TIDAL

Tidal Workload Automation HP Operations Manager for Unix Adapter Guide

Version 6.3.3

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Preface

This guide describes the installation, configuration, and usage of the HP Operations Manager for Unix (HP OMU) Integration with Tidal Workload Automation (TWA).

Audience

This guide is for the administrators who install and configure HP OMU for use with TWA, and who troubleshoot TWA installation and requirements issues.

Related Documentation

For a list of all Tidal Workload Automation guides, see the *Tidal Workload Automation Documentation Overview* of your release on tidalautomation.com at:

http://docs.tidalautomation.com/

Note: We sometimes update the documentation after original publication. Therefore, you should also review the documentation on tidalautomation.com for any updates.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see What's New in Tidal Product Documentation at:

http://docs.tidalautomation.com/rss

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Document Change History

The table below provides the revision history for the HP OMU Integration Guide.

Table 2-1

Version Number	Issue Date	Reason for Change
6.0	October 2012	New Cisco version.
6.2.0	June 2013	Window documentation removed.
6.2.1 SP2	June 2015	Configuration provided in the *TES Installation Guide*.
6.2.1 SP3	May 2016	Consolidated all HP OMU Integration documentation into one document.
6.3	August 2016	Rebranded "Cisco Tidal Enterprise Scheduler (TES)" to "Cisco Workload Automation (CWA)". Miscellaneous edits for the 6.3 release.
6.3.3	January 2018	Rebranded "Cisco Workload Automation (CWA)" to "Tidal Workload Automation (TWA)"

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Introducing the HP OMU Integration

This chapter provides an overview of the Tidal Workload Automation HP OMU Integration and its requirements:

- Overview
- System Requirements
- Terms to Know

Overview

The Tidal Workload Automation HP OMU Integration provides integration of TWA into HP OMU. This integration consists of several parts, including:

- Policies for accepting messages sent by TWA actions

  TWA actions can be configured to generate HP OMU messages, which are forwarded by the local HP OMU agent to the HP OMU Management Server. These actions are triggered by the occurrence of system or job events configured in TWA.

- Policies for monitoring TWA services

  These services may be on the master, backup master, fault monitor and/or agents. Agent monitoring is available for either the original TWA agent or the high-performance agent for both Unix and Windows systems.

- HP OMU tools

  With these applications the HP OMU operator can quickly and easily perform common TWA tasks from the HP OMU console.

- Executables

  These executables are provided to manage TWA agents on Unix nodes and provide general access to the TWA command-line facility.

All of the HP OMU messages generated by TWA include help text, and many include operator-initiated actions, allowing one-click response to certain problems. Use of these and other standard HP OMU integration points provide an interface familiar to any HP OMU operator.

This manual is not intended to replace the documentation provided with HP OMU and TWA. Specifically, you need the HP OMU and TWA documentation appropriate to your installation to achieve a thorough understanding of both products.

System Requirements

- This integration only works with TWA version 6.1 or higher.

- Only HP OMU 9.0 is supported with TWA.

- This integration does not place any significant resource requirements on any of the systems beyond what is expected by normal operation of the TWA and HP OMU products. Refer to the documentation for your versions of TWA and HP OMU to determine your actual system requirements. Consistent with normal usage of TWA and HP OMU, the functionality provided by this integration consumes a small amount of system resources on server and agent machines.

- TWA must be installed, licensed and fully operational before installing this integration.

- HP OMU must be installed, licensed and fully operational before installing this integration.

- HP OMU Agent installation is one of the key tasks that need to be performed after adding the nodes as managed/controlled. Please refer to the *HP OMU Administrator Guide* for installing the Agent. Use the Agent Installation from HP OMU Server using the Node's Actions -> Install Agent option. This might require an FTP Server to be configured on the TWA environment that you would want to monitor/control.

- The TWA machine must be an HP OMU managed node. Any TWA agent nodes that you wish to monitor must also be HP OMU managed nodes. The HP OMU Management Server does not need to be a TWA client, agent or master node.

Terms to Know

- Client Manager—As one of two main components of the TWA architecture, Client Manager services requests from user initiated activities, such as through the TWA Web Client and from other external sources that utilize the Command Line Interface (CLI) or published TWA Web services.

- Event—In the case of HP OMU, an event is any occurrence that can be detected by the monitoring facilities of HP OMU. In the case of TWA, it is one of a fixed list of system or job states or conditions.

- HP OMU Tool—A HP OMU tool is an icon/link in the Tool Bank that, when triggered by the operator, causes some action to be taken. Starting, stopping and checking the status of the TWA agent are examples of OMU Tools

- HP OMU Managed Node—A computer or network device controlled or monitored by HP OMU. Typically this is a computer with a HP OMU intelligent agent installed.

- HP OMU Management Server—The computer where the HP OMU server software is installed.

- MIB—Management Information Base TWA provides MIBs for HP NNM to identify the trap messages and understand their structure.

- Object—An object represents a particular entity or resource in a networked systems environment.

- Policies—The new term for templates.

- Policy—A policy is an HP OMU component that specifies a set of conditions that determine which events are ignored and which events generate messages in HP OMU. Different types of policies are used for different methods of monitoring, such as message policies, monitor policies, log file policies, SNMP policies, etc. Policies are assigned to and distributed to managed nodes to perform monitoring.

- Submap—A submap is a particular view of the network environment. It consists of related symbols that are displayed in a single window.

- Symbol—A symbol (icon) is a graphical representation of an object.

- Tools—A term used to describe the various installed software applications that is used HP OMU for monitoring.

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Installing and Configuring the HP OMU Integration

Overview

Installation and configuration of the HP OMU Integration involves these tasks:

1. Prerequisites–Verify that all prerequisites as described in the following section are completed.

2. Installing the HP OMU Integration–Install the HP OMU Integration module on the HP OMU Management Server.

3. Assigning HP OMU Policies–Assign the proper policies/policy groups to each TWA system.

4. Distributing the Template Definitions–Distribute the assigned policies/policy groups to each node.

5. Restart TWA Components–Restart the TWA Master to detect that the HP OMU agent is installed and that HP OMU messages are valid actions.

6. Restart the TWA Master(s)–Restart all TWA components to ensure proper integrity with the restarted TWA Master(s).

7. Configuring the HP OMU Integration for TWA–Configure the users, HP OMU Integration, and agents to work with the TWA Master.

Each of these tasks is described in the following sections.

Prerequisites

The purpose of HP OMU integration with TWA is to monitor the operation of TWA components, receive events, and perform actions within the product. Therefore, it is recommend that you first install and implement TWA and obtain a good understanding of its operation. Performing the tutorial exercises in the documentation is helpful as is the specialized training available with TWA. After you are satisfactorily scheduling and tracking your own jobs, you can install the module for HP OMU with a high expectation of success. You should already be familiar with the use of your operating system(s) and HP software.

Note: For information regarding training classes for TWA and its various components, contact your sales representative.

The following prerequisites must be met prior to installing and configuring the integration:

- HP OMU is installed and operational.

- TWA software is installed, operational, and correctly licensed.

- Each TWA Master, agent, Fault Monitor, and Backup Master you want to monitor is an HP OMU Managed Node.

  Note: If not already completed, you must add each TWA Master as a managed node in HP OMU. Consult your HP OMU documentation for instructions. Machines with TWA Client Manager, agents, Fault Monitors, and/or Backup Masters installed on it, but without HP OMU installed, will function normally. However, you can not monitor those machines from HP OMU. Consult your HP OMU documentation for instructions on adding managed nodes to your HP OMU configuration.

