Tivoli Application Dependency Discovery Manager
Version 7 Release 2.1

Troubleshooting Guide

IBM
Tivoli Application Dependency Discovery Manager
Version 7 Release 2.1

Troubleshooting Guide

IBM
## Contents

### Tables

| Tables | V |

### About this information

<table>
<thead>
<tr>
<th>About this information</th>
<th>vii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventions used in this information</td>
<td>vii</td>
</tr>
<tr>
<td>Terms and definitions</td>
<td>viii</td>
</tr>
</tbody>
</table>

### Troubleshooting

<table>
<thead>
<tr>
<th>Troubleshooting</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Troubleshooting overview</td>
<td>1</td>
</tr>
<tr>
<td>Troubleshooting a problem</td>
<td>1</td>
</tr>
<tr>
<td>Searching knowledge bases</td>
<td>3</td>
</tr>
<tr>
<td>Getting a fix</td>
<td>4</td>
</tr>
<tr>
<td>Contacting IBM Support</td>
<td>5</td>
</tr>
<tr>
<td>Setting up logging in TADDM</td>
<td>6</td>
</tr>
<tr>
<td>Log files</td>
<td>6</td>
</tr>
<tr>
<td>Logging levels</td>
<td>12</td>
</tr>
<tr>
<td>Collecting information for IBM Support</td>
<td>14</td>
</tr>
<tr>
<td>Log Analyzer</td>
<td>25</td>
</tr>
<tr>
<td>Solutions for problems that you might have</td>
<td>28</td>
</tr>
<tr>
<td>Anchor problems</td>
<td>29</td>
</tr>
<tr>
<td>API problems</td>
<td>32</td>
</tr>
<tr>
<td>BIRT report problems</td>
<td>35</td>
</tr>
<tr>
<td>Bulk load program problems</td>
<td>40</td>
</tr>
<tr>
<td>Connectivity problems</td>
<td>42</td>
</tr>
<tr>
<td>CMS and DIS problems</td>
<td>44</td>
</tr>
<tr>
<td>Custom query problems in the Data Management Portal</td>
<td>44</td>
</tr>
<tr>
<td>Custom server template problems</td>
<td>45</td>
</tr>
<tr>
<td>Database problems</td>
<td>46</td>
</tr>
<tr>
<td>Discovery problems</td>
<td>50</td>
</tr>
<tr>
<td>Duplicate computer system problems</td>
<td>51</td>
</tr>
<tr>
<td>Gateway problems</td>
<td>52</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring DLA problems</td>
<td>53</td>
</tr>
<tr>
<td>Logging problems</td>
<td>55</td>
</tr>
<tr>
<td>Memory problems</td>
<td>56</td>
</tr>
<tr>
<td>Isof problems</td>
<td>57</td>
</tr>
<tr>
<td>Discovery of short names and fully qualified domain names in TADDM</td>
<td>60</td>
</tr>
<tr>
<td>Report problems</td>
<td>63</td>
</tr>
<tr>
<td>Security problems</td>
<td>65</td>
</tr>
<tr>
<td>Self-monitoring tool problems</td>
<td>74</td>
</tr>
<tr>
<td>Sensor problems</td>
<td>75</td>
</tr>
<tr>
<td>Shutdown problems</td>
<td>75</td>
</tr>
<tr>
<td>Startup problems</td>
<td>75</td>
</tr>
<tr>
<td>Storage problems</td>
<td>81</td>
</tr>
<tr>
<td>TADDM GUI problems</td>
<td>81</td>
</tr>
<tr>
<td>TADDM server problems</td>
<td>91</td>
</tr>
</tbody>
</table>

### Notices

<table>
<thead>
<tr>
<th>Notices</th>
<th>99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trademarks</td>
<td>100</td>
</tr>
</tbody>
</table>
## Tables

1. General log files ........................................ 7
2. Additional log files in a synchronization server deployment ........................................ 9
3. Additional log files in a streaming server deployment ......................................................... 10
4. Operating-system-specific command sequences for obtaining computer specifications .... 17
5. Valid groups and modules ........................................ 19
About this information

The purpose of this PDF document is to provide the related topics from the information center in a printable format.

The IBM Tivoli Application Dependency Discovery Manager Troubleshooting Guide and the troubleshooting topics in the information center include information on the following items:
- How to identify the source of a software problem
- How to gather diagnostic information, and what information to gather
- Where to get fixes
- Which knowledge bases to search
- How to contact IBM® Support

Conventions used in this information

This information describes the conventions that are used in the IBM Tivoli Application Dependency Discovery Manager (TADDM) documentation for denoting operating system-dependent variables and paths and for denoting the COLLATION_HOME directory. It also indicates the location of the collation.properties file, which is referenced throughout the TADDM documentation, including in the messages.

Operating system-dependent variables and paths

This information uses the UNIX convention for specifying environment variables and for directory notation.

When using the Windows command line, replace $variable with %variable% for environment variables, and replace each forward slash (/) with a backslash (\) in directory paths.

If you are using the bash shell on a Windows system, you can use the UNIX conventions.

COLLATION_HOME directory

The COLLATION_HOME directory is the directory where TADDM is installed plus the dist subdirectory.

On operating systems such as AIX® or Linux, the default location for installing TADDM is the /opt/IBM/taddm directory. Therefore, in this case, the $COLLATION_HOME directory is /opt/IBM/taddm/dist.

On Windows operating systems, the default location for installing TADDM is the c:\IBM\taddm directory. Therefore, in this case, the %COLLATION_HOME% directory is c:\IBM\taddm\dist.
Location of collation.properties file

The collation.properties file contains TADDM server properties and includes comments about each of the properties. It is located in the $COLLATION_HOME/etc directory.

Terms and definitions

This information contains the terms and definitions for important concepts in the IBM Tivoli Application Dependency Discovery Manager (TADDM).

**asynchronous discovery**
In TADDM, the running of a discovery script on a target system to discover systems that cannot be accessed directly by the TADDM server. Because this discovery is performed manually, and separately from a typical credentialed discovery, it is called “asynchronous”.

**business application**
One or more computer programs or software components that provide functionality in direct support of a specific business process or processes.

**business service**
A group of diverse but interdependent applications and other system resources that interact to accomplish specific business functions.

**CI**
See configuration item.

**collection**
In TADDM, a group of configuration items.

**configuration item (CI)**
A component of IT infrastructure that is under the control of configuration management and is therefore subject to formal change control. Each CI in the TADDM database has a persistent object and change history associated with it. Examples of a CI are an operating system, an L2 interface, and a database buffer pool size.

**credentialed discovery**
TADDM sensor scanning that discovers detailed information about the following items:
- Each operating system in the runtime environment. This scanning is also known as Level 2 discovery, and it requires operating system credentials.
- The application infrastructure, deployed software components, physical servers, network devices, virtual systems, and host data that are used in the runtime environment. This scanning is also known as Level 3 discovery, and it requires both operating system credentials and application credentials.

**credential-less discovery**
TADDM sensor scanning that discovers basic information about the active computer systems in the runtime environment. This scanning is also known as Level 1 discovery, and it requires no credentials.

**Data Management Portal**
The TADDM web-based user interface for viewing and manipulating the data in a TADDM database. This user interface is applicable to a domain server deployment, to a synchronization server deployment, and to each storage server in a streaming server deployment. The user interface is very
similar in all deployments, although in a synchronization server deployment, it has a few additional functions for adding and synchronizing domains.

**discovery worker thread**
In TADDM, a thread that runs sensors.

**Discovery Management Console**
The TADDM client user interface for managing discoveries. This console is also known as the Product Console. It is applicable to a domain server deployment and to discovery servers in a streaming server deployment. The function of the console is the same in both of these deployments.

**discovery server**
A TADDM server that runs sensors in a streaming server deployment but does not have its own database.

**domain**
In TADDM, a logical subset of the infrastructure of a company or other organization. Domains can delineate organizational, functional, or geographical boundaries.

