, highlight the text and begin typing over it.
3. To add to an existing description, click the mouse immediately following the last letter of current description and begin typing.

Viewing Current Events (Messages and Exceptions)

The Current Events grouping is located on the **General** page of the Property Sheet. The list uses a row-column format to illustrate messages or exceptions and each column is a field in that message or exception. Exceptions appear at the top of the list. The **General** page enables you to quickly determine the current active messages and exceptions for a resource.

Double-click the appropriate message or exception from the Current Event grouping and read the information from the Event Detail window. This window presents the details of the exception or message.

Understanding the Current State and Desired State of a Resource

The Current State of a resource reflects whether that resource is currently available. Every resource contains at least two values for Current State: Inactive or Active.

The Desired State of a resource reflects whether that resource should be available at that current time.

Comparing the Current State of a resource with its Desired State is one method of determining whether or not a resource is available.

While Current State is a function of availability for the resource, Desired State is a function of a resource's schedule and/or calendar. Each resource has a schedule that defines the period during which the resource is Active (available or processing) or Inactive (unavailable or not processing).

Both Current State and Desired State are listed on the Attributes page so in case of an alert, you can quickly determine whether a resource is available. The Current State field is read only - the state is controlled by TBSM. You can control the Desired State of a resource with the dropdown menu.

The range of state values for every resource appears in the Appendices.

Understanding Events that Affect Availability

Actions on a resource, for example, an alert notification or the propagation of alerts up and down a view, result from Events. Events may be messages or exceptions associated with a resource or a state change to a resource. One example of an exception is unacceptable response time associated with a CICS transaction. An example of a message event is the reception of a console message informing you that a Batch Job has terminated abnormally, causing a state change to occur and resulting in an event.

As events occur within the monitored environment, TBSM records and displays them by displaying an alert icon adjacent to the affected resource's icon.

Exceptions and Child Events Pages

The purpose of the Exceptions and Child Events pages are to enable you to view the number of exceptions being received by the resource, originating from either the resource's performance monitors or its children. The Exceptions and Child Events pages contain aggregate exception tables, which allow TBSM Administrators to set thresholds for the number of exceptions they can receive before they generate an alert.

The Exception page defines the tolerance rates for the number of exceptions that can directly occur on the selected resource. The Child Events page defines the tolerance rates for events associated with the children of the selected resource. Also associated with each unique type of exception or event is a priority schema (this is defined on the Priority page, discussed later in this section.)

Child Events

Suppose a few of the transactions that are contained within a CICS region have exceeded their thresholds and been tagged with alerts. Each transaction that had an alert generates an event and passes that event to its parent, the CICS resource. These events are called Child Events, because they originate from children of a resource. That event also has a priority assigned to it, based on the priority assigned to the transaction itself or based on the incoming exception that caused the alert.

You can display Child Events that occur on resources within the Child Events page. The event displays the offending resource within the record in a list fashion.

Uncategorized MVS Resources

TBSM automatically discovers resources that run under the control of automation platforms (such as SA/390). These resources appear in the physical hierarchy under the appropriate MVS Operating System. The order in which TBSM categorizes these resources is configurable by the TBSM Administrator (see SA/390 Release Notes). Any discovered resources that do not fit the established criteria are considered “uncategorized” and are viewable within the Uncategorized MVS Resources window.

The Uncategorized MVS Resources window is available from the Operating System or from any resource above the Operating System. It is also available from Lines of Business that contain Operating Systems.

Uncategorized MVS Resource Fields

Several fields identify each uncategorized MVS resource. The field headings that appear within the window are the following:

- Reporting System - This is the full path of the Operating System that reported the resource. Please note that this is not necessarily the same as the Operating System where the resource is running.
- Name - Name of the resource.
- SMFID - SMF ID of the Operating System where the resource is running.
- Resource Type - Resource type as reported by the automation platform (e.g. - GATEWAY, SUBSYSTEM, WTOR).
- State - Last known state of the resource (e.g. - UP, DOWN, BROKEN).
- Initial Discovery Date - Date and time the resource is first reported on by the automation platform.
- Latest Discovery Date - Date and time the resource is last reported on by the automation platform.

Filtering Uncategorized MVS Resources

Using any of the pattern fields in the filter panel (Name Pattern, Resource Type Pattern, State Pattern, and SMFID Pattern) filters uncategorized MVS Resources. If you enter a value in one of these fields and press the Refresh button, only the Uncategorized Resources that match that field are displayed. Each field supports SQL wildcard values. Refer to Appendix H for a full list of SQL wildcard expressions. For example, use the '%' (percent) symbol to indicate any number of characters or the '_' (underscore) symbol to indicate a single-character wildcard.

Deleting Uncategorized MVS Resources

A user with administrative privileges may delete resources from the Uncategorized MVS Resources window.



Reclassifying Uncategorized Resources

A user with administrative privileges may reclassify any resource within the Uncategorized MVS Resources window. By reclassifying a resource, the administrator is allowed to create a managed resource from the resource. This enables the resource to appear within the resource hierarchy allowing any further events that occur on that resource to be managed according to the standard rules for events within TBSM.

5

Understanding Alerts

Tivoli Business Systems Manager (TBSM) informs you of availability problems by notifying the resources that represent your systems, applications, and resources. As events that threaten availability occur within your environment, TBSM notifies you by displaying an alert adjacent to that resource. Resources appear with the following types of alerts:

Alert Type	Description
	Warning (Yellow) alert. It informs you that the resource is performing but its availability is in jeopardy. This may be due to a system being overloaded, or could be part of the normal operations of your data center.
	Critical (Red) alert. It informs you that the resource is not available or its availability is at serious risk. This requires problem determination on your part and possibly a correction.

Determining the Cause of an Alert

Multiple events or scenarios affect availability and can cause an alert on a resource. These events and scenarios include subsystem crashes, performance slowdowns, unscheduled downtime, and problems originating from child or parent of a resource. When you determine the cause of an alert you must examine a resource's Properties page. The following information assumes that the alert you are examining has recently occurred and is a Critical (Red) alert.

What is the Resource Type of the Currently Alerted Resource?

It is important to remember that when examining the details of the resource you can eliminate many of the potential causes of an alert by knowing the possible causes of an alert for the current resource. For example, some resources do not receive events unless child resources have propagated them. If the current resource is one of these types, there is no reason to suspect the cause of an alert to be exception. These resources can theoretically receive parent state change notification and the resource represents aggregates of other resources. For example, an Enterprise is an aggregate of Complexes, and a Complex is an aggregate of Machines.

Is It a State Change?

Observe the Current Events list on the Properties page and examine the message at the top of the list. Click the States page and look for Inactive or Abended and see if the date matches the current date and the time is within a minute of the current time. If so, the message is recent and is a prime suspect for the reason of this alert. Within the suspected message, the Inactive or Abended text tells us that the resource is not active when it should be or it has Abended or stopped unexpectedly.

If the date and time of the top-most message is outside a minute of the current time, it is probably best to examine the next suspect Exceptions.

Is It an Exception?

Select the Exceptions page and observe if the resource contains exceptions, then look at the dates and times of the most recent exceptions. Next, observe whether the date and time are within a minute of the current time. If they are, make note of the exception name and description. If you do not understand what this exception is, click the Help button and proceed to the reference section under the Table of Contents page. This contains a brief description of each exception for each resource, sorted alphabetically by name. Examine the top-most recent exceptions. Then look at the exception count table to see which exception has exceeded the exception aggregate thresholds.

Critical exceptions always cause an alert. To find out which exception or exceptions caused the threshold to be exceeded, place the cursor over the cell whose threshold has been exceeded, and the offending exception(s) is highlighted in the Current Exceptions grouping.

The Exceptions page lists the active exceptions. The aggregate exception table displays the current thresholds for each priority and the current counts of exceptions that the resources received.

Is It an Exception or State Change from a Child Resource?

If no recent exceptions appear and the threshold settings are not exceeded, the alert could have been propagated from the children of one or more of the current resources.

The first method to determine whether the availability of the child resource has been threatened is to open the view to the next level below the currently selected resource. If upon opening the view to the next level, you see resources containing alerts, it is likely that this is the cause of the alert you are investigating.

The second method, double clicking on a child event brings you to the next resource in the propagation chain. In other words, by selecting the Child Events page and then double clicking on an event you advance to the resource that forwarded the child event and the source of the problem is highlighted.

The Child Events page contains an aggregate exception table very similar to the one contained on the Exceptions page that counts only exceptions and state changes from resources that are children of the current resource. From this table, you are able to discern if an alert has occurred because of an alert originating from one or more child resources.

The ability to open the view to the next level may not be available depending on how your active view has been constructed. For example, Line of Business views can be constructed with resources that have children, but it is the TBSM Administrator's decision whether to include some or all of the children of the resource. If you have questions on what makes up your Line of Business view, see your TBSM Administrator.

WTOR Capture and Alert Processing

Write to Operator with Reply (WTOR) are messages initiated by application programs, TBSM components, and independent software vendor (ISV) products, to the console that require a response from either the operator or some type of automation. In many cases, they are critical in nature, signifying either a situation/problem with the environment, or a stoppage in application processing. It requires a response to tell the program some event has

taken place (tape mount, forms mount in a printer, etc.). Delays in responding could be critical to the specific applications or to the system as a whole given the right set of circumstances. Therefore, it is important for the operator to be aware of these situations when they arise.

TBSM has the ability to process WTORs and raise alerts to the workstation when delays occur in responding. When enabled, WTORs, with responses outstanding more than a user specified amount of time, generate an alert, which will be posted to the Operating System on the All Resources view. Once a response has been entered against the WTOR, the TBSM Source/390 Object Pump will process the corresponding Delete Operator Message (DOM). The TBSM Source/390 Object Pump generates a clear alert to the All Resources view, which removes the alert from the Operating System. For configuration details refer to the Tivoli Business Systems Manager Installation and Configuration Guide.

6

Notes

Notes is the functionality for taking ownership of an issue or issues that cause an alert. A note provides communication between users regarding resources, problems, and general information. You can attach notes to any resource within the All Resources view or Line of Business view. A note contains a subject, status, type, author, and descriptive text.

There are three types of notes:

To	Use this Type of Note
Take ownership of problem that has caused a Red or Yellow alert.	Ownership
Provide information regarding a problem that already has an owner, or a problem whose severity does not dictate ownership.	Problem
Provide or write general information regarding a resource, or other subject.	Information

Ownership

Resources enter an alert state of Yellow or Red due to the resource receiving events that indicate that the resource is unavailable or in duress. Once you take ownership, the resource enters a state called Ownership. You now accept the responsibility to correct or manage the effort to correct the problem for all the events associated with that resource. An icon that represents ownership is displayed in addition to the alert state icon.

TBSM enables you to assume ownership of events at the resource level as well as the event level. The process of taking ownership of an alert at the resource level correlates specifically to the alert state of the resource.

The ability to take ownership at an event level enables you to own individual events on a given resource instead of owning the alert state of the resource, which in effect is all of the events for that resource. It provides you with added flexibility to ascertain if there are multiple events on a resource and whether those events represent more than one discreet problem by integrating with Tivoli Service Desk. The TBSM integration with Tivoli Service Desk and its association with ownership notes is discussed in an Appendix in this book.

Taking Ownership of an Alert at the Resource Level

When you take ownership of an alert at the resource level, an ownership icon is displayed adjacent to the resource. The purpose for this icon is to allow you to clearly see which resources contain problems that are being addressed (ownership) and which are not.

Creating an Ownership Note at the Resource Level

To create an Ownership note at the resource level for a warning (Yellow) or critical (Red) alert state, select the affected resource and right-click to reveal the shortcut menu. Click Take Ownership. The Note Editor window opens, enabling you to author your Ownership note.

Note Editor

The Note Editor dialog enables you to author new notes (Ownership, Information, and Problem), view the contents of a note assigned to a selected resource, and view owned events.

When you take ownership of a resource, the Note Editor dialog pre-fills the Assigned To, Note Type, and Note Status drop-down list boxes automatically with the appropriate data within the Note Information grouping. The Date Created and Last Update text boxes reflect your new data upon creation of the note.

Enter information in the Subject field and the Description text box, which are mandatory entries for all note types. The Description text box provides a more descriptive textual entry of the alert condition. To create the Ownership note, click OK.

The Events grouping lists the same fields as a Properties page. Slide the column fields to display or hide information that is important to you. The Alert State column has an icon for a message or exception as well as a description.

TBSM maintains links between events, problem tickets, and ownership notes. This process is not only enhanced by providing ownership at the event level, but also through integration with Tivoli Service Desk. For further details on problem management integration, refer to Appendix E.

The Events grouping on the lower half of the window provides a list of all events for that resource. The lower pane of the Note Editor dialog lists all events in descending column order with exceptions filtered to the top of the grid. Both types of events that TBSM defines (messages and exceptions) are listed and the headings for all of the fields are a union of information from the two event types. The column headings are the same as in the Properties page for the resource.

The ownership icon remains on resources until the owner of that alert decides to update the note to a status of Closed. Updating the status to Closed signifies that you have solved the problem and the resource(s) are back in the correct state and are available. After the Problem/Ownership note is closed, the resource icon is without a 'tag' unless there are still alerts outstanding on the resource.

Restarting the resource closes any outstanding open Ownership notes, and initializes all exception and Child Event thresholds. Resources with notes that were closed by restarting or other system-originating events, are assigned a System Closed notation in the Description text box of the Note Editor window.

To Take Ownership of a critical (Red) or warning (Yellow) alert at the resource level:

1. Select the resource that contains the critical or warning alert.
2. Right-click the resource and click **Take Ownership**. The Note Editor window opens.

3. In the **Subject** and **Description** fields, enter the desired information.
4. Click **OK**.

Taking Ownership at the Event Level

When you create an Ownership note at the event level, you are accepting responsibility of a potential problem like you did at the resource level. To Take Ownership at the event level:

1. Select the resource that contains the event and right-click the resource and click **Take Ownership**
2. Select the specific event from the events table.
3. In the **Subject** and **Description** fields, enter the desired information.
4. Click **OK**.

The ability to take ownership at the event level allows you to own individual events on a specific resource instead of owning the state of the resource. Therefore, if there is more than one problem with a given resource, there may be more than one person attempting to resolve that problem.

The functionality of ownership at the event level does not limit you from owning individual problems at that level, but increases the level of granularity of where ownership takes place (event versus resource). You can still take ownership at the resource level, which as previously mentioned, is taking ownership of all of the events for that resource.

Rules of Event Ownership

The following table explains the rules of event ownership from the Property page.

When you can Take Ownership	When you cannot Take Ownership
<ul style="list-style-type: none"> ■ All Red, Yellow events (messages and exceptions) 	<ul style="list-style-type: none"> ■ Owned events (messages and exceptions). On the grid list they appear with the Ownership icon ■ Any event (message or exception) that is Green, Blue (Information) or Black (Unknown)

Creating an Ownership Note at the Event Level

To create an Ownership note at the event level, you must begin by assuming responsibility for the affected resource. To Take Ownership at the event level:

1. Select the resource.
2. Right-click the resource and click Take ownership. The Note editor window opens.
3. Select the event(s) that you want to own on the Property Sheet.
4. In the Subject and Description fields, enter the desired information.
5. Click **OK**.

Information and Problem Notes

Information and Problem notes are more for general use than are Ownership notes. You can use Problem and Information notes to provide additional information about TBSM resources, problems, alerts, or any other subjects.

Problem notes provide additional information about solving a problem that someone took ownership of, or to act as the primary source of information regarding a problem whose severity did not call for anyone to take ownership. Problem notes, when created, open a status, and you can later close them when the problem disappears. They do not, however, tag the resource icon with an Ownership icon or remove an alert, if present.

Information notes are even more general than Problem notes. You can use them for everything else that Ownership and Problem notes cannot accommodate.

To insert an Information or Problem note:

1. Select the resource to which you would like to add a note.
2. On the Insert menu, click Note. The Note Editor window opens.
3. In the Note Type drop-down list box, select the type of note you want.
4. Enter text in the Subject and Description boxes.
5. Click OK.

Notes Window

The Notes window acts as a centralized viewing facility. It enables you to view the relationships between ownership notes and problem tickets, and events and performs the following tasks:

- View owned events for the selected resource.
- View notes and filter for various criteria, including note type such as Ownership, Problem, and Information, as well as note status and owner.
- View any note.
- Close an Ownership note and problem ticket.
- View all open problem tickets associated with the selected resource.

To access the Notes window:

1. Select a resource from a view in TBSM and right-click on the resource.
2. From the menus choose **View-->Notes**.

To select a Note:

1. Select the note and then right-click it.
2. From the menus choose **Properties**. The Note Editor window opens.

Problem Criteria information appears on the same row of the Notes window as the note data, cementing the correlation between note types and problem tickets. The Problem Criteria

information appears under various different color column headings. For a further explanation of this functionality, see the Appendix in this book titled *Integrating Tivoli Service Desk and TBSM*.

Inserting a Note

You can insert any type of note within the Notes window or directly from TBSM. The insertion of a note provides assistance, helps identify important personnel, and aids in solving future problems.

To insert a note from the resource level:

1. Select a resource from a view within TBSM.
2. Right-click the resource, point to Insert, and click Note. The Note Editor dialog opens.
3. In the Note Type drop-down list box, click the type of note you want.
4. Enter text in the Subject and Description boxes.
5. Click OK.

Viewing a Note

You can view any type of note directly from the Notes window with a right-click menu command.

To view a note:

1. Select a note row from the Notes window.
2. Right-click the note row and click Properties. The Note Editor window opens.
3. The Note Editor window allows you to view detailed information.
4. Make your updates and click **OK**.

Transferring Ownership of a Note

Only an administrator transfer ownership of a note.

To transfer Ownership of a note:

1. Select a resource from a view within TBSM.
2. Right-click the resource, point to View, and click Notes. The Notes window opens.
3. Select an Ownership note(s) from the Notes window.
4. Right-click an Ownership note(s) and click Properties. The Note Editor window opens.
5. Select a name from the **Assign to** drop-down list box. (Select *Unassigned* to release ownership.)
6. Click **OK**.
7. Press Enter on your keyboard to complete the transfer.

Closing a Note

You can close a note within the Note Editor window by changing the status to Closed and entering a resolution in the Resolution text box.

To close a note:

1. Select a resource from a view within TBSM.
2. Right-click the resource, point to View, and click Notes. The Notes window opens.
3. Select the note that you want to close.
4. Right-click Properties. The Note Editor dialog opens.
5. Select **Closed** for status.
6. Enter a note resolution in the Resolution text box and click **OK**.

7

CICS File Availability (Enterprise Edition Only)

Files are a supported resource type within Tivoli Business Systems Manager (TBSM) and are a critical resource for CICS Regions which uses files for storage. File availability determines whether a CICS Region has the necessary data to continue its processing. TBSM provides this functionality for the CICS Regions. TBSM checks for the availability of files using the following methods for each CICS Region:

- Verify that the CICS Region is Active and its Desired State is Active.
- Perform a status check for all files within the CICS Region.

Available files have only one valid status: Open\Enabled. Unavailable files can have any of the following status:

- Closed\Enabled: The file is enabled and closed.
- Closed \Disabled: The file is disabled and closed.
- Closed \Unenabled: The file is unenabled and closed.
- N/A/N/A: The file is present within the region, although for some reason the status cannot be found, or the file is a remote file.
- ---\ ---: The status is not given on the file. The file was inserted manually and not found during status verification.

TBSM performs a proactive status check at scheduled intervals. You can check files on CICS Regions for each operating environment being monitored for these intervals. The TBSM administrator sets up specific time intervals for each task. For example, CICS Regions tend to start during the early A.M. hours and it is critical for files to be available. Status checks can be configured to begin at 15-minute intervals between the hours of 6:00 A.M.- 7:00 A.M., and when you deem appropriate.

The File Status Window

You can view the status of Files from any resource within any Line of Business view as long as that resource contains a CICS Region where you are monitoring files. For example, you can view the status for all files within a Complex by choosing **View-->File Status** when you have a Complex selected.

All the files that meet the criteria expressed by the fields on the File Status window appear in the window. The default view of NOT Open\Enabled displays all unavailable files. You

can select other choices from the status field controls to change views. For example, by changing the value to ALL, the window displays all files within your currently selected resource.

The selections you make in the filtering part of the File Status window determine the information that appears on the list window. If the file status shows ---\---, this means that the status is not provided for the file. (The file was manually inserted and not found during the status verification.) Available files have one valid status: **Open\Enabled**.

The upper limit of files displayed in the File Status window is 454. You can reach this limit easily by opening the File Status window from a selected resource that contains multiple CICS Regions, such as an Operating System or Complex.

Note: The upper limit of 454 is set in the Windows registry database. If you need to change the setting, contact your TBSM Administrator.

Various other fields and indicators that provide additional information appears within the File Status window. The File Status window allows you to selectively display files that have any resource priority combination of Critical, High, Medium, Low, and Ignore. Registration Status enables you to filter for files that are registered, unregistered, or both.

This detailed view presents more information than the other views, such as DD (data definition) Name, DS (Dataset) Name, Status, Last Update, Priority, and Registration.

Additionally, you can automatically update and control the refresh interval. The refresh interval number is based on minutes. Indicators show how many files appear and the date and time the last refresh took place. The refresh interval default is set to zero and requires you to perform a manual refresh by entering a number and clicking Refresh. If you desire auto-refresh, we recommend a rate of five to seven minutes during the time for 15-minute interval file checks.

To open the File Status window:

1. Right-click the resource and the shortcut menu opens.
2. Point to **View** and click **File Status**.

Performing Operations on Files within the File Status Window

You can perform operations on files within the File Status window. An example of such an operation is changing the priority of a file. You perform these operations by selecting commands from the main menu, or by right-clicking a file and selecting a command from the shortcut menu. The operations that apply to other TBSM resources (CICS, Batch Job, DB2, and STC) also apply to Files. You can perform the following operations while the File Status window is in the state of Open.

Inserting a File

You can insert a file within the File Status window, but make certain you open a window from a CICS resource. Inserting a file makes that file available to the CICS Region by defining it to the system, thereby allowing an Administrator to monitor it.

To insert a file:

1. Select a file from the File Status window.
2. On the Insert menu, click File.

3. In the Name field, type the name of the file.
4. Click Create.

-or-

1. Right-click a file and the shortcut menu appears.
2. Select Insert and click File.

Inserting a Note

You can insert a note within the File Status window for any selected file. The purpose of the note is to provide a vehicle for assistance and to help people identify and solve future problems.