Installing the HP OMU Integration

The HP OMU Integration contains HP OMU components that must be loaded into the HP OMU configuration on the HP OMU Management Server. Perform the following steps on the HP OMU Management Server.

Note: You must have root or Superuser privileges to install the HP OMU module. You must also shut down the HP OMU user interface console to complete this installation.

If the HP OMU Management Server is running on an HP-UX machine, the Software Distributor package used to install the integration is part of the operating system. If the HP OMU Management Server is running on a Solaris machine, the Software Distributor was installed during the HP OMU installation. Each procedure is described in this section.

To install the HP OMU Integration:

1. Log into the HP OMU Management Server as root.

2. Obtain the installation package.

3. If one does not already exist, create a directory for the installation.

4. Run the **tar** (or equivalent) command to expand the archived package.

    Use the following command:

    ```
    tar -xvf /<installation_directory>/OpenView/TIDAL-SA-OV-ALLOS.tar /tmp/TIDAL-SA-OV
    ```

5. Run the **opccfgupld** command to upload the template on this OMU server.

    Use the following command:

    ```
    opccfgupld -add -subentity /tmp/TIDAL-SA-OV/DOWN_SPI
    ```

    Note: Use the -replace command if the template is already loaded.

6. Verify that the template was successfully uploaded in the Policy and Tool Banks in the HP OMU Admin UI.

7. Log in as the opc_adm user.

If you do not see the new policies and tools, examine the Software Distributor logfile (*/var/adm/sw/swagent.log*) to determine the cause of the installation failure.

Assigning HP OMU Policies

Monitoring an application with **HP OMU** policies is a two-step process, including assigning a selected set of policies/policy groups to each managed node and distributing (downloading) these policies/policy groups to the managed node.

Because the assignments are saved, you can redistribute the policies/policy groups at a later date without reselecting the templates to distribute.

When selecting policies/policy groups for a managed node, it is important to select only the policies/policy groups appropriate for that node. Typically, policies/policy groups are for a specific application on a hardware platform or operating system.

To assign policies/policy groups:

1. Click the **OMU** button in the title bar of the HP OMU Administration UI.The HPOM for Unix Configuration page displays.
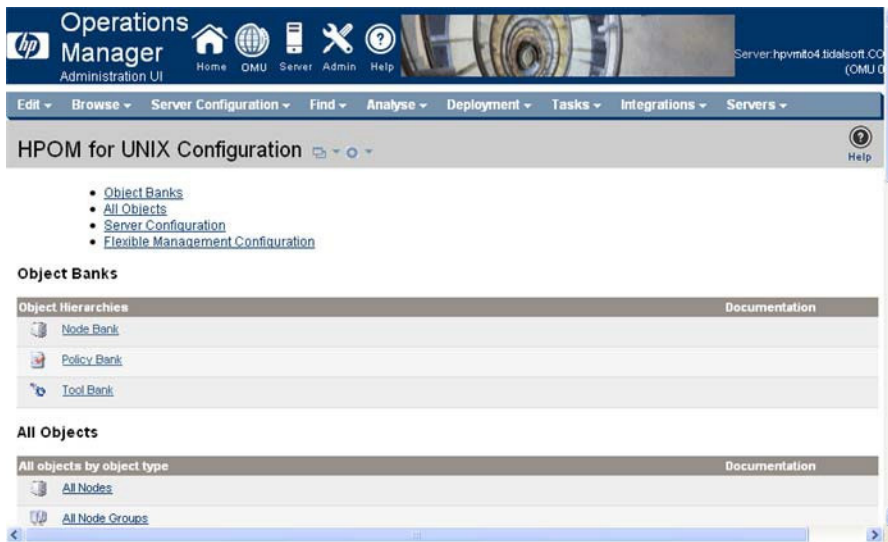
2. Click the **Policy Bank** link in the Object Hierarchies section. The Policy Bank page displays.
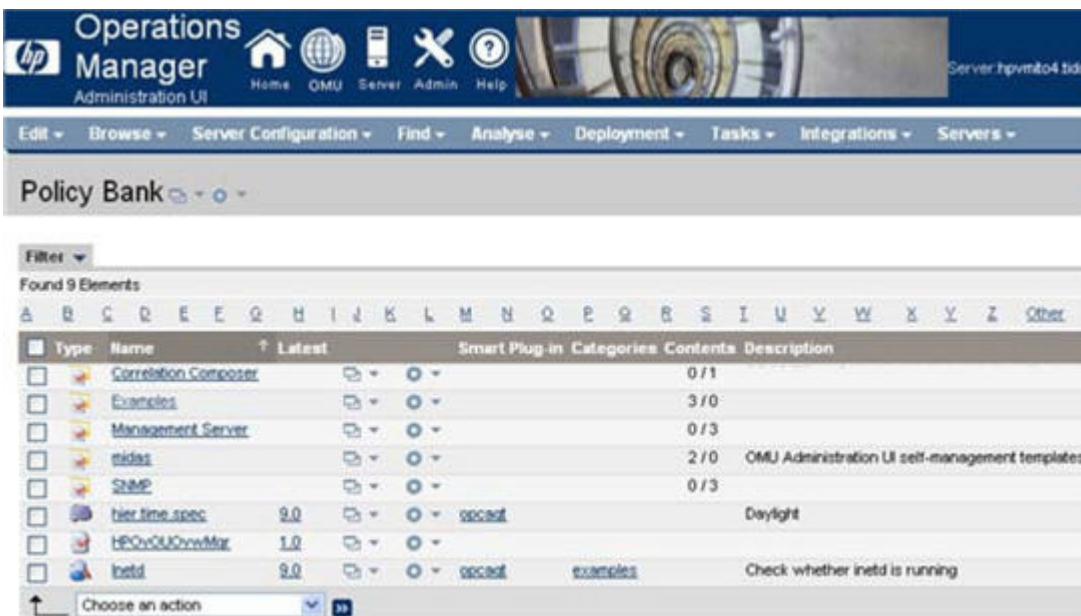
3. In the Name column, click the **Policy Group TIDAL Software** link. The Details TIDAL Software tab displays.

4. In the Name column, click the **Scheduler Templates** link. The Details Scheduler Templates tab displays.

5. Select the appropriate template by clicking the check box in its corresponding row.

6. From the Actions list, choose **Assign to Node/Node Group** to display the Selector dialog box.
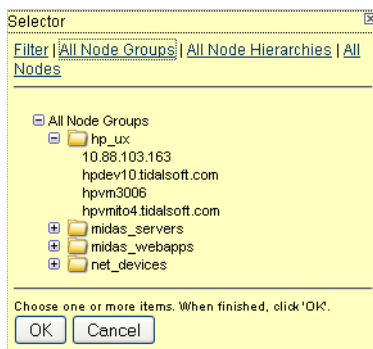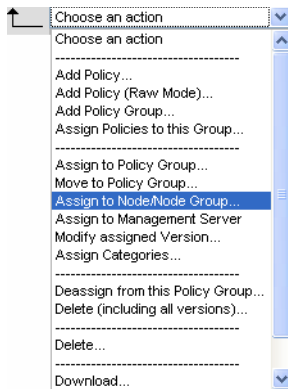
7. Locate and select the appropriate node.

8. Click **OK**. A confirmation note displays.
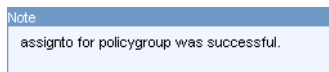
Distributing the Template Definitions

Once the templates have been assigned, they must be distributed (downloaded and installed) to the HP OMU Managed Nodes.