**domain server**
A TADDM server that runs sensors in a domain server deployment and has its own database.

**domain server deployment**
A TADDM deployment with one domain server. A domain server deployment can be part of a synchronization server deployment.

In a domain server deployment, the following TADDM server property must be set to the following value:

```
com.collation.cmdbmode=domain
```

**launch in context**
The concept of moving seamlessly from one Tivoli® product UI to another Tivoli product UI (either in a different console or in the same console or portal interface) with single sign-on and with the target UI in position at the proper point for users to continue with their task.

**multitenancy**
In TADDM, the use by a service provider or IT vendor of one TADDM installation to discover multiple customer environments. Also, the service provider or IT vendor can see the data from all customer environments, but within each customer environment, only the data that is specific to the respective customer can be displayed in the user interface or viewed in reports within that customer environment.

**Product Console**
See *Discovery Management Console*.

**script-based discovery**
In TADDM, the use, in a credentialed discovery, of the same sensor scripts that sensors provide in support of asynchronous discovery.

**SE**
See *server equivalent*.

**server equivalent (SE)**
A representative unit of IT infrastructure, defined as a computer system (with standard configurations, operating systems, network interfaces, and storage interfaces) with installed server software (such as a database, a web server, or an application server). The concept of a server equivalent also
includes the network, storage, and other subsystems that provide services to the optimal functioning of the server. A server equivalent depends on the operating system:

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Approximate number of CIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td>500</td>
</tr>
<tr>
<td>AIX</td>
<td>1000</td>
</tr>
<tr>
<td>Solaris</td>
<td>1000</td>
</tr>
<tr>
<td>Linux</td>
<td>1000</td>
</tr>
<tr>
<td>HP-UX</td>
<td>500</td>
</tr>
<tr>
<td>Network devices</td>
<td>1000</td>
</tr>
</tbody>
</table>

**storage server**

A TADDM server that processes discovery data that is received from the discovery servers and stores it in the TADDM database. The primary storage server both coordinates the discovery servers and all other storage servers and serves as a storage server. All storage servers that are not the primary are called secondary storage servers.

**streaming server deployment**

A TADDM deployment with a primary storage server and at least one discovery server. This type of deployment can also include one or more optional secondary storage servers. The primary storage server and secondary storage servers share a database. The discovery servers have no database.

In this type of deployment, discovery data flows in parallel from multiple discovery servers to the TADDM database.

In a streaming server deployment, the following TADDM server property must be set to one of the following values:

- `com.collation.taddm.mode=DiscoveryServer`
- `com.collation.taddm.mode=StorageServer`

For all servers except for the primary storage server, the following properties (for the host name and port number of the primary storage server) must also be set:

- `com.collation.PrimaryStorageServer.host`
- `com.collation.PrimaryStorageServer.port`

If the `com.collation.taddm.mode` property is set, the `com.collation.cmdbmode` property must not be set or must be commented out.

**synchronization server**

A TADDM server that synchronizes discovery data from all domain servers in the enterprise and has its own database. This server does not discover data directly.

**synchronization server deployment**

A TADDM deployment with a synchronization server and two or more domain server deployments, each of which has its own local database.

In this type of deployment, the synchronization server copies discovery data from multiple domain servers one domain at a time in a batched synchronization process.
In a synchronization server deployment, the following TADDM server property must be set to the following value:

```
com.collation.cmdbmode=enterprise
```

This type of deployment is obsolete. Therefore, in a new TADDM deployment where more than one server is needed, use the streaming server deployment. A synchronization server can be converted to become a primary storage server for a streaming server deployment. For more information, see Converting from a synchronization server deployment to a streaming server deployment.

**TADDM database**

In TADDM, the database where configuration data, dependencies, and change history are stored.

Each TADDM server, except for discovery servers and secondary storage servers, has its own database. Discovery servers have no database. Storage servers share the database of the primary storage server.

**TADDM server**

A generic term that can represent any of the following terms:
- domain server in a domain server deployment
- synchronization server in a synchronization server deployment
- discovery server in a streaming server deployment
- storage server (including the primary storage server) in a streaming server deployment

**target system**

In the TADDM discovery process, the system to be discovered.
Troubleshooting

Troubleshooting overview

To help you understand, isolate, and resolve problems with your IBM software, this information includes instructions for using the troubleshooting resources that are provided with your IBM products.

You can find out how to identify the source of a problem, how to gather diagnostic information, where to get fixes, and which knowledge bases to search. If you need to contact IBM Support, you can find out what diagnostic information the service technicians need to help you address a problem.

Topics that are specific to troubleshooting the IBM Tivoli Application Dependency Discovery Manager (TADDM) cover the following information:

- Setting up logging in TADDM
- Collecting and sending TADDM-specific information to IBM Support
- Solutions for specific problems that you might have with TADDM

Troubleshooting a problem

Troubleshooting is a systematic approach to solving a problem. The goal of troubleshooting is to determine why something does not work as expected and explain how to resolve the problem.

The first step in the troubleshooting process is to describe the problem completely. Problem descriptions help you and the IBM Support person know where to start to find the cause of the problem. This step involves gathering the necessary information to answer the following questions:

- What are the symptoms of the problem?
- Where does the problem occur?
- When does the problem occur?
- Under which conditions does the problem occur?
- Can the problem be reproduced?

Knowing the answers to these questions helps you create a good description of the problem for IBM Support. These answers can result in a faster resolution of the problem.

What are the symptoms of the problem?

To describe a problem, first break the problem into several focused questions that create a more descriptive picture of the problem. The following questions are examples:

- Who, or what, is reporting the problem?
- What are the error codes and messages?
- How does the system fail? For example, is it a loop, hang, crash, performance degradation, or incorrect result?
- What is the business impact of the problem?
**Where does the problem occur?**

Determining where the problem originates is one of the most important steps in resolving a problem. Many layers of technology can exist between the reporting and failing components. Networks, disks, and drivers are only a few of the components to consider when you are investigating problems.

The following questions help you to focus on where the problem occurs to isolate the problem layer:

- Is the problem specific to one platform or operating system, or is it common across multiple platforms or operating systems?
- Is the current environment and configuration supported?

Remember that if one layer reports the problem, the problem does not necessarily originate in that layer. Part of identifying where a problem originates is understanding the environment in which it exists. Take some time to completely describe the problem environment, including the operating system and version, all corresponding software and versions, and hardware information. Confirm that you are running within an environment that is a supported configuration. Many problems can be traced back to incompatible levels of software that are not intended to run together or have not been fully tested together.

**When does the problem occur?**

Develop a detailed timeline of events that lead to a failure, especially for those cases that are one-time occurrences. This timeline is easier to develop if you start at the time that an error was reported (as precisely as possible, even to the millisecond). Then work backwards through the available logs and information. Typically, the first suspicious event in a diagnostic log is the best starting point. However, this method is not always easy to do. Knowing when to stop looking is especially difficult when multiple layers of technology are involved, and when each has its own diagnostic information.

To develop a detailed timeline of events, answer these questions as a guideline for knowing whether the appropriate information is gathered:

- Does the problem happen only at a certain time of day or night?
- How often does the problem happen?
- What sequence of events leads up to the time that the problem is reported?
- Does the problem happen after an environment change, such as upgrading or installing software or hardware?

**Under which conditions does the problem occur?**

Knowing which systems and applications are running at the time that a problem occurs is an important part of troubleshooting. The following questions about the environment can help in identifying the root cause of the problem:

- Does the problem always occur when the same task is being performed?
- Does a certain sequence of events have to occur for the problem to surface?
- Do any other applications fail at the same time?

Answering these types of questions can help in explaining the environment in which the problem occurs and in correlating any dependencies. Remember that just because multiple problems might have occurred around the same time, the problems are not necessarily related.
Can the problem be reproduced?

Problems that can be reproduced are often easier to debug and solve. Typically, if a problem can be reproduced, more tools and procedures are available to help with investigation into the cause of the problem. If possible, re-create the problem in a test or development environment, which typically offers you more flexibility and control during your investigation.