To insert a note:

1. Select a file from the File Status window.
2. On the Insert menu, click Note. The Note Editor dialog opens.
3. In the Note Type box, click the type of note you want.
4. Type in the Subject and Description text boxes.
5. Click OK.

-or-

1. Right-click the file and the shortcut menu appears.
2. Select Insert and click Note.

Viewing a Note

You can view a note within the File Status window for any selected file.

To view a note:

1. Select a file from the File Status window.
2. On the View menu, click Notes. The Note Editor dialog opens.
3. Read the note and then click OK.

-or-

1. Right-click the file and the shortcut menu appears.
2. Select View and click Notes.
3. Read the note and then click OK.

Renaming a File

To rename a file:

1. Select a file from the File Status window.
2. On the Edit menu, click Rename.
3. The Rename dialog box opens and in the To box, type in the new name.
4. Click **OK**.

OR

1. Right-click the file.
2. Click Rename.
3. Follow Steps 3 and 4 from the previous instructions.

Changing the Priority of a File

You can change the priority of a file within the File Status window for any selected file.

To change the priority of a file:

1. Select a file from the File Status window.
2. Right-click the resource and select Set Priority. Choose the priority.

Registering or Unregistering a File

You can register or unregister any file from the File Status window. Registered files are files that are determined to be important to the successful operation of the parent CICS Region. Unregistered files have a status that you are updating, but you do not care to monitor. Registering a file causes an exception to generate if the file is not Open/Enabled during the Active time for a CICS Region.

Unregistering a file turns off the availability reporting capabilities and essentially removes the file from any default display settings. In addition, if an unregistered file is unavailable it will not generate an Unavailable file exception. However, it is present in the TBSM database.

To register a file:

1. Select a file from the File Status window.
2. Right-click a file and click Register to change an Unregistered file to a registered file.
3. A text box opens, asking you if you are sure you want to Register this file.
4. Click Yes.

To unregister a file:

1. Select a file from the File Status window.
2. Right-click a file and click Unregister to change a Registered file to an unregistered file.
3. A text box opens, asking you if you are sure you want to Unregister this file.
4. Click Yes.

Deleting a File

You can delete a file from the File Status window and the TBSM database.

1. Select a file from the File Status window.
2. Right-click the file.
3. Click Delete.

Marking or Unmarking a File

You can mark or unmark a file from the File Status window for any selected file. A marked file causes a check mark to appear to the left of the file name within the File Status window.

Marking or unmarking a file provides you with a visual cue for traversing the file list while verifying file availability from one refresh instance to the next. You can mark or unmark a file by clicking to the left of the desired file.

To mark or unmark a file:

1. Select a file from the File Status window.
2. Right-click the file and click Mark. A check mark (ü) appears next to the selected file.
3. To unmark a file, right-click the file and click Unmark.

Viewing File Properties

You can view file properties from the File Status window for any selected file.

To view file properties:

1. Select a file from the File Status window.
2. Right click and select Properties from the menu.

-or-

1. Right-click the mouse button on the file and the shortcut menu appears.
2. Click Properties.

Working with the File Detail Window (Property Sheet)

Files contain a Properties page similar to other resources defined within TBSM. All file status messages and exceptions appear in the **Current Events** box. As information about the file becomes available and as long as the region is in open state, you can add a description for the file. For example, you can add information about which applications use a particular file or which file needs to be available.

Scheduling Violation Exceptions and CICS Alerts

When a CICS Region (resource) is running, the Current State of that CICS is Active. Within TBSM, Current State is one of several attributes contained within a CICS resource. The Current State attribute reflects the state of the CICS resource now, whether it is active, inactive, starting or stopping.

Another CICS attribute, Desired State, reflects what the state of the CICS should be at the current time. The Desired State attribute sets a scheduling parameter that exists within TBSM.

An example of a particular implementation schedule calls for monitored CICS Regions to maintain a Desired State of Active from 6:00 A.M. to 8:00 P.M. daily, except for a configurable Startup delay and Shutdown delay. If the region has a Current State of Inactive during this period, a schedule violation occurs and TBSM generates an exception on the offending region.

The Startup and Shutdown delays are for providing flexibility during CICS startup and shutdown. For example, each region may not start exactly at 6:00 A.M. or stop at 8:00 P.M. You can configure grace periods for each region, so that if a region starts at 6:12 A.M. an alert does not generate. The Startup and Shutdown delays currently are set to a default time

of 15 minutes. However, the default times can be changed on the CICS Property Sheet. The values for Startup and Shutdown delays are for that CICS Region only.

After a designated time during which most of the CICS regions are down, the Desired State for all monitored CICS Regions becomes indifferent and is set to Active or Inactive. Active or Inactive means that during this time no scheduling violations can occur. The region is indifferent to starting or stopping messages or whether the CICS is Active or Inactive. TBSM does, however, notify and alert on abends if a region is active.

In addition to a scheduled period where the Desired State is “Active or Inactive,” you may not want to have a CICS Region scrutinized for scheduling violations during the normally Active period. In this case, an administrator can manually set the Desired State attribute of the CICS Region to Active or Inactive.

Regions with an Active or Inactive value for Desired State are not checked for scheduling violations, therefore, they do not receive the SCHV exception. To set a CICS region to Active or Inactive during an Active period, open the CICS Attributes page on the selected CICS resource within the All Resources view. You cannot perform this operation on a CICS resource within a LOB because your change effects all links to this resource in various LOB views. The setting is not persistent as implemented and is placed back on schedule the next day. If you want a particular set of CICS Regions to ignore schedule violations, see your TBSM Administrator.

The SCHV and UNVF exceptions are prioritized within the CICS Region: Resources Properties dialog box.

What Is Autodiscovery of Files?

Users or administrators may not be aware of files that exist within a CICS Region. This could be the result of program changes, region changes, or even personnel changes. The knowledge base of which files do exist and which ones do not can become blurred.

TBSM can capture and indicate the status for all files within a region, whether known or not, and provide a means to monitor them using a process called Autodiscovery. Files that receive status messages and are unknown to TBSM are known as Unregistered files. You can view and record the status of these files. As mentioned previously, Unregistered files do not cause Unavailable file exceptions, and are not included in Unavailable file calculations.

CICS Status Summary Window

The CICS Status Summary window provides a collection of CICS Regions in a list view with file data summarized for each region. You can open this window from any resource that contains a child CICS resource.

This CICS Status Summary view provides a quick glimpse of which regions are having the most trouble with file availability. The change field in this view displays the delta between the current number of files unavailable and the number of unavailable files from the previous file status check.

For example, if the current number of unavailable files is eight, and the previous number is 12, the number in the change column would be minus four (-4). The view also shows how

many Registered and Unregistered Files are contained within a region and provides information on the number of files you are monitoring.

To view the CICS Status Summary window:

1. Select a CICS parent resource.
2. On the Actions menu, click **View-->CICS Status Summary**.

-or-

1. Right-click the resource.
2. Point to View and click CICS Status Summary.

CICS File Status Window

The CICS File Status is a collection of CICS Regions and shows in a list view, the status of files that correspond to a resource in that CICS Region. This view enables administrators to understand which regions are having trouble with availability and provides an instant view of those files in order to continue processing the necessary data for the CICS regions.

The top half of the window displays the CICS Regions and the number of Registered and Unregistered files within those regions. The Change box displays the delta between the current number of unavailable files and the number of unavailable files from the previous status check.

When you select a CICS Region from the top-half of the window, a status list of all files for that resource meeting the displayed criteria is shown in the lower half of the window.

CICS Transaction Management

CICS is a software product that companies use to satisfy their transaction processing needs. CICS is an on-line process typically involving user interaction. You enter data, which invokes an application program to carry out a task and return output to you. Output is information that you requested displayed to the screen, or a response that the task has been successfully completed. Output may also be a response that the task has been unsuccessful. If this is the case, the system prompts you for additional or more accurate data/information.

Each product in the CICS family is designed to run on a particular operating system and hardware platform, and each product has powerful functions to allow inter-product communication with other members of the CICS family. CICS provides a cost-effective and manageable transaction processing system that enables you to write your own applications or to choose from many existing vendor-written business products.

CICS supports large networks of terminals that can run interactive application programs written in a variety of programming languages. CICS runs in its own address space and manages the execution of many application programs that communicate with terminal devices. Multiprogramming within a CICS address space is transparent to, and subordinate to, the multiprogramming operation of MVS itself.

The following systems are examples of CICS applications:

- Inventory control systems
- Retail distribution systems

-
- Finance banking, insurance, and stock brokering systems
 - Order entry and processing systems
 - General ledger systems
 - Payroll systems
 - Automatic teller machines
 - Airline reservation systems
 - Process control systems



CICS Transactions

Transactions are familiar to us in everyday life. For example, transactions occur when we exchange money for goods and services such as buying a train ticket or paying for medicine. The processing of any one of these items is a business transaction that could be handled by CICS.

A typical On-line Transaction Processing (OLTP) transaction consists of many computing and data-access tasks to be executed on one or more machines. The tasks may include handling the user interface, data retrieval and modification, and communications. In CICS terms, these operations are grouped together as a unit of work or a transaction.

A transaction management system such as CICS performs the following:

- Handles the start, running, and completion of units of work for many concurrent users.
- Enables the application (when started by an end-user) to run efficiently, to access a number of protected resources in a database or file system, and then to terminate normally returning an output screen to the user.
- Isolates many concurrent users from each other so those users cannot update the same resource at the same time.

Icon	Resource	Description
	CICS	Customer Information Control System. IBM's flagship transaction processing system that permits transactions entered at remote terminals to be processed concurrently by user applications.
	Transaction	A specific set of input data that triggers execution of a specific process or jobs; a message destined for an application program.

TBSM collects status and performance information on CICS Transactions from three primary sources:

- Exceptions from CICS performance monitors such as Omegamon (for CICS from Candle Corporation)
- Transient Data Queue Messages
- Console Messages

TBSM monitors and traps messages for these critical resources to ensure CICS regions remain online and processing. You can configure TBSM to trap any message and collect historical information on these messages.

Performance problems are monitored within a CICS resource. Thresholds are set for criteria that when exceeded, generate exception events within TBSM. When exceptions exceed those specified thresholds, TBSM generates an alert to the resource in jeopardy. Priorities are assigned to exceptions and the priority dictates the severity of the alert (Red or Yellow).

Transaction Status Window

All Transactions registered under a CICS region are displayed in the Transaction Status window. You can filter for Desired, Current, and Alert State, as well as a specific Transaction, Program, or Class.

You can sort columns in ascending or descending order. You can arrange columns in the order you prefer by simply dragging the column headings left or right and positioning them in the order you want.

To view the Transaction Status window:

1. Select a CICS parent resource.
2. On the Actions menu, click **View-->Transaction Status**.

-or-

1. Right-click the resource and the shortcut menu opens.
2. Point to View and click Transaction Status.

Although transactions are not initially displayed in Tree or Hyperview, TBSM Administrators can drag them into a LOB view. This is typically done with transactions that are critical to day-to-day processing and need to be monitored closely.

To drag a transaction(s) into an LOB:

1. Open an LOB and select the Complex.
2. Right-click the mouse to bring up the shortcut menu and select View.
3. Choose Transactions Status from the submenu.
4. Double-click on the LOB in the left pane to open your LOB.
5. From the Transaction Summary window, select the Transactions from the Transaction Status window and drag into your LOB (Tree or Hyperview).

Note: You can drag files into a LOB view using the same method via the CICS / File Status window.

8

Batch Processes (Enterprise Only)

Monitoring batch processes within Tivoli Business Systems Manager (TBSM) provides quick determination of problems that threaten Batch Schedules from completing correctly and on time. You can monitor batch jobs for start times and duration as specified in the scheduling package, as well as for significant deviations from normal behavior. You can view current or historical information on batch schedules and batch schedule jobs. An organization can use this information and adjust batch schedules to ensure they are running as scheduled.

What Are Batch Jobs?

A batch job is a scheduled program that executes without user intervention. Large corporations use batch jobs to automate tasks that they need to perform on a regular basis. Batch jobs usually run during off peak hours when systems are not being used for on-line processing. For example, systems may run to update files, create printed reports, or purge files. Batch jobs that need to be processed on a regular basis are incorporated into batch schedules.

Defining Batch Jobs within TBSM

When defining batch jobs you have to determine whether the batch job is a member of a sequence of batch jobs that run off a schedule on a regular basis. If this is the case, you should place those batch jobs within a batch schedule. If the batch job does not run as part of a sequence that is scheduled, it can be defined at the Complex level, contained by the aggregate resource Batch Job Set.

You can define batch jobs that always run under one specific operating system at the Complex level as well. You can define batch jobs to a specific operating system that are usually bound to a particular resource such as a database or dataset. Be aware that batch job names are unique within an operating system. If a batch job is contained within a batch schedule, then the name is unique within the Complex that contains the Batch Schedule.

Displaying Batch Jobs in TBSM

When you display batch jobs:

- The view on the left side of the window displays batch jobs which do not belong to a batch schedule. These jobs belong to a Batch Job Set which is inserted at the Complex level in the All Resources view. A non-scheduled batch job may also be defined to run under one specific operating system.

-
- The view on the right of the window displays batch jobs that do belong to a batch schedule. These batch jobs can be executed on any one of the Complex's operating systems. Only batch schedule key jobs are displayed in the LOB or All Resources views when they belong to a batch schedule.

Note: Remember the propagation model when you define and place batch jobs within the All Resources view. For example, batch jobs inserted at the Complex level do not propagate alerts to the Operating System they are running on. This is because Complex is above Operating System in the TBSM hierarchy.

Batch Process Resource Types

Five supported resource types for Batch process monitoring within TBSM are:

- Batch Schedule Set - aggregate resource for batch schedules.
- Batch Schedule - a collection of batch jobs that run off a schedule. An aggregate resource containing scheduled batch jobs.
- Batch Job Set - aggregate resource for non-scheduled batch jobs.
- Batch Schedule Key Job - a batch job which is defined as critical, is monitored for schedule violations, abends, and is used in reporting progress data to the batch schedule.
- Batch Schedule Job - a batch job that is contained within a batch schedule and is only monitored for abends. It is used for reporting problems to the Batch Schedule.

Batch Schedule Sets

A Batch Schedule Set is a collection of Batch Schedules. Batch Schedules must be inserted into a Batch Schedule Set, which is an aggregate resource that can be placed under a Complex within the All Resources view, and is used to organize Batch Schedules.

Batch Schedule

A Batch Schedule is the resource that represents a schedule, stream, or batch process. It is a container for all batch jobs running from the same schedule. For example, if you have a set of batch jobs that run sequentially from a schedule that updates all files nightly for a medical records application, you would define that set of batch jobs within a batch schedule. You may name it the MRFU batch schedule to indicate "Medical Records Files Update."

A TBSM Administrator determines which batch schedules they need to monitor. Once that determination is made, the administrator creates the schedules within TBSM. Each batch schedule within TBSM is derived from an equivalent schedule from a scheduling product.

Note: TBSM automatically populates Batch schedules through a process of importing batch job names for a given schedule from a scheduling product, for example, OPC.

A Batch Schedule has two sets of attributes: Current and Historical.

The following table contains the Current Attributes.

Attribute Name	Description
Name	The name of the Batch Schedule
Description	The textual description of the Batch Schedule
Estimated Duration	The estimated duration of time in units that it takes the Batch Schedule to run from start to finish

Attribute Name	Description
Initial Estimated Complete	The initial estimated completion time of the Batch Schedule. This is a DATE/TIME value computed by adding the scheduled Start time to the Duration attribute.
Current Estimated Complete	This is set when the schedule actually starts by adding Duration to the actual Start time.
Start Time	The start time of the Batch Schedule recorded during its previous run. This is typically set by the start of the first batch schedule key job with an Initiating Priority defined in the schedule. (It is strongly suggested the first batch job of every batch schedule be defined as a Batch Schedule Key Job.)
Current State	<p>The current state of the Batch Schedule. The current state can be one of the following values:</p> <ul style="list-style-type: none"> ■ Inactive - indicates the schedule is awaiting the start of the first job. ■ Running - the first batch job is Active or has completed successfully, and the last job has not yet run. ■ Halted - a job has abended halting the schedule. ■ Pending - manually set state to indicate that a halted schedule is being investigated. ■ Completed - the batch job with a terminating priority defined to the schedule has completed. <p>This value may be changed by an Administrator only, through the SetCurrentState.</p>
Desired State	<p>The state the batch schedule should be in currently. The Desired State can be one of the following values, which have the same definition as the values contained in Current State:</p> <ul style="list-style-type: none"> ■ Inactive ■ Running ■ Completed
Last Key Job ID	The unique identifier of the last key job to have started in the schedule
Last Key Job State	The current state of the last key job to have started in the schedule

The following table contains the Historical Attributes:

Attribute Name	Descriptions
Total Runs	The total number of times the schedule is started. It includes both successful and unsuccessful runs.
Total Successful Runs	The number of successful runs. A successful run is a Start followed by a normal completion.

Batch Schedule Types

A Batch Schedule can contain potentially hundreds or even thousands of batch jobs. Monitoring this volume of resources can create unnecessary overhead for the system and for the monitoring system itself. It also presents an overwhelming amount of information. This volume issue is addressed by dividing the jobs within a schedule into two types: key and non-key.

Key Jobs

When you decide to monitor a Batch Schedule, you should identify key jobs within the schedule. Detailed information is recorded for key jobs including Start and Stop times, expected duration, and which operating system they run on. Key jobs are the most important jobs in the schedule because they are the jobs used to monitor the schedule. An example of jobs that might be designated as key jobs are the following: the first job (start job), the last job (end job), jobs that usually give you trouble, or a job that falls at a critical point within the schedule. If there are no distinguishing jobs to designate as key jobs, other methods can be used. For example, if your batch schedule contains 100 batch jobs, you can define the first (Job 1), the last (Job 100) and nine remaining jobs 10, 20, 30, 40, 50, 60, 70, 80, and 90, as key jobs. The remaining jobs that run between those key jobs are defined as non-key jobs.

Non-Key Jobs

Non-key jobs are defined by name to the batch schedule, but do not contain all the attributes of key jobs. They are not monitored for Start and Stop times but, like key jobs, they are monitored for abends. They are not visually represented below the batch schedule resource within a TBSM Tree or Hyperview (All Resources view or LOB views). They appear, however, in the list representation of the contents of a Batch Schedule within the Batch Management Summary window.

Since non-key jobs are not registered within TBSM unless they abend, console traps and performance threshold exceptions are not applied for those jobs. Non-registered resources are resources that are running within your complex that you have decided not to monitor. Non-key batch jobs are handled slightly differently from other non-registered resources. When a non-key job abends, Source/390 captures the ABEND message and forwards it to the TBSM database. All abends for all batch jobs are captured and forwarded in this manner. When Source/390 captures the ABEND, it examines the message to see if it is for one of the registered jobs (batch schedule key jobs). If not, it scans to see which job the message is for and temporarily registers that job. This enables TBSM to capture the Start and Stop times for that job. Once the job is completed, or a set period of time passes (set by a TBSM Administrator), the job is unregistered. This method allows TBSM to capture the important Start and Stop times of a job that has abended, providing a more definitive view of the running Batch Schedule.

Note: Key and non-key jobs apply to jobs within batch schedules only.

Assigning Key Jobs in a Batch Schedule

Once the Batch Schedules are populated in TBSM, you assign key batch jobs within the schedule. The key batch jobs enable TBSM to monitor the Batch Schedule. You can convert Key jobs to non-key jobs.

To assign key jobs in a batch schedule:

1. Select a Batch Schedule from a LOB view.
2. Right-click the mouse to bring up the shortcut menu.
3. Select View-->Batch Management Summary.
4. Select a Batch Schedule. Batch jobs within the schedule appear in the lower pane of the window.
5. Select the job(s) you want to set up as key jobs.

6. Right-click and select Convert to Key Job.

Setting Initiating Priority on the Starting Key Job

Batch Schedules must be assigned a starting job to indicate a start time for the schedule. Within a Batch Schedule, specific key jobs are assigned an initiating priority value that starts the schedule. It must be noted that all jobs within a schedule do not necessarily run every day. Depending upon the day of the week, a different key job may be designated as the first key job to start the schedule. For example, the initiating priority job on Tuesdays and Thursdays may be different from the job that initiates the schedule on Mondays, Wednesdays, and Fridays. In the following table, JOB87 has an initiating priority value of 1 and runs every day of the week. JOB54 has an initiating value of 2 and runs on Tuesdays and Thursdays only. Therefore, on Tuesdays and Thursdays JOB54 begins the Batch Schedule, as 2 is greater than 1.

Note: The highest value takes priority.

Job Name	S	M	T	W	T	F	S
JOB87	1	1	1	1	1	1	1
JOB54	N/S	N/S	2	N/S	2	N/S	N/S
N/S = Not Scheduled							

Setting Terminating Priority on the Ending Key Job

You must assign Batch Schedules an ending job to indicate when the schedule should end. Specific key jobs within the schedule are assigned a terminating priority value to designate the end of the batch schedule. Again, depending upon the day of the week, you may assign a different job to terminate/end the Batch Schedule. For example, in the following table, the terminating priority job for workdays Monday through Friday may be assigned a terminating priority code of 1. The terminating priority job for Tuesdays may have been assigned a terminating priority code of 2. Therefore, on Tuesdays, the job assigned the higher terminating priority code is the job that determines the end of the batch schedule. The following table illustrates the terminating values that would be set based on this example.

Job Name	S	M	T	W	T	F	S
ETODBSMF	N/S	1	1	1	1	1	N/S
IPCPDTX	N/S	0	2	0	0	0	N/S
N/S = Not Scheduled							

Note: Batch Schedule key jobs within the schedule that do not start or end the schedule have an initiating/terminating default priority setting of zero.

Assigning Initiating/Terminating Priority to Batch Schedule Key Jobs

Use Batch schedule key jobs to indicate the Start and Stop of Batch Schedules.

1. From the Batch Management Summary window, select the key batch job for priority assignment.
2. Right-click and select Properties.
3. Select Additional Information.
4. Use the Up and Down arrows and assign a priority number.

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5. Click Apply.
 6. Click OK.

