IBM Management Edition for AIX, version 1.1.2: User's Guide

IBM

Introduction

IBM® Management Edition for AIX® comprises the following elements:

Launchpad

A launchpad that you use to install the following products:

- IBM Tivoli® Monitoring
- IBM Tivoli Application Dependency Discovery Manager
- IBM Usage and Accounting Manager Virtualization Edition

This launchpad also installs the DB2® Database that these products use for RDBMS support.

The launchpad is fully documented with online documentation or links to information centers that provide all the information you need to know about installing and configuring these products.

Workspaces

A set of workspaces that you use to integrate IBM Tivoli Monitoring with Application Dependency Discovery Manager and Usage and Accounting Manager. This current document describes how to use the workspaces to achieve the integration.

Note: This document does not tell you how to use the products, as they have full documentation, accessible online, to provide that information.

The workspaces provide the following:

- A way of viewing configuration data for UNIX® systems from the Tivoli Enterprise Portal of IBM Tivoli Monitoring
- A way of alerting the Tivoli Enterprise Portal when determined configuration changes occur, and of viewing the change history in the console
- The possibility of opening the Usage and Accounting Manager Administrator Console from within Tivoli Enterprise Portal

The description of how to use the workspaces is organized in the following topics:

- "Post-installation preparation" on page 2
- "Viewing configuration data for UNIX systems from Tivoli Enterprise Portal" on page 3
- "Viewing configuration change data for UNIX systems from Tivoli Enterprise Portal" on page 5
- "Locate unmonitored resources" on page 6
- "Opening Usage and Accounting Manager Administrator Console from within Tivoli Enterprise Portal" on page 7
- "Administration and Troubleshooting" on page 8
- "Notices" on page 14

Post-installation preparation

Perform the following activities:
- "Preparing the Tivoli Enterprise Console"
- "Preparing Application Dependency Discovery Manager"

Preparing the Tivoli Enterprise Console

If you have defined one or more Tivoli Enterprise Console event recipients, you must import the baroc file that contains the event class definition for Application Dependency Discovery Manager, if you have not already done so. This file is called `TADDM_MEAIX.baroc` and can be found on the Management Edition for AIX media in the directory `files/TEC`. Follow the instructions in the Tivoli Enterprise Console documentation about how to import a baroc file.

Preparing Application Dependency Discovery Manager

Application Dependency Discovery Manager has a discovery action that collects configuration data about all the nodes in your network. Before you can access this configuration data in the workspaces, you must complete the discovery.

The prerequisite for the discovery is that the AIX computers you want to be included in the discovery must have SSL and SSH installed.

The discovery can be run manually, or can be scheduled through the Application Dependency Discovery Manager Administration Console. Follow the instructions in the information center.

Viewing configuration data for UNIX systems from Tivoli Enterprise Portal

To view configuration data for UNIX systems from Tivoli Enterprise Portal, do the following:

1. Open the Tivoli Enterprise Portal using the portal client. There are two kinds of portal client:

   Browser client interface (automatically installed with Tivoli Enterprise Portal Server)
   In your Internet browser, enter the URL for a specific Tivoli Enterprise Portal browser client installed on your Web server (in the format http://<teps_server_name>:<port>/). You can only run the browser client interface from Windows® computers.

   Desktop client interface
   This is a Java-based graphical user interface on a Windows or Linux® workstation. After the desktop client is installed and configured, you can use it to start Tivoli Enterprise Portal in desktop mode. You can also download and run the desktop client using Java™ Web Start.

   For full details see the IBM Tivoli Monitoring documentation.