To distribute the templates:

1. From the HPOM for Unix Configuration page, click the **Node Bank** link to display the Node Bank page.
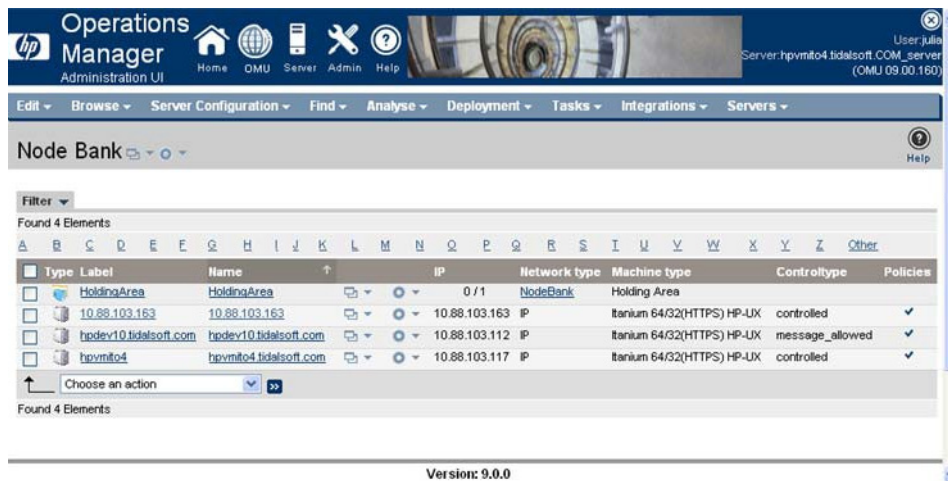
2. Select the node(s) where components are installed.

3. From the Actions menu, choose **Deploy Configuration** to display the Deploy Configuration dialog box.
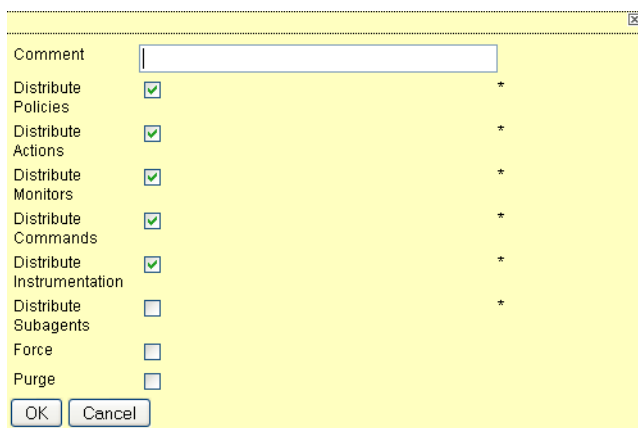
4. Select the appropriate components, then click **OK** to distribute the templates.

   A note displays containing a successful message and additional information.
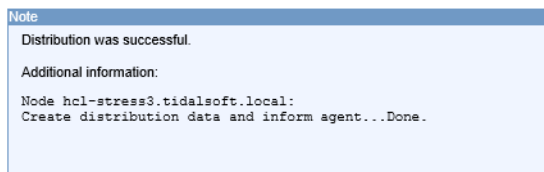
5. If you see any warning while deploying the configuration, login to the HP OMU Server command line and execute the following command to deploy the node.

   ```
   opcsw -installed NodeName
   ```

6. Login to the HP OM Java Console (Java GUI).

   Note: The Java GUI must be installed on your computer before you can view the Message Browser.

All messages matching your operator login responsibilities are added to the bottom of the Workspace pane. For further information regarding the installation of the Java GUI, see your *HP OMU Administrator Guide*.

Severity	Dup.	SUIAONE	Time Received	Node	Application	MsgGrp	Object	Message Text
Critical		-X-----	18:15:43 10/13/10	hpvmito4.tidalso...	HP Operations ...	OpC	Licensing	Critical Notification: 1 'HP Operations Mar..
Critical		-X-----	18:15:42 10/13/10	hpvmito4.tidalso...	HP Operations ...	OpC	Licensing	Critical Notification: 1 'Agent Count' licens.
Warning		--X----	18:36:02 10/12/10	hpqa07.tidalsoft...	Distribution Mo...	OpC	Template	Distribution still pending after 57505 min.
Warning		--X----	18:26:09 10/12/10	hpqa07.tidalsoft...	Distribution Mo...	OpC	Template	Distribution still pending after 57495 min..
Warning		--X----	18:15:35 10/12/10	hpvmito4.tidalso...	HP Operations ...	OpC	opcmsgm	(...Errors while creating IP address mapping.
Warning		--X----	18:15:33 10/12/10	hpvmito4.tidalso...	HP Operations ...	OpC	opcdispm	(... Nonexisting MSI ID (a679968e-d586-71d..
Critical		--X----	18:15:31 10/12/10	hpvmito4.tidalso...	HP Operations ...	OpC	opcbbcdist ...	Node is not in the node bank. (OpC50-9'..
Major		-X-----	07:07:17 10/12/10	hpvmito4.tidalso...	TES		TES	check agent
Major		-X-----	06:07:10 10/12/10	hpvmito4.tidalso...	TES		TES	check agent
Major		-X-----	05:07:03 10/12/10	hpvmito4.tidalso...	TES		TES	check agent
Major		-X-----	04:06:57 10/12/10	hpvmito4.tidalso...	TES		TES	check agent

of	4	9	0	5	0	0		0	0	☐ Lock

A message for each selected node displays that indicates that the policies, monitors, actions and commands have been successfully distributed. If you do not see any messages concerning the distribution:

- If the nodes do not appear on the Java Console, you might have to use "Actions -> Move to Layout Group" option to be seen from Java GUI.

- Verify that the HP OMU user that you are logged in as has access rights for the OpC message group on those nodes.

For instructions regarding nodes and assigning responsibilities to users, see your *HP OMU Administrator Guide*.

Restart TWA Components

The TWA components must be stopped and restarted before the changes that occurred during the installation of the HP OMU Integration will take effect.

To see the HP OV Operations (HP ITO Actions) in the TWA Actions:

1. Execute the following query on the Master DB:

   MSSQL:

   ```
   update sysval set sysval_string = 'Y' where sysval_id=43;
   ```

   Oracle:

   ```
   update TIDAL.sysval set sysval_string = 'Y' where sysval_id=43;
   ```

Restart the TWA Master(s)

You must stop and restart all TWA Masters to which you have distributed the HP OMU agent software and templates before the changes can take effect. The restarted Master should have HP ITO actions enabled.

To restart the Master, follow these steps:

1. From the command line of the Master machine, go to the directory for your platform:

   Windows: <Master Installation>/script

   UNIX: <Master Installation>/bin

2. Stop the Master by entering:

   tesm stop

3. Verify that the Master has completely stopped, by entering:

   tesm status

4. Once the Master has stopped, restart it by entering:

```
tesm start
```

Configuring the HP OMU Integration for TWA

There are several configuration tasks to perform for the HP OMU Integration to work with TWA:

- Create Account User Definitions in TWA, page 16

- Configuring the HP OMU Integration for a Unix Master, page 17

- Configuring Unix Agents for HP OMU, page 18

Create Account User Definitions in TWA

TWA validates Windows logon names against its own user database. During installation of the Master, you provide TWA your Windows user name and password. TWA creates the first TWA user account for you with this information and automatically assigns you Superuser capability. The Superuser option provides access to all TWA functions and supersedes all security policies because it encompasses all security permissions. Refer to your *Tidal Workload Automation User Guide* for information regarding creating user accounts.

If you care using a Windows version of TWA, as part of HP OMU integration you must add a user with the user name HP ITO account to TWA.

Note: The Unix version of TWA does not require a HP ITO account user.

The HP ITO account user definition must have the Superuser option selected.