Key Jobs - Initiating Priority Value

Within a batch schedule, specific key jobs are assigned an Initiating Priority value that starts the schedule. The TBSM Administrator is the only one who can set the Initiating Priority value. You can see a Key job's Initiating Priority value from the Attributes page on the job's Property Sheet.

All jobs within a schedule do not necessarily run every day. Depending upon the day of the week, a different key job may be designated as the first key job to start the schedule. The initiating job on Tuesdays and Thursdays may be different from the job that initiates the schedule on Mondays, Wednesdays, and Fridays. For example, JOB87 has an Initiating Priority value of 1 and runs every day of the week. JOB54 has an Initiating Priority value of 2 and runs on Tuesdays and Thursdays only. Therefore, on Tuesdays and Thursdays JOB54 will begin the batch schedule, as 2 is greater than 1. (The highest value takes priority.)

Key Jobs - Terminating Priority Value

Within a batch schedule, specific key jobs are assigned a Terminating Priority value that ends the schedule. The TBSM Administrator is the only one who can set the Terminating Priority value. You can see a Key job's Terminating Priority value from the Attributes page on the job's Property Sheet.

As described above, depending upon the day of the week, a different job could terminate/end the batch schedule. For example, the terminating job for Monday through Friday may be assigned a Terminating Priority value of 1. The terminating job for Tuesdays be assigned a Terminating Priority value of 2. Therefore, on Tuesdays, the job assigned the higher Terminating Priority value is the job that determines the end of the batch schedule. Batch schedule key jobs within the schedule that do not start or end the schedule have an initiating/terminating default priority setting of zero.

Batch Schedule Key Job Current Statistics

Using the Statistics page on the Property Sheet of Batch Schedule key jobs to obtain information for monitoring key jobs during the processing cycle and enables you to forecast a potential problem that affects the batch schedule. Select a key Batch job from the lower left area on the Batch Management Summary window and click Properties. When the job's Property Sheet opens, select the **Statistics** page.

To view the Batch Schedule Key Job Statistics page:

1. Right-click the key batch job to bring up the shortcut menu.
2. Click Properties. The Resource Property Sheet opens.
3. Select the Statistics page.

Converting a Key Job to a Non-Key Job

To convert a key job to a non-key job:

1. Select the key job from the Batch Management Summary window.
2. Right-click the key job to bring up the shortcut menu.
3. Click Convert to Non-key job.

Note: You can change a non-key job to a key job using the same method.

Batch Schedule Jobs have the following attributes:

Attribute Name	Description
Name	The name of the Batch Schedule Job. (Unique in the batch schedule)
Description	The textual description of the Batch Schedule Job.
Schedule ID	The unique ID of the batch schedule that this job belongs to.
Job ID	The unique identifier of the Batch Job.
Current State	The current state of the Batch Schedule Job. An operator through the SetCurrentState may change this value. The current state can be one of the following values: <ul style="list-style-type: none"> ■ Running - indicates the batch job is active and running. ■ Completed - indicates the job has successfully completed. ■ ABEND - indicates the job has abended. ■ Pending - indicates the job is waiting to start.
State Change Time	The timestamp of the last change to Current State.

Batch Schedule key jobs inherits all of the attributes of the Batch Schedule jobs previously listed. They also contain the following attributes:

Attribute Name	Description
Estimated Stop Time	Estimated completion time for this job if Current State is active.
Total Runs	The number of observed runs. A run is a Start followed by a normal or abnormal termination.
Total Successful Runs	The number of successful runs. A successful run is a Start followed by a normal termination.

Tracking Scheduled Changes

When you make a change to move the start or duration times of a schedule or key job forward or backward, TBSM tracks the change and identifies the workstation and user who implemented the change. You can find a trail of these changes in the Current Messages grouping of the Property Sheet for the particular resource. This informs other users and the TBSM Administrator of changes that are made to batch schedules and key jobs.

To view schedule changes made to batch schedules and key jobs:

1. From the Batch Management Summary window, right-click a Batch Schedule or key job and select Properties.
2. View the trail in the Current Events grouping.

Batch Process Monitoring Windows

The Batch process monitoring windows are the following:

- Batch Management Summary
- Batch Schedule History

These windows provide you with the ability to:

- Monitor batch schedules and batch schedule jobs.
- View current information on batch schedules and batch schedule jobs within an Enterprise, Complex, Line of Business, Batch Schedule Set, or Batch Schedule.
- View historical schedule information pertaining to all batch schedules and jobs within an Enterprise, Complex, Line of Business, Batch Schedule Set, or Batch Schedule.
- Perform maintenance functions on batch schedules and batch schedule jobs.

You can customize all windows for your own preferences and needs. You can sort the columns in ascending and descending order. You can rearrange the order of columns by dragging the column headings. By selecting **Console-->Save Workspace**, you display a customized view each time that you open TBSM.

Batch Management Summary Window

The Batch Management Summary window enables you to view batch schedules and the batch jobs that belong to schedules. The top pane of the window displays the Batch Schedule Sets. When you select a Batch Schedule Set from the top pane of the window, all Batch Schedules included in that set appear in the middle pane of the window. When you select a Batch Schedule from the middle pane of the window, all batch jobs within that schedule appear in the lower pane of the window. Key jobs are indicated with a key icon, and the entire row is highlighted, which allows you to quickly identify the key jobs.

As non-key batch jobs are not monitored unless they ABEND, no data appears in these rows unless they ABEND. In that case, the data appears in dimmed text in the Stop Time column, and the Current State column appears as abended. When the ABEND has been cleared and the job restarted, the Start Time column displays the time, the Current State column displays as running, and the Stop Time column contains no data until the job has completed. The system captures the information on the ABEND and you can retrieve it later as historical data.

The Order column within the Batch Management Summary window displays the numerical order in which the scheduling system inserts batch jobs into TBSM. A bullet appears in this column after a registered job has completed.

To view batch schedules using the Batch Management Summary window:

1. From a LOB or the All Resources view, select the Batch Schedule Set you want to view.
2. On the View menu, select Batch Management Summary.
3. Select a Schedule Set from the top pane. All Batch Schedules in that set will appear in the middle pane.
4. Select the Batch Schedule you want. All batch jobs within the schedule appear in the bottom pane of the window.

-or-

1. From a LOB or All Resources view, select the Batch Schedule Set.
2. Right-click the mouse to bring up the shortcut menu.
3. On the View menu, select Batch Management Summary.
4. Select a Schedule Set from the top pane. All Batch Schedules in that set will appear in the middle pane.
5. Select the Batch Schedule you want. All batch jobs within the schedule appear in the bottom pane.

Note: To view all Batch Schedule Sets within a Complex, select the Complex icon in the LOB view, and follow steps 2-3 as previously indicated.

Batch Schedule History Window

The Batch Schedule History window allows you to view events and historical data directly from the TBSM screen.

To view Batch Schedule History:

1. Within the Batch Management Summary window, select the batch schedule you want to view.
2. From the View menu, select Batch Schedule History. The Batch Schedule History window opens.

High Level Batch Schedule Set Monitoring

Different levels of detail are often required when monitoring any set of resources. Various departments, staff members, and personnel require different views, often displaying different levels of detail, while monitoring exactly the same resources. There are three levels of detail you can monitor: Batch Schedule Sets, the Batch Schedule, and the individual Batch jobs. The highest level of monitoring for Batch Processes is to monitor the schedule sets only. TBSM can control propagation enabling only specific or critical problems on batch jobs to propagate to the level of the Batch Schedule Sets.

To create a high level view of the Batch Schedule Sets within your enterprise:

1. Select the Enterprise resource.
2. Right-click the Enterprise resource and point to View.
3. Click Batch Management Summary. The Batch Management Summary window opens displaying all of the Batch Schedule Sets defined within your Enterprise.

The window opens with three panes. The top contains the Batch Schedule Sets; the middle pane contains the Batch Schedules and the bottom pane the actual Batch Jobs.

Drag the top pane split bar located below the window frame containing the Batch Schedule Sets, to the bottom of the window. This hides the Batch Schedule Set and the Batch job windowpanes, displaying only the high level Batch Schedule Sets.

4. Sort the Alert column to display all Schedule Sets in an alert state of Red, followed by those with alert states of Yellow and Green respectively. Resize the window, so empty columns do not appear on the screen. This screen is a welcome addition to any high-level view.

Monitoring the Progress of a Batch Schedule

Monitoring the progress of a Batch Schedule focuses on monitoring the pending batch jobs within the schedule. Pending Batch jobs are the jobs that have not yet started and have a current state of Pending. Observing pending jobs allows you to see which jobs are about to run and their scheduled times.

To display the pending jobs in a Batch Schedule:

1. Open the Batch Management Summary window.
2. Select a Batch Schedule from the middle pane of the window.
3. Insert Pending into the row filter for Current State.
4. Select **OK**.

Extending Schedules to Minimize Alerts

You can monitor batch schedules and batch schedule key jobs for interrupted execution (abends) and schedule violations. Schedule violations can be unexpected Start or Completion times, the duration of execution for a key job, or the entire batch schedule. Each batch schedule or batch schedule key job can have many thresholds or counters assigned to it.

When a key job starts to process within a batch schedule, TBSM immediately checks the threshold rules for the Start time. If the job starts before the scheduled time, a schedule violation occurs in the form of an exception. TBSM traps the exceptions, and when thresholds are exceeded, generates an alert.

The following matrix provides an example of the collection of thresholds that you may choose to set on a batch schedule and/or Batch Schedule key jobs. The following Batch Schedule has an estimated duration of 20 minutes, although it has been known to last for as long as 45 minutes on occasion. This usually occurs during the end of a week, month, or quarter.

Type	Delta direction	Value	Alert	Priority
Duration	> greater than	30 minutes	Yellow	High
Duration	> greater than	60 minutes	Red	High
Duration	> greater than	90 minutes	Red	Critical
Duration	< less than	5 minutes	Red	High

Note: The expected duration is completion time.

The preceding matrix shows that four thresholds have been created for the Batch Schedule. All four are of type Duration. Duration is defined as the difference between the completion time of the last job in the schedule and the Start time of the first job in the schedule.

Because this batch schedule completes typically in 20 minutes, you want to be warned if you exceed that time. If you exceed that time by 10 minutes, the first threshold is exceeded and the Batch Schedule will be tagged with a Yellow alert. The Batch Schedule is assigned a warning because, as previously stated, this batch schedule sometimes runs about 45 minutes. If the batch schedule is running beyond 60 minutes, you have a Red High condition, which

informs you that the second threshold has been exceeded. The issue escalates by raising the priority from High to Critical after 90 minutes has passed.

The third threshold shows this example. Our fourth is a different case. This states that you have a Red High condition if the Batch Schedule completes too soon (after five minutes). This protects against an improbable early completion of the Batch Schedule. Usually, if a batch schedule with an assigned estimated duration completes this quickly, it is due to one of its jobs abending. TBSM captures the abend and the batch schedule receives an alert. However, if the batch schedule does complete this quickly, there may be a problem with the data used by the jobs in this batch schedule.

For example, a dataset that usually contains 20,000 records was truncated and only contained 200. The less than symbol (<) in the direction column informs TBSM that this counter is concerned with a completion time that is earlier than the estimated completion time. The other counters are all concerned with completion times that are later than our estimated completion times and have a direction indicator of greater than (>).

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Understanding Active Documentation

Tivoli Business Systems Manager (TBSM) provides documentation features. One of these features is called Active Documentation. Active Documentation is a visual representation of the TBSM resource repository. Active Documentation provides a mechanism to view resource definition information for any resource or resource type. In the Active Documentation, we refer to a resource type as a class. The type of information available includes resource attributes, methods, events, links, parents, children, and states. The documentation is dynamic based on the current resource definitions within the TBSM resource repository. For further detail concerning the installation and configuration of this feature, refer to the Tivoli Business Systems Manager Installation and Configuration Guide.

TBSM uses a Web browser to display Active Documentation. If you are on a Windows 9x/NT/2000 platform, the recommendation is to keep the system default Web browser. Otherwise, you need to specify the fully-qualified path to a Web browser in the **Console-->Preferences-->General** dialog. After you do this, click the **Test** button in the dialog to verify that the Web browser is working.

Viewing Active Documentation from TBSM

To enter Active Documentation, select a registered resource and right-click on it to access a menu. On the series of menus, select **View-->Documentation-->Schema-->Attributes**. This opens a menu of Active Documentation categories. Selecting an item from this menu takes you directly to that link for data.

To view the schema of a registered resource:

1. Select a resource from a view.
2. Right-click on the resource.
3. Choose **View-->Documentation-->Schema-->Attributes**.

Understanding the Active Documentation Interface

Navigation buttons enable you to move around the Active Documentation. On the left side is a Table of Contents (TOC) for the Active Documentation, listing all resource classes, enumerations, and online documents. To view these selections, click the small box to the left of your choice. Detailed information for the class or resource selected is displayed on the right side in the main viewing area. The main viewing area also contains navigational buttons for viewing other parts of the object schema.

It is important to remember that the TOC refers to general class information, not specific resource information.

The browser buttons (Back, Forward, Stop, Refresh and Home) enable you to navigate the Active Documentation. The Back and Forward buttons allow you to go back or advance one page. The Stop button halts the loading of data when you click a particular navigational link. The Home button brings you back to your starting point.

The Active Documentation Table of Contents (TOC)

The Active Documentation TOC contains an Overview and the following categories:

Classes

Displays all TBSM resource classes

Enumerations

Displays all TBSM enumerations

Online Documents

Displays all available documents known to the Documentation system

The Right Pane of the Active Documentation

The right pane of the Active Documentation displays the various aspects of the resource repository and contains the following categories. A separate page represents each category.

- Attributes
- Methods
- Events
- Links
- Parents
- Children
- States
- Attribute Pages
- Rules
- Functions

Note: When you use the navigation buttons in the Active Documentation, the button becomes highlighted when covered by the mouse pointer. This provides you with a visual cue to help you make correct selections.

Table of Contents

This section describes the Active Documentation TOC. It is important to remember that the TOC refers to general class information, not specific resource information.

Classes

The Classes selection from the TOC lists all TBSM resource classes. A Class is a generalized category that describes a group of more specific items called resources. Each Class has characteristics (attributes) or a set of tasks (methods) that you can perform on resources in that Class.

You can access Classes from the left pane of the Active Documentation window. Click the small box next to Classes to display all the Classes. Selecting any item from the Classes list by clicking on its name in the TOC takes you directly to the Class Attributes page for that class.

Enumerations

Enumerations are lists of values and descriptions that are assigned to attributes of a resource class. For example, an enumeration called `AlertState` is assigned the names Green, Yellow, and Red, which are assigned to integer values 1, 2, and 3 within TBSM.

You can access Enumerations from the TOC in the Documentation window. When you click the small box next to Enumerations, you expose all Enumerations. Selecting a value from the list by clicking on its name displays the appropriate page.

In the preceding example, the Enumeration: `AlertState` is selected from the TOC. The corresponding result for that value appears in the right pane. This page displays all Enumeration information for `AlertState`, including the Name, Value, Label, and Description.

When you select the Enumeration: `AlertState` hyperlink found in the right pane of the Documentation window, the Active Documentation (Enumeration Cross-Reference) page appears. This page is a cross-reference to all classes associated with that Enumeration: `AlertState` page. Any class that has an alert state attribute appears in this window.

Online Documents

Online Documents in the TOC enables you to view the latest version of a document or manual. Click the small box next to Online Documents to view available documents. When you select a document or manual, it appears in the right pane of the Documentation window.

Depending on the type of document (extension), you need the appropriate software (Word, Internet Explorer, Netscape Navigator) loaded locally on your machine. (TBSM does not interpret the document but attempts to display the document using the proper product.)

Note: The selected document may contain hyperlinks. These hyperlinks enable you to easily navigate through the document.

Active Documentation Link Buttons

Attributes Pages

The Active Documentation (Class Attributes) page displays all attributes for a selected class. An attribute is an element of additional information (the characteristics of a resource). The Class Attributes page displays the resource class, name and icon, the base class (es), and other attributes associated with a class. It displays the Name, Type, Length, and a Description of the attribute. A base class is a grouping from which other classes are derived.

Methods

A Method is a process that can be executed on a class. The Active Documentation (Class Methods) page displays all methods associated with a selected class. All methods for a class appear on the Class Methods page.

A list of method parameters appears underneath the Description heading. These parameters provide the additional information the method needs to complete the process or procedure.

For example, the method `GetJobChain` requires the parameters `Predecessors`, `Successors`, and `Chain`. The description of the parameter and its required type appears to the right of each parameter.

Clicking the hyperlink located under the methods `Name` column displays the `Methods Cross-Reference Page`. This page lists other classes that contain the selected method.

The `Active Documentation (Methods Cross Reference)` page lists all cross-references to classes that can access that method.

Events

The `Active Documentation (Class Events)` page displays all events associated with the selected class. An event is any action or occurrence that is generated for a given resource. Events appear in two groups: `Message Events` and `Exception Events`.

For each message or exception displayed, the `Message ID` or `Exception ID`, and the `Alert State`, `Priority`, `Source`, and `Description` are displayed.

Links

The `Active Documentation (Class Links)` page displays all links associated with a resource class. A link connects two resources based on a link type. The `Active Documentation (Class Links)` page displays both the `Source Links` and `Destinations Links` for the selected class. The `Class icon`, `Class Name`, `Type`, and `Description` appear on the main viewing area.

Parents

The `Active Documentation (Class Parents)` page displays all parent resources that can be associated with a resource class. A parent resource is a resource that can contain other resources on the physical tree. The contained resources (child resources) are often dependent upon the parent resource. The parent is a link only on the physical tree.

Children

The `Active Documentation (Class Children)` page displays all child resources associated with the currently selected class. A child resource is a resource that can reside below a resource within the TBSM tree. The child is a link only on the TBSM physical tree.

States

The `Active Documentation (Class States)` page displays all states that are possible for the selected class. A state of a resource shows the current condition or the desired condition of a resource at a particular time. This page lists all the possible values that the desired and current states can have.

The `Name`, `Value`, `Label`, and `Description` for each state appear in the main viewing area.

Attribute Pages

The `Active Documentation (Class Attributes Pages)` page displays all the tabs from the `TBSM Properties` page that a class has in the appropriate order. This page displays all the functions the system needs to create the `Properties` page for the resource you select. The `Order` and `Function Name` appear on the main viewing area.

Rules

The `Active Documentation (Class Rules)` page lists all the rules for a given class or resource. The headings that appear on this page are `Rule ID`, `Description`, `Filter Restrict`, and `Filter Value`.

Functions

The Active Documentation (Class Functions) page lists a series of rules for a given class. The headings that appear on this page are Function Id and Description.

10

TBSM Reporting System

Tivoli Business Systems Manager (TBSM) contains a reporting application called the TBSM Reporting System. The Reporting System allows you to generate reports from real time and historical availability data that TBSM collects from the system. You can access the Reporting System through a conventional Web browser or directly from Tree, Hyperview, or the Managed Object View.

TBSM uses a Web browser to display the reports. If you are on a Windows 9x/NT/2000 platform, the recommendation is to keep the system default Web browser. Otherwise, you need to specify the fully-qualified path to a Web browser in the Console-->Preferences-->General dialog. After you do this, click the **Test** button in the dialog to verify that the Web browser is working.

TBSM Reporting System Interface

The reporting system interface consists of the Report Template Index along the left column with an accompanying main Web page (information window). The Default Data Server and Current Date/Time indicators always contain pertinent report information.

The Report Template Index contains the following links:

- Historical Reporting - contains all the report templates in the database.
- Help & Info - enables you to view a full online version of this manual, and a general overview of the reporting system.
- Menu Administration (Administrators Only) - enables an administrator to create, delete, and modify all elements for their organization.
- User Administration (Administrators Only) - enables the administrator to employ the user administration facilities for maintaining reporting system users and passwords.
- Class Documentation - enables you view documentation for all resources classes within the Enterprise from a Hyperview of the class hierarchy.
- Export Report - enables you to export reports generated in the Reporting System to various file formats. The current list of file formats that the reporting system supports appears in the “Generating File Formats with Historical Data” later in this section.

The TBSM Administrator is the only one who can upgrade the index to reflect additional contents and reports as well as links to the corporate Intranet or Internet site.

Report Forms within the TBSM Reporting System

The TBSM Reporting System provides report forms to view the data you need in order to analyze, anticipate, and avoid any future problem scenarios. All reports in the system require that you specify a time-span. This requirement exists because of the large number of records that are contained in a database - possibly covering a year or more worth of historical data. By issuing a specific time span you are able to ensure that a reasonable number of reports are returned to you, that waiting time is curtailed, and that network traffic is kept to a minimum.

Report Form Selection Criteria

Enter the selection criteria for your reports through pre-supplied forms. The forms appear by name and contain a brief description. The fields on the report contain all the data necessary for a particular report. Drop-down list boxes within the filtering grouping list all the possible choices. When you complete all the information, click the Submit button to generate a report.

After you select the report type from the Report Template Index, enter data into the filtering boxes and click Submit.

Starting the Reporting System from within TBSM

To view the reporting system from a shortcut menu, right-click a resource and point to View>Reporting System. For example, a selection of the resource type Machine from the All Resources view using this method takes you specifically to the Physical Resource Event Report Selection filtering boxes. Consequently, a selection of a resource from a Line of Business takes you to the Line of Business Event Report Selection filtering boxes.

To view the TBSM Reporting System from Tree, Hyperview, or the Managed Object View:

1. Select a resource.
2. On the View menu, click Reporting System.
3. In the appropriate filtering boxes, enter your criteria.
4. Click Submit.

-or-

1. Use the shortcut menu by right clicking a resource.
2. Point to View and click Reporting System.
3. In the appropriate filtering boxes, enter your criteria.
4. Click Submit.

To view the TBSM Reporting System from Hyperview:

1. Select a resource from the Hyperview.
2. Right-click and select View, then Reporting System.
3. In the appropriate filtering boxes, enter your criteria.
4. Click Submit.

To view the TBSM Reporting System from the Managed Objects view:

1. Select a resource from the Managed Objects view.
2. Right-click and select View, then Reporting System.
3. In the appropriate filtering boxes, enter your criteria.
4. Click Submit.

TBSM Report Selection Filtering Boxes

Depending on your view and the resource you select, the appropriate filtering boxes enable you to select specific criteria for your report selection. After you make your filtering choices, click Submit to generate your report.