2. In the Navigator View select **UNIX Systems**.

3. Right click **UNIX Systems** and select **Workspace**.

4. From the displayed list, select the **ME for AIX UNIX Systems Summary** workspace. The Managed System Status panel opens, filtered to show only systems on which are installed agents with the product codes of the agents shipped with Management Edition for AIX, plus the IBM Tivoli Monitoring hub monitoring server. These are the agents which are enabled:

Table 1. IBM Tivoli Monitoring agent codes enabled for UNIX Systems Summary workspace

Agent code	Agent name
UX	UNIX OS Base agent
UL	UNIX Logs Base agent
PX	AIX Premium agent
PK	Central Electronics Complex Base agent
PH	Hardware Management Console Base agent
VA	Visual Internet Operating System Premium agent
EM	IBM Tivoli Monitoring Hub Monitoring Server
LZ	Linux OS Base agent (this agent is not distributed with Management Edition for AIX but the agent is enabled)

The details in the display are as follows:

Name   Agent name

Host info   AIX version number

Status   OFFLINE or ONLINE

Product   Agent product code (see Table 1)

Version   Agent version number

Host address   System IP protocol, IP address and host name

Managing system   Name of the hub monitoring server that manages the agent

5. Click the link icon on the left of the row corresponding to the UNIX system for which you need the configuration data.

6. Log in to Application Dependency Discovery Manager.

7. A panel opens, displaying the following options:

Product Console
>Click this to display the Application Dependency Discovery Manager console.
>
>**Note:** Before accessing the console you must add its URL to the trusted zone in your browser.

Changes
>Click this to display a panel of configuration changes for the selected computer, taken from the Application Dependency Discovery Manager database. A full explanation of the panel is provided in the Application Dependency Discovery Manager documentation.

Details
>Click this to display a tabbed panel of current configuration data for the selected computer, taken from the Application Dependency Discovery Manager database. A full explanation of the panel is provided in the Application Dependency Discovery Manager documentation.

Viewing configuration change data for UNIX systems from Tivoli Enterprise Portal

To view configuration change data for UNIX systems from Tivoli Enterprise Portal, do the following:

1. Open the Tivoli Enterprise Portal using the portal client (see the first step in the previous section for how to do this).
2. In the Navigator View select **UNIX Systems**.
3. Right click **UNIX Systems** and select **Workspace**.
4. From the displayed list, select the **ME for AIX UNIX Systems Configuration Changes** workspace.

   Two panels open:

   The Application Dependency Discovery Manager login panel
   > The Application Dependency Discovery Manager login panel is in the upper part of the user area of the portal. Log in to Application Dependency Discovery Manager.

   Configuration changes event summary
   > The lower part of the user area is a tabbed panel of configuration change events.
   >
   > Events are received from all systems discovered by Application Dependency Discovery Manager, irrespective of whether an IBM Tivoli Monitoring agent is installed, and that satisfy the *listener* queries that you created in the EventConfig.xml file during the configuration of Application Dependency Discovery Manager. To change these queries, see "Changing the Application Dependency Discovery Manager event module configuration" on page 9.
   >
   > Events remain visible in this summary panel until the first refresh of the list after they have exceeded the timeout configured in the Universal Agent that you installed to enable the integration. The default value used when the agent was configured is 14400 seconds (4 hours). If this timeout is not correct, change the configuration of the Universal Agent, as described in "Modifying event list timeout" on page 10.
   >
   > The details in the display for each system are the Tivoli Enterprise Portal default details for a configuration change event for a UNIX system.

   Note: If a pop-up panel is displayed with a message referring to an "Unresponsive script", click **Continue**. See "Stopping the display of the message about an "unresponsive script"" on page 13 for instructions on avoiding the display of this message.

5. Click the link icon �'— on the left of the row corresponding to the event for which you need the configuration change data.
6. Two panes open:

   Change history
   > The panel of configuration changes for the selected computer, taken from the Application Dependency Discovery Manager database. A full explanation of the panel is provided in the Application Dependency Discovery Manager documentation.

   Configuration details
   > The tabbed panel of current configuration data for the selected computer, taken from the Application Dependency Discovery Manager database. A full explanation of the panel is provided in the Application Dependency Discovery Manager documentation.

Locate unmonitored resources

The IBM Tivoli Application Dependency Discovery Manager Monitoring Coverage Report highlights resources that are not monitored by comparing data that it extracts from IBM Tivoli Monitoring with other data that it has discovered.

The Application Dependency Discovery Manager Monitoring Coverage Report was first introduced in Application Dependency Discovery Manager 5.1, and it provides configuration data about your monitoring environment. The Monitoring Coverage Report is used in conjunction with the IBM Tivoli Monitoring Discovery Library Adapter that is shipped with IBM Tivoli Monitoring 6.1 fix pack 3 or later.