As part of HP OMU integration, you must also add a user with the user name **opc_op** to TWA. The **opc_op** user definition must have the Superuser option selected. This user ID is used when executing operator-initiated actions from within HP OMU.

Adding a User

To add a user:

1. From the Navigator pane, select **Administration>Interactive Users** to display the Users pane.

2. Right-click in the Users pane, and select **Add Interactive User** from the context menu to display the User Definition dialog box.

3. In the **User Name** field, enter the HP ITO or opc_op, as appropriate for the user definition you are creating.

   Note: The Unix version of TWA does not require a HP ITO user account.

4. Select the **Superuser** option.

5. Click **OK** to save the new user definition.

Configuring the HP OMU Integration for a Unix Master

To use the HP OMU Integration with TWA 's Unix Master, configuration of the Master is required.

To configure the HP OMU Integration for a Unix Master:

1. Create a file called umlist in the TWA directory on the Unix Master machine:

   `/etc/TIDAL/umlist`

2. In the umlist file, enter the following information on a single line with a single space between each entry:

   – **<masterID>** The master ID (should match the master ID in the *master.props* file; e.g., **TidalSAMaster**.

   – **<user>** The user account that installed the Unix Master; e.g., **root**.

   – **<host>** The machine name of the Unix Master machine; e.g., **galaxy4**.

   – **<master_directory>** The directory path to the Unix Master directory; e.g., **/opt/unixsa/TIDAL/master**.

   – **<java_home>** The directory path to the JVM being used by the Unix Master.

   This directory will be the directory above the bin directory in the Java directory path. For example, if the Java directory path is **/usr/java1.4/bin/java**, then **<java_home>** is **/usr/java1.4**.

   – **<ito_user>** The user account, opc_op, created earlier in TWA . (The HP OMU user account is not used with the Unix Master.)

   The file will resemble the following example:

   `tidalSAMaster oracle galaxy4 /opt/unixsa/TIDAL/master /usr/java1.4 opc_op`

   Note the space after "`/master `".

3. In a text editor, open the master.props file in the config directory where the TWA files are installed on the Unix Master machine.

4. On a separate line in the file, add the **<opcmsgPath>** parameter providing the directory path to the **opcmsg** executable file.

UNIX example:

```
opcmsgPath=<HP OMU Agent Installation folder>/bin/OpC/opcmsg
```

Windows example:

```
opcmsgPath=C:\\Program Files\\HP\\HP BTO Software\\bin\\win64\\OpC\\opcmsg.exe
```

Note: This step is required for Windows.

5. Add a new line that specifies the **<masterID>** parameter. For example:

```
masterID=TidalSAMaster
```

Note: This step is required for Windows.

6. Save the changes and close the master.props file.

7. Stop and restart the Master to recognize the new configuration.

Configuring Unix Agents for HP OMU

To monitor the TWA agent on Unix, an additional configuration step is necessary prior to distributing the HP OMU templates to the machine. The HP OMU templates that monitor the Unix TWA agents rely on this configuration step.

Note: No additional steps are required for TWA Agents on Windows.

You must create the file **/etc/TIDAL/aglist** on each managed node. You may have to create the **/etc/TIDAL** directory if it does not already exist. Permissions must be set to allow all users to read the file. This means at least read and execute permissions on the **/etc/TIDAL** directory, and read permissions on the aglist file itself (i.e. **chmod -R a+rx /etc/TIDAL**).

The aglist file should contain a line for each Unix agent that you want to monitor. Since each line includes the host name, you can create a single aglist file containing all agents on every node, and place a copy of that file on each TWA Unix agent node. Or, you can create a separate file on each managed node that lists only the agentsnode.

The format of each line of the aglist file is as follows:

<descriptive-name> <user> <host> <tidalagent-directory-path>

where:

<descriptive-name> is a defined string explaining what the product is used for or where it is deployed (such as "development", "accounting", etc.) or just the agent name (for example, TIDAL_AGENT_2).

<user> is the user name (login name) of the user who owns the TWA agent files

<host> is the name of the host machine where the product is installed

<tidalagent-directory-path> is the directory where the product is installed (the $tidalagent variable)

Note: Fields in the aglist file cannot contains spaces. Fields may be separated by spaces or tabs. Per normal Unix convention, include a new line at the end of the last line of data.

The following is an example of the aglist file in the java-based version of the TWA Agent for Unix:

```
production tidal bigserver /opt/ocs development
development devuser devserver /usr/local/ocs
accounting account deptserver /home/account/ocs
```

3
Using HP OMU with TWA

Overview

TWA provides complete visibility to your production workload and allows you to handle exceptions, as needed. Job or system-level events are defined to handle these exceptions. Each event can trigger one or more actions when TWA detects the event condition. Using the HP OMU module, you can specify actions that send messages to HP OMU. These messages are displayed to the responsible HP OMU operator, and contain information including the severity, data, time, node, TWA event ID, and a brief description of the problem. Some messages also contain a predefined operator-initiated action, that allow the operator to respond to the event with just a few mouse clicks.

This chapter covers the tasks that you perform with the HP OMU Integration:

- Creating Actions, Job Events, and System Events

- Monitoring TWA with HP OMU

- Using the HP OMU Applications

Creating Actions, Job Events, and System Events

An **action** is a task or notification automatically performed by TWA in response to an event trigger that occurs for a specific job, job group, or system event. Actions are linked to a job or system event through the Job Event Definition and System Event Definition dialogs.

A **job event** connects job event triggers to actions. For the HP OMU integration, you must create a job event that sends a message to HP OMU. For example, if any of your jobs complete with a Completed Abnormally status, that event can trigger an HP ITO action to send a message to HP OMU, alerting the operator to the situation.

A **system event** allows you to assign actions to events generated by the TWA master. For example, you can send a message to HP OMU any time the master is shut down. System events are useful for notification of conditions with global, or system-wide effects.

The following sections describe how to create actions, job events, and system events:

- Creating an Action, page 19

- Creating a Job Event, page 20

- Creating a System Event, page 22

Creating an Action

To create an action to be used by this integration:

1. From the Navigator pane, select **Definitions>Actions>HP OV Operations** to display the HP OV pane.

2. Right-click in the HP OV pane and choose **Add ITO Action** from the context menu to display the Action Definition: HP OV Operations dialog box.

An HP ITO action sends a message to the HP OMU Management Server when the associated job or system event occurs.
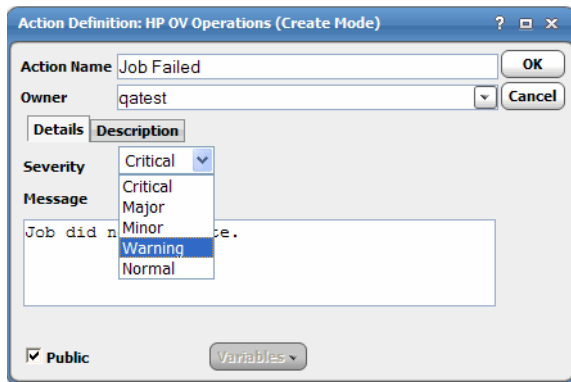
3. In the Action Name field, enter a name for this action (up to 30 characters). The name must be unique.

4. From the Owner list, select an owner for the action. The default owner of the action is the creator.

5. From the Severity list, select the severity level for the HP OMU message. You can choose Critical, Major, Minor, Warning or Normal. See OMU Severity Levels, page 25 for more information about choosing the appropriate severity level.

6. In the Message field, enter the descriptive text for your message, which will appear in the HP OMU Message Browser. To include variables (such as Job Occurrence ID or Queue Name) in the Message field, select the desired value from the Variables list at the bottom of the Action Definition: HP OV Operations dialog.