- Can the problem be reproduced on a test system?
- Are multiple users or applications encountering the same type of problem?
- Can the problem be re-created by running a single command, a set of commands, a particular application, or a stand-alone application?

Searching knowledge bases

You can often find solutions to problems by searching IBM knowledge bases. Learn how to optimize your results by using available resources, support tools, and search methods and how to receive automatic updates.

Available technical resources

The following technical resources are available to help you resolve problems:

- IBM Tivoli Application Dependency Discovery Manager Support website, [http://www.ibm.com/software/sysmgmt/products/support/IBM_Tivoli_Application_Dependency_Discovery_Manager.html](http://www.ibm.com/software/sysmgmt/products/support/IBM_Tivoli_Application_Dependency_Discovery_Manager.html), which includes technote, APARs (problem reports), downloads, and education materials

Searching with support tools

The following tools are available to help you search IBM knowledge bases:

- **IBM Support Assistant (ISA)** is a free software serviceability workbench that helps you resolve questions and problems with IBM software products. Instructions for downloading and installing the ISA, and the ISA plug-in for TADDM, are on the ISA website at [http://www.ibm.com/software/support/isa/](http://www.ibm.com/software/support/isa/)

  Product plug-ins, such as the one for TADDM, customize the IBM Support Assistant experience and give focused, product-specific help resources, search capabilities, and automated data collection. When ISA is installed, product plug-ins can quickly and easily be added by using the built-in Updater component.

  If the ISA workbench cannot be installed on a target system, a portable collector can be created. Use a system where the ISA workbench is installed. See the IBM Support Assistant Workbench Help content for more information about how to create a portable collector.

  With the function of the portable collector, data collection can be exported into a small archive that consists of a Java™ application. The compressed file that is created can be transferred to a remote system where data collection can be performed. Remote Linux, Solaris, AIX, and Linux on System z® operating systems require a permissions change of the startcollector.sh file to run this file. Use the following command to change the permissions:

  ```bash
  chmod +x startcollector.sh
  ```
If it is not already set, set the JAVA_HOME environment variable. Verify that this variable is properly set by running the following command:

$JAVA_HOME/bin/java -version

As a result of running the preceding command, the version of the Java Runtime Environment (JRE) in use is printed to the command window.

Start the portable collector. For more information about the portable collector, see the documentation within the IBM Support Assistant Workbench Help content.

When you run ISA to resolve an error, use the same login credentials (user ID and password) that were used when the error occurred.

- **IBM Software Support Toolbar** is a browser plug-in that provides a mechanism to easily search IBM support sites. Download the toolbar at [http://www.ibm.com/software/support/toolbar/](http://www.ibm.com/software/support/toolbar/)

### Search tips

The following resources describe how to optimize search results:

- Using the Google search engine, [http://www.google.com/support/](http://www.google.com/support/)

### Receiving automatic updates

You can receive automatic updates through RSS feeds. For information about RSS, including steps for getting started and a list of RSS-enabled IBM web pages, go to [http://www.ibm.com/software/support/rss/](http://www.ibm.com/software/support/rss/)

### Limitations

In the IBM Support Assistant (ISA), the collector might fail on Windows systems when enabling trace, and if it does, the following error message is displayed in the collector log files:

Unable to remove existing file %COLLATION_HOME%\etc\collation.properties

If this message is displayed, run the collector again.

### Getting a fix

A product fix might be available to resolve your problem.

### Before you begin

The naming convention for IBM Tivoli fixes is v.r.m.f-Group-ProductAbbreviation-optionalOS-XXnnnn. Therefore, fixes for TADDM follow either of the following conventions:

- `v.r.m.f-TIV-CCMDB-XXnnnn`
- `v.r.m.f-TIV-ITADDM-XXnnnn`

The variables in these conventions represent the following items:

- **v** Version number
- **r** Release number
- **m** Modification level
Fix level of the release. For example, if fix pack 5 has been installed on release 3.2.0 of some product, the release maintenance level for that product is 3.2.0.5.

XX Represents one of the following types of fix:
- FP for fix pack
- IF for interim fix
- LA for limited availability fix

nnnn The number of the fix

A sample name is 5.1.1.2-TIV-ITADDM-IF0002, which is version 5, release 1, modification 1, fix level 2 of TADDM with interim fix 2.

Most fixes have prerequisites. You should review the readme files before you apply fixes. Ensure that the version, release, modification, and fix level is appropriate for the TADDM server that you are running, and follow the installation instructions in the readme file to apply the fix.

Procedure

To get fixes, complete the following steps:
1. Determine which fix you need. See the TADDM Support Web site [http://www.ibm.com/software/svmsmgmt/products/support/IBM/Tivoli/Application/Dependency/Discovery/Manager.html](http://www.ibm.com/software/svmsmgmt/products/support/IBM/Tivoli/Application/Dependency/Discovery/Manager.html) which includes technotes, APARs (problem reports), downloads, and education materials. To determine which fix you need, review the available fixes, the associated issues that have been corrected, and the known problem or limitations. Typically, before IBM Support provides fixes for reported problems, IBM Support requires you to apply the latest maintenance package for your installed release.
2. Download the fix. Open the download document and follow the link in the “Download package” section.
3. Apply the fix. Follow the instructions in the “Installation Instructions” section of the download document.

Contacting IBM Support

IBM Support provides assistance with product defects.

Before you begin

Before contacting IBM Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM.

Procedure

Complete the following steps to contact IBM Support with a problem:
2. Gather diagnostic information. For information on how to use the automatic data collection feature in the IBM Support Assistant (ISA), see the ISA Web site at [http://www.ibm.com/software/support/isa/](http://www.ibm.com/software/support/isa/)
   Also see “Collecting information for IBM Support” on page 14.
3. Submit your problem to IBM Support in one of the following ways:
• Using ISA to submit the problem through the Electronic Service Request (ESR) system, which generates a Problem Management Record (PMR) in the IBM RETAIN® database. To log into the ESR from ISA, click Service, and click Log into ESR.

• Online: On the “Open service request” page on the IBM Software Support site at http://www.ibm.com/support/entry/portal/Open_service_request/Software/Software_support_(general). Also see “Sending information to IBM Support” on page 25.


What to do next

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

Setting up logging in TADDM

To troubleshoot problems with TADDM, you must understand the TADDM log files and logging levels and how to collect troubleshooting information for IBM Support.

Log files

The TADDM server creates log files about its operation and stores these log files in the $COLLATION_HOME/log directory. Log files can help you in troubleshooting problems with discovery or with the function of the TADDM server.

Table 1 on page 7 lists the general log files in TADDM. Table 2 on page 9 lists additional log files that are present in a synchronization server deployment, and Table 3 on page 10 lists additional log files that are present in a streaming server deployment.

If a log file is in the $COLLATION_HOME/log directory itself, only the file name is listed. If a log file is in a lower level directory in the $COLLATION_HOME/log path, the additional path information is shown with the file name.