Administrators use the report as an informational tool in deciding to which computer system to deploy IBM Tivoli Monitoring monitoring agents for databases and operating systems. Application Dependency Discovery Manager provides a launch in context to IBM Tivoli Monitoring to view performance and availability metrics. Combining the Monitoring Coverage Report with other IBM solutions allows you to deploy IBM Tivoli Monitoring agents to resources that are not monitored by using IBM Tivoli Monitoring's remote deployment feature.

The data used in the report are collected by an IBM Tivoli Monitoring agent called the Monitoring Agent for IBM Management Edition for AIX Integration. The frequency with which the integration agent collects the data is determined by a frequency control that you can set in the Monitoring Coverage Report. Information about how to check that the agent is working correctly, is given in "Checking that the integration agent is working correctly" on page 11

Opening Usage and Accounting Manager Administrator Console from within Tivoli Enterprise Portal

To open the Usage and Accounting Manager Administrator Console from within the Tivoli Enterprise Portal do the following:

1. Open the Tivoli Enterprise Portal using the portal client (see the information above for how to do this).
2. In the Navigator View select **UNIX Systems**.
3. Right click **UNIX Systems** and select **Workspace**.
4. From the displayed list, select the **TUAM Administrator Console** workspace.
5. Log in to Usage and Accounting Manager
6. The Usage and Accounting Manager Administrator Console is displayed.

Administration and Troubleshooting

For regular system administration of the products installed by Management Edition for AIX, see the relevant product manuals.

System administration of the workspaces and other items installed by Management Edition for AIX is described here. See the following:
- "Application Dependency Discovery Manager administration and troubleshooting"
- "Integration agent administration and troubleshooting" on page 10
- "Stopping the display of the message about an "unresponsive script"" on page 13

Application Dependency Discovery Manager administration and troubleshooting

This section contains administration and troubleshooting information about the integration with Application Dependency Discovery Manager. This integration is encompassed by the workspaces and monitoring coverage report described in "Viewing configuration data for UNIX systems from Tivoli Enterprise Portal" on page 3, "Viewing configuration change data for UNIX systems from Tivoli Enterprise Portal" on page 5, and "Locate unmonitored resources" on page 6.

The administration and troubleshooting information is organized in these topics:
- "Changing the API password used by the Application Dependency Discovery Manager Event Module"
- "Changing the Application Dependency Discovery Manager event module configuration" on page 9
- "Modifying event list timeout" on page 10
- "Setting the event module traces" on page 10

Changing the API password used by the Application Dependency Discovery Manager Event Module

When you installed the Event Module for Application Dependency Discovery Manager in the launchpad, one of the parameters you supplied was the *<API password>*. This is the password of the *<API user>*, which is the user that you chose to authenticate the Event Module's access to Application Dependency Discovery Manager.

If the password of this user changes, you need to be able to change the encrypted version of the password stored in the `omp.properties` file (which is installed with the event module).

To do this, go to the directory *<event_module_installation_path>*`/taddmomp/bin`, and run the following script:

meaix_setpwd.sh

Usage: **./meaix_setpwd.sh [-u** *<TADDM_API_username>* **[-p** *<TADDM_API_password>***]]**

Parameters: The parameters are as follows:

-u *<TADDM_API_username>*
> Identifies the API user that you supplied when you installed the event module.
>
> If you omit the username and password in the command string, you will be prompted for them; the password is masked when you enter it, for security.

-p *<TADDM_API_passord>*
> Identifies the password of the API user.

If you omit the password in the command string, you will be prompted for it, and it is masked when you enter it, for security.

Comments: The password is saved in the *<event_module_installation_path>*/omp.properties file in encrypted form. However, if you want not to use an encrypted password for any reason, do the following:

1. Open the omp.properties file in a text editor.
2. Locate the com.ibm.cdb.password_encrypted property
3. Change the property's value from *yes* to *no*.
4. Locate the com.ibm.cdb.password property
5. Change the property's value to the unencrypted value you require.
6. Save the omp.properties file.