7. To enter a description or other notes for your action, select the **Description** tab, and enter your description.

8. Click **OK** to close the definition of the action.

9. Repeat this procedure for each action that you need to create.

Creating a Job Event

To create a job event:

1. On the Navigator pane, select **Definitions>Job Events** from the left pane to display the Job Events pane.

2. Right-click in the right pane and select **Add Event** from the context menu to display the Job Event Definition dialog box.
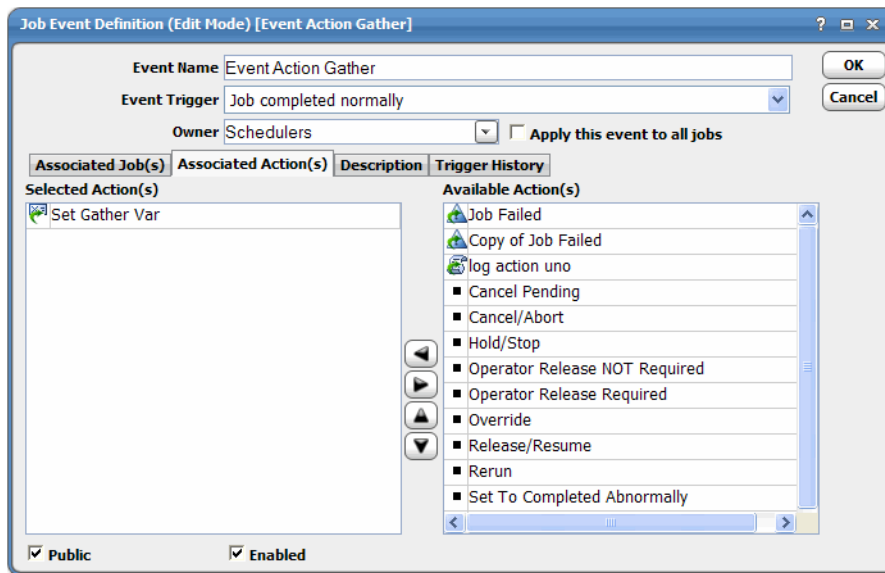
3. Enter a name for this event in the Job Event Name field (up to 30 characters).

4. Select an event trigger from the Event Trigger list. The list of event triggers is a pre-defined list of events.

5. The default owner of the event is the creator, but you can select a different owner from the Owner list.

6. Select one of the ITO Actions that you have added in the above procedure (Creating an Action, page 19) and/or any other actions displayed in the Available Action(s) field and click the **left arrow** button to move it to the Selected Action(s) field.

7. Click the **Associated Job(s)** tab.
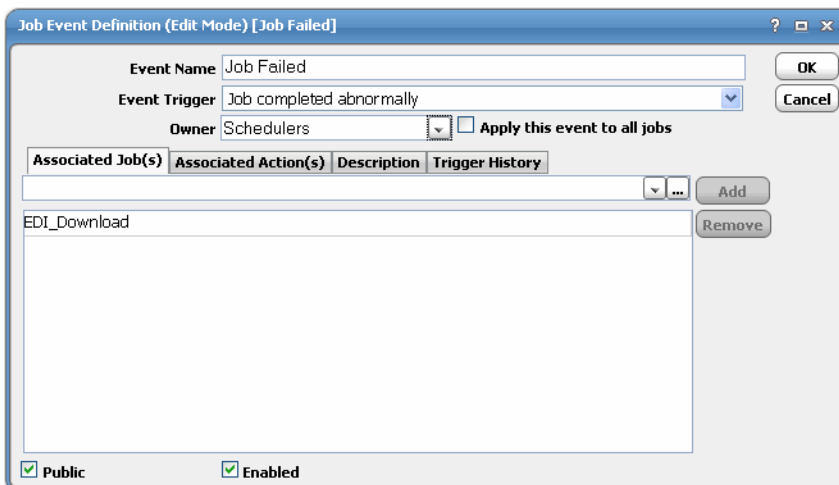
8. Select the TWA job to be monitored for this event from the list or click the **browse** button to browse for a job. If you have not yet created the desired job, or later wish to associate this event with a new job, you can also select associated events from Job Events tab in the Job Definition dialog box.

9. Click the **Description** tab to enter descriptive information about this job event.

10. Click **OK** to complete the definition of the job event.

11. Repeat this procedure for each job event that you need.

Now, whenever one of the jobs you selected in the Associated Job(s) field meets the condition defined in the Event Trigger list, a message is sent to HP OMU with the description and severity specified for that associated action.

Creating a System Event

To create a system event:

1. From the Navigator pane, select **Definitions>System Events** to display the System Events pane.

2. Right-click in the System Events pane and select **Add Event** from the context menu to display the System Event Definition dialog.

3. In the System Event Name field, enter a name (up to 30 characters).

4. From the Event Trigger list, select an event trigger.

5. From the Owner list, select the owner of the event. The default owner of the event is the creator.

6. Select one of the ITO Actions that you have added in the above procedure (Creating an Action, page 19) and/or any other actions displayed in the Available Action(s) field and click the **left arrow** button to move it to the Selected Action(s) field.

7. Click the **Description** tab to enter any descriptive information about this system event.

8. Click **OK** to complete the system event definition.

9. Repeat this procedure for each system event that you need.

Now, whenever the condition selected in the Event Trigger list is met, a message is sent to HP OMU with the description and severity specified for that associated action.

Monitoring TWA with HP OMU

Starting the HP OMU Message Browser

To see the HP OMU message browser:

1. Log into the Java GUI using the login and password provided to you by your OMU Admin.

Severity	Dup.	SUIAONE	Time Received	Node	Application	MsgGrp	Object	Message Text
Critical	-X-----	18:15:43 10/13/10	hpvmito4.tidalso...	HP Operations ...	OpC	Licensing	Critical Notification: 1 'HP Operations Manager Server' lice
Critical	-X-----	18:15:42 10/13/10	hpvmito4.tidalso...	HP Operations ...	OpC	Licensing	Critical Notification: 1 'Agent Count' licenses are used in
Warning	--X----	18:36:02 10/12/10	hpqa07.tidalsoft...	Distribution Mo...	OpC	Template	Distribution still pending after 57505 min. for
Warning	--X----	18:26:09 10/12/10	hpqa07.tidalsoft...	Distribution Mo...	OpC	Template	Distribution still pending after 57495 min. for Template A
Warning	--X----	18:15:35 10/12/10	hpvmito4.tidalso...	HP Operations ...	OpC	opcmsgm	(...Errors while creating IP address mapping table. (OpC40-
Warning	--X----	18:15:33 10/12/10	hpvmito4.tidalso...	HP Operations ...	OpC	opcdispm	(... Nonexisting MSI ID (a679968e-d586-71df-1b43-0a58677
Critical	--X----	18:15:31 10/12/10	hpvmito4.tidalso...	HP Operations ...	OpC	opcbbcdist ...	Node is not in the node bank. (OpC50-91) No according
Major	-X-----	07:07:17 10/12/10	hpvmito4.tidalso...	TES		TES	check agent
Major	-X-----	06:07:10 10/12/10	hpvmito4.tidalso...	TES		TES	check agent
Major	-X-----	05:07:03 10/12/10	hpvmito4.tidalso...	TES		TES	check agent
Major	-X-----	04:06:57 10/12/10	hpvmito4.tidalso...	TES		TES	check agent
of	4	9	0	5	0	0	0	0	☐ Lock

The content of the message text depends partly on what you entered in the Message field of the Action Definition dialog for the action that sent the message.