The TBSM Reporting System provides you with a browser page to navigate through the report. You can enter search words, increase or decrease the size of your viewing page, view the other reports in the collection, and print out the report.

To Search, enter your criteria in the box and press the binocular icon. It accepts any valid SQL pattern. See Appendix H for a list of SQL Wildcards.

From this report, you have the option of viewing other reports for children of the selected parent resource by selecting the resource type and name from the Table of Contents (TOC) on the left-hand pane.

Note: The TBSM databases are case sensitive and therefore, so are the patterns.

Accessing the TBSM Reporting System using a Web Browser

Another way to enter the reporting system is independently through a Web browser. See your TBSM Administrator for the correct URL. This is the only way to get the list of reports in the frame to the left.

The information Web page is the main section of the reporting system. Once you select a report from the Report Template Index, a filtering box appears within the Web page. These filters control the historical data you retrieve by targeting only the information you request.

The Log Out hyperlink is a security function that enables you to end a reporting session. Once you log off a reporting session, you must log on to re-enter the system. For example, if you view reports on a Line of Business for payroll, which is classified information, you would use the Log Out feature to secure your report data.

The Report Template Index lists all available report templates. Some are grouped into submenus within the index. If the selected template requires selection of a resource from the All Resources view, the appropriate tree view appears.

To select the resource for reporting, click on the hyperlink next to the appropriate resource. After making your selections from the various headings, click Submit to generate and view the results in the browser.

Class Documentation

The Class Documentation link on the Report Template Index enables you view an enterprise's systems, subsystems, applications, and resources as resources in the Hyperview option. The viewing controls in the lower-left corner of the Hyperview window enable you to customize your view according to the resource and the information you need.

When you point to a resource in this view, the resource name receives a red outlined box and the name appears in a pop-up window. You double-click the resource, in the preceding example, Machine, and you proceed directly to the Active Documentation part of the Documentation feature.

A class attribute is an element of additional information (characteristics). The Class Attributes page includes the Class; name and icon, Base Class and the Attributes associated with the selected class.

The Classes selection from the Table of Contents pane enables you to view the Class Attributes page for any of the classes that appear on the list.

The Export Report template on the Report Template Index enables you to export historical data reports that the TBSM Reporting System generates to industry standard file formats. The link to the Export Report screen is available at the bottom of the report viewer screen. This makes it available when reports are run from within the TBSM application.

To export this report you click Export Report from the Report Template Index and choose your file format. You select a format from the Save Report as: box and click the Create File button. The Create File button establishes a link for your selected format. If you mark the Report Detail Only check box, you receive only raw detail data in your subsequent report. This is useful for exporting to spreadsheet formats.

The Back to current report hyperlink enables you to return to your previous view of your selected report.

You can right-click the hyperlink and select Save Target As (Internet Explorer) or Save Link As (Netscape) to save your exported file wherever you want using any name you desire on your local machine. The Save As dialog enables you to automatically save your report on your local machine for future reference. Locate a folder on your machine and enter a name in the File name text box. Click the Save button to save the report.

The Report Templates

The following section contains information about the report templates of the TBSM Reporting System. The following tables describe the selection criteria used for report generation. Report templates that do not contain selection criteria tables have pre-defined selection criteria where the report is generated when you select the template from the Report Template Index.

Physical Resource Tree Report

The Physical Resource Tree report allows the user to view the entire All resources view structure in an indented format. An HTML tree view of the All Resources view is presented allowing a specific resource to be chosen. The report prints the structure from that point down.

LOB Resource Tree Report

The LOB Resource Tree report is identical to the Physical Resource Tree report previously discussed, only for the Line of Business Container. An HTML view of the Line of Business Container allows you to choose a specific resource. The report prints the structure from that point down.

New Resources Report

The New Resources report shows all resources that have been added to the All Resources view on or after a specified date. An HTML view of the All Resources view allows you to choose. The report shows all new resources on or below that point in the All Resources view. The selection criteria is as follows:

Field Selection Criteria	Description	Multiple Select
Resources Created On or After	The starting cutoff date for the report	N/A

MVS Messages and Exceptions Report

The MVS Messages and Exceptions report provides a list of console messages and performance monitor exceptions for any desired TBSM class that runs within an MVS Operating System for a given date range. The selection criteria for the report is as follows:

Field Selection Criteria	Description	Multiple Select
Complex	The Complex the desired resource(s) resides within	No. However, there is an (ALL) selection.
OS	The Operating System that the desired resources run on	No. However, there is an (ALL) selection.
Resource Type	The class of a resource, for example, CICS, Batch, STC, etc.	No
Resource Name	The name of a specific resource	This can use standard SQL wildcard patterns to match multiple resource names.
Alert State	Alert state of the selected resource, Red, Yellow, or Green	No. However, there is an (ALL) selection.
Priority	The priority attribute of the resource	No. However, there is an (ALL) selection.
Time Period Option	Various “quick clicks” time periods such as Last 15 minutes, Yesterday, and Today, etc.... When you make a selection in this box, you create the Beginning and Ending Time/Date range for the report.	N/A
Beginning Date/Time	The Beginning date and time that is to Start the date/time range of this report.	N/A
Ending Date/Time	The Ending date and time that is to end the date/time range of this report	N/A
Event Type	Console Messages, Performance Monitor exceptions, or both	No. However, there is an (ALL) selection.
Detail Search Pattern	Allows entry of a standard SQL pattern including wildcards for searching the message detail. All searches are case sensitive.	N/A

LOB Events Report

The LOB Events report provides you with the ability to select any defined Line of Business View and create a report that contains Messages and Exceptions for any or all of the resources within that LOB View. The selection criteria for the report is as follows:

Field Selection Criteria	Description	Multiple Select
Line of Business Resource	The Line of Business Resource that is selected from the Line of Business Container	No
Alert State	Alert state of the selected resource, Red, Yellow, or Green	Yes
Priority	The priority attribute of the resource	Yes
Time Period Option	Various “quick clicks” time periods such as Last 15 minutes, Yesterday, and “Today,” etc. When you select here, you create the Beginning and Ending Time/Date range for the report.	N/A
Beginning Date/Time	The Beginning date and time that is to start the date/time range of this report	N/A
Ending Date/Time	The Ending date and time that is to end the date/time range of this report	N/A
Event Type	Messages, Exceptions, and/or Child Event	Yes
Show Machine /System	When checked, the report shows the appropriate higher level resource (OS, System Name, etc.) to which the resource belongs.	N/A
Order By	Order the report by specific fields	N/A
Message Name Search Pattern	Allows entry of a standard SQL pattern including wildcards for searching the message name. All searches are case sensitive.	N/A
Detail Search Pattern	Allows entry of a standard SQL pattern including wildcards for searching the message detail. All searches are case sensitive.	N/A
Exclude Child Resources	If this is checked, the report will not include events that have occurred on resources that are children of the currently selected resources.	N/A

LOB Resource Summary Report

The LOB Resource Summary report shows a summary of all Business Container resources that belong to a specific Line of Business. An HTML view of the Line of Business Container allows you to choose a specific Line of Business.

Physical Resource Events Report

The Physical Resource Events report provides you with the ability to select any resource from the All Resources view and create a report that contains events for that resource and for all of its child resources. The selection criteria for the report is as follows:

Field Selection Criteria	Description	Multiple Select
Physical Resource	The Physical Resource that is selected from the Business Container	No

Field Selection Criteria	Description	Multiple Select
Include Children / This Resource Only	This determines whether events for the selected resource children are shown.	N/A
Alert State	Alert state of the selected resource, Red, Yellow, or Green	Yes
Priority	The priority attribute of the resource	Yes
Time Period Option	Various “quick clicks” time periods such as Last 15 minutes, Yesterday, and “Today,” etc.... When you select here, you create the Beginning and Ending Time/Date range for the report.	N/A
Beginning Date/Time	The Beginning date and time that is to start the date/time range of this report	N/A
Ending Date/Time	The Ending date and time that is to end the date/time range of this report	N/A
Event Type	Messages, Exceptions, and/or Child Events	Yes
Show Machine / System	When checked, the report will show the appropriate higher level resource (OS, System Name, etc.) to which the resource belongs.	N/A
Order By	Order the report by specific fields	N/A
Message Name Search Pattern	Allows entry of a standard SQL pattern including wildcards for searching the message name. All searches are case sensitive.	N/A
Detail Search Pattern	Allows entry of a standard SQL pattern including wildcards for searching the message detail. All searches are case sensitive.	N/A

Resource LOB Impact Report

The Resource LOB Impact report provides you with the ability to select any resource from the All Resources view and generate a report that displays all of the Line of Business Views that contain the selected resource. It uses the same navigational tool as the LOB Resource Summary report. This report can be quite useful in determining the Business Impact of any resource within the enterprise.

Resource Class Events Report

The Resource Class Events report provides you with the ability to select a specific resource class and display all of the events for a given date period that have affected resources of this class. A button allows the class to be selected from a Hyperview of the entire available resource class structure. The selection criteria for the report is as follows:

Field Selection Criteria	Description	Multiple Select
Resource Type	The class of a resource, for example, CICS, Batch, STC, etc.	No.
Alert State	Alert state of the selected resource, Red, Yellow, or Green	No. However, there is an (ALL) selection.
Priority	The priority attribute of the resource	No. However, there is an (ALL) selection.
Enter Beginning Date/Time	The Beginning date and time that is to start the date/time range of this report	N/A

Field Selection Criteria	Description	Multiple Select
Enter Ending Date/Time	The Ending date and time that is to end the date/time range of this report.	N/A
Event Type	Console Messages, Performance Monitor exceptions, or both	No. However, there is an (ALL) selection.
Detail Search Pattern	Allows entry of a standard SQL pattern including wildcards for searching the message detail. All searches are case sensitive.	N/A

LOB Open Event Ownership Report

The LOB Open Event Ownership report prompts for a resource from the Line of Business Container using an HTML Tree. The resulting report shows all open events against resources on or below that point in the structure for which ownership has been taken, but has not been closed. The report shows who took ownership, when ownership was taken, notes, when the event occurred, and the original text of the event. The selection criteria for the report is as follows:

Field Selection Criteria	Description	Multiple Select
Order By	The sort order for the report.	N/A

Physical Resource Open Event Ownership Report

The Physical Resource Open Event Ownership report is identical to the Line of Business Open Event Ownership report above, only is run for resources in the Business Container.

LOB Event Count Report

The LOB Events Count report provides you with the ability to select any defined Line of Business View and create a report that contains event count statistics which can be sorted and grouped in many different ways. The selection criteria for the report is as follows:

Field Selection Criteria	Description	Multiple Select
Line of Business Resource	The Line of Business Resource that is selected from the Line of Business Container	No
Alert State	Alert state of the selected resource, Red, Yellow, or Green	Yes
Priority	The priority attribute of the resource	Yes
Time Period Option	Various “quick clicks” time periods such as Last 15 minutes, Yesterday, and “Today,” etc.... When you select here, you create the Beginning and Ending Time/Date range for the report.	N/A
Beginning Date/Time	The Beginning date and time that is to start the date/time range of this report	N/A
Ending Date/Time	The Ending date and time that is to end the date/time range of this report	N/A
Event Type	Messages, Exceptions, and/or Child Events	Yes
Summary Fields	There are several options provided for grouping the resulting counts.	N/A

Field Selection Criteria	Description	Multiple Select
Sort By	The resulting report can be sorted either by the Summary Fields chosen above, or by descending event frequency (ordered by the summary field groups, which had the highest event counts).	N/A

Physical Resource Event Count Report

The Physical Resource Event Count report provides you with the ability to select any resource in the Business Container and create a report that contains event count statistics which can be sorted and grouped in many different ways. The selection criteria for the report is as follows:

Field Selection Criteria	Description	Multiple Select
Physical Resource	The physical resource that is selected from the Business Container	No
Include Children / This Resource Only	This determines whether events for the selected resource children are shown.	N/A
Alert State	Alert state of the selected resource, Red, Yellow, or Green	Yes
Priority	The priority attribute of the resource	Yes
Time Period Option	Various “quick clicks” time periods such as Last 15 minutes, Yesterday, and “Today,” etc.... When you select here, you create the Beginning and Ending Time/Date range for the report.	N/A
Beginning Date/Time	The Beginning date and time that is to start the date/time range of this report	N/A
Ending Date/Time	The Ending date and time that is to end the date/time range of this report	N/A
Event Type	Messages, Exceptions, and/or Child Events	Yes
Summary Fields	There are several options provided for grouping the resulting counts.	N/A
Sort By	The resulting report can be sorted either by the Summary Fields chosen above, or by descending event frequency (ordered by the summary field groups, which had the highest event counts).	N/A

Global LOB AlertState Report

The Global LOB AlertState Report template generates a report that provides all of the resources defined in the Enterprise with a specific Alert State. The only selection criteria Alert States are Red, Yellow, or Green. Multiple selections are available.

Note: WARNING! Because this involves all of the resources defined to TBSM, this report is extremely costly to run, and should be generated only during emergencies and/or off-peak periods.

CICS Start/Stop Time Report

The CICS Start/Stop Time report displays the Start and Stop times for all of the CICS Regions for a Line of Business View. This provides an analysis of actual region start and stop times which can assist in setting up schedule violation tolerances.

Utility Reports (Administrators Only)

Utility Reports provide a TBSM Administrator with the ability to quickly analyze the state of TBSM from a data perspective. The reports retrieve data from the TBSM real-time database. It is recommended that their use be restricted to administrators and not run during peak TBSM usage periods. The reason for this is that they most likely will degrade performance for other users.

LOB Alert State Report

The LOB Alert State Report provides the ability to select a Line of Business View and create a report that displays all of the resources with selected alert state(s) within that Line of Business View. You can select multiple alert states.

LOB Schedule Violation Exceptions Report

The LOB Schedule Violation Exceptions report provides the ability to select a Line of Business View and display all of the schedule violations for all resources within that Line of Business View. The selection criteria is the following:

Field Selection Criteria	Description	Multiple Select
Time Period Option	Various “quick clicks” time periods such as Last 15 minutes, Yesterday, and Today, etc.... When you select here, you create the Beginning and Ending Time/Date range for the report.	N/A
Enter Beginning Date/Time	The Beginning date and time that is to start the date/time range of this report	N/A
Enter Ending Date/Time	The Ending date and time that is to end the date/time range of this report	N/A
Alert State	Alert state of the selected resource, Red, Yellow, or Green	No. However, there is an (ALL) selection.
Priority	The priority attribute of the resource	No. However, there is an (ALL) selection.

Current MVS Messages/Exceptions Report

The Current MVS Messages/Exceptions report template provides you with the ability to select criteria to create a report that contains all of the Messages and Exceptions for any class contained within an instance of a MVS Operating System. This can include multiple operating system resources. The selection criteria for the report is the following:

Field Selection Criteria	Description	Multiple Select
OS	The Operating System that the desired resources run on	Yes
Resource Type	The class of a resource, i.e.... CICS, Batch, STC, etc.	Yes

Field Selection Criteria	Description	Multiple Select
Resource Name	The name of a specific resource	Can use standard SQL patterns with wildcards.
Alert State	Alert state of the selected resource, Red, Yellow, or Green	Yes
Priority	The priority attribute of the resource	Yes
Time Period Option	Various “quick clicks” times such as “Last 15 minutes,” “Yesterday,” and “Today,” etc.... Selecting here creates the Beginning and Ending Time/Date range for the report.	N/A
Enter Beginning Date/Time	The Beginning date and time that is to start the date/time range of this report	N/A
Enter Ending Date/Time	The Ending date and time that is to end the date/time range of this report	N/A
Event Type	Console Messages, Performance Monitor exceptions, or both	No. However, there is an (ALL) selection.
Detail Search Pattern	Allows entry of a standard SQL pattern including wildcards for searching the message detail. All searches are case sensitive.	N/A

Security in TBSM (Administrators)

This chapter discusses security in TBSM. Included are sections for creating TBSM user groups, granting rights to Windows log in on the Application server, and configuring the Application server to run under a different login user ID.

TBSM uses Windows groups to define the roles for operators and administrators. TBSM user IDs and passwords are controlled from the Windows server that the TBSM Application server is installed on, so you need to define user IDs for TBSM clients on the Application server. No setup is required on TBSM client machines.

To set this up, define two Windows local groups on the TBSM Application server, one for administrators (called **TBSM_Administrators**) and one for operators (called **TBSM_Operators**). To control which role a user performs in TBSM, assign Windows user IDs to the two local groups you define. Upon signing in to TBSM, the user's role is displayed in the upper right hand corner of the screen. An administrator role is indicated by the words *System Administrator* and an operator role is indicated by the words *System Operator*.

Users sign in to the TBSM client by specifying their Windows login ID and password. The password is encrypted and both the ID and password are then sent to the Application server, which attempts to authenticate the user and returns to the client an indication of either a login failure (expired password, for example) or the user's authorization. Authorization identifies which group the user is in, either in the **Administrator** or the **Operator** group. This determination is made by examining the Windows User Groups in which the login ID is a member--either **TBSM_Administrators** or **TBSM_Operators**.

Note: Because authentication is done by the Application server, the Application server must run on Windows.

Creating TBSM Groups on the TBSM Application Server (Windows/NT)

To create TBSM_Administrators and TBSM_Operators groups:

1. Go to **Start->Programs->Administrative Tools->User Manager for Domains**.
2. From the menu, select **User->New Local Group**.
3. Enter TBSM_Administrators as the Group Name.
4. Press **Add** and add the user names that you are granting Administrator access to.
5. Press **OK**.

Repeat Steps 2-5 to create a TBSM_Operators group. In Step 3, enter TBSM_Operators as the group name. In Step 4, add user names that you want to grant Operator access to.

Granting Rights to Login on the Application Server (Windows/NT)

To authenticate users with NT, the Application server must run under a particular Windows login. This login requires specific user rights. To grant these user rights:

1. On the machine running the Application server, go to **Start->Programs->Administrative Tools->User Manager**. (Under NT Server, it is listed as **User Manager for Domains**.)
2. On the menu, select **Policies->User Rights**.
3. In the **User Rights Policy** dialog, click the **Show advanced User Rights** check box.
4. Select **Act as part of the operating system** from the list of Rights, and ensure the login is in the **Grant To** list. Press **Add** to add user names that are not in this list.
5. Select **Replace a process level token** from the list of Rights and again, ensure the login is in the **Grant To** list.
6. Click **OK**.

Note: If you are granting these rights to the NT machine on which you are currently logged in, log off and log on again before these newly granted rights take effect.

Configuring the Application Server to Run under a New Login (Windows/NT)

To configure the Application server to run under the login you created:

1. On the machine running the Application server, go to **Start->Settings->Control Panel->Services**.
2. Locate the Tivoli BSM Console Server.
3. Press the **Startup** button.
4. Under **Log On as: This Account**, specify this account login and password for the account under which the Application server will run.

Creating TBSM Groups on the TBSM Application Server (Windows 2000)

To create TBSM_Administrators and TBSM_Operators groups:

1. Go to **Start->Settings->Control Panel->Administrative Tools->Computer Management**.
2. On the tree, expand **System Tools** and **Local Users and Groups**. Right click **Groups** and select **New Group**.
3. Enter **TBSM_Administrators** as the Group Name.
4. Press **Add** and add the user names that you are granting Administrator access to.
5. Press **OK**.

Repeat Steps 2-5 to create a TBSM_Operators group. In Step 3, enter TBSM_Operators as the group name. In Step 4, add user names that you want to grant Operator access to.

Granting Rights to Login on the Application Server (Windows 2000)

To authenticate users, the Application server must run under a particular Windows login. This login requires specific user rights. To grant these user rights:

1. On the machine running the Application server, go to **Start->Settings->Control Panel->Administrative Tools->User Manager**. (Under NT Server, it is listed as **Local Security Policy**).
2. On the tree, select **Local Policies->User Rights Assignment**.
3. Select **Act as part of the operating system** from the list of Rights, and ensure the login is in the **Grant To** list. Double-click on **Rights** to open it and add the login ID if needed.
4. Select **Replace a process level token** from the list of Rights.
5. Click **OK** and exit all windows.

Note: If you are granting these rights to the machine on which you are currently logged in, log off and log on again before these newly granted rights take effect.

Configuring the Application Server to Run under a New Login (Windows 2000)

To configure the Application server to run under the login you created:

1. On the machine running the Application server, go to **Start-->Programs-->Administrator Tools-->Services**.
2. Double-click on Tivoli BSM Console Server.
3. Select the **Logon** tab and change to this account.
4. Specify the login and password for the account under which the Application server will run.

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TBSM for Sysplex Support (Administrators)

This chapter describes how to configure and view Tivoli Business Systems Manager (TBSM) for Sysplex support.

Sysplex (Systems Complex) consists of 1-32 MVS systems. When these individual MVS systems are integrated into one multisystem environment or Sysplex, it offers increased availability, scalability, improved throughput and greater availability. TBSM allows you to define your Sysplex for the purpose of creating traps associated with jobs requiring monitoring, while the Sysplex itself dynamically distributes the workload across the MVS systems based on the changing availability of resources. This section provides systematic instructions for the installation configuration and viewing of Sysplex within TBSM.

Discovering and Registering Resources to TBSM

A critical step in the successful implementation of TBSM is the Bulk Discovery and Registration of all pertinent system resources within a company's enterprise. The identification or discovery uses SA/390 and/or SMF (System Management Facility) as data sources, for the initial population of job resources into TBSM. These discovered resources are imported into the TBSM in a process called resource registration.

Once resources are registered, they can be displayed in a Tree Hyperview or Managed Objects view via the TBSM workstation. These physical resources are represented graphically as icons that reside in the All Resources view.

Effect on the Database Load Process and Configuration of a Sysplex into TBSM

During the process of loading the resource database for TBSM, job resources (such as CICS, DB2, etc.) participating in the Sysplex will be associated with a new resource attribute for indicating SYSPLEX Resource participation. During the load process, the default configuration option within TBSM sets the SYSPLEX-participating attribute for all resource types as participating, with the exception of STC and Performance Monitor resources. Generally, STCs and Performance Monitors are assigned to one specific Operating System. Therefore, by default, TBSM assigns the new attribute to these two resources as non-participating in the Sysplex. In the event, you want to include these resources in your Sysplex, TBSM can be configured with a default setting of ON. In addition, on an individual resource basis, the Sysplex Resource Flag can be appropriately set to ON/OFF.