Note: Having an unencrypted password in a text file might be a security violation in your work environment.

To reset encryption, perform the same procedure, changing the property's value from *no* to *yes*.

Changing the Application Dependency Discovery Manager event module configuration

When you were enabling change configuration event reporting in the launchpad, one of the steps was to set the event *recipients* and *listeners*:

Recipients
These are the consoles that can receive change configuration events. They are Tivoli Enterprise Portal, Tivoli Enterprise Console®, and Tivoli NetCool/Omnibus, and are identified by their host names and listening ports.

Listeners
These are the configuration objects and their attributes, for which you want to send an event if they change.

If you want to change any of this information after the installation and configuration has been completed, there are two possible ways:

Set up the options from scratch
Use the launchpad option to configure the *recipients* and *listeners*. This option does not maintain any existing values, so you will start again from scratch and overwrite your previous configuration information.

See "Learning about listeners" on page 10 to determine which objects and attributes you should monitor.

Edit the existing options
To add to your existing configuration information, edit the EventConfig.xml file manually, following this procedure:

1. Edit the *<event_module_installation_path>*/taddmomp/properties/EventConfig.xml file, where *<event_module_installation_path>* is the path you chose to install the Event Module in the launchpad. Use a text editor or an XML editor (preferably one which helps you avoid syntax errors)
2. Read the description in the EventConfig.xml file comments of how to define which change events are sent to the recipients
3. See "Learning about listeners" on page 10 to determine which objects and attributes you should monitor
4. Make the changes you require and save the file.

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Learning about listeners

Whichever method you use to define them, to understand more about listeners, do as follows:

1. Locate either $TADDM_DIR/dist/sdk/doc/model/CDMWebsite.zip or $TADDM_DIR/dist/sdk/doc/model/model-javadoc.tar.gz in the installed directory structure of Application Dependency Discovery Manager.

2. Unzip the package of files into a directory of your choice.

3. Within the unzipped structure, launch the file misc/CDM.htm in your Internet browser.

4. From this set of HTML files, learn about the listener objects and attributes that you can use in the XML query structure to determine which change events are sent to the Universal agent (from which they are forwarded to the chosen recipients). Use the information in the file comments and the above-indicated documents to refine your choice of events.

Modifying event list timeout

The length of time that events remain visible in the configuration change events summary panel is determined by a timeout configured in the Universal Agent that you installed to enable the integration. This section explains how to modify the timeout.

Do the following:

1. On the computer where the Universal Agent that you are using for event forwarding is installed, stop the Universal Agent following the instructions in its User Guide.

2. Open the file *<ITM_Install_Dir>*/config/um.ini.

3. Locate the property: KUMP_POST_APPL_TTL

4. Change the value

5. Restart the Universal Agent.

Setting the event module traces

The Application Dependency Discovery Manager event module is installed with its tracing disabled, by default.

To enable the traces, take the following steps:

1. Open the file *<Event_Module_Install_Dir>*/taddmomp/bin/changeevents.sh

2. Locate the following command:

```
$TADDM_PATH/external/jdk-1.5.0-AIX-powerpc/jre/bin/java -Dcom.collation.home=$TA
DDM_PATH/sdk -classpath "$omp_classpath" com.ibm.cdb.integration.OmpEventModule
$MODULE_PATH/taddmomp
```

3. Add the following string at the end of the command: > *<log_file_path_and_name>* 2>&1

   where *<log_file_path_and_name>* is the path and name of the log file you want to create.