TADDM.log is the product log file that contains only informational messages for users. The other log files contain trace information that might be useful to both users and IBM Software Support. The following log files are typically the most useful:

• error.log
• local-anchor*.log
• sensors/runid/sensorName-IP.log, if you use split logging
• services/DiscoverManager.log
• services/TopologyManager.log
• TADDM.log
• tomcat.log
<table>
<thead>
<tr>
<th>Log file</th>
<th>Information contained in log file</th>
</tr>
</thead>
<tbody>
<tr>
<td>agents/*.log</td>
<td>Information from the topology builder agents that is split into different log files that reference individual agents</td>
</tr>
<tr>
<td>appexit.log</td>
<td>Information about stopping the TADDM server on computers that are running Windows operating system</td>
</tr>
<tr>
<td>bulkload.log</td>
<td>Information about the bulk load program</td>
</tr>
<tr>
<td>change-events.log</td>
<td>Information about change events that are sent to IBM Tivoli Netcool/OMNIbus</td>
</tr>
<tr>
<td>changeevents_out.log</td>
<td>Information about change events that are sent to IBM Tivoli Netcool/OMNIbus</td>
</tr>
<tr>
<td>control.log</td>
<td>Information about the starting, stopping, and status of the TADDM server</td>
</tr>
<tr>
<td>discover.log</td>
<td>Information from the Discover Jini service</td>
</tr>
<tr>
<td>discover-admin.log</td>
<td>Information from the DiscoverAdmin Jini service</td>
</tr>
<tr>
<td>error.log</td>
<td>Error messages from TADDM services</td>
</tr>
<tr>
<td>events-core.log</td>
<td>Information from the EventsCore Jini service</td>
</tr>
<tr>
<td>local-anchor*.log</td>
<td>Information from J2EE application server sensors, such as WebSphere® and WebLogic</td>
</tr>
<tr>
<td>login.log</td>
<td>Information about user logins (for audit purposes)</td>
</tr>
<tr>
<td>l2.log</td>
<td>Information from the topology builder process</td>
</tr>
<tr>
<td>migration.log</td>
<td>Information that is related to upgrading TADDM</td>
</tr>
<tr>
<td>migration/changedGuids-time-stamp.xml</td>
<td></td>
</tr>
<tr>
<td>migration/TADDM-version/time-stamp-DbConfiguration.log</td>
<td></td>
</tr>
<tr>
<td>migration/TADDM-version/time-stamp-DbMessages.log</td>
<td></td>
</tr>
<tr>
<td>migration/TADDM-version/time-stamp-PrimarySchema.log</td>
<td></td>
</tr>
<tr>
<td>migration/TADDM-version/time-stamp-SecondarySchema.log</td>
<td></td>
</tr>
<tr>
<td>migration/TADDM-version/time-stamp-GuidByClass.log</td>
<td></td>
</tr>
<tr>
<td>migration/TADDM-version/time-stamp-GuidByID.log</td>
<td></td>
</tr>
<tr>
<td>migration/TADDM-version/time-stamp-Templates.log</td>
<td></td>
</tr>
<tr>
<td>migration/TADDM-version/time-stamp-SensorConfiguration.log</td>
<td></td>
</tr>
<tr>
<td>proxy.log</td>
<td>Information from the Proxy Jini service</td>
</tr>
<tr>
<td>plugins/plugins-sensors.log</td>
<td>Information from the pluggable sensor loader</td>
</tr>
<tr>
<td>Log file</td>
<td>Information contained in log file</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>sensors/runid/sensorName-IP.log</td>
<td>If you use split logging, information about sensor activity. The runid includes the date and time of the discovery. The sensorName-IP (the log file name) includes the sensor name and the IP address of the target system. The following example is a log file on the TADDM server: $COLLATION_HOME/log/sensors/20070621131259/SessionSensor-10.199.21.104.log.</td>
</tr>
<tr>
<td>services/ApiServer.log</td>
<td>Information about TADDM APIs</td>
</tr>
<tr>
<td>services/AuthorizationManager.log</td>
<td>Information about logins to TADDM</td>
</tr>
<tr>
<td>services/ChangeManager.log</td>
<td>Information about the processing of change events after discovery completes</td>
</tr>
<tr>
<td>services/ClientProxy.log</td>
<td>Information about the GUI</td>
</tr>
<tr>
<td>services/DiscoverManager.log</td>
<td>Information about sensor activity</td>
</tr>
<tr>
<td>services/DiscoverObserver.log</td>
<td>Information about the movement of completed work items from the discover manager to the topology manager</td>
</tr>
<tr>
<td>services/ProactiveRequests.log</td>
<td>Information about incoming proactive requests and the results of these requests (for audit purposes). The log also contains information about the number of proactive requests that are pending in the work queue.</td>
</tr>
<tr>
<td>services/ProfileManager.log</td>
<td>Information about storing and retrieving discovery profiles</td>
</tr>
<tr>
<td>services/ProcessFlowManager.log</td>
<td>Information about the event processing engine for discovery</td>
</tr>
<tr>
<td>services/ReconciliationMerge.log</td>
<td>Information about merging that has occurred between two or more configuration items that are stored in the database</td>
</tr>
<tr>
<td>services/ReconciliationPlugIns.log</td>
<td>Information about the activity of reconciliation plug-ins</td>
</tr>
<tr>
<td>services/ReportsServer.log</td>
<td>Information about the processing of reports</td>
</tr>
<tr>
<td>services/SecurityManager.log</td>
<td>Information about the security activities of the TADDM services</td>
</tr>
<tr>
<td>services/Semaphore.log</td>
<td>Information about the semaphore service in TADDM</td>
</tr>
<tr>
<td>services/Template.log</td>
<td>Information about the custom templates that are used in TADDM</td>
</tr>
<tr>
<td>services/TopologyBuilder.log</td>
<td>Information from topology builder agents</td>
</tr>
<tr>
<td>services/TopologyManager.log</td>
<td>Information about the interface between the data store and all other components</td>
</tr>
<tr>
<td>services/ViewManager.log</td>
<td>Information about the building of the topology graphs and navigation trees for configuration items</td>
</tr>
</tbody>
</table>
### Table 1. General log files (continued)

<table>
<thead>
<tr>
<th>Log file</th>
<th>Information contained in log file</th>
</tr>
</thead>
<tbody>
<tr>
<td>TADDM.log</td>
<td>The TADDM product log file, which contains the following information:</td>
</tr>
<tr>
<td></td>
<td>• Information about starting and stopping the following processes:</td>
</tr>
<tr>
<td></td>
<td>– bulkload</td>
</tr>
<tr>
<td></td>
<td>– discovery</td>
</tr>
<tr>
<td></td>
<td>– sensor</td>
</tr>
<tr>
<td></td>
<td>– sensor result storage</td>
</tr>
<tr>
<td></td>
<td>– topology builder</td>
</tr>
<tr>
<td></td>
<td>– topology builder agent</td>
</tr>
<tr>
<td></td>
<td>– change propagation</td>
</tr>
<tr>
<td></td>
<td>– view build</td>
</tr>
<tr>
<td></td>
<td>– synchronization server</td>
</tr>
<tr>
<td></td>
<td>• Messages about the following items:</td>
</tr>
<tr>
<td></td>
<td>– Logon and logoff from the user interface (UI)</td>
</tr>
<tr>
<td></td>
<td>– Connections to an API</td>
</tr>
<tr>
<td></td>
<td>– Closing of the API session</td>
</tr>
<tr>
<td></td>
<td>– Timeout errors</td>
</tr>
<tr>
<td>tomcat/cdm-rest.log</td>
<td>Information about UI services</td>
</tr>
<tr>
<td>tomcat/cdm-webapp.log</td>
<td>Information about UI services</td>
</tr>
<tr>
<td>tomcat.log</td>
<td>Information about application server activity</td>
</tr>
<tr>
<td>topology.log</td>
<td>Information from the Topology Jini service</td>
</tr>
<tr>
<td>trace.log</td>
<td>This log is generated by the WebSphere client that is used in the IBM WebSphere sensor.</td>
</tr>
<tr>
<td>win-service.log</td>
<td>Information about the Windows operating system. This log applies only to computers that are running the Windows operating system.</td>
</tr>
</tbody>
</table>

### Table 2. Additional log files in a synchronization server deployment

<table>
<thead>
<tr>
<th>Log file</th>
<th>Information contained in log file</th>
</tr>
</thead>
<tbody>
<tr>
<td>ecmdb-core.log</td>
<td>Information from the initialization of the core service in a synchronization server deployment</td>
</tr>
<tr>
<td>services/Synchronizer.log</td>
<td>Information from the synchronization process in a synchronization server deployment</td>
</tr>
<tr>
<td>sync/computer-FQDN.log</td>
<td>computer-FQDN represents the fully qualified domain name of the computer where the Data Management Portal is being used.</td>
</tr>
<tr>
<td></td>
<td>This log contains the messages that are sent to the View Sync Details window in the Data Management Portal. To help you evaluate the status of the synchronization, it contains only the most important events that occur during the synchronization process.</td>
</tr>
<tr>
<td></td>
<td>$COLLATION_HOME/log/services/Synchronizer.log contains much more detail about the synchronization process.</td>
</tr>
</tbody>
</table>
### Setting the maximum number and size of log files

You can set the maximum number of log files that the TADDM server creates and the maximum size of each log file.