Creating the SYSPLEXES Line of Business Folder

The Sysplex Line of Business (LOB) view is the primary tool for monitoring jobs running under Operating Systems that participate in a Sysplex in your Enterprise. Jobs running under the Operating Systems that have been flagged as Sysplex participating during the database load process can now be monitored via TBSM.

The initial step in creating a Sysplex Line of Business view(s) is to create the Line of Business: SYSPLEXES folder. The Line of Business: SYSPLEXES folder is the top-level container for all individual Sysplex LOB views.

To create the SYSPLEXES Line of Business Folder:

1. From the **Console** menu select **Open new line of business**.
2. Type **SYSPLEXES** in the Name field of the New line of business dialog – SYSPLEXES is a reserved word to TBSM.
3. Click **Create**.

The new Line of Business: SYSPLEXES folder with the reserved name of SYSPLEXES is created as the top-level container. All actual Sysplex LOB views will be inserted into this folder.

Creating Individual Sysplex Line of Business Views

Lines of Business (LOB) views are logical representations of the physical resources contained in the All Resources view. The Sysplex Line of Business (LOB) view is the primary tool for monitoring jobs running under Operating Systems participating in a Sysplex. Save these views so that other users can view them.

You create logical resources by dragging a physical resource from the All Resources view into a Line of Business view. Logical resources are links to the physical resources that reside within the All Resources view. Each link contains a set of filters and controls. When you create a Sysplex Line of Business view, participating Operating System resources are dragged from the All Resources view into your Sysplex Line of Business view.

Note: Only Operating System resources are dragged into a Sysplex LOB view.

To create your individual Sysplex Line of Business view:

1. Open the Line of Business: SYSPLEXES view and select the Line of Business: SYSPLEXES folder.
2. Right click the SYSPLEXES folder to open its menu. Choose **Insert-->Line of Business**. The New Line of Business dialog opens.
3. Type Sysplex and the name of the Sysplex in the following format. (Sysplex is a reserved name that precedes the actual name of the Sysplex.) Example: Sysplex A011
4. Click **Create**.

Dragging and Dropping Participating Sysplex Operating Systems into the LOB View

To drag and drop Sysplex Operating Systems in an LOB view:

1. From the **Console** menu, select **Open resources**.
2. Expand the tree and select the Complex containing the Operating Systems that are part of the Sysplex you are defining. This view remains open for dragging the appropriate operating system resources into your LOB view.
3. From the Window menu, select **Tile**.
4. Click and drag the Operating Systems from the All Resources view and drop into the Sysplex Line of Business folder.

The Effect that Creating Console Traps for Participating Resources Has on a Sysplex

Console traps are used to trap messages related to resources. These traps can be set for any resource in a corporation's enterprise. TBSM can be configured to collect and report on all messages, based on your company's needs and requirements. This provides tremendous flexibility in monitoring your systems enterprise. Console traps are used to trap the messages related to these resources.

Within a Sysplex, during the process of auto discovery or rediscovery, console traps are set on all Sysplex- participating Operating Systems. For example, all jobs that are children of an operating system will have console traps set on all Operating Systems participating in the Sysplex, where that operating system resides. Therefore, if the automation tool were to start a job on one operating system that was discovered on a different operating system, the console trap is already present. The job itself will automatically be moved in the All Resources view to the operating system on which the job started.

Monitoring Operating Systems in a Sysplex Using TBSM

Jobs that run under an Operating System that participate in a Sysplex are not bound to only one Operating System. TBSM allows you to monitor these Operating Systems. In the event an Operating System goes down or is brought-down for maintenance TBSM identifies the condition and automatically moves those jobs to other Operating Systems within the Sysplex.

Note: Console Traps are set on multiple Sysplex-participating Operating Systems to capture messages for a specific job(s). In the event one Operating System is down, another Operating System, which has also been trapping messages on that job(s), takes over.

Changing a Resource to Participating or non-Participating within the Sysplex

The Resource Properties Source/390 page allows you to change a job(s) to either participating or non-participating within the Sysplex. This includes all job types. For example, CICS, DB2, Started Task or Batch Job.

To change a job to participating or non-participating within the Sysplex:

-
1. Open the All Resources view or your Line of Business view.
 2. Expand the view and select the job you want to change to Sysplex participating or non-participating.
 3. Using mouse button 2, click the resource to bring up its menu and then select **Properties**.
 4. Select the Source/390 page.
 5. Select the Participating in Sysplex checkbox to assign the job as participating in the Sysplex.
 6. De-select the checkbox to assign the job as non-participating in Sysplex.
 7. Click **OK**.

Note: Only Operating Systems are displayed in a Sysplex LOB view, not the jobs.
Therefore, this function cannot be performed within a SYSPLEX LOB view.

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TBSM Administration (Administrators)

This section deals specifically with administrative tasks within the TBSM product. These tasks include registering resources, creating Line of Business views, and setting metric thresholds for performance.

Resources and the All Resources View

Within TBSM, you can map applications, subsystems, and technical resources to resources. Registration is the process of defining resources to TBSM. Resources defined to TBSM are known as Registered resources.

Registered resources have a resource name and are located in the TBSM repository. Registered resources are representations of the applications, subsystems, and resources that TBSM actively monitors for availability. In addition to having the previously mentioned attributes, registered resources contain links such as schedules, filters, exceptions, and other resource and resource-specific information. Resources appear on the TBSM workstation graphically as icons and reside in a Tree, Hyperview, or Table.

You can access detailed resource attribute information about a resource's properties by selecting the resource then right-clicking the resource and choosing Properties from the menu.

TBSM can store many different hierarchical views. One hierarchical view is All Resources, which contains all of the registered resources within the Enterprise.

The All Resources view is unique and contains an icon representation for each of the registered resources in the Enterprise. The All Resources view is actually a representation of the physical model of the Enterprise and the base resource collection from which you create views. A set of rules governs the creation, modification, and management of the All Resources view and its resources. The basis of this rule set is the physical and logical containment properties of the systems, subsystems, and resources, within your company's enterprise.

Because of the relative positioning of resources within the All Resources view, parent-child relationships can exist between resources of different types. When discussing resources, it is common to refer to a resource of one type as having child resources or children. For example, a CICS resource may have several Transactions, Files, LUs, and DB Connections that are children of that CICS.

Monitoring for Availability

TBSM monitors resources for state changes and performance characteristics that reflect availability. If the availability of a resource or resources is threatened, TBSM alerts you by overlaying or tagging the resource or subsystem resource icon with an alert icon. The notification of alerts and event management is one of the primary tasks of TBSM. By observing the All Resources view or other resource views, you can discern whether the system, subsystem, or resource is available and performing correctly.

Line of Business Views

You can assemble and view resources that are of interest to you or other groups for monitoring in a collection called a Line of Business View. Line of Business views use a tree design (Tree), Table, or a Hyperview to display resources and include icons for each registered resource that is contained within them. You can create, save, and later access Line of Business views (also known as LOB views). You can open multiple windows, each containing different LOB views, so you can monitor different resources and their various relationships on one physical workstation. You can base LOB views on an actual Line of Business as well as the following:

- An application or set of applications
- A department
- A vertical area of responsibility
- A geographical region

Some examples of Line of Business views are the following:

- Property & Casualty (Line of Business)
- Health Claims, Policy Easy-Access, Order Entry, Help Desk (applications)
- Human Resources (department)
- DASD Management & vertical areas of responsibility
- Far East Operations (geographical region)

Line of Business views enable you to logically organize the resources that you want to monitor. For example, if you want to monitor a company's help desk system, you would construct a Line of Business view by performing the following tasks:

1. Identify the various applications, resources and subsystems that make up the Help Desk system.
2. Verify that those items are registered resources within TBSM.
3. Create a Line of Business view called "Help Desk."
4. Link the identified resources, by means of a drag-drop user interface, into the newly created Line of Business view.

The concept of using Line of Business views to monitor critical information is a powerful and important feature of TBSM. It provides users, having different interests and skill levels, their own customized view of the resources that are important to them.

Navigating the All Resources View and Line of Business Views

Both the All Resources view and a Line of Business view use the same type of hierarchical principle to hold and display resources. You can expand or collapse the view to display different views of resources when applicable. Resources that have a filled-in expansion box adjacent to their icon can be expanded or opened to display the next level of resources below them. Resources that have a blank expansion box are in the open state. Resources that do not have an expansion box are at the lowest level of the branch and do not contain any resources below them. You can select a resource by positioning the mouse pointer on the resource and clicking. If you want to perform an operation on a particular resource, you must first select that resource using this method.

Creating a Line of Business View

To create a Line of Business View:

1. On the Console menu, click New Line of Business. The New LOB View dialog opens.
2. In the View Name box, type the name of the new Line of Business view. You can also add a description.
3. Click **OK**.

At this point, the LOB view you created contains no resources.

Constructing the LOB View

Following the successful creation of a LOB view, you can start to drag and drop the resources from the All Resources view or LOB views into the newly created LOB view.

Note: You can't drag and drop into the left pane.

Unlike the All Resources view, where you maintain relationship conformity, an LOB view can have resources within it at any hierarchical level. For example, the relationship within the physical All resources is such that a Complex contains Machines, which contain LPARS, which contain Operating Systems, which contain jobs such as CICS, Batch, and STC resources.

LOB views have no such constraints. You can drag an LU resource from the All Resources view and place it in the LOB view at the same level as a CICS resource. The placement of resources within an LOB view is flexible and allows you to place any resource at any level. You can also place LOB views within other LOB views giving you an infinite range of possible views.

To place a resource in a Line of Business view, make sure the target LOB view is open and available in the workspace. Also you must open and make available the All Resources view or source LOB view on the workspace. If they are not open, open them. (Refer to the section, *Opening an LOB View*).

Note: If you copy an existing LOB underneath another LOB and then you rename either of the LOBs, both of the LOBs are renamed. For example, suppose you create an LOB named folderA, then you create an LOB named folderB. Next you drag folderA under folderB. At this point you have 2 LOBs named folderA. You rename the folderA that is under folderB to folderC. You will notice that folderA that is above folderB is also renamed folderC.

For the LOBs to have different names, rather than copying an existing LOB under another LOB do this:

1. Select the LOB.
2. Right-click on the LOB to open its menu.
3. On the menu, choose **Insert-->Line of Business**.
4. In the **Name** field on the **Create a New Line of Business** dialog, enter the name for the new LOB.

Registering Resources on the All Resources View

Registration is the act of identifying resources to TBSM for monitoring. You can register resources at the TBSM workstation by using the Insert command, or you can have TBSM automatically discover resources within your enterprise. Inserting resources within the All Resources view using the Insert command requires that you know what the resource is, its name and its location. The Insert command is adequate if you have that information and the number of resources that you have to register is small.

If the number of resources is large (large being greater than 20) you may want to consider having TBSM discover them. The discovery process “listens” on the master console for a defined period for resources to start or stop. It then sends the necessary resource information to the workstation, so you can decide whether to complete the registration or reject the resource. This is especially useful when you need to register resources and do not have the complete information. The discovery process is also useful when resources, through their normal operations, have migrated from one location to another. For example, nightly Batch Jobs execute wherever there are an abundance of resources. They may run on one machine one night and another the next evening.

Inserting Resources in the All Resources View

You can insert certain resources only on the All Resources view. The All Resources view contains all of the resources you register within TBSM. Resources that reside in a Line of Business view are logical resources that you create by making a copy of registered resources from the All Resources view, or another Line of Business. Inserting a resource on the All Resources view is one of the methods of registering a resource within TBSM.

The Insert Resource function allows you to create a resource, name it, and position it within the All Resources view. You begin by selecting the resource, which contains the newly created resource. You traverse the All Resources view until the desired resource is found, and then click Insert from the main menu or use the shortcut menu directly from the resource selection.

Both menus are context-sensitive, therefore, only the allowable resources appear as choices. (Remember the All Resources view contains a rule set that enforces relationship conformity.) For example, if you want to insert a CICS Region, you would traverse the All Resources view to the Operating System (OS) that contains the CICS you want to insert within it. Select the Operating System and click **Insert-->CICS Region**. The Insert CICS Region dialog box opens, enabling you to type or select the necessary resource attributes from the text boxes. Click Create to insert the resource.

Inserting a Resource

To insert a resource:

1. Select the resource container where you want to add the newly created resource to the All Resources view.
2. On the Insert menu, click the resource that you want to insert. The Insert dialog opens.
3. In the Name box, type the name of the resource.
4. Click **Create**. The Property Sheet for the resource opens. Type the remaining attributes of the resource.
5. Click **OK** to close the Property Sheet and return to the application.

OR

1. Select the resource, right-click, point to Insert, and click the resource.
2. Follow Steps 3-5 from the previous instructions.
3. Right-click a resource point to Insert and then click the resource you want to insert.

Unlike, other TBSM resources, TBSM/D resources cannot be manually inserted into the physical hierarchy tree. When the instance is created, information is gathered from the event and used as correlation data to match monitor events containing state information to the correct instance. Since it is unlikely that an operator could provide the data needed to allow correlation to work, TBSM/D resource instances do not appear under the Insert menu.

Deleting Resources

Deleting a resource from the TBSM workstation removes the selected resource and its children from the current active view, whether it is the All Resources view or a Line of Business. For example, if you select a CICS resource and perform a delete, child resources (if there are any present) such as Transactions and Database Connections are deleted. The ramifications of deleting a resource can be great depending upon the resource links that exist to other resources or views.

Deleting a Resource from the All Resources View

If you are deleting a resource contained in the All Resources view, you are deleting the registered resource from TBSM. If this resource contains links to any other logical resources residing in other Line of Business views, you also delete those logical resources and their links. You are the only one who can delete a resource from the All Resources view.

Note: It is important to remember that when you delete a resource it removes the resource(s) from TBSM, but does not delete the actual resource(s) from the data center. Deletion of a resource from TBSM stops all monitoring for that resource and its children. This operation can be costly if ill-performed; therefore, we recommend that you observe extreme caution.

Deleting a Resource from a Line of Business View

If you delete a resource contained in a Line of Business view, you are deleting a logical resource. Deleting a logical resource removes the logical resource from the current view, and any other Line of Business views that contain that logical resource.

The way to delete a registered resource from the All Resources view or a logical resource from a Line of Business view is the same.

To delete a resource:

1. Select the resource you want to delete.
2. On the Edit menu, click Delete.
3. In the Delete Resource confirmation window, click Yes.

OR

1. Select the resource you want to delete.
2. Right-click the mouse button to open a menu for the resource.
3. Click **Delete**.
4. In the Delete Resource confirmation window, click Yes.

Renaming a Resource

You can change the name of a resource, but be selective of your new resource name. TBSM does not enforce duplicate naming or any other conventions. You can rename a resource from the Properties window.

Operational Tasks

The task processor interacts with the Tivoli Framework (TMF) or Tivoli NetView for OS/390 environments. Command requests from the TBSM operator are routed to the task processor, which then routes the request to the appropriate environment for execution. The responses are returned to the task processor where they are correlated to the request and then routed back to the requesting operator.

The task processor communicates with TBSM Task Server using TCP/IP. The Task server communicates with Tivoli NetView for OS/390 using either TCP/IP or LU 6.2. For the distributed environment, the task processor communicates with TMF using native framework calls. For needed authorization configuration please refer to the Tivoli Business Systems Installation and Configuration Guide.

TMF tasks are issued to the framework using the operator id that the Tivoli BSM Task Server is running under. Under NT, the operator id that the task processor is running under can be set via the Services applet in the Control Panel. Under UNIX, the task processor runs as Root.

Tivoli NetView for OS/390 commands are issued using the Tivoli NetView for OS/390 operator id and password that is defined to the task processor using the `hostcmdoper` command. For more information about the `hostcmdoper` command, see Appendix F in this guide.

Perform the following operational tasks by right-clicking the resource and selecting Operational tasks from the menu:

- Query_Thresholds
- Boot
- Shutdown

TBSM Welcome Window

A welcome window is displayed in the workspace when the TBSM Console first appears. The welcome window goes away when a view is opened. The Welcome Window identifies and describes the TBSM product but it can be customized to inform Operators who to contact for problems or contain other pertinent information.

Two default welcome window files are shipped with TBSM. These files are located in the JavaAppServer\banner directory in the base TivoliManager directory, <drive:>\TivoliManager\JavaAppServer\banner. File names are:

TBSMWelcomeOperator.html

Displayed when an Operator signs on

TBSMWelcomeAdministrator.html

Displayed when an Administrator signs on

Customizing the TBSM Welcome Window

To customize the Welcome Window, edit the TBSMWelcomeOperator.html file. (It's a good idea to make a backup copy of the existing file before you begin.) The location for your customized information is shown in bold font in the following sample file. Replace that information with your customized information.

```
<html>
<head>
<title>Welcome to the Tivoli Console</title>

<STYLE type="text/css">
    BODY {
        background : #FFFFFF url(TBSMWelcomeBackground.gif) no-repeat;
    }
</STYLE>
</head>
<body bgcolor="#FFFFFF" marginheight="0" marginwidth="0" topmargin="0"
leftmargin="0">
<table border="0" width="698" cellspacing="0" cellpadding="0">
    <tr>
        <td></td>
        <td></td>
        <td></td>
    </tr>
    <tr>
        <td></td>
        <td></td>
        <td></td>
    </tr>
    <tr>
        <td></td>
        <td></td>
        <td></td>
    </tr>
    <tr>
        <td>&nbsp;</td>
        <td valign="top" align="left">
            <p align="left"><font face="Arial, Helvetica, sans-serif" size="-1"
color="5E6D81"><br>
Tivoli Business Systems Manager (TBSM) is a business systems management tool
that enables you to perform distributed management, OS/390 management, or
both.
Even when a business system spans multiple platforms, TBSM enables you to
graphically monitor and control interconnected business components and
operating system resources. A business component and its resources are
```

```

referred
    to as a Line of Business (LOB). Using the LOB concept, TBSM helps you plan,
define,
    and control your business system. TBSM, together with other Tivoli management
    components, helps you manage the dependencies between business components and
    their underlying infrastructure.
</td>
<td>&nbsp;</td>
</tr>
</table>
</body>
</html>

```

TBSM Banner

A Banner appears at the top of the TBSM Console window. It identifies the current user's role, and can be customized to display your company's name and name of the user's role.

Two default banner files are shipped with TBSM. These files are located the JavaAppServer\banner directory in the base TivoliManager directory, <drive>:\TivoliManager\JavaAppServer\banner. File names are:

TBSMBannerOperator.html

Displayed when an Operator signs on

TBSMBannerAdministrator.html

Displayed when an Administrator signs on

Customizing the TBSM Banner

To customize the TBSM banner, edit the TBSMBannerAdministrator.html file. (It's a good idea to make a backup copy of the existing file before you begin.) The location for your customized information is shown in bold font in the following sample file. Replace that information with your customized information

```

<html>
<head>
<title>Banner</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<style type="text/css">
<!--
.largeText
{font-family: Arial, sans-serif; font-size: 14pt; font-style: normal; font-weight:
bold; color: #FFFFFF}
.smallText
{font-family: Arial, sans-serif; font-size: 10pt; font-style: normal; font-weight:
bold; color: #FFFFFF}
-->
</style>
</head>

<body bgcolor="#9AAFC4" topmargin="0" leftmargin="0" marginwidth="0"
marginheight="0">
<table width="100%" border="0" cellspacing="0" cellpadding="0">
<tr>
<td width="360" background="bannerTile.gif"></td>
<td width="90%" background="bannerTile.gif" align="right">
<!-- Change TBSM to Company Name, if desired -->
<font class="largeText">Tivoli Business Systems Manager</font>
<br>
<font class="smallText">SYSTEM ADMINISTRATOR</font>
</td>
<td width="10%" background="bannerTile.gif">&nbsp;</td>

```

```

    </tr>
</table>
<span class="smallText"></span>
</body>
</html>

```

The TBSMBannerOperator.html file is identical except has **SYSTEM OPERATOR** instead of **SYSTEM ADMINISTRATOR**

Four other banner files that you can choose from and use as templates for your banner are also in the JavaAppServer\banner directory in the base TivoliManager directory, <drive>:\TivoliManager\JavaAppServer\banner. File names are:

- banner1.html
- banner2.html
- banner3.html
- banner4.html

These files are identical to the banner sample above except they have different images on the left side.

Modifying Launch-in Listening Ports

In addition to supporting Launch-out with context, the TBSM Console supports other applications launching out from their user-interface into the TBSM Console. (At the time of the publication of this document no applications currently support launch into the TBSM console.)

When the TBSM console starts, a Launch-in-listener is created to listen for launch-in connections. An entry in the RDM_LAUNCHER (launch table) table in the TBSM database defines a range of port numbers the Launch-in-listener uses when it creates a socket. The port range that is shipped with TBSM is 4580-4583. These ports may conflict with other port-using software that is installed and running on the same machine where the TBSM Console is running. The following instructions describe how to change the port range that the TBSM Console's Launch-in-listener uses.

There are unique entries in the launcher table for each platform that TBSM runs on. If in your organization the different users of the TBSM console use different platforms (98, ME, NT, 2000, UNIX) each entry for the appropriate platform must be changed.

There are two ways to modify the port-range.

- Use SQL Server Query Analyzer to directly update the correct entry in the TBSM database.
- Use TBSM supplied scripts to delete and then recreate the correct entry in the TBSM database.

Using SQL Server Query Analyzer

To find all the entries that define port ranges for TBSM:

1. Select * from RDM_LAUNCHER where RDM_NAME = 'TBSM'

An example to modify a specific entry:

```
update RDM_LAUNCHER set MIN_PORT = 5670, MAX_PORT = 5680
where RDM_NAME = 'TBSM' AND PLATFORM = 'Windows 2000'
```

Using TBSM Supplied Scripts

TBSM scripts are located on the CD in the bin directory. The two scripts that are used for modifying launch table entries are:

- AddAppLauncherEntry.sh
- DeleteAppLauncherEntry.sh.