2. To see the details of a message, double-click it or select the message and click **Properties**.
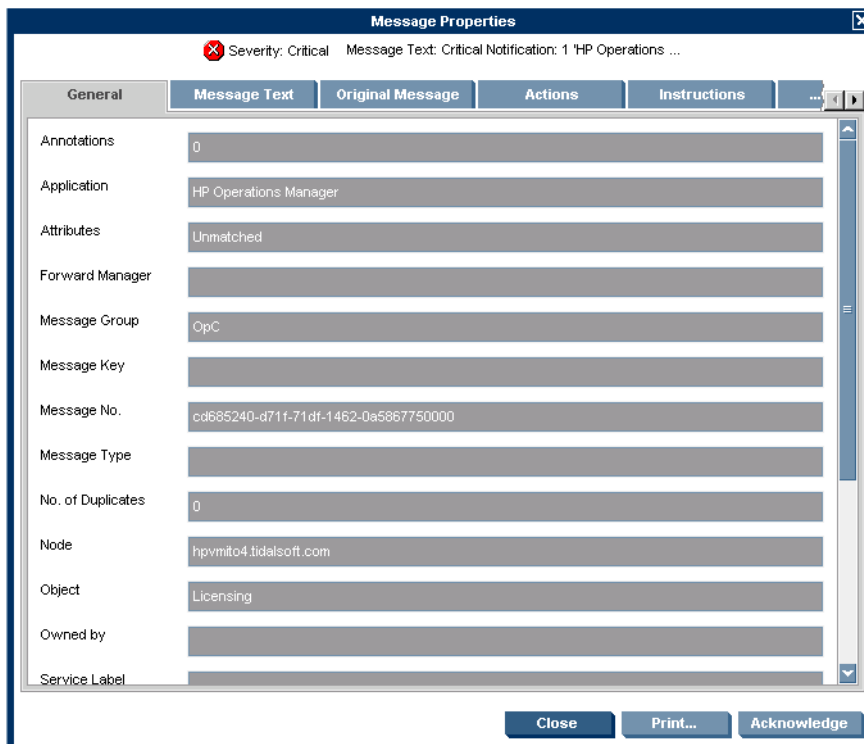
The Message Properties dialog box displays the following:

- the node where the message originated

- the specific application that generated the message

- date and time

- severity level of the message

- template whose condition generated the message

- actual command that would be executed if the operator clicked the **Perform** button located on the Actions tab

The HP OMU Integration has preconfigured several operator-initiated actions for appropriate events. For example, in the Message Properties dialog box above:

- A job is associated with the Job waiting for operator release event trigger.

- The Job waiting for operator release event trigger is associated with an HP ITO action for this job.

- When the job reaches the status of Job waiting for operator release, a message is sent to HP OMU, as configured.

- The HP OMU operator views the message in the Message Browser.

If the HP OMU operator clicks **Perform** in the Actions tab for that message, the job is released.

Performing Tasks

In addition to the Perform button associated with messages, the HP OMU Integration provides HP OMU Tools in the form of icons/links on the HP OMU Tool Bank window. The operator can use these tools to perform common tasks from the HP OMU Java GUI, typically in response to messages received.

With supplied HP OMU Tools, the operator can:

- Start, stop, or get the status of Windows agents

- Pause and resume the master production schedule

- Compile the master production schedule

- Get a list of alerts

- Get a list of job occurrences

- Perform most job control functions such as run, hold, release, cancel, remove, rerun, or set the status of a job.

Note: All HP OMU tools require the operator to select a node in the HP OMU Node Bank prior to execution. The task is then executed on the selected node. Many of these tools, and the job control functions in particular, also require the operator to enter arguments at run time. For example, to release a job, the operator must enter the job-occurrence-ID (job run ID) for the job that they wish to release. The instructions for doing this are included in the example below.

Using the HP OMU Applications

To use the HP OMU Tools:
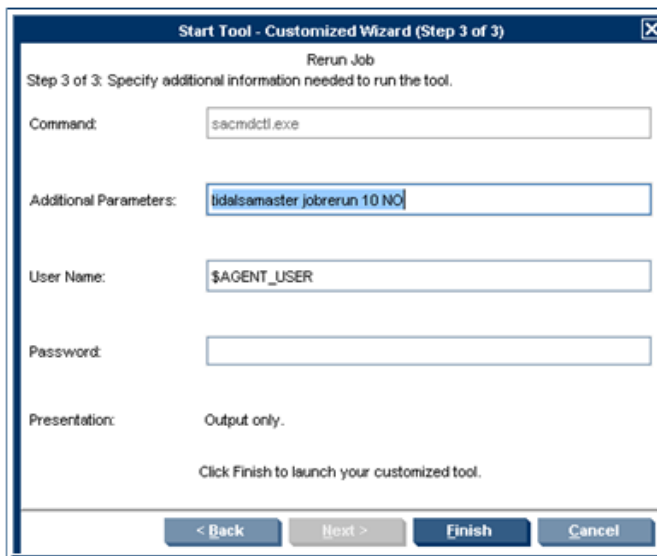
1. Launch the Java GUI and log in using the login and password provided to you by your OMU Admin.

2. Right-click the node, then select **Start** or **Start Customized** from the context menu depending on whether the Tool that you want to run requires additional parameters. The Start Tool Wizard displays.

   Note: This procedure contains an example of a tool that requires additional parameter to run.
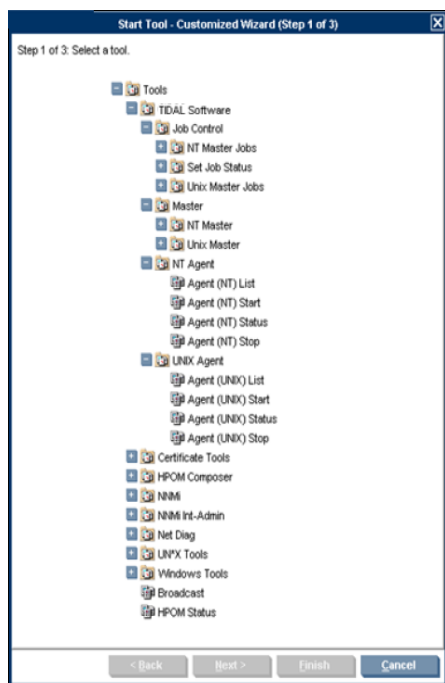
3. In this example, to release a job (which is a job control function), open the Unix Master Jobs.

4. Click **Next** to display the Rerun Job panel.

5. Specify the additional parameters.

The master_id must match the name that is configured in the master.props file. Additionally, the job occurrence_id is the job run id.

6. Click **Finish**.

OMU Severity Levels

The following table contains the possible message severities in OMU, their corresponding colors, and meanings.

Table 3-1

| Level	Color	Meaning
Critical	Red	Indicates a severe problem, requiring immediate corrective action. Service is unavailable.
Major	Orange	Indicates a significant problem. Service is degraded
Minor	Yellow	Indicates a problem of relatively low severity. Service is slightly degraded, but there is a workaround.
Warning	Cyan	Indicates detection of a potential or impending problem. Action should be taken to further diagnose and correct the situation to prevent a more serious issue.
Normal	Green	Indicates situation is as expected or other status information. Service is functioning normally.
Unknown	Blue	Indicates the severity level cannot be determined. this severity level is not available when creating an action in TWA.