When the maximum size of a log file is reached, the TADDM server automatically copies the log file to a file with a new name and a unique extension and creates a new log file. For example, assuming that the maximum number of log files is four, when the current log file reaches its maximum size, the TADDM server manages the older log files in the following way:

- The logfile.3 file overwrites the logfile.4 file.
- The logfile.2 file overwrites the logfile.3 file.
- The logfile.1 overwrites the logfile.2 file.
- The logfile file overwrites the logfile.1 file.
- A new logfile file is created.

To set the maximum number of log files and the maximum size of each log file, edit the following properties in the `$COLLATION_HOME/etc/collation.properties` file:

- **com.collation.log.filecount**
  - To specify the maximum number of log files

- **com.collation.log.filesize**
  - To specify the maximum size of each log file

Then save and close the `collation.properties` file.

### Split logging

To create a separate log file for each sensor or topology agent, which improves the readability of the sensor or topology agent logs, you can use split logging. However, split logging can affect TADDM performance.

### Sensor log files

To use split logging, set the value of the following property to true in the `collation.properties` file, if it is not already set (the default value is true):

```
com.collation.discover.engine.SplitSensorLog=true
```

If this property is not set to true, the default logging for all sensors is put in the `$COLLATION_HOME/log/services/DiscoveryManager.log` file.

When it is used, split logging applies to the TADDM server and the anchor servers, and the split log files are placed in the following directories:

**On the TADDM server**

- The following directory:
  - `$COLLATION_HOME/log/services/DiscoveryManager.log`

**On the TADDM server**

- The `runid` includes the date and time of the discovery. The `sensorName-IP` (the log file name) includes the sensor name and the IP address of the
target system. The following example is a log file on the TADDM server:

On the anchor server
One of the following directories:
- ANCHOR_DIR/log/sensors/runid/sensorName-IP.log
- ANCHOR_DIR\log\sensors\runid\sensorName-IP.log

On the TADDM server, the split log files are deleted automatically after seven
days. To change this interval, update the value of the

Because anchor servers run for only short periods of time, if the split log files are
accumulating on anchor servers, they must be deleted manually.

**Topology agent log files**

To use split logging, set the value of the following property to true in the
collation.properties file, if it is not already set (the default value is true):
com.ibm.cdb.topobuilder.SplitAgentLog=true

If this property is not set to true, the default logging for all topology agents is put
in the $COLLATION_HOME/log/services/TopologyBuilder.log file.

When it is used, split logging applies to the TADDM server and the anchor
servers, and the split log files are placed in the following directory:
$COLLATION_HOME/log/agents/agentName.log

The agentName (name of the log file) contains the topology agent name. The
following example is a log file on the TADDM server:
$COLLATION_HOME/log/agents/AppDescriptorAgent.log

**Tips for finding and searching log files**

These tips might help you in finding and searching log files.
- Log file names can have lowercase letters (such as logfile.log) or mixed case
  letters (such as logFile.log).
- For Linux, Solaris, AIX, and Linux on System z operating systems, use the less,
grep, and vi commands for searching logs.
  If you install Cygwin, you can use the less, grep, and vi commands on
Windows systems.
- Start at the end of the file, and search backwards.
- Filter the DiscoverManager.log file using the following methods:
  - The DiscoverManager.log file can be large.
    - Divide the file into pieces using the split command, which is available on
      UNIX platforms.
    - Use the grep command to search for specific strings, and pipe the results
      into another file.
  - If the result is verbose and you want additional filtering, use the Target or
    Thread commands.
  - If you are reviewing the entire file, start by finding the target and sensor that
    you are working with. For example, search for IpDeviceSensor-9.3.5.184.
After you search for the target and sensor, use the Find-next function for the Thread ID. For example, DiscoverWorker-10.

- If you are searching a filtered log and find something that you are looking for, note the time stamp. For example, 2007-08-29 21:42:16,747. Look at the complete log for the lines near that time stamp.

**How to preserve script logs**

Script logs on local servers can be preserved for investigation in case of discovery failure.

**Procedure**

1. Update the `dist\etc\collation.properties` file with the following values:
   a. `com.ibm.cdb.discover.DeleteScriptDiscoveryOutputs=false`

2. Restart the TADDM server

**Results**

On the local server, the logs are saved under: `/tmp/taddm7.2.1.x/ddd/discovery RunIdcom.ibm.cdb.discoversensor.*`

**Logging levels**

The logging level affects how much information is included in the log files. You can set logging levels either globally or locally for each TADDM service. Use the `tracectl` utility to set the logging level. The new logging levels take effect within about 60 seconds of the change to the `collation.properties` file.

You can make and save changes to the existing logging levels in the `collation.properties` file without restarting the TADDM server.

**Setting the logging level**

To set the logging level, complete the following steps:

1. Go to the `$COLLATION_HOME/bin` directory.
2. Run the following command with your chosen values for `service` and `level`:

   ```
   ./tracectl -s service -l level
   ```

   **service**
   
   The service for which you want to set the logging level. The valid values are:

   - Discover
     - The service that runs sensors.

   - DiscoverAdmin
     - The service that stores sensor results and monitors the discovery process.

   - EventsCore
     - The service that performs security functions.

   - Proxy
     - The service that performs UI and API functions.

   - Topology
     - The service that handles data management, change detection, and reconciliation.
**EcmsgCore**
The EventsCore, Proxy, and Topology services on a synchronization server in a synchronization server deployment.

**DiscoveryService**
The DiscoverAdmin and Proxy services on a discovery server in a streaming server deployment.

**StorageService**
The EventsCore, Proxy, and Topology services on a primary or secondary storage server in a streaming server deployment.

**Global** All other services that are not included by the service-specific values that are previously listed. Affected log files include tomcat.log and migration.log.

**level**
The logging level that you want to use. The valid values are:
- DEBUG
- ERROR
- FATAL
- INFO
- TRACE
- WARN

Notes:
- Setting the logging level for the Topology JVM to DEBUG can cause performance problems on some systems. Set the level to DEBUG only to debug storage errors or topology issues. If the time to re-create a problem takes more than a few minutes, you must allocate more space for the topology logs. Review the following properties in the collation.properties file, and increase the values of these properties as needed:

  ```
  # File size of a rollover log file
  com.collation.log.filesize=20MB
  # Number of logfiles before rollover
  com.collation.log.filecount=5
  ```

  When all the space is used as allocated by the values of these properties, the oldest data is deleted.
- Do not set the logging level to TRACE unless IBM Support requests that you do this.

**Troubleshooting problems with TADDM**

To troubleshoot problems with TADDM, complete the following steps to set the logging level on the TADDM server for debugging:

1. In the collation.properties file, set the logging level to DEBUG, as shown in the following example:

   ```
   com.collation.log.level=DEBUG
   ```
2. Use split logging. The following properties must be set to true, which is the default value:

   ```
   com.collation.discover.engine.SplitSensorLog=true
   com.ibm.cdb.topobuilder.SplitAgentLog=true
   ```
3. Save and close the collation.properties file.
4. Optionally, remove all files from the log directory.
Collecting information for IBM Support

After you set up logging for troubleshooting and before you contact IBM Support, collect as much information as possible about the specific problem. This section describes the information that you can collect depending on the type of problem.