LaunchEntries.txt, located in the sql directory, is an input file that can be used with the Add script and it contains definitions for each RDM_LAUNCHER table entry. To use the script:

1. Determine which entries need to be modified and delete each of those entries with DeleteAppLauncherEntry.sh. An example invocation:

```
DeleteAppLauncherEntry.sh -S <serverName> -U <user> -P <password>
-n TBSM -l "Windows 2000"
```

2. To replace the deleted entries, make a copy of LaunchEntries.txt, and name it MyLaunchEntries.txt. Use a text editor to modify the port ranges on the appropriate entries in MyLaunchEntries.txt. Each entry is bracketed by BEGIN_ROW and END_ROW. An example to add entries:

```
AddAppLauncherEntry.sh -S <serverName> -U <user> -P <password>
-f MyLaunchEntries.txt
```

Entries that currently exist in the RDM_LAUNCHER table will NOT be updated.

The deleted entries will be recreated with the new port ranges you specified in MyLaunchEntries.txt.

Note: Usage information is available for the scripts. Invoke a script with no parameters and its usage will be written to the screen.

Source/390 Functions (Administrators)

TBSM Source/390 functionality is concerned with packaging and sending Source/390 commands from the TBSM NT Server to Source/390, the OS/390-based agent. The TBSM workstation contains some interface additions that allow TBSM administrators to issue these commands by clicking a mouse.

The class called Performance Monitor is used to represent performance monitors from multiple vendors. The Performance Monitor class allows you to manage the connections between Source/390 and performance monitors. It also allows administrators to manage the connections between the monitors and the resources that they monitor, such as MVS and CICS.

Additionally, attributes have been added to existing classes such as MVS and CICS and others to better manage connectivity to performance monitors and registration of these resources within TBSM.

TBSM Source/390 Commands

The Source/390 agent component of TBSM is used to collect events that occur within the OS/390-based environment, which includes the Operating System (MVS) and CICS environments. Source/390 interfaces with the master console and also with point products such as performance monitors, automation tools, and schedulers.

You can perform all administration for Source/390 from the TBSM workstation by selecting a resource from the All Resources view and right-clicking to view commands from the shortcut menu. Execution from the shortcut menu allows you to send commands to multiple Source/390 agents running on various Operating Systems that reside on a Machine, within a Complex or even across the Enterprise. For example, if you wanted to register a TBSM resource on all of the Operating Systems that reside in a given Complex or data center, select the Complex then right-click and select **Source/390-->Register resources**. Doing this formulates the necessary command(s) and uploads the command(s) to each Operating System (image) within the Complex, where Source/390 interprets the command(s) and registers the resources.

Executing TBSM Source/390 Commands

For TBSM Source/390 commands to work, you must enable Upload on an operating system. If Upload is not enabled, none of the OS/390 commands is executed on the disabled operating system. Enabling upload is a simple checkbox control that can be set on the Operating System Source/390 page. To execute Source/390 commands, first select a descendant in the workspace, then right-click on the descendant to open a menu and then

choose a command. For example, if you select a resource that is an Enterprise, any command you issue is executed on each Operating System where Source/390 is running and where upload is enabled.

Understanding TBSM Source/390 Commands

The following section describes TBSM Source/390 commands from a functional perspective, their execution state, and when they should be executed in relationship to each other. Many of these commands are automatically executed upon the startup of Source/390, and do not need to be executed from the TBSM workstation unless it is necessary for administrative purposes. Remember you must enable Upload so the TBSM Windows server can send these commands to TBSM.

Initialize Source/390

The Initialize Source/390 command is the first command executed upon startup of Source/390. It runs after the address spaces for all of the Source/390 components have initialized and are running. It lets Source/390 become aware of the TBSM All Resources view, specifically the upper nodes of the tree that contain the aggregate resources from Enterprise down through Operating Systems.

Resources from the following classes are initialized upon the execution of the Initialize Source/390 command:

- Enterprise
- Complex
- Machine
- LPAR
- Operating System (OS)

Register Resources

The command to register resources is the second step to identify resources within TBSM. All of the resources that are on lower level nodes than an OS need to be registered within Source/390. The registration of resources involves the creation of traps for each resource being registered so those messages arriving from the resources that the resource represent are captured by Source/390.

You can register resources such as CICS Regions, STCs, DB2 databases, Batch Jobs, and others all at once by executing the Register resources command at the Complex, Machine, LPAR, or Operating System level. The command can be executed across multiple images or Operating Systems by selecting an aggregate resource such as a Complex and executing the command. If executed from these aggregate resources, all of the resources below this node are registered. Resources can also be individually registered once a resource has been created on the All Resources view.

The Resource Registration menu for an individually selected DB2 Database resource enables you to send a Register or Unregister command to the Source/390 running on the Operating System where the resource is running.

Set Dynamic Traps

The Set Dynamic Traps command instructs Source/390 to set specialized traps for non-key batch jobs. Non-key batch jobs do not normally have traps set for starting and stopping,

however Abend messages are captured for all Batch Jobs--both key and non-key. Assuming Dynamic traps are set, if a non- key Batch job abends, additional traps are automatically set for that abended non-key job allowing TBSM to be notified when that Batch job starts and ends.

Set TDQ Message Capture

The Set TDQ Message Capture command allows Source/390 to capture Transient Data Queue message from CICS regions running on the OS where the Source/390 is running. In addition to running this command, CICS regions must enable or invoke an exit to provide TDQ messages within the CICS. If both the CICS exit is enabled and the TDQ Message Capture is set on Source/390, TBSM collects and stores TDQ messages.

Send File Status Request

The Send File Status Request command instructs Source/390 to retrieve the File Status for all CICS regions that are running on the same OS as that Source/390 agent. A performance monitor that supports File Status processing through TBSM must also be connected to the CICS region or regions where File Status is desired.

Configure TGM Task Server

Each MVS Operating System resource in TBSM must be configured so that it can invoke tasks for CICS, DB2, and IMS. This configuration involves setting several operating system attributes. These attributes are:

TGMTaskServer

Specifies the name of the host running the TBSM Task Server used to communicate with NetView/390

NVDomain

Specifies the name of the NetView domain on which the tasks for this Operating System are executed

NVUser

Specifies the NetView user id used to execute tasks

NVPassword

Specifies the password for the specified NVUser

To view or change these resources:

1. Select the operating system resource.
2. Right-click the resource to open the menu.
3. Choose **Source/390**.
4. Choose **Configure TGM Task Server...**
5. To see the current values for the configuration attributes, click the **Execute** button without filling in any of the value fields. The current values are displayed.
6. To update any of the values, type the new value in the value field next to the name of the attribute. (You may change more than one value.) Press the **Execute** button to apply the new values. Once the new values are set, the next task that is executed will use these values.

Upload Processing

The processing model for sending commands to Source/390 and the execution of those commands by Source/390 is asynchronous. This means the send or upload process does not wait for Source/390 to process the incoming commands. The two TBSM processes that are involved with Upload processing are ASIMVUploadRuleSvc and Source/390.

Audit Messages: Verifying Upload Processing

Upload processing involves many TBSM components and is distributed across two environments: Windows NT and Source/390. Because of this and its asynchronous processing model, it is necessary that administrators understand how to verify correct processing all through the model. Audit messages are implemented within both the Windows NT environment and the Source/390 environment for this purpose. Audit messages within the Windows NT environment are posted by ASIMVUploadRuleSvc and by the Tivoli BSM Application Server directly to the Operating System that represents the Source/390 Operating System. TBSM Source/390 logs audit messages within the Source/390 environment to the JES message log.

Source/390 Administration Using Windows NT Components

You can access TBSM Source/390 commands from a TBSM workstation by using shortcut menus. You can execute Source/390 commands that perform such tasks as initializing Source/390, registering resources, and requesting file status. (Many of these commands are executed automatically during the startup of Source/390 following a system IPL or Source/390 restart.)

The automatic execution of these commands results in TBSM Source/390 sending state information in the form of messages to the TBSM NT servers. Upon receipt of these state messages ASIMVUploadRuleSvc evaluates the information and formulates the appropriate commands to send and uploads the appropriate command or command set to Source/390, where the command is executed. ASIMVUploadRuleSvc runs on any one of the NT Servers within the TBSM Server suite and is typically configured on the same host as the TBSM Listeners and TBSM Event Handlers because they also are used for processing data from Source/390.

Start and stop ASIMVUploadRuleSvc through the Windows NT Server Manager. It has no dependencies as to when it needs to be started or stopped in relation to other TBSM services. In addition to processing messages regarding initialization of Source/390, ASIMVUploadRuleSvc also evaluates other conditions that are relevant in the execution of the Source/390 environment.

Configuring TBSM Resources for Source/390 Administration

To send commands to Source/390 from TBSM servers, security, and other configuration parameters must be set correctly.

The Source/390 properties sheet for the Operating System is the primary point of configuration for Source/390 and it contains a checkbox for enabling Source/390 Upload. When Upload is enabled, administrative commands are uploaded to Source/390 from the TBSM NT servers. This means the checkbox must be checked to administer Source/390 from TBSM NT servers. The Source/390 properties sheet contains the user name and password for Upload as well as security and configuration information for the Performance

Monitor that monitors this Operating System. The Source/390 properties sheet also contains various controls for security and connectivity between Source/390 and performance monitors.

The Source/390 properties sheet is where you set the performance monitor APPLID, the collection interval, and the number of logical rows to be collected. This properties sheet has buttons (**Connect**, **Disconnect**, and **Recycle**) for controlling connections between the performance monitor for the operating system and the operating system itself.

Performance Monitor Class

TBSM contains a class called Performance Monitor. This class is intended to represent performance monitors of any type from any vendor in the Source/390 environment.

The Performance Monitor is a registered resource within TBSM that represents the performance monitors that are running within your enterprise. If the Performance Monitor starts, stops or abends, TBSM captures the message and posts the message to the resource that represents the Performance Monitor. Performance Monitor resources are also used to maintain configuration information that is important to TBSM Source/390.

To view the property sheet for a performance monitor, double-click the performance monitor resource.

Configuring a Performance Monitor through TBSM

You can configure and then connect a performance monitor to the resource that it is monitoring from the properties sheet for that performance monitor. Using its property sheet, you can also maintain a performance monitor's configuration information.

The performance monitor settings include APPLID, which is the resource name of the performance monitor. This APPLID must be identical to the one on the Source/390 properties sheet for every resource the performance monitor is monitoring. For example, if the performance monitor is an Omegamon CICS (a single instance of Omegamon CICS Performance Monitor is capable of monitoring many CICS regions simultaneously), and the APPLID is defined as DPODB2D1, each CICS region that it monitors must also have the APPLID defined as DPODB2D1.

The properties page has buttons (**Connect**, **Disconnect**, and **Recycle**) for connecting or disconnecting all sessions to all resources that this performance monitor is monitoring.

On the properties sheet you can also select the vendor and product for the performance monitor and administer the performance monitor's user name and password. The **Register** and **Unregister** buttons allow you to register or unregister this resource only.

Administering File Control Table (FCT) Schedules

TBSM monitors availability of files within CICS Regions by examining the File Control Table (FCT) for each CICS Region that it is monitoring. These examinations occur on request or they can be scheduled to start throughout the day. TBSM maintains a schedule for each CICS Region that it monitors. The schedule uses a 24-hour clock. For example, if you want to add an FCT time for 1 PM, you would enter 13:00:00.

To access FCT Times, right-click the CICS resource on the workspace and choose **Properties** from the menu. On the properties sheet, click **FCT Times**. FCT Times contains the time listings when TBSM Source/390 retrieves the status for the files that are contained within this CICS region.

You can modify the time schedule by using the **Add**, **Edit**, and **Delete** buttons. Pressing the **Add** button opens the **Add FCT Time** dialog where you can add an FCT time for the resource. Pressing the **Edit** button opens the **Edit FCT Time** dialog where you can change the time to retrieve the status for the resource. Pressing **Delete** eliminates the time from the **FCT Time Listing** schedule.

Once the desired FCT times are set, click **Send** to forward the FCT schedule to Source/390. Doing this completely rewrites the existing schedule that Source/390 is maintaining for this CICS resource.

Viewing FCT Schedules for Multiple CICS Regions

You can view the FCT Schedules for multiple CICS regions by selecting an enterprise, complex, or operating system resource on the workspace and then right-clicking and choosing **View-->FCT Times**. Viewing FCT schedules for multiple CICS regions is useful when comparing FCT schedules between multiple CICS regions. Doing this can be helpful because retrieving file status causes some overhead on a system and effective scheduling of the status checks can minimize that overhead.

When you click FCT Times from the menu, the FCT Times window is displayed. The columns contain the full path of the CICS regions from the All Resources view (Path), the number of files that the region contains (Number of Files) and the various times (Run Time) when the FCT retrievals are scheduled. You can sort any of the columns in either ascending or descending order



TBSM Generated Exceptions

The following exceptions apply to TBSM resources except where noted:

Exception	Category	Description
SCHV	Schedule Violation Exception	Indicates scheduling violations during an Active period
UNVF	Unavailable File	Indicates which files sent to the CICS Regions are not available

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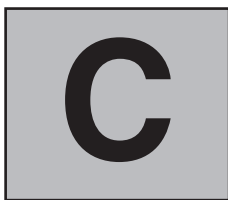
OS/390 Exception Events from Omegamon

The following exceptions apply to MVS resources except where noted:

Exception	Category	Description
ABND		Indicates the job is in abnormal termination
ASER	Auxiliary Storage Exceptions	Indicates errors on all page datasets
ASMI	Paging Related Exceptions	Indicates a high ASM I /O count
DNRS		Indicates DASD is not responding to I/O requests
DRDY		Indicates DASD is in dropped ready condition
DYPR		Indicates the dynamic path reconnect inactive
ELAP		Indicates excessive elapsed time
FXFR	Storage Exceptions	Indicates excessive Fixed Frames
MAXU	Storage Exceptions	Indicates if a number of used and unusable address spaces exceed a threshold
NVSC	Paging Related Exceptions	Indicates excessive non-VIO slots used
PAER	Paging Related	Indicates errors on all page datasets
PAIO	Paging Related Exceptions	Indicates excessive I/O time to page DS
PAOD	Paging Related Exceptions	Indicates there is an open DS on a paging volume
PATM	Paging Related Exceptions	Indicates high average I /O time for page DS
PDNO	Auxiliary Storage Exceptions	Indicates that the page datasets are not operational
PERA	System Software Exceptions	Indicates PER is active for the job
PERS	System Software Exceptions	Indicates PER is active for the system
PSCU		Indicates a percentage of steps CPU used
SDNO	Auxiliary Storage Exceptions	Indicates SWAP datasets are not operational
SLOG	System Software Exceptions	Indicates the SYSLOG not recording
SLOT	Paging Related Exceptions	Indicates less than n slots are available
SSRT	Paging Related Exceptions	Indicates high swap set response time
SWER	Auxiliary Storage Exceptions	Indicates errors on the swap dataset
SWPC		Indicates excessive Swap counts
TNRS		Indicates the tape device not responding
TRDY		Indicates the taped device in dropped ready
TSOR	Address Space Related Exceptions	Indicates excessive TSO response time for current period (See TRSP session option)
VISC	Paging Related Exceptions	Indicates excessive VIO slots used
VTOC		Indicates the indexed VTOC switched is inactive

Exception	Category	Description
WAIT		Indicates excessive Time in a Wait state
WSHI		Indicates the working set size > n K
WSLO	Address Space Related Exceptions	Indicates working set size < n K
WTOR	System Software Exceptions	Indicates less than n WTOR buffers available
XACP	SRM Related Exceptions	Indicates average CPU exceeds n percent
XCHN	Hardware Related Exceptions	Indicates missing channel path analysis Use CHNM to set the Channel Paths to Monitor
XCON	System Software Exceptions	Indicates less than n WTO buffers available
XCPU	Hardware Related Exceptions	Indicates missing CPU analysis. Use CPUM to set the Channel Paths to Monitor
XCSA	Common Storage Exceptions	Indicates high CSA utilization
XDDR	System Software Exceptions	Indicates DDR swap is in progress
XDOM	SRM Related Exceptions	Indicates SRM Domain is overloaded
XDPR	SRM Related Exceptions	Indicates the demand-paging rate has exceeded n pages per second
XECS	Common Storage Exceptions	Indicating high ECSA utilization
XESM	Storage Exceptions	Indicates a low mount of expanded storage online
XGTF	System Software Exceptions	Indicates GTF is active
XGRS	System Software Exceptions	Indicates the GRS ring is broken
XJCA		Indicates High Job ECSA growth
XJCB		Indicates High Job CSA utilization
XJSA		Indicates High Job ESQA growth
XJSB		High job SQA growth
XMCA	System Software Exceptions	Indicates Monitor Call is Active
XMEM	Hardware Related Exceptions	Indicates < n K of real memory is currently online
XMPP	SRM Related Exceptions	Indicates the milliseconds per page value have exceeded in milliseconds
XMTA	Address Space Related Exceptions	Indicates Missing Task Analysis (Use "MTA" command to display and set table)
XOLT	System Software Exceptions	Indicates OLTEP is active
XPRT	SRM Related Exceptions	Indicates the page fault rate exceeds n pages per second
XREP	System Software Exceptions	Indicates WTOR replies are outstanding
XRMF	System Software Exceptions	Indicates the RMF monitor is not recording
XSCA	Common Storage Exceptions	Indicates high ESCA system growth
XSCB	Common Storage Exceptions	Indicates high CSA system growth
XSFR	Storage Exceptions	Indicates excessive address space use of expanded storage
XSMA	Paging Related Exceptions	Indicates low expanded storage migration age
XSMF	System Software Exceptions	Indicates SMF dataset unavailable
XSMR	Paging Related Exceptions	Indicates high-expanded storage page migration
XSPM	Paging Related Exceptions	Indicates high-expanded storage page movement

Exception	Category	Description
XSQA	Common Storage Exceptions	Indicates high SQA overflow
XSRM	SRM Related Exceptions	Indicates SRM MPL adjustment analysis exception
XSSA	Common Storage Exceptions	Indicates high ESQA system growth
XSSB	Common Storage Exceptions	Indicates high SQA system growth
XUCA		Indicates high job ECSA use
XUCB		Indicates high job CSA use
XUIC	Storage Exceptions	Indicates high demand for real storage (low UIC)
XUSA		Indicates high job ESQA use
XUSB		Indicates high job SQA use



CICS Exception Events from Omegamon for CICS

The following exceptions apply to the CICS resources except where noted:

Exceptions	Category	Description
AMXP	Task Control Exceptions	Indicates the active max tasks > n%
AMXT	Task Control Exceptions	Indicates at or over active max tasks
CMXP	Task Control Exceptions	Indicates class max tasks > n%
CMXT	Task Control Exceptions	Indicates system at CMXT for class n
CPHI	MVS (CPU, Virtual, and Real Storage) Exceptions	Indicates CPU rate > n %
CPLO	MVS (CPU, Virtual, and Real Storage) Exceptions	Indicates CPU rate < n %
DB21	Database Exceptions	Indicates the number of requested threads for transaction > n
DB22	Database Exceptions	Indicates the number of thread requests for transaction > n%
DB2A	Database Exceptions	Indicates the number of aborts for transaction > n %
DB2M	Database Exceptions	Indicates the number of active threads for transaction > n
DB2T	Database Exceptions	Indicates the number of threads in use for transaction > n%
DB2W	Database Exceptions	Indicates the number of Waits for transaction > n%
DBON		Indicates CICS is not attached to DB2
DBUP	Database Exceptions	Indicates CICS attached to DB2 at shutdown
DBMN	Database Exceptions	Indicates DL/I Database monitor active
DLCL	Database Exceptions	Indicates DBCTL inactive
DLDB	Database Exceptions	Indicates DMBs unavailable > n
DLPB	Database Exceptions	Indicates PSBs unavailable > n
DLTH	Database Exceptions	Indicates DL/I threads utilization > n%
DMBP	Database Exceptions	Indicates DMB pool utilization > n %
DNRS	I/O Related Exceptions	Indicates DASD not responding
DPRO	Omegamon Exceptions	Indicates CICS dispatch priority exceeds Omegamon
DRDY	I/O Related Exceptions	Indicates DASD dropped ready
DSAV	Storage Control Exceptions	Indicates DSA pages available < n

Exceptions	Category	Description
DSHI	Storage Control Exceptions	Indicates DSA used percentage > n %
DSIZ	Storage Control Exceptions	Indicates total DSA size < n pages
DSLO	Storage Control Exceptions	Indicates DSA used percentage < n K
DSTO	Storage Control Exceptions	Indicates DSA available storage < n K
DUMP	General Exceptions	Indicates CICS is performing a system dump
DXAB	Omegamon Exceptions	Indicates Bottleneck analysis task has abended
ELAP	Job Address Space Related Exceptions	Indicates excessive elapsed time
ENQP	Database Exceptions	Indicates Enqueue pool utilization > n %
ESAV	Storage Control Exceptions	Indicates EDSA pages available < n
ESHI	Storage Control Exceptions	Indicates EDSA used percentage > n
ESIZ	Storage Control Exceptions	Indicates the total EDSA < n pages
ESLO	Storage Control Exceptions	Indicates the EDSA used percentage < n
ESOS	Storage Control Exceptions	Indicates EDSA short-on storage
ESTO	Storage Control Exceptions	Indicates EDSA available storage < n K
EXPD	Omegamon Exceptions	Indicates Omegamon product expiration date
GRSP	Omegamon Exceptions	Indicates the number of transaction, program, terminal, or LU response exceeds nn seconds
INAB	Omegamon Exceptions	Indicates interval recording collector abend
IOHI	I/O Related Exceptions	Indicates I /O rate exceeds n per second
JCJS	I/O Related Exceptions	Indicates journals waiting for WTORs
LSQA	MVS (CPU, Virtual, and Real Storage) Exceptions	Indicates contiguous LSQA < n K
MAXP	Task Control Exceptions	Indicates total Max Tasks > n%
MAXR	Global Resource Limit Exceptions	Indicates the number of tasks is over the threshold for CPU consumption
MAXT	Task Control Exceptions	Indicates the number of tasks is at or over max tasks
MAXU	Job Address Space Related Exceptions	Indicates if a number of used and unusable address spaces exceed a threshold
NDMP	Global Exceptions	Indicates the number of transaction dumps exceeds n
OSCH	MVS (CPU, Virtual, and Real Storage) Exceptions	Indicates contiguous OSCOR > n K
OSCL	MVS (CPU, Virtual, and Real Storage) Exceptions	Indicates contiguous OSCOR < n K
PAGE	MVS (CPU, Virtual, and Real Storage) Exceptions	Indicates the Page-in rate > n per second
PCRT	Storage Control Exceptions	Indicates Program compressions > n
PSCU	Job Address Space Related Exceptions	Indicates the percentage of step CPU used
RMTH	Task Control Exceptions	Indicates the remote links in use exceeds n % or remote scheduler pending for system
RMTT	Task Control Exceptions	Indicates the total link waits > n