Monitor Policies

The HP OMU Integration provides monitor policies that monitor the following:

Table 3-2

Service Description	Service Name	Template name
Master Services		
TWA Master Service	TidalSAMaster	TidalSAMaster
MS SQL Server Service	MSSQLServer	MSSQLServer_SYSADMIRAL
Backup Master Services		
TWA Backup Master Service	TidalSAMaster	TidalSABackup
Fault Monitor		
TWA Fault Monitor Service	TidalSAFaultmon	TidalSAFaultmon
Client Manager		
TWA Client Manager Service	TidalClientMgr	TidalClientMgr
Agent Services **Note:** All agent services on an agent node are monitored.The exact names of the agent services are dependent upon the agent's configuration.		
Original Windows Agents	Depends on configuration	TidalAgentMonitor
High-Performance Agents		
Unix Agents		

To view a list of the agents on a particular agent node:

1. Select the agent node in the Java GUI.

2. Right-click the node, then click **Start> TIDAL Software>Unix Agent>Agent (UNIX) List**. The output window displays a list of the agents installed on that node.
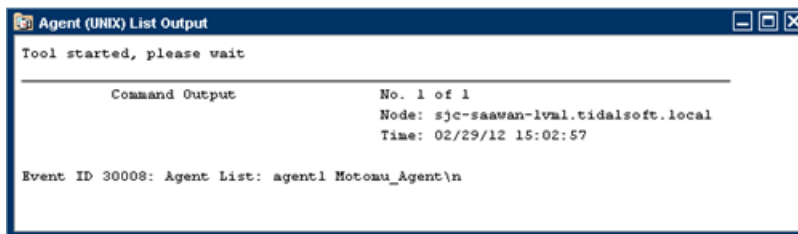
Troubleshooting

The information included in this section will assist you in troubleshooting the HP OMU Integration installation. One or more of the following factors are the usual source of difficulty:

- The network connection between the HP OMU Management Server and one or more of the TWA managed nodes has been lost.

- You logged into HP OMU as an operator who does not have the appropriate access rights. Verify that the operator has access rights for all of the TWA nodes that are HP OMU managed nodes. The operator should have access permission to the job message group. The HP OMU Administrator (opc_adm) can view and change these permissions.

- The TWA HP OMU Integration is not installed or configured correctly.

- The HP OMU agent is not installed on the remote host.

■ Templates for the TWA HP OMU module have not been loaded on the HP OMU agent.

Diagnosing Problems

To diagnose a problem:

1. Verify that HP OMU is installed and running.

   a. Launch the HP OMU console using the **opc** command.

   b. Open the Message Browser and Node Bank.

   c. Verify that node status is reflected correctly in the node bank.

   If HP OMU reports errors when starting, or if the status of the nodes in the Node Bank is incorrect, see your HP OMU Administrator or refer to your HP OMU documentation for assistance.

   d. From the Unix command prompt, execute the following command:

   ```
   ovstatus
   ```

   e. Verify that all the necessary components are running.

2. Verify that the TWA HP OMU Integration is installed

   a. Verify that the TWA templates display in the Message Source Template window.

   b. Using the Window - Message Source Template option, open the Message Source Template window and verify that message templates for TWA appear in this window.

3. Verify that the remote HP OMU agent is installed.

   From the Unix command prompt, execute the command:

   ```
   opcragt -status <nodename>
   ```

   This should display the status of the HP OMU agent on the remote system. If the opcragt command indicates that the HP OMU agent is not installed, follow the procedure described in the HP OMU manuals and install the HP OMU agent.

4. Verify that the templates have been successfully loaded on the remote system and download the templates to the remote host. You should see a message in the HP OMU Message Browser that indicates that templates, monitors, etc., have been successfully downloaded to the remote node.

5. Verify that the HP OMU event delivery mechanism is working

6. Execute the opcmsg command on the remote node to send a simple text message to the HP OMU master. Verify that your message appears in the HP OMU Message Browser. An example of this command is:

   ```
   opcmsg sev=normal appl=test obj=test msg_text="Test message from node x"
   ```

Specific Problems

Operator Actions Are Not Working

In order for the HP OMU actions to work, you must add a user with the user name HP ITO Account to TWA . The HP ITO Account user definition must have the TWA Superuser option selected.

Job and System Messages Are Not Getting Through

Verify that HP OMU alerts are set up. Execute the **opcmsg** command manually to make sure that the HP OMU agent and event reporting are working.

4
Event ID Tables

Overview

Each event trigger used in TWA has its own ID number. Job events use a different numbering scheme than system events. A listing of each job event and system event are provided in separate tables in the following sections:

-

-

Job Event Triggers

The following table lists the event triggers for various job events supported by TWA. These event triggers are supported throughout the various integration channels. Using the event ID number displayed in the Windows application log you can reference its meaning from this table. All job events have an ID number that begins with 12.

Table 4-1

Event ID	Trigger	Event Type(s)	Description
12000	Job added to schedule on demand	Status Change/Job Control	The job was added to the production schedule on an unscheduled basis.
12001	Job completed	Status Change	The job completed with a Completed Normally or Completed Abnormally status.
12002	Job completed abnormally	Status Change	The job completed with a Completed Abnormally status. The job's exit code is non-zero
12003	Job completed normally	Status Change	The job completed with a Completed Normally status. The job's exit code is 0
12005	Job waiting for operator release	Status Change	All the job's dependencies have been met. This event trigger only occurs when you select the Require operator release option in its job definition. The job is now waiting for the operator to release it.
12006	Job put on hold	Job Control	The operator put the waiting job on hold.
12007	Job waiting on resource	Status Change	All the job's dependencies have been met and the job is waiting for an execution slot to become available.
12008	Job not ready by end of its time window	Schedule Irregularity	The end of the job's time window was reached before its dependencies were met.
12009	Job launched	Status Change	The queue manager released the job from its queue to an agent, and the job entered the Launched status. Launch is the status prior to the job becoming Launch.
12010	Job active	Status Change	The job started running.

Table 4-1

Event ID	Trigger	Event Type(s)	Description
12011	Job stopped	Job Control	The job was stopped by an operator.
12012	Error occurred while launching job	Status Change	The job status changed to Error Occurred. The job did not run.
12013	Job skipped	Schedule Irregularity	The job did not run because another occurrence of this job was already running. The job must have the concurrency option set to Skip in its job definition for this to occur.
12014	Job deferred	Schedule Irregularity/Status Change	Because another occurrence of this job was running when this job was ready to launch, the job is waiting for the previous occurrence to complete. The job must have the concurrency option set to Defer until completion in the Job Definition dialog box for this to occur
12015	Agent unavailable for job	Status Change	The agent or the network has gone down prior to the job running. Therefore, the job cannot complete on this agent. If the job uses an agent list, this event trigger occurs in different ways based on the agent list: Ordered, Random, Balanced, or Rotation Agent List: If the job uses any of these lists, the event trigger occurs when all agents in the list are unavailable to run the job. Broadcast Agent List: If the job uses a broadcast list, the event trigger occurs for each agent in the list that is unavailable to run the job.
12016	Agent for job inactive	Status Change	The agent's Enabled option is set to Disabled, or Inactive. As a result, the job cannot launch on this agent. If the job uses an agent list, this event trigger occurs in different ways based on the agent list: Ordered, Random, Balanced, or Rotation Agent List: If the job runs on any of these agent lists, the event trigger occurs if all agents in the agent list are inactive. Broadcast Agent List: If the job runs on a broadcast list, the event trigger occurs for each agent in the agent list that is inactive.
12017	Job status changed	Status Change	Your job status changed. You can use this event trigger to catch all status changes for this job. The associated action occurs for all changes to the status of a job.
12018	Job might start later than expected	Schedule Irregularity	Other jobs which the job depends on are running behind schedule. This could cause your job to run later than expected. This event trigger occurs when one or all of the prerequisite jobs run longer than their estimated duration. The job might start later than originally forecast