General information to collect

For each new problem that you report, provide the following information as applicable:

- Provide information about the platform on which TADDM is running, such as the following items:
  - Name and version of operating system
  - Name and version of database software
  - Fix pack level
  - Fix level
  - Amount of memory on computer where TADDM server is installed
  - Number of CPUs on computer where TADDM server is installed

To determine what version of TADDM is running, see the values of the following properties in the `$COLLATION_HOME/etc/collation.properties` file:

- com.collation.version=7.1
- com.collation.buildnumber=20070930D
- com.collation.oalbuildnumber=20070930D

If you need to provide IBM Support with a list of fixes that you have installed, list all the files that match “efix*” in the `$COLLATION_HOME/etc` directory.

- If the problem is sensor-related, provide the name and version of the sensor. To find this information, look in the `$COLLATION_HOME/osgi/plugins` directory, which contains a subdirectory for each sensor. The subdirectory name is based on the full class name and version of the sensor. For example, version 7.1.0 of the HP-UX computer system sensor is located in the `$COLLATION_HOME/osgi/plugins/com.ibm.cdb.discover.sensor.sys.hpuxcomputersystem_7.1.0` directory.

If you cannot determine the sensor version, provide the name of the problem sensor and the specific platform on which the problem occurs (for example, discovering DB2® V8.2 on AIX 5.3).

- Provide the problem scenario, including the steps to reproduce the problem if possible. Explain what you expected to occur and what actually occurred. For example, provide the following information:
  - Problem description (including the date and time that the problem occurred)
  - Steps to reproduce the problem
  - Expected outcome
  - Actual outcome (list any messages that were shown in the UI or CLI when the problem occurred)

- Provide the business impact, which helps IBM Support to understand the criticality of the problem in the business context and to prioritize it accordingly

- If the steps required to reproduce a given problem are known, set the logging level to DEBUG and reproduce the problem before collecting the files.

IBM Support Assistant Lite collector script

IBM Support Assistant provides a collector script that you can use to collect logs and configuration information through a script rather than gathering it manually.
You can download the IBM Support Assistant Lite collector script from http://www.ibm.com/software/support/isa/download.html.

For more information about IBM Support Assistant Lite collector script, see http://www.ibm.com/support/docview.wss?uid=swg27024695.

**Installation problems**

For installation problems, collect the following files into a compressed file:

- `$COLLATION_HOME/..installLogs/*`
- `$COLLATION_HOME/..cd_b_install*`
- `$COLLATION_HOME/..installCDT.stdout`
- `$COLLATION_HOME/..installCDT.stderr`
- `${HOME}/InstallShield/Universal/common/Gen2/_vpddb/vpd.script` (Linux and UNIX systems) or `${SystemRoot}/InstallShield/Universal/common/Gen2/_vpddb/vpd.script` (Windows systems)
- `${HOME}/InstallShield/Universal/common/Gen2/_vpddb/vpd.properties` (Linux and UNIX systems) or `${SystemRoot}/InstallShield/Universal/common/Gen2/_vpddb/vpd.properties` (Windows systems)
- Files with the screen captures that indicated to you that a problem had occurred

**Fix pack installation problems**

For fix pack installation problems, collect the following files into a compressed file:

**Main log files:**

- `$COLLATION_HOME/..installLogs/cdb_upgrade_7.2.x.log`
- `$COLLATION_HOME/..installLogs/cdb_upgrade_7.2.x_stdout.log`
- `$COLLATION_HOME/..installLogs/cdb_upgrade_7.2.x_stderr.log`

**Database upgrade log files:**

- `$COLLATION_HOME/..installLogs/db_upgrade_7.2.x_stdout.log`
- `$COLLATION_HOME/..installLogs/db_upgrade_7.2.x_stderr.log`

**Other database upgrade log files:**

- `$COLLATION_HOME/log/migration.log`

**Initialization problems**

For initialization problems, collect the following files into a compressed file:

- `$COLLATION_HOME/log/*`
- `$COLLATION_HOME/..installLogs/*`
- `$COLLATION_HOME/..cd_b_install*`
- `$COLLATION_HOME/..installCDT.stdout`
- `$COLLATION_HOME/..installCDT.stderr`
- `${HOME}/InstallShield/Universal/common/Gen2/_vpddb/vpd.script` (Linux and UNIX systems) or `${SystemRoot}/InstallShield/Universal/common/Gen2/_vpddb/vpd.script` (Windows systems)
- `${HOME}/InstallShield/Universal/common/Gen2/_vpddb/vpd.properties` (Linux and UNIX systems) or `${SystemRoot}/InstallShield/Universal/common/Gen2/_vpddb/vpd.properties` (Windows systems)
**Discovery problems**

For discovery problems, stop the TADDM server, remove the log files, restart the TADDM server, and reproduce the problem. Then collect the following files into a compressed file:

- $COLLATION_HOME/log directory
- $COLLATION_HOME/etc/collation.properties
- $COLLATION_HOME/external/gigaspaces*/bin/javacore* files
- $COLLATION_HOME/external/gigaspaces*/bin/heapdump* files
- $COLLATION_HOME/external/gigaspaces*/bin/hserr* files

For discovery problems that might be data-specific (for example, storage errors), also include the $COLLATION_HOME/var/dwitem/result/* files. Because these files are overwritten with each discovery, save them immediately after reproducing the problem.

Also include the following information:

- Name and IP address of the TADDM server
- Name and IP address of the system where the discovery failure occurred
- Name and IP address of any gateways or anchors that are involved in the discovery. For anchors, also include the files in the ANCHOR_DIR/log directory.
- If a discovery scope was used, include the scope specification.
- If a discovery profile was used, include the profile definition.

**Bulk loader problems**

For bulk loader problems, first reproduce the problem. Then collect the following files into a compressed file:

- $COLLATION_HOME/log directory (and all subdirectories)
- $COLLATION_HOME/etc/collation.properties
- $COLLATION_HOME/external/gigaspaces*/bin/javacore* files
- $COLLATION_HOME/external/gigaspaces*/bin/heapdump* files
- $COLLATION_HOME/external/gigaspaces*/bin/hserr* files
- $COLLATION_HOME/bulk/results directory

Also include the XML file that was being loaded and the exact command that was used to run the bulk load program.

**Anchor creation problems**

For anchor creation problems, collect the following files into a compressed file:

- First, verify that the ANCHOR_DIR/log directory has been created on the anchor computer. Then include the directory listing of that directory and its subdirectories. You can use the following command:
  `ls -alr ANCHOR_DIR`
- After performing a discovery of a target computer for the respective anchor, include the $COLLATION_HOME/log/DiscoverManager.log file from the primary TADDM server.
Performance problems with discovery

For performance problems with discovery, collect the computer specifications by running one of the command sequences in [Table 4] according to the operating system.

Table 4. Operating-system-specific command sequences for obtaining computer specifications

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Command sequence</th>
</tr>
</thead>
</table>
| AIX              | lsdev -Cc processor  
|                  | lsattr -E -l sys0 | grep realmem  
|                  | df -k             
|                  | uname -a          
|                  | oslevel           |
| Linux            | uname -a          
|                  | cat /proc/meminfo 
|                  | cat /proc/cpuinfo 
|                  | cat /etc/*release 
|                  | df -k             |
| Solaris          | uname -a          
|                  | prtconf           
|                  | psrinfo -v        
|                  | df -k             
|                  | showrev -p        |
| Windows          | systeminfo        |

The following type of information is returned for the operating system:

- Operating system
- Platform
- Memory
- CPU speed
- Number of CPUs
- Hard drives
- Machine type

GUI problems

If something is not displaying in the GUI, see "TADDM GUI problems" on page 81.

Running the collect_logs command to collect and package log files

You can run the `collect_logs` command to automatically collect and package log files to send to IBM Support (or to use for your own analysis).

The following files are collected:

- Platform problem determination files
- Platform provisioning files
- System configuration files
- System log and trace files
- Java dump files
- Problem determination framework internal log files
Output from the `collect_logs` command

The `collect_logs` command creates the following files in the `$COLLATION_HOME/log/support` directory:

- A compressed file that is the package of log files
- `collect_logs.log`. If the collection and packaging of the log files is unsuccessful, review this log file to determine the problem.