Exceptions	Category	Description
SDMP	General Exceptions	Indicates the number of system dumps exceeds n
SRHn	VSAM Exceptions	Indicates LSR pool n strings in use > nn %
SRLn	VSAM Exceptions	Indicates LSR pool n look aside ratio < nn%
SRTn	VSAM Exceptions	Indicates LSR pool n strings waits > nn
STIO		Indicates the string waits per I /O > n%
STRU		Indicates the strings in use > nn %
STRW		Indicates the total string waits > n
SVSY	Storage Control Exceptions	Indicates that the number of Storage violations > n
SVTK	Storage Control Exceptions	Indicates the number of storage violations / task > n
SVTR	Storage Control Exceptions	Indicates that the number of Storage violations / terminal > n
SWPC	Job Address Space Related Exceptions	Indicates Excessive Swap counts
TDBU	Transient Data Exceptions	Indicates TD buffers in use > n %
TDBW	Transient Data Exceptions	Indicates TD total buffer waits > n
TDCI	Transient Data Exceptions	Indicates TD CIs in use > n %
TDHI	Transient Data Exceptions	Indicates TD queue exceeds trigger
TDQU	Transient Data Exceptions	Indicates TD queue length > n
TDSH	Transient Data Exceptions	Indicates TD strings in use > n
TDST	Transient Data Exceptions	Indicates TD total string waits > n
TNRS	I/O Related Exceptions	Indicates tape is not responding
TPDR	I/O Related Exceptions	Indicates tape dropped ready
TSBU	Temporary Storage Exceptions	Indicates TS buffers in use > n %
TSBW	Temporary Storage Exceptions	Indicates TS current buffer waits > n %
TSSH	Temporary Storage Exceptions	Indicates TS strings in use > n %
TSST	Temporary Storage Exceptions	Indicates TS total string waits > n
VCAS		Indicates the data CA splits > n
VCIS		Indicates the data CI splits > n
VINX		Indicates the index CA/CI splits new extents
VMEX		Indicates the new data extents > n
VTMA	I/O Related Exceptions	Indicates VTAM ACB not open
WAIT	Job Address Space Related Exceptions	Indicates excessive Time in Wait state
WSHI	MVS (CPU, Virtual, and Real Storage) Exceptions	Indicates working set size > n K
WSLO	MVS (CPU, Virtual, and Real Storage) Exceptions	Indicates working set size < n K
XJCA	Job Address Space Exceptions	Indicates High job ECSA growth

Exceptions	Category	Description
XJCB	Job Address Space Exceptions	Indicates High Job CSA utilization
XJSA	Job Address Space Exceptions	Indicates High job ESQA growth
XJSB	Job Address Space Exceptions	High job SQA growth
XRFA	General Exceptions	Indicates the XRF system is not active
XSOS	Storage Control Exceptions	Indicates DSA short -on storage
XTOD	General Exceptions	Indicates CICS clock not updated
XUCA	Job Address Space Exceptions	Indicates high job ECSA use
XUCB	Job Address Space Exceptions	Indicates high job CSA use
XUSA	Job Address Space Exceptions	Indicates high job ESQA use
XUSB	Job Address Space Exceptions	Indicates high job SQA use
XVCS	VSAM Exceptions	Indicates VSAM split / extent analysis are performed every 5 minutes

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DB2 Exception Events from Omegamon for DB2

The following exceptions apply to the DB2 resources except where noted:

Exceptions	Category	Description
ARCM	Thread Exceptions	Indicates thread back out-processing is waiting for an archive tape mount
ARCV	System Exceptions	Indicates a tape mount is required to archive an active log
BMAX	System Exceptions	Indicates a buffer pool has reached its maximum size
BMTH	System Exceptions	Indicates the percentage of buffer pool in use exceeds threshold
BXPN	System Exceptions	Indicates when a buffer pool has expanded
CICT	CICS Related Exceptions	Indicates CICS thread use for jobname is > n%
COMT	Thread Exceptions	Indicates the ratio of system page updates to commits for a thread is > n
CTHD	Thread Exceptions	Indicates an application is waiting for thread creation This is caused when the system maximum thread limit has been reached (THREAD parameter)
DDFS	System Exceptions	Indicates the Distributed Database Facility (DDF) is not active in the DB2 subsystem being monitored
DRCV	System Exceptions	Indicates the DB2 subsystem VTAM APPC receive rate is greater than the exception threshold, expressed in Kilobytes per second
DWAT	Thread Exceptions	Indicates the time that a Distributed Allied Thread has waited for a response to any SQL request exceeds the exception threshold
EDMU	System Exceptions	Indicates the number of environmental descriptor manager (EDM) pool pages use is > n%
ENTO	CICS Related Exceptions	Indicates when the number of CICS transactions overflowing to the pool is > n%
ENTU	CICS Related Exceptions	Indicates the number of ENTRY threads is in use for a plan is > n%
ENTW	CICS Related Exceptions	Indicates the number of CICS transactions waiting ENTRY threads is > n%
ETIM	Thread Exceptions	Indicates the elapsed time for a DB2 thread is > n seconds

Exceptions	Category	Description
GETP	Thread Exceptions	Indicates the ratio of get page requests to read I/O is < n
GTRC	System Exceptions	Indicates the DB2 global trace is active
IDBC	Thread Exceptions	Indicates the amount of CPU time used by a DB2 to process a thread is greater than the specified threshold value
IDBT	Thread Exceptions	Indicates the amount of time used by DB2 to process a thread is greater than the specified threshold value
IDBK	System Exceptions	Indicates the number of active background connections is > n%
IDFR	System Exceptions	Indicates the number of active foreground connections is > n%
IDNT	System Exceptions	Indicates the number of in doubt threads * n
IMCN	IMS Related Exceptions	Indicates an IMS dependent region has failed to connect to DB2
IMND	IMS Related Exceptions	Indicates there are no IMS dependent regions defined to DB2 for the IMSID
INDB	Thread Exceptions	Indicates a thread has terminated and in doubt
LKUS	Thread Exceptions	Indicates a thread exceeds n% of the maximum page locks a user may hold
LOGN	System Exceptions	Warns when the number of available primary active logs is <= n
MCNV	System Exceptions	Indicates the percentage of conversations in use for a remote /VT logmode combination exceeds the exception threshold The remote location VTAM logmode is displayed
MDBT	System Exceptions	Indicates the percentage of the maximum number of Database Access threads (MAXDBAT) exceeds the exception threshold
MDBW	System Exceptions	Indicates the number of threads waiting because the thread limit (MAXDBAT) has been reached exceeds the exception threshold
MSGE	System Exceptions	Display's user specified DB2 and IRLM messages that have been generated since the last time system exception messages are displayed
PGUP	Thread Exceptions	Indicates the number of thread page update requests per second is > n
POLU	CICS Related Exceptions	Indicates the number of active CICS POOL threads is >n
POLW	CICS Related Exceptions	Indicates the number of CICS transactions waiting for a POOL thread is > n
PREF	Thread Exceptions	Indicates the time that a Distributed Allied Thread has waited for a response to any SQL request exceeds the exception threshold
RCPU	Thread Exceptions	Warns when the CPU used by a Distributed Allied thread at a remote DB2 has exceeded the exception threshold

Exceptions	Category	Description
RELM	Thread Exceptions	Indicates the ratio of the resource limit in effect (CPU seconds) is greater than the specified threshold value
RIO	Thread Exceptions	Indicates the number of synchronous read I/Os per second on behalf of a thread > n
SUSL	System Exceptions	Indicates the number of threads that are unable to continue due to locking conflicts > n
TCPU	Thread Exceptions	Indicates the CPU utilized for an address space that has DB2 connection threads is > n%
THDQ	System Exceptions	Indicates the number of users waiting for a DB2 thread is > n
TMAX	System Exceptions	Indicates the number of current threads is > n%
TRCV	Thread Exceptions	Indicates the number of bytes of data received to a remote DB2 exceeds exception thresholds
TSND	Thread Exceptions	Indicates the number of bytes of data sent to a data sent to a remote DB2 exceeds the exception threshold
UTIS	System Exceptions	Indicates a utility has been started but not completed running
VDIO	System Exceptions	Indicates the volume DB2 I/O rate is > n
VEDR	System Exceptions	Indicates the volume extent per dataset ratio > n
VSRV	System Exceptions	Indicates volume service time > n active log
VTIO	System Exceptions	Indicates volume total I/O rate is > n
VUTL	System Exceptions	Indicates volume utilization is > n%
WDLK	Thread Exceptions	Indicates the wait time on drain lock exceeds the threshold
WLCM	Thread Exceptions	Indicates the wait time on drain of claimers exceeds the exception threshold
WLGQ	Thread Exceptions	Indicates the wait time on ARCHIVE LOG MODE (QUIESE) exceeds the exception threshold
WSRV	Thread Exceptions	Indicates the wait time on DB2 service exceeds the exception threshold
WTRE	Thread Exceptions	Indicates a DB2 thread is waiting for a resource for longer than the specified threshold value



IMS Exception Events from Omegamon IMS

The following exceptions apply to the IMS resources except where noted:

Exception	Category	Description
ACBH	I/O Related Exceptions	Indicates I/O to ACB dataset greater than nn per second
ACEA	Storage Related Exceptions	Indicates that Common ext subsystem Pool utilization is high (nn%)
ABUF	Storage Related Exceptions	Indicates that Sequential buffering storage utilization is high (nn%)
ACIO	Communications Pool	Indicates the Communications I/O pool usage is high (nn%)
ADBW	Resource use Exceptions	Indicates the Database Work Pool utilization is high (nn%)
ADHI	I/O Related Exceptions	Indicates high I/O activity to the specified Fastpath DEDB area (nn)
ADLO	I/O Related Exceptions	Indicates that I/O activity to the specified Fastpath DEDB area is low (nn)
ADMB	Resource use Exceptions	Indicates the DMB Pool utilization is high (nn%)
ADSU	Availability exceptions	Indicates that the specified area of a DEDB database is unavailable
AEPC	Resource use Exceptions	Indicates the Extended PCB Pool utilization is high (nn%)
AFRE	Resource use Exceptions	Indicates the Fixed FRE Pool utilization is high (nn%)
AHIO	Resource use Exceptions	Indicates that the High I/O Pool utilization is high (nn%)
ALMD	Long message exceptions	Indicates the Long Message Dataset utilization is at n%
AMFS	Resource use Exceptions	Indicates the Message Format Services Pool utilization is at n%
AMSG	Resource use Exceptions	Indicates the Message Queue Buffer Pool utilization is at n%
ARSP	Response time exceptions	Indicates the Average processing time for the specified group is nn seconds
COMW	Resource use Exceptions	Indicates a communications pool space shortage

Exception	Category	Description
CPUA	Performance exceptions	Indicates that IMS CPU utilization is low (available percentage)
CMHI	Performance exceptions	Indicates that CPU utilization for the specified MPP is high (nn%)
CMLO	Performance exceptions	Indicates that CPU utilization for the specified IFP is high (nn%)
CRHI	Performance exceptions	Indicates that CPU utilization for the monitored DBRC Region is high (nn%)
CRLO	Performance exceptions	Indicates that CPU utilization for the monitored DBRC Region is low (nn%)
CSHI	Performance exceptions	Indicates that CPU utilization for the DLS Region is high (nn%)
CSLO	Performance exceptions	Indicates that CPU utilization for the DLS Region is low (nn%)
CSVC	Performance exceptions	Indicates that the IMS control task is in an OS wait in non-PRb code
DBWE	Internal Omegamon Exception	Indicates that an I/O write error has occurred on the specified database
DBWE	I/O Related Exceptions	An I/O error occurred on the specified database
CUOW	Performance exceptions	The specified fast path program is in contention with another unit of work.
DISP	Internal Omegamon Exception	Indicates the OMEGAMON/IMS's dispatching priority is lower than IMS's
DCMN	Performance exceptions	Indicates that the IMS DC Monitor is active
DDHI	I/O Related Exceptions	Indicates that I/O activity to all DEDB areas on the specified volume is high (nn/second)
DDLO	I/O Related Exceptions	Indicates that I/O activity to all DEDB areas on the specified volume is low (nn/second)
DMER	I/O Related Exceptions	An I/O error has occurred in the specified in FP DEDB area
DMBE	Availability exceptions	Indicates that an error occurred on the specified database
DLTR	Performance exceptions	Indicates that the DL/I Trace is on
DMFF	Resource use Exceptions	Indicates that the DMB Pool free space is fragmented and shows the number of free blocks
DSHI	I/O Related Exceptions	Indicates that I/O activity to all DEDB areas on the specified dataspace is high (nn/second)
DSLO	I/O Related Exceptions	Indicates that I/O activity to all DEDB areas on the specified dataspace is low (nn/second)
DSTR	Performance Exceptions	Indicates that the DISPATCHER Trace is on
DSPI	Resource use Exceptions	Indicates that there is one or more unused VSO Dataspace(s)
ICLO	I/O Related Exceptions	Indicates that the I/O rate for the control region is low (nn%)
ILHI	I/O Related Exceptions	Indicates that the I/O rate for the IRLM region is high (nn%)

Exception	Category	Description
ILLO	I/O Related Exceptions	Indicates that the I/O rate for the IRLM region is low (nn%)
IMHI	I/O Related Exceptions	Indicates that the I/O rate for the specified IFP is high (nn/second)
INAC	Availability exceptions	Indicates that IMS Shutdown is in Progress
IORC	Availability exceptions	Indicates that the specified device is in I/O recovery mode
IRCS	Storage Related Exceptions	Indicates that IRLM has used nn% of the MAXCSA specified
IMLO	Performance exceptions	Indicates that the specified MPPP I/O rate is low (nn/second)
IRIN	Availability exceptions	Indicates that a required IRLM is not active for this IMS
IRGC	Availability exceptions	IRLM was not able to connect to the MVS Coupling Facility
IRFC	Performance exceptions	Indicates that the occurrence of false lock contentions within IRLM is high (nn/second)
IRHI	I/O Related Exceptions	Indicates that the I/O rate for the DBRC region is high (nn/second)
IRTP	Performance exceptions	Indicates that IRLM's pass the buck (PTB) trace is active
IRRU	Resource use Exceptions	Indicates that the IRLM RLE Usage too high (nn%)
IRRC	Resource use Exceptions	Indicates that the IRLM Real Contention rate too high (nn%)
IRLO	I/O Related Exceptions	Indicates that the I/O rate for the DBRC Region is low (nn/second)
ITWH	Performance exceptions	Indicates a shortage of Internal Task Save Areas
IRTR	Performance exceptions	Indicates that the IRLM request handler (RH) trace is active
ISHI	I/O Related Exceptions	Indicates that the I/O rate for the DLS Region is high (nn/second)
ISLO	I/O Related Exceptions	Indicates that the I/O rate for the DLS Region is low (nn/second)
LALO	Storage Related Exceptions	Indicates that LSQA assurance space for the Control Region (nnk)
LKTR	Performance exceptions	Indicates that the LOCK Trace is on
LDMB	Resource use Exceptions	Indicates that the number of DMB Pool blocks is high (nn%)
LLBR	Performance exceptions	Indicates that the number of waits for OLD's buffers is high (nn/second)
LLCH	Performance exceptions	Indicates that the number of Checkwrite requests to the WADS is high (nn/second)
LMGH	I/O Related Exceptions	Indicates that the I/O rate for the LHMSG dataset is high (nn/second)
LMLO	Storage Related Exceptions	Indicates that the maximum free block in the LSQA for the control region is low (nnk)

Exception	Category	Description
NPOQ	Resource use Exceptions	Indicates that the Output Queue length for the specified unavailable logical terminal is high
NOOT	Resource use Exceptions	Indicates that no Output Threads are available
NPDL	Performance exceptions	Indicates that parallel processing of VSAM I/O is not available
NOFB	Resource use Exceptions	Indicates that the specified region is in a buffer wait due to a lack of fast path buffers
NTIQ	Availability exceptions	Indicates that the input queue length for the specified non-competing transaction is high (nn)
NVAP	Performance exceptions	Indicates that VTAM Authorized Path is not on
NSDC	Availability exceptions	The VTAM ACB has not been opened
NQRE	Availability exceptions	Indicates that the specified RECON dataset is reserved by another job
OBAU	Resource use Exceptions	Indicates that there is contention for the Fast Path Overflow Buffer Allocation
ODIE	Availability exceptions	Indicates that there are less than three OLDS still active
OLER		I/O Error has occurred on DFSOLP00
OLNA	Availability exceptions	Indicates that OLDs Auto Archiving is not active
ONLC	Availability exceptions	Indicates that an online change is in progress
ONLO	Availability exceptions	Indicates that an online change has occurred
ORER	Availability exceptions	Indicates that one or more of the OLDs has had an I/O error
OLST	Availability exceptions	Indicates that the specified OLDS has been stopped
OSBL	I/O Related Exceptions	Indicates that a record is locked in an OSAM buffer due to a write error
ORIP	Availability exceptions	Indicates that the specified number of OLDs are inactive, either because they have been stopped or because of I/O Errors
ORST	Availability exceptions	Indicates that the specified number of OLDs have been stopped
OSDN	Availability exceptions	IMS is terminating because only one OLDS is available
PBTR	Performance exceptions	Indicates that trace is on for the specified PSB
OXHI	I/O Related Exceptions	Indicates that the I/O rate for the specified OSAM database DD is high
OXLO	I/O Related Exceptions	Indicates that the I/O rate for the specified OSAM database DD is low
PIBC	Storage Related Exceptions	Indicates that the common area page-in rate for the specified MPP is high (nn/second)
PIBP	Storage Related Exceptions	Indicates that the private area page-in rate for the specified MPP is high (nn/second)
SAPW	Performance exceptions	Indicates there are insufficient save areas for the IMS Internal Tasks (ITASKS)

Exception	Category	Description
SDLO	Resource use Exceptions	Indicates that the number of free CIs in the sequential dependent part of the specified DEDB area is low (nn%)
SCTR	Performance exceptions	Indicates that the scheduler trace is on
RSRV	Availability exceptions	Indicates that the RSR VTAM connection is down
TCOI	Performance exceptions	Time Controlled Operations is Inactive
SMGH	I/O Related Exceptions	Indicates that the I/O rate for the SHMSG dataset is high (nn/second)
SDSP	Resource use Exceptions	Indicates that Internal tasks are not being dispatched because of a resource shortage for ITASKS
TCOT	Performance exceptions	Indicates that the Time Controlled Operations (TCO) trace is active
TMSI	Availability exceptions	Indicates that the Transport Manager Subsystem is unavailable
TRDY	Availability exceptions	Indicates that the specified tape device is not ready
TXIQ	Availability exceptions	Indicates that the queue length for the specified competing transaction is high (nn)
VCAS	Performance exceptions	Indicates that the specified database had nn CA splits within the last nn minutes
VCIS	Performance exceptions	Indicates that the specified database had nn CI splits within the last nn minutes
VMEX	Performance exceptions	Indicates that the specified database had nn extensions within the last nn minutes
VMLO	Storage Related Exceptions	Indicates that the largest free area in the control region private area is low (nnk)
VSLO	Storage Related Exceptions	Indicates that the total free area in the control region private area is low (nnk)
VTLO	Storage Related Exceptions	Indicates that free storage within the IMS Control region below the region line is low (nnk)
VWRC	Performance exceptions	Indicates that 'Write-check' is on for the specified VSAM database
WBHI	Storage Related Exceptions	Indicates that the working set size for the specified MPP is high (nnk)
VXHI	I/O Related Exceptions	Indicates that the I/O rate for the specified VSAM database DD is high (nn)
VXLO	I/O Related Exceptions	Indicates that the I/O rate for the specified VSAM database DD is low (nn)
WCHI	Storage Related Exceptions	Indicates that the working set size for the control region is high (nnk)
WBLO	Storage Related Exceptions	Indicates that the working set size for the specific MPP is low (nnk)



Integrating Tivoli Service Desk/D and TBSM

The primary impetus for integrating Tivoli Service Desk (TSD) 6.0 Distributed with Tivoli Business Systems Manager (TBSM) is the fact that TBSM monitors resources, systems, and applications for problems. When you discover those problems, you generate problem tickets within TSD. Problem tickets are generated as a result of examining an event and determining that a ticket is warranted.

The integration of TSD and TBSM contains the following functionality:

- You have the ability to create, view, modify, and search problem tickets that TSD or other Problem Management systems manage without opening an independent problem application.
- Once you close a problem ticket through TSD, which is linked to TBSM, the open ownership notes and events are updated and closed with complete audit trails.
- When you create problem tickets, all of the pertinent resource information that TBSM maintains is pre-filled in the newly created ticket, therefore reducing manual entry time of data during the creation of the ticket.
- Links are maintained between problem tickets, ownership notes, and events enabling you to better manage these resources within TBSM.

The following diagram illustrates the component interaction and the process flow when you create a problem ticket within TSD from a TBSM workstation. The circular numbers correspond to the steps in that workflow.

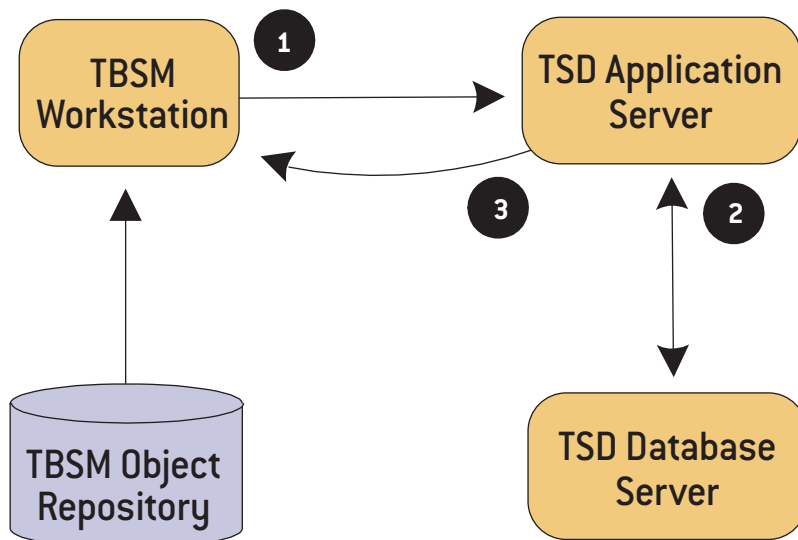


Figure 7. Component interaction and the process flow when you create a problem ticket within TSD from a TBSM workstation.