Table 4-1

Event ID	Trigger	Event Type(s)	Description
12020	Job might not be ready by end of its time window	Schedule Irregularity	The end of the job's time window might not be reached before its dependencies are met. This trigger is activated approximately 7 seconds before the job's estimated start time becomes later than the end of the job's time window
12021	Job running longer than expected	Schedule Irregularity	The job is running longer than its estimated duration value. The job continues to run unless you stop it with a Job Control action that is associated with this event trigger, or unless an operator stops it. You initially set the Estimated Duration value in the Job Definition dialog box when you create the job. **<z_sys>sys<z_Star>*<z_ADMIRAL>ADMIRAL** adjusts the value to a historical average after each run of the job.
12022	Job running past end of its time window	Schedule Irregularity	The job is running past the time window set for it in its job definition. The job continues to run unless it is stopped with an associated job control action, or unless it is stopped by an user.
12023	Job might run pst end of its time window	Schedule Irregularity	The job might run past the time window set for it in its job definition. The job will continue to run unless it is stopped with an associated job control action, or unless it is stopped by the user. This trigger is activated at the end of the job's time window minus the job's estimated duration.
12025	Job finished later than expected	Schedule Irregularity	The job ran longer than the time specified in the Estimated Duration field in its job definition.
12026	Job running longer than its maximum time	Schedule Irregularity	The job is running longer than its Maximum Duration value, as defined in its job definition. The job continues to run unless you stop it with a job control action that is associated with this event trigger, or unless it is stopped by an user.
12027	Job ran shorter than its minimum time	Schedule Irregularity	The job ran in less time than the time specified in the Minimum Duration field in its job definition
12028	Operator reran the job	Job Control	The operator ran a job again after it already completed. Once set, this trigger will only apply to jobs that were not already in the schedule.
12029	Operator cancelled the job	Job Control	The operator cancelled the job before it had a chance to run.
12030	Operator aborted the job	Job Control	The operator aborted the job while it was running. The job could have taken too many resources, or some other problem could have occurred to justify the abort.
12031	Operator override of job dependencies	Job Control	The operator launched the job, even though all of its dependencies were not met.

Table 4-1

Event ID	Trigger	Event Type(s)	Description
12032	Job status is LAUNCH on startup.	Job Control	A job status of Launched means that a request to launch the job has been sent to the agent, and is pending notification from the agent that the job has started executing.
12033	Job added to schedule based on calendar	Status Change/ Job Control	The job was added to the production schedule automatically.
12034	Job orphaned	Status Change	The master lost connection to the agent running the job and can not determine the job's current status.
12035	Job rerun would exceed maximum reruns	Job Control	Rerunning the job would exceed the maximum reruns allowed.
12036	Job completed with specified exit code(s)	Status Change	The job completed within the specified exit code range. The exit code can denote normal or abnormal status for a job to trigger different actions.
12037	Job completed normally (output pending)	Status Change	Job completed normally (output pending) The job has completed normally but the job output is still being gathered and is not yet available.
12038	Job completed abnormally (output pending)	Status Change	Job completed abnormally (output pending) The job has completed abnormally but the job output is still being gathered and is not yet available.
12039	Job externally defined (output pending)	Status Change	Job externally defined (output pending) The job status was determined by an external user or program and the job output is still being gathered and is not yet available.
12040	Job has insufficient time to run before agent outage	Schedule Irregularity	Using the duration value of the job, the job will not complete before a planned outage on its agent.
12041	Job might run into agent outage window	Schedule Irregularity	Using the duration value of the job, the job may not complete before a planned outage on its agent.

System Event Triggers

The following table lists the event triggers for various system events supported by TWA. These event triggers are associated with system events through the System Event Definition dialog box.These event triggers are supported throughout the various integration channels.Using the event ID number displayed in the Windows application log you can reference its meaning from this table All system events have an ID number that begins with 20.

Table 4-2

Event ID	System Event Trigger	Description
20001	System queue limit set to zero	The system queue's (master queue under which all other queues reside) limit has been set to zero, eliminating the possibility for any jobs to enter the production schedule.
20002	Any queue limit set to zero	A queue's limit was set to zero. This may have been done to prevent jobs of a certain class from running. Note that a queue can be set to accept a certain class of jobs based on the queue's filters. To refer to the queue in an alert message, use the Queue Name variable in the assigned action.
20003	System queue reached its job limit	The number of jobs running in the overall system queue has reached the overall system queue limit, and no other jobs can run until a slot becomes available. Slots become available when a job running in the queue completes, or the queue's limit is increased. When this trigger occurs, it indicates that either too many jobs are being scheduled for the capacity of the system, or the system capacity has been underestimated, and the system queue limit needs to be raised.
20004	Any queue reached its job limit	A queue cannot launch any more jobs until a slot becomes available in the queue. This may indicate that a certain class or type of job is overloading the system. To refer to the queue in an alert message, use the Queue Name variable in the associated action.
20005	Agent reached its job limit	The number of jobs an agent is executing is equal to its job limit. The agent cannot start any more jobs until other jobs complete. To refer to the agent in an alert message, use the Agent Name variable in the assigned action. This system event can notify users when an agent is operating at capacity.
20006	Compile started	The production schedule compile has started. Compiling usually begins at midnight, when the master is started on a new day, or when you select the Create Schedule menu item from the Operations menu. You can use this system event to notify users that a new schedule is being created.
20007	Compile finished	The production schedule compile has completed. Compiling time is based on, among other factors, the number of jobs. Use this system event to alert users that a new schedule is in effect.
20008	Master paused	The master was paused. Waiting jobs are suspended until the master resumes operation. You can use this system event to notify users that the master was temporarily paused, and jobs will not launch until the master resumes.
20009	Master resumed	The master has been resumed from paused state. You can use this event to notify users that the master has resumed launching jobs. Depending on how long the master was paused, many jobs may have their dependencies met at once, which may cause a spike in system resource utilization.

Table 4-2

Event ID	System Event Trigger	Description
20010	Lost Connection to agent	An agent's network connection was lost. To refer to the agent, use the Agent Name variable in the assigned action. You can use this event to warn users that an agent is no longer connected.
20011	Master program shut down	The master has been shut down normally. You can use this system event to notify users that all waiting jobs will not run until the master restarts.
20012	Backup master took over	A fault occurred on the primary master (such as the master going down, or a network failure occurred) which caused scheduling to be transferred to the backup master. You can use this system event to warn users that the backup master took over the scheduling process. Any jobs that were manually updated after the last database replication update prior to the takeover will have to be re-entered. See the *Fault Tolerance Guide* for more information on Fault Tolerance.
20013	Primary master started	The primary master has started. You can use this system event to notify users that jobs will resume being launched. Depending on how long the Master was stopped, many jobs may have their dependencies met at once, which may cause a spike in system resources.
20014	New production day	The master has recognized a new production day for which jobs are automatically compiled. You can use this event to trigger initializing variables used in dependencies.
20015	Lost connection to fault monitor	The network connection to the fault monitor was lost.
20016	Lost connection to backup master	The network connection to the backup master was lost.
20017	Lost connection to database	The connection to the database was lost. Operator alerts and **<z_sys>sys<z_Star>*<z_ADMIRAL>ADMIRAL** logging actions are not available because they access the database. However, the logging action can be used with the NT event log.
20018	Lost network connection to remote master	The network connection to the remote master was lost.
20019	Connection brought offline due to planned outage	The agent/adapter connection has entered a scheduled outage window.
20020	Connection brought online after planned outage	The agent/adapter connection suspended during a scheduled outage window has ended its outage. (Does not apply to connections that are disabled during the outage.) This event could apply to either the automatic enabling of the connection at the scheduled end of the outage or when an administrator manually enables the connection early.