**collect_logs command details**

From the `$COLLATION_HOME/bin` directory, run one of the following commands, with the parameters of your choice, depending on the operating system:

**On Windows systems**

```
collect_logs.bat -i | -g | -h [-f prefix]
```

**On UNIX systems**

```
collect_logs.jy -i | -g | -h [-f prefix]
```

The parameters in the command represent the following items:

- **-i** Collects log files and relevant information for troubleshooting an installation problem.
- **-g** Collects log files and relevant information for troubleshooting a general problem.
- **-h** Prints the log files and relevant information.

Optional:

- **-f prefix**

  Specifies the prefix that you want to add to the name of the compressed file that is the package of log files.

  By default, a compressed file named `TADDM_ISA_Collection.problem_type.timestamp.zip` is created in the `$COLLATION_HOME/log/support` directory. `TADDM_ISA_Collection` is the default prefix. To override this default prefix, specify the prefix of your choice.

  If you are gathering support information to attach to a problem management record (PMR), include the IBM Support naming convention `ppppp.bbb.ccc` in your prefix, where:
  - `ppppp` is the Problem Management Record (PMR) number
  - `bbb` is the branch number
  - `ccc` is the country code

**Healthcheck program**

You can use the `Healthcheck` program to collect consolidated data about your TADDM environment for IBM Support.

Run the `Healthcheck` program from the `$COLLATION_HOME/bin` directory.

**Command syntax**

```
healthcheck -u user -p password [format] [action]
```

**Parameters**

- **-u user** The TADDM user name. The default value is `administrator`. 

18  Application Dependency Discovery Manager: Troubleshooting
password
The TADDM user password. The default value is collation.

-h Prints a help message.

format
Specifies the format of the output. You can specify none or one of the following options:

-c, --csv
Outputs information in CSV format, which can be used for scripting.

--moswos column_list
Outputs only the columns you specify in the list of comma-separated column names. If you use the --moswos option, you must also specify one module when running the Healthcheck program.

action
Specifies how the Healthcheck program is run. You can specify none or one of the following options:

-l list Displays all the available modules.

module name
The module on which the Healthcheck program is run. If a module is not specified, then the Healthcheck program is run on all modules.

-g group
Runs the Healthcheck program on all modules in the specified group.

Valid groups and modules
Table 5 lists the valid groups and modules with which you can run the Healthcheck program.

<table>
<thead>
<tr>
<th>Group</th>
<th>Module name</th>
<th>Module description</th>
</tr>
</thead>
<tbody>
<tr>
<td>config</td>
<td>checkTADDMInfo</td>
<td>This module displays information about TADDM.</td>
</tr>
<tr>
<td>config</td>
<td>checkTaddmAnchors</td>
<td>This module displays information about the TADDM anchor servers.</td>
</tr>
<tr>
<td>config</td>
<td>checkTaddmDNS</td>
<td>This module displays information about the TADDM server DNS configuration.</td>
</tr>
<tr>
<td>config</td>
<td>checkTaddmGateways</td>
<td>This module displays information about the TADDM gateways.</td>
</tr>
<tr>
<td>config</td>
<td>checkTaddmMode</td>
<td>This module displays information about the TADDM mode.</td>
</tr>
<tr>
<td>config</td>
<td>checkTaddmOS</td>
<td>This module displays information about the TADDM server.</td>
</tr>
<tr>
<td>config</td>
<td>checkTaddmScopes</td>
<td>This module displays information about the TADDM scopes.</td>
</tr>
</tbody>
</table>

Troubleshooting 19
### Table 5. Valid groups and modules (continued)

<table>
<thead>
<tr>
<th>Group</th>
<th>Module name</th>
<th>Module description</th>
</tr>
</thead>
<tbody>
<tr>
<td>database</td>
<td>checkDBIndexes</td>
<td>This module validates the indexes on the primary database schema. It compares the indexes in the database with the indexes in the following files:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• create-indexes.sql or create-meta.sql from the oal-topomgr.jar file</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• etc/schema/create-tables.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The text “Nothing to do” means that the indexes were successfully validated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If some indexes are not displayed, reset them. If unexpected indexes are displayed. Investigate why they are displayed.</td>
</tr>
<tr>
<td>database</td>
<td>checkDBInfo</td>
<td>This module displays basic information about the database and the database server.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To view extended information about the database server, it must have been discovered by the TADDM server where the Healthcheck program is running.</td>
</tr>
<tr>
<td>database</td>
<td>checkDBStats</td>
<td>This module shows the last time that database statistics were updated in the database.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ensure that the TADDM database statistics are updated regularly. If the TADDM spaces have not been updated recently, ensure that a database administrator updates the statistics.</td>
</tr>
<tr>
<td>database</td>
<td>checkDBTuning</td>
<td>This module displays information about buffer tuning in the database.</td>
</tr>
<tr>
<td>database</td>
<td>getCompsysTableInfo</td>
<td>This module displays basic information and sizing information about the database.</td>
</tr>
<tr>
<td>database</td>
<td>getPersobjTableInfo</td>
<td>This module displays information about the Persobj database table, by type.</td>
</tr>
<tr>
<td>discovery</td>
<td>checkDiscFailures</td>
<td>This module displays information about the sensors that have failed during discovery. They are ordered by week.</td>
</tr>
<tr>
<td>discovery</td>
<td>checkDiscIPFailures</td>
<td>This module displays information about discovery results for the Session sensor, for the previous week.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IP address failures for the Session sensor might indicate credential or access problems.</td>
</tr>
</tbody>
</table>
Table 5. Valid groups and modules (continued)

<table>
<thead>
<tr>
<th>Group</th>
<th>Module name</th>
<th>Module description</th>
</tr>
</thead>
<tbody>
<tr>
<td>discovery</td>
<td>checkDiscThisWeek</td>
<td>This module displays information about discovery results for all sensors, for the previous week. The following details are displayed:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Label</strong>  The sensor name.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Week</strong>   The start date of the current week.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>UniqueIPS</strong> The number of items discovered by the sensor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total_Runs</strong> The number of times the sensor was run the previous week.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Success</strong> The number of successful sensor runs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Failures</strong> The number of failed sensor runs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>You can use this information to determine which sensors must be investigated for configuration problems.</td>
</tr>
<tr>
<td>performance</td>
<td>checkDBPerformance</td>
<td>This check runs a performance test against the database over a Java Data Base Connectivity (JDBC) connection.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The following tasks are performed:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Connects to the TADDM database.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Creates a table with 10 columns (one character large object and one binary large object)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. For large objects of size 1000, 10000, and 20000 bytes, the following tasks are performed:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Inserts 300 rows.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Selects 300 rows.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Deletes 300 rows.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The result is the number of milliseconds it takes to complete the test. The result can be used to compare JDBC performance between two systems, or over time.</td>
</tr>
<tr>
<td>Group</td>
<td>Module name</td>
<td>Module description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| performance  | checkTaddmPerformance   | This check calculates the time taken to perform finds and gets on ComputerSystem model objects. It runs the check against 10 ComputerSystem model objects and returns the following information:  
  **Label** The displayName of the computer system.  
  **Attribute Count** An estimate of the number of attributes the computer system has.  
  **AttrTime(sec)** The time taken to get the attributes.  
  **Relationships** The number of relationships the computer system has. This check uses findRelationships.  
  **RelTime(sec)** The time taken to run findRelationships.  
  **ExtAttributes** The number of extended attributes. This check uses getExtendedAttributes.  
  **ExtAttrTime(sec)** The time taken to run getExtendedAttributes.  
  **Find Guid Time(sec)** The time taken to perform a depth 3 find on the GUID of a displayName. |
<table>
<thead>
<tr>
<th>Group</th>
<th>Module name</th>
<th>Module description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>checkTaddmStatus</td>
<td>This module displays information about the TADDM status (similar to information provided by <code>bin/control</code>) for the major services, and information about the services that they provide. For the major services, the following details are displayed, where available: <strong>Label</strong> The service name. A subservice is indicated with the “+” character. <strong>Max Memory</strong> The maximum memory available to the Java Virtual Machine (JVM). The information is similar to information provided by the <code>-Xmx</code> setting. <strong>Total Memory</strong> The total amount of memory in use. <strong>Free Memory</strong> The amount of free memory. <strong>Threads</strong> The number of threads assigned. <strong>Running Threads</strong> The number of threads in use. <strong>Status</strong> The status of the service. For more information about these values, see <code>java.lang.Runtime</code> in the Javadoc.</td>
</tr>
<tr>
<td>validate</td>
<td>checkCompsysAging</td>
<td>This module displays a count of systems discovered in the last 30 days, 30 - 90 days ago, and 90 - 360 days ago. You can use this information to determine what maintenance must be performed on the system. For example, if TADDM must contain the list of actual systems, you must ensure that they are discovered or loaded regularly (at least every 90 days).</td>
</tr>
<tr>
<td>validate</td>
<td>checkOrphanedIP</td>
<td>This module looks for a specific data corruption problem where an IpInterface has been orphaned. The module reports the address of the interface, the GUID of the interface, and the MSS that controls the interface. Where an orphaned interface exists, the IpInterface points to a parent ComputerSystem, but the parent ComputerSystem does not point to the IpInterface. In this situation, the parent ComputerSystem has been deleted, so you can delete the orphaned interface.</td>
</tr>
</tbody>
</table>
Table 5. Valid groups and modules (continued)