For example, if the trace file you want to create is called /tmp/module.trace, the command would be:

```
$TADDM_PATH/external/jdk-1.5.0-AIX-powerpc/jre/bin/java -Dcom.collation.home=$TA
DDM_PATH/sdk -classpath "$omp_classpath" com.ibm.cdb.integration.OmpEventModule
$MODULE_PATH/taddmomp > /tmp/module.trace 2>&1
```

Integration agent administration and troubleshooting

This section contains administration and troubleshooting information about the Integration Agent, that cannot be obtained from the IBM Tivoli Monitoring documentation. The Integration Agent is used to discover information for the Monitoring Coverage Report, see "Locate unmonitored resources" on page 6. The administration and troubleshooting information is organized in these topics:

- "Checking that the integration agent is working correctly" on page 11.
- "Enabling the Remote Execution and Access traces for the integration agent" on page 12

- "Specify private key file for SSH" on page 13

Checking that the integration agent is working correctly

To collect the information required for the Monitoring Coverage Report, the integration agent performs the following actions:

1. Invokes `KftTmsDla` to produce the DLA Book
2. Connects to the Application Dependency Discovery Manager Server system using the Remote Execution and Access libraries
3. Uploads the DLA book XML file into a predefined temporary directory
4. Invokes the loadidml.sh Application Dependency Discovery Manager command to import the DLA book.

The result of this is a return code in the Tivoli Enterprise Portal Server workspace indicating the result of the most recent running of the agent.

To access this information, do the following:

1. In the Tivoli Enterprise Portal Server navigation tree, Expand the **Management Edition for AIX Integration** item
2. Click on the **DLA Book Update** leaf. A default workspace is opened with a **Report** section that contains the data about the most recent running of the agent.

The columns in the report are as follows:

Node   The Tivoli Enterprise Portal Server server name.

Timestamp
The date and time that the report was prepared.

Upload Time
The date and time of the most recent import of the DLA book from Application Dependency Discovery Manager.

Return Code
A code indicating the result of the import. The possible values are as follows:

Table 2. Return codes from DLA book import

Return code	Meaning
-1	No data available, the first DLA book update is in progress
0	Success
1	General error
2	Unable to run the Tivoli Enterprise Portal Server command to export the DLA Book
3	Application Dependency Discovery Manager Server hostname not valid
4	Unable to connect to the Application Dependency Discovery Manager Server system
5	Unable to create the working temporary directory on the Application Dependency Discovery Manager Server system
6	Unable to upload the DLA Book XML file
7	Unable to import the DLA Book XML file

Enabling the Remote Execution and Access traces for the integration agent

The Integration Agent uses a package called Remote Execution and Access to access a remote system and launch a command. If you encounter a problem with Remote Execution and Access, it is possible to enable and collect the traces.

All agent logs, including these traces, are written to the $CANDLEHOME/logs directory, with the log name being kmt_ClientProvider_X.log, where "X" is a sequential number.

The traces are enabled by modifying the mt.ini file located in the $CANDLEHOME/config directory. This is a startup configuration file used by the integration agent. The following is a typical example:

```
KGL_KGLMSGBASE=$CANDLEHOME$/$ARCHITECTURE$/bin/KGLMSENU
ATTRLIB=$CANDLEHOME$/$BINARCH$/$PRODUCTCODE$/tables/ATTRLIB
CT_CMSLIST=$NETWORKPROTOCOL$:$HOSTNAME$;$HSNETWORKPROTOCOL$$MIRROR$
CTIRA_HIST_DIR=$CANDLEHOME$/$BINARCH$/$PRODUCTCODE$/hist
CTIRA_LOG_PATH=$CANDLEHOME$/logs
CTIRA_SIT_PATH=$CANDLEHOME$/$BINARCH$/$PRODUCTCODE$/bin
KBB_ACF1_PATH=$CANDLEHOME$/$ARCHITECTURE$/bin
KBB_RAS1=ERROR
KDC_FAMILIES=$NETWORKPROTOCOL$
LOGSHOME=$CANDLEHOME$/logs
LD_LIBRARY_PATH=$CANDLEHOME$/$BINARCH$/$PRODUCTCODE$/lib:
   $CANDLEHOME$/$ARCHITECTURE$/lib:/opt/ibm/gsk7_64/lib64
LIBPATH=$CANDLEHOME$/$BINARCH$/$PRODUCTCODE$/lib:$CANDLEHOME$/$ARCHITECTURE$/lib
PATH=/bin:/usr/bin:$CANDLEHOME$/$BINARCH$/$PRODUCTCODE$/bin:$CANDLEHOME$/$ARCHITECTURE$/bin
SHLIB_PATH=$CANDLEHOME$/$BINARCH$/$PRODUCTCODE$/lib:$CANDLEHOME$/$ARCHITECTURE$/lib
SQLLIB=$CANDLEHOME$/tables/cicatrsq/SQLLIB
KDCB0_HOSTNAME=$HOSTNAME$
KDC_PARTITION=$KDC_PARTITIONNAME$
$COMMENT$TIRA_STANDALONE=Y
$CLUSTERFLAG$TIRA_HOSTNAME=$CLUSTERNAME$
ITMDEPLOY_TIMEOUT=300
ITMDEPLOY_AGENTDEPOT=$CANDLEHOME$/tmaitm6/agentdepot
ITM_BINARCH=$BINARCH$
KDS_RATE_CACHE_SIZE=8192
KDS_RATE_ENABLEFIRE=false
ICCRTE_DIR=$ICCRTE_DIR$
AGENT_REF_FILE=$CANDLEHOME$/$BINARCH$/mt/bin/kmt.ref
# ===============================================================
# Install Specific Settings
# ===============================================================
COMMAND=kmtagent
NLS1_LOCALEDIR=$CANDLEHOME$/$ARCHITECTURE$/ax/locale
CTIRA_SIT_PATH=$CANDLEHOME$/$BINARCH$/$PRODUCTCODE$/bin
CDP_DP_ACTION_TIMEOUT=20
CDP_DP_CACHE_TTL=30
CDP_DP_PING_TIMEOUT=30
CDP_DP_SCRIPT_TIMEOUT=30
CDP_PURE_EVENT_CACHE_SIZE=100
CTIRA_HOSTNAME=$RUNNINGHOSTNAME$
# ===============================================================
# Agent Specific Environment Variables
# ===============================================================
# EOF===========================================================
```