1. You initiate a request to create a problem ticket from the TBSM workstation. You may perform this (but not restricted to) during the investigation of an event that caused a problem. `OpenIntegrationRequest`, `AddRequestField`, `CommitIntegrationRequest`, and `CancelIntegrationRequest` are request methods used in the TSD interaction.
2. The request is processed by the TBSM workstation, which in turn uses the TSD application programmer's interface (API) to make a call to the TSD Application Server to create/update/close the problem ticket. The Tivoli Service Desk API performs the packaging and communication necessary to perform a valid TSD transaction.
3. Upon successful completion of the problem ticket creation within TSD, a valid problem ticket number is returned to the TBSM workstation, which then inserts the ticket number into the TBSM database.

An additional benefit of this integration is that it allows you to be aware of problem tickets associated with the specific resources that TBSM is monitoring. When you click any registered resource in the system, you view problem tickets for the resource that specific resource represents. Once a problem ticket is closed, a process determines which system the ticket was created on by using the system parameters of the System Component Item Module (SCIM). If the system is TBSM, a perl script is executed to update all necessary links to the problem ticket.

Generating a Problem Ticket

You can create a problem ticket within Notes from the Note Editor dialog, Notes window, or dynamically from TBSM.

When you create a problem ticket from either of the Notes windows, you insure a relationship between the linked event but only through an Ownership note. The creation of a problem ticket from a menu command within TBSM is at the resource level and therefore linked only to the Tivoli Service Desk SCIM.

The Note Editor dialog, where you normally create any type of note, enables you to gain access to the Problem Entry window when you mark the Create Problem Ticket check box. The Problem Entry window is the focal point for all functions within the Problem

Management system. You can record pertinent resource information as well as begin a search for existing tickets by activating the Problem Maintenance window.

The Notes window enables you to create a problem ticket after you select a note, right-click and choose Insert Ticket from the drop-down menu. Please note, however, that the menu option is dynamic depending on the column values. For example, if a problem ticket already exists the Insert Ticket menu selection does not appear as an option.

To create a problem ticket from a shortcut menu within a view, right-click a resource, point to Insert and click Problem Ticket. However, a problem ticket that is initiated from a menu does not contain linked events or ownership notes.

For information about note functions, refer to Chapter 7 in this guide.

Problem Entry Window

The Problem Entry window enables you to create problem tickets. These problem tickets contain vital information that may lead towards the resolution of problems in your service desk environment. Creating a problem ticket enables you to record and track the chronology of events. The ticket describes the nature of the problem, severity level, the resource the problem affects, component information, and the personnel you need to notify.

The Problem Entry window contains the following functionality:

- The ability to enter data and create a problem ticket within a problem ticket system such as Tivoli Service Desk and others.
- Fields are pre-filled with system information such as User ID, System, Component, Items, Module, and Problem Code when you enter directly from TBSM and create a new problem ticket.

The General Information grouping appears on left-hand side of the window. When you insert the problem ticket and save it, the system assigns a specific identification number for future tracking. The User ID field displays your TSD-specific log in data. You must enter your corresponding TSD Password. The Description text box enables you to include a problem description in order to facilitate the resolution process.

The Ticket Information grouping consists of three drop-down list boxes. You select from the list or enter your own information. The fields are the following:

- Problem Type
- Problem Code
- Severity

The Problem Type and Severity fields contain TSD specific enumerations. The Problem Type field contains Communications, Hardware, and Software as selections while Severity has 1:Emergency, 2:Important, 3:Moderate, and 4:Low as default values.

The Problem Code field includes Open and Closed values, which pertains to the status of the problem ticket. If you add, change, or alter the parameters for the aforementioned drop-down list boxes in TSD, the Problem Entry and Problem Maintenance windows reflect the new parameters.

The other fields in the Ticket Information grouping are pre-filled from the application. They are the following: System, Component, Item, and Module. The System field refers to your current application and its relation to Tivoli Service Desk. The Component field is the TBSM Class ID. The Item field consists of the Resource ID.

When you take ownership of events at the event level and consequently create problem tickets in unison, you cement a link with the event(s). You can create problem tickets directly without taking ownership; however, they must be linked to a resource within TBSM. If ownership is not involved in the problem ticket creation process, the TSD SCIM is used to link the problem ticket with the resource.

When you are finished entering your information, click the OK button to create the problem ticket. However, before you click OK, if you want know about any tickets with similar problems, click the Find button to enter the Problem Maintenance window and begin your search.

Creating Tivoli Service Desk Problem Tickets within TBSM

To create a problem ticket from TBSM:

1. Select the resource.
2. Right-click the resource, point to Insert, and click Problem Ticket. The Problem Entry window opens.
3. Enter your User ID and Password and fill out the necessary fields. Enter text in the Description box.
4. Click OK to create the problem ticket.

To create a problem ticket at the resource level from an Ownership note:

1. Select the resource.
2. Right-click the resource and click Take Ownership. The Note Editor dialog opens.
3. In the Subject and Description fields, enter in the desired information.
4. Mark the Create Problem ticket check box.
5. Click OK. The Problem Entry window opens.
6. Enter your User ID and Password and fill out the necessary fields.
7. Click OK to create the problem ticket.

To create a problem ticket at the event level from an Ownership note:

1. Select the resource.
2. Right-click the resource and click Properties (or double-click the resource to open the Property Sheet.)
3. Select the event(s) that you want to own on the Property Sheet.
4. Right-click the event(s) and click Take Ownership.
5. The Note Editor dialog opens.
6. In the Subject and Description fields, enter in the desired information.
7. Click OK. The Problem Entry window opens.

-
8. Enter your User ID and Password and fill out the necessary fields.
 9. Click OK to create the problem ticket.

To create a problem ticket at the event level from an Ownership note for all events:

1. Select the resource that you want to take ownership.
2. Right-click the resource and click Properties (or double-click the resource to open the Property Sheet.)
3. Mark the Select all events for Ownership check box.
4. Right-click the event(s) and click Take Ownership. The Note Editor dialog opens.
5. In the Subject and Description fields, enter in the desired information.
6. Click OK. The Problem Entry window opens.
7. Enter your User ID and Password and fill out the necessary fields.
8. Click Save to create the problem ticket.

Problem Maintenance Window

The Problem Maintenance window enables you to view, modify, search, and close problem tickets within the TSD system. This window provides an enhancement to other Problem Management system capabilities and includes the following functionality:

- Ability to search for problem tickets based on values that you enter in the Ticket Information grouping.
- Ability to evaluate trends in specific areas of concern and anticipate potential problems by analyzing the problem tickets related to a resource.
- Providing management insight for problem workload and outstanding critical problems by listing open or closed tickets.
- Ability to close a problem ticket provided the level of authority is correct within TSD.
- Ability to view an existing problem ticket by entering a valid ticket number in the Problem ID box and clicking the Search button.

Gain access to the Problem Maintenance window from TBSM when you select a resource, and then choose View--> Problem Ticket. You can also enter directly from the Problem Entry window by clicking the Find button. The User ID, Password, System, Component, Item, and Module fields from the General Information and Ticket Information groupings are pre-filled with your problem ticket data.

The Problem Maintenance window enables you to view and search for problem tickets. For example, you can search for all tickets with a specific problem description by entering text in the Description box or for all tickets in your system with an OPEN status.

Enter your criteria in the appropriate filtering boxes on the lower half of the window and click Search to view your problem ticket information. Once you receive your results, you can view specific problem ticket information by selecting various individual cells from the Search grouping and viewing the data from the fields in the lower portion of the window.

When you close a problem ticket, you must change the status to CLOSED in the Problem Code drop-down list box, enter text in the Solution box, and click the Update button. The Clear button erases all default values, enabling you to search for all Tivoli Service Desk tickets in the system.

Note: You can only close a problem ticket within the Problem Maintenance window.

Operations on Tivoli Service Desk Problem Tickets within TBSM

The following procedures are a list of interactions regarding TSD problem tickets within TBSM.

Viewing a Problem Ticket

To view a problem ticket from TBSM:

1. Select a resource from TBSM.
2. Right-click the resource, point to View and click Problem Ticket from the drop-down menu. The Problem Maintenance window opens.

-
3. Perform a search if needed and select a specific problem ticket in the Search list.
 4. View the problem ticket information.
 5. Click **OK** or Cancel to exit the window.

To view a problem ticket from the Notes window within TBSM:

1. Select a resource from a view within TBSM.
2. Right-click the resource and click Notes window. The Notes window opens.
3. Select an open problem ticket row from the Notes window.
4. Right-click the problem ticket row and click View Ticket. The Problem Maintenance window opens.
5. View the problem ticket information.
6. Click **OK** or Cancel to exit the window.

Modifying a Problem Ticket

To modify or update a problem ticket from TBSM:

1. Select a resource from TBSM.
2. Right-click the resource, point to View, and click Problem Ticket from the drop-down menu. The Problem Maintenance window opens.

-
3. Perform a search if needed and select a specific problem ticket in the Search list.
 4. Enter what criteria you want to modify in the appropriate filtering boxes.
 5. Click the **OK** button.

Searching for a Problem Ticket

To search for a problem ticket from TBSM:

1. Select a resource from TBSM.
2. Right-click the resource, point to View, and click Problem Ticket. The Problem Maintenance window opens.
3. Enter what criteria you want to search for in the appropriate filtering boxes of the General and Ticket Information groupings.
4. Click the Search button.

Note: You can use the **Clear** button to remove all current filtering values before you begin a search.

To search for a problem ticket from the Problem Entry window:

1. Select a resource from a view within TBSM.
2. Right-click the resource, point to Insert and click Problem Ticket. The Problem Entry window opens.
3. Click the Find button. The Problem Maintenance window opens.
4. Enter what criteria you want to search for in the appropriate filtering boxes of the General and Ticket Information groupings.
5. Click the Search button.

Closing Problem Tickets

To close a problem ticket from the Problem Maintenance window:

1. Select a resource from TBSM.
2. Right-click the resource, point to View and click Problem Ticket from the drop-down menu. The Problem Maintenance window opens.
3. Perform a search if needed and select a specific problem ticket in the Search list.
4. View the problem ticket information.
5. You must change the status to CLOSED in the Problem Code drop-down list box.
6. Enter text in the Solution box and click the Update button.

To close a problem ticket from the Notes window:

1. Select a resource from a view within TBSM
2. Right-click the resource and click Notes. The Notes window opens.
3. Select the row with the Problem Code ID you want to close.
4. Right-click and click Close Ticket. The Problem Maintenance window opens.
5. You must change the status to CLOSED in the Problem Code drop-down list box.
6. Enter text in the Solution box and click the Update button.



Tivoli Service Desk for OS/390 and TBSM

Data flow as a Result of Opening, Closing, or Updating a Problem Ticket

The following diagram illustrates the data flow that occurs when you open, close, or update a problem ticket that is maintained by TSD OS/390. The number in the circle corresponds to the steps in the workflow.

TBSM Users Open, Close, and Update Problem Tickets

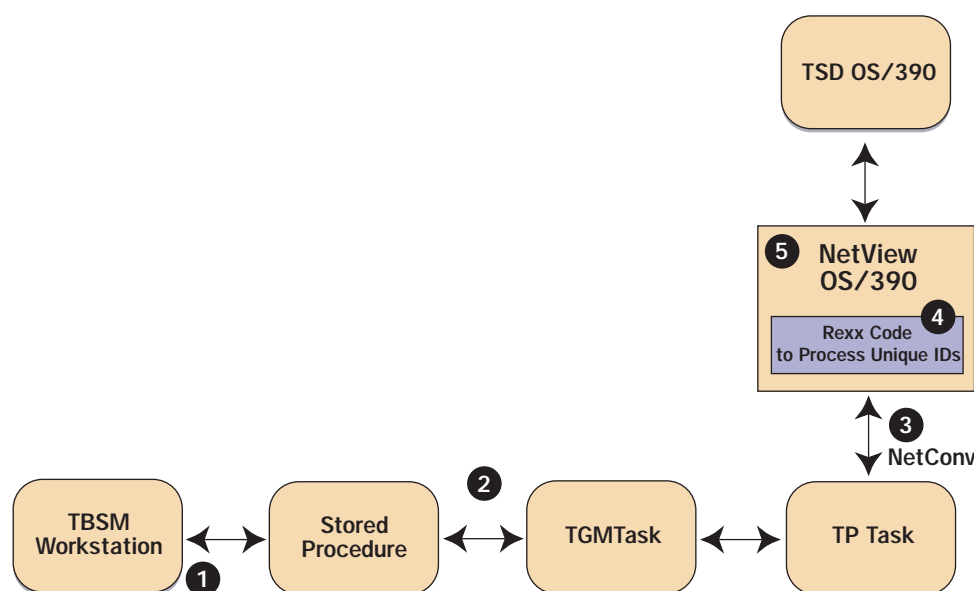


Figure 8. Data Flow when Opening, Closing, or Updating a Problem Ticket

Dataflow

1. From a TBSM workstation you Open, Close, Query, or Update a problem ticket that is maintained by TSD OS/390.
2. The necessary command data is collected from the workstation and passed to a stored procedure that makes a call to the TPTask executable.
3. TP Task forwards the command and the appropriate parameters to NetView for OS/390 via the NetConv transport facility.
4. NetView for OS/390 executes REXX code that parses the unique resource identifier information and constructs the proper TSD OS/390 API call to Open, Close or Update a problem ticket.

-
5. Command result passed back through mechanism to workstation and displayed in result window.

Notification of a TBSM Generated Problem Ticket Closed by a non-TBSM User

The following illustration describes the data flow for closing TBSM generated problem tickets by a non TBSM user, which most likely will be a user working from the TSD OS/390 workstation. The circular numbers correspond to the steps in that workflow.

Closing of TBSM Tickets by non-TBSM Users

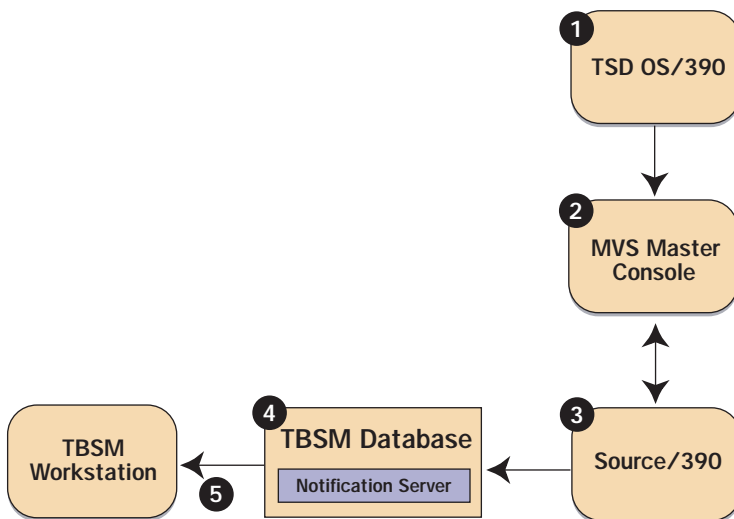


Figure 9. Data flow for closing TBSM generated problem tickets by a non TBSM user

DataFlow

1. Within TSD OS/390 a Terminal Simulator Program (TSP) is added so that any closures to any TBSM generated problem tickets by non-TBSM users are captured.
2. A TSO message is generated by the TSP and sent to the MVS Master Console
3. Source/390 traps and reformats the captured message and forwards it to the Windows based Servers.
4. The message is forwarded into the TBSM database where the record updates the Ownership and Problem State for a resource.
5. Notification Server forwards notifications to the TBSM workstation to close Ownership or Open Problem States.

Problem Entry and Problem Maintenance Windows for TSD OS/390

The functionality of the Problem Entry window for TSD OS/390 is the same as TSD Distributed except that two description boxes have been added. The Description text box has been expanded to include a Problem Description and Short Description. The Problem Description box enables you to textually create a problem description for the resolution process. The Short Description box enables you to create a 45 character maximum entry for a description.

Similarly, the Problem Maintenance window has the same two description boxes as the Problem Entry window. The functionality is the same as its TSD Distributed counterpart. For all TSD functionality, refer to Appendix E of this guide.



SQL Wildcards

Wildcard	Meaning	Example
% (percent)	Any string of zero or more characters	C% searches for all characters that begin with the upper case C
_(underscore)	Any single character	_CS searches for all three letter names ending with the characters CS
[](square brackets)	Any single character within the specified range (for example, [a - f])	[AaBbCc] indicates a match for any single character that is an upper- or lower-case a, b, or c
[^] (carat)	Any single character not within the specified range (for example, [^a - f])	[^A-Z] specifies a single character that is not in the range of A through Z.

Note: Try to use wildcards at the end of a pattern. Using them any other place will affect performance.



Glossary of Terms

Aggregate resource

Resources that are used to represent a collection of discrete resources. For example, a Complex contains a collection of Machines, DASD, and other resources.

Alerts Occur when the limits set on a resource for exceptions or events have been exceeded. There are two types: Yellow and Red. Yellow indicates a Warning condition while Red indicates a Critical problem.

All Resources View

The physical representation of an Enterprise. The All Resources view presents all the resources that are currently being monitored. See also: Line of Business View.

Attributes

A dialog for a resource. The Attributes dialog contains all the basic information associated with the resource.

Autodiscovery

A method of Discovery in which TBSM “listens” for resources it does not yet know about. See also: Discovery, Rediscovery.

Batch Job

A scheduled program that executes without user interaction and runs in the background with its own address space and allocates datasets and other resources. They perform a specific function and run during a particular time of day.

Batch Job Set

Aggregate resource for non-scheduled batch jobs.

Batch Schedule

Aggregate resource for scheduled batch jobs.

Batch Schedule Non-key Job

A batch job within a batch schedule that is only monitored for abends. Typically, a batch schedule non-key job will be a predecessor to a batch schedule key job.

Batch Schedule Key Job

A batch job within a batch schedule that is defined as critical and is monitored for schedule violations and abends, and is used in reporting progress data to the batch schedule.

Batch Schedule Set

Aggregate resource for batch schedules

Business Impact

Uses Hyperview as the visualization method and enables you to focus on resources that share multiple applications and/or business units and provides rapid determination on how an outage affects them.

Child Events

Events that originate from a resource's children. They are displayed within the Child Event tab on the resource Properties page.

Child Resource

A resource that is contained within another resource (the parent resource) or resides below a resource within a tree.

CICS Status

A window that provides a collection of CICS regions presented in a list complete with Summary summary data regarding the availability of files for each region.

CICS Customer Information Control System, an IBM flagship transaction processing system.

CICS Status

A view that provides a collection of CICS Regions with summary data regarding the Summary availability of files for each region.

Complex

A resource type, an aggregate collection of machines. See also: Machine.

Current State

Exhibits whether a resource is available or not at the current time.

DASD Direct Access Storage Device, a disk pack.

Database Connect

A physical database connection

Dataset

The major unit of data storage and retrieval in the operating system.

DB Connect

The physical database connection.

DB2 DataBase Two; an IBM produced relational database management system.

Desired State

The state of a resource should be at the current time.

Discovery

A method TBSM uses to find resources within an Enterprise or find a new location of monitored resources that have moved. See also: Rediscovery, Autodiscovery.

Documentation

A mechanism to view resource definition information for any resource class from the dynamic menu or from the reporting system.

Enterprise

The aggregate of an organization's data center complexes. This resource is at the top of the TBSM hierarchical model.

Event An incident that occurs at a specific time that causes data to be generated with information concerning the incident.

Exception

An events that is generated when a threshold from a performance monitor is exceeded.

File A dataset under CICS. See also: Dataset.

File Status window

Displays all files within a CICS region.

Filter A tool of TBSM that enables the user to specify which types of resources to display in the All Resources view, Line of Business, or other view.

Hyperview

An elliptical view that allows you to see a large quantity of resources at once.

IDMS Informational Database Management System, a relational system similar to DB2.

IMS Information Management System, a relational system similar to DB2.

Line of Business View

Resources that are of interest to users or group of users for monitoring that can be assembled and viewed as a collection. See also: All Resources view.

LPAR Logical Partition, a division of a machine that looks and acts independently and can execute its own Operating System. It can manage its own resources and run its own applications.

LU A Logical Unit, an IBM communications resource that allows users and applications entry onto a SNA Network.

Machine

Represents a computer collection of CPU's housed in one physical container.

Managed Objects

The grid-like viewing area enables you to manage all your physical resources within the Enterprise or individual segments that are important to the health of your overall system - from a single point of reference.

Note The vehicle for taking Ownership of an issue that causes a Yellow or Red alert or to provide communication between users regarding resource problems and solutions.

OS Operating System software that manages and maintains the computer hardware and its peripherals. It provides a platform to run applications.

Ownership

A contract of problem acceptance for an alert condition, whether a resource is tagged Yellow or Red. Also can be a type of note.

Priorities

A set of values assigned to events or resources that a user selects indicating the relative importance of that event or resource.

Propagation

The escalation of alerts up the tree views within TBSM and across to LOB resources.

Properties

A series of pages associated with each resource. Some Property pages include Events, Exceptions, Attributes, States, etc. These pages enable the user to set thresholds, schedules, etc. for a particular resource.

Properties Page

A grouping of properties presented as a tabbed page.

Rediscovery

A method of Discovery that allows TBSM to look for resources it already knows about and relocates them if they moved. See also: Discovery, Autodiscovery.

Registered

Defined resources within TBSM that are monitored and have a name, type, and are located in the TBSM repository.

Registration

The process of defining resources to the TBSM system for monitoring purposes.

Reporting System

Provides you with report forms to view the data you need in order to analyze, anticipate, and avoid any future problem scenarios. This application allows you to generate reports from real time and historical availability data that has been collected by TBSM.

Stale Files whose status have not been updated since the CICS region they belong to has been stopped and restarted.

STC Started Task, a program whose execution began from the Started Task Manager.

Transaction

A four character code, the user initiates to specify a program to be run. Once a user invokes a transaction, CICS locates the application associated with the specific transaction and loads it into storage and begins a task.

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