To enable the Remote Execution and Access traces for the integration agent, create a new variable called RXA_LOGGING=true in the *Agent Specific Environment Variables* stanza, save the file, and restart the agent. The stanza would thus be as follows:

```
.
.
.
# ===============================================================
```

```
# Agent Specific Environment Variables
# ============================================================
RXA_LOGGING=true
# EOF========================================================
```

To disable the trace collection, either remove the variable, comment it out, or set it to *false*.

Specify private key file for SSH

If you have enabled the SSH protocol for agent communication, the connection uses public-private key cryptography to ensure security. With this method, you need to define the name of the file where the private key is stored, using a startup variable (SSH_KEYSTORE_FILE), that must be added to the mt.ini file located in the $CANDLEHOME/config directory (see "Enabling the Remote Execution and Access traces for the integration agent" on page 12 for an example of the complete file). If the SSH protocol is not specified, this variable, if present, is ignored.

The variable should be defined in the *Agent Specific Environment Variables*, as follows:

```
.
.
.
# ============================================================
# Agent Specific Environment Variables
# ============================================================
RXA_LOGGING=true
SSH_KEYSTORE_FILE=/home/mySSLDir/myKeystore
# EOF========================================================
```

Ensure the file has the appropriate permissions for the user of the Management Edition for AIX workspaces.

Stopping the display of the message about an "unresponsive script"

While opening the Management Edition for AIX workspaces in Tivoli Enterprise Portal, a message might ber displayed, referring to an "unresponsive script". This does not negatively impact the behavior of the workspaces. However, you might prefer not to see the message, and this section tells you how.

The message is displayed because a timeout has been exceeded. To change the timeout, do the following:
1. On the computer where the Tivoli Enterprise Portal Server is installed, stop the Tivoli Enterprise Portal Server.
2. Locate the following file:
   `<USER_HOME_DIR>/.webrendererswing/UNIX/Webrenderer/user.js`
3. Edit the file and locate the property:
   `dom.max_script_run_time`
4. The default value of this property is 10 (seconds). Set it to 20, and save the file.
5. Restart the Tivoli Enterprise Portal Server.
6. Check if the message is displayed. If so, repeat this procedure, increasing the timeout value.

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This document describes how to use the workspaces of IBM Management Edition for AIX to provide a solution for the monitoring, performance tracking, discovery, usage, and accounting of your AIX IT infrastructure.