<table>
<thead>
<tr>
<th>Group</th>
<th>Module name</th>
<th>Module description</th>
</tr>
</thead>
<tbody>
<tr>
<td>validate</td>
<td>checkRogueAgents</td>
<td>This module displays the number of CIs, grouped by the CDM type and Management Software System (MSS). It lists which sensors or DLAs created systems in TADDM. You can use this module to find problematic sensors, DLAs, or topology agents. For example, a disproportionately large number of computer systems owned by a single topology build agent might indicate a data problem. The data in this module might be truncated. If so, you can view it in CSV format by using the -c switch when running the Healthcheck program.</td>
</tr>
<tr>
<td>validate</td>
<td>checkTADDMDuplicates</td>
<td>This module displays CIs with the same DisplayName. CIs with the same name are potentially duplicates. The host name, GUIDs, and the MSS owners (for example, sensors and DLA) of the duplicate items are displayed. It searches for COMPSYS entries that are of type “ComputerSystem”, and that have been scanned with the OS sensor. You must examine each one and establish whether it is valid or not. In many situations, duplicate displayNames do not indicate a problem.</td>
</tr>
</tbody>
</table>

Examples

The following sample command lists the available modules:
```
healthcheck --list
```

The following sample lists the available modules, by group and with a description:
```
healthcheck --info
```

The following sample command runs all modules:
```
healthcheck -u username -p password
```

The following sample command runs a group of modules:
```
healthcheck -u username -p password -g group
```

The following sample command runs a single module:
```
healthcheck -u username -p password module_name
```

The following sample command runs a single module and outputs only the requested columns:
```
healthcheck -u username -p password --moswos "column1,column2,..." module_name
```

If a column does not exist, the result is “None”. No headers or other information is output.
Sending information to IBM Support
After you collect the appropriate troubleshooting information for the problem, you can search IBM knowledge bases for a solution or send the information to IBM Support. This section describes how to send the information to IBM Support.

Putting the information into a compressed file

To send the troubleshooting information to IBM Support, put all information into one compressed file with a file name in the format **ppppp.bbb.ccc.xxxx**, where:

- **ppppp** is the Problem Management Record (PMR) number
- **bbb** is the branch number
- **ccc** is the country code
- **xxxx** is a descriptive name that is any number of characters

A sample file name is `02206.227.000.installlogs.tar.gz` or `02206.227.000.installlogs.tar.Z`.

Sending the information

To send the information using the File Transfer Protocol (FTP), enter the following commands at a command prompt:

1. `ftp ftp.emea.ibm.com`
2. For **User**, enter `anonymous`.
3. For **Password**, enter your e-mail address.
4. `cd /toibm/tivoli`
5. Change to binary mode by entering `bin`.
6. `put ppppp.bbb.ccc.xxxx`
7. `bye`

To send the information by e-mail, attach the compressed file in the e-mail, include the PMR number in the subject line of the e-mail, and send the e-mail to `tivoli_support@mainz.ibm.com`. A sample subject line is `PMR 02206,227,000`.

**Related concepts:**
- “Searching knowledge bases” on page 3
You can often find solutions to problems by searching IBM knowledge bases. Learn how to optimize your results by using available resources, support tools, and search methods and how to receive automatic updates.

Log Analyzer

With the Log Analyzer, you can gather system and performance data from local and remote systems.

You can use the Log Analyzer to create resource sets. Resource sets are sets of definitions that contain the path locations of the logs that you need to examine and the levels of information that they contain. You can keep customized definitions to reuse. The definitions provide the same set of instructions about where to find a log, and what kind of information to gather from the log, saving time during subsequent log imports.

Using the Log Analyzer, you can also download and store symptom database catalogs to your local system. These catalogs provide detailed diagnostic solutions to a variety of scenarios, which can give direction to your troubleshooting tasks.
If you use TADDM with IBM Tivoli Change and Configuration Management Database (CCMDB) rather than as a stand-alone application, see the CCMDB documentation for information about how to start and use the Log Analyzer from the CCMDB application and from the Integrated Solutions Console.

**Downloading the Log Analyzer**

You can download the Log Analyzer from the IBM Support Assistant Web site.

**Procedure**

To download the Log Analyzer, complete the following steps:

1. If you do not have the IBM Support Assistant installed, go to [http://www.ibm.com/software/support/isa/](http://www.ibm.com/software/support/isa/) to download it. The website includes instructions for downloading and installing.


4. After installation of the Log Analyzer is complete, start the IBM Support Assistant.

5. In the list of tasks, click **Tools**.

6. In the list of products, click **IBM TADDM 7.2.1**.

7. In the list of tools for TADDM, click **Log Analyzer**. The Log Analyzer should start working.

**Importing TADDM log files to the Log Analyzer**

You can import log file from the TADDM servers into the Log Analyzer.

**Procedure**

To import the TADDM log files to the Log Analyzer, complete the following steps:

1. Copy the relevant log files from the TADDM servers to the system where you installed the IBM Support Assistant workbench. Put the log files for each server in a unique directory. For example, `c:\TADDM\logs\serverXXX\...`

2. Import the TADDM log files. The Log Analyzer organizes related log files into log sets. Log sets can be used to import and analyze a set of related log files. This facility is used to organize and import your TADDM log files. Log set definitions provide information to the Log Analyzer specifying where log and trace data reside and what kind of data to gather from local and remote systems. The Log Analyzer allows you to import pre-defined log sets that contain the necessary path information required for retrieving log files on demand.

3. Use one of the following procedures:
   - To save time later, when you create the log set, ensure that you include each log file that you want. To create the initial TADDM log set, complete the following steps.
     a. Click **File > Import Log File**.
     b. Create a new log set.
     c. Type the name for the log set. For example, you could type the following text: **TADDM Log files for server xxxx**
d. Click Add.
e. Complete the following steps:
   1) In the Name Filter window, to limit the list of log files to the TADDM log files, type Discovery.
   2) Select the type of log file that you are adding to the log set.
   3) Type the name of the log file on your local system. Ensure the type of log file matches the log file that you specified.
   4) Enter the TADDM version number that corresponds to the log file. Refer to the Log Analyzer online help for additional options.
   5) To add the log file to the log set, click OK.
   Repeat the preceding steps for each log file that you want to include in the log set.

• Reuse an existing TADDM log set:
a. Select File > Import Log File.
   b. Select an existing Log Set Definition from the list of defined log sets.
   c. If necessary, change the contents of the log set definition. You can add, edit, or remove from the list of log files in the log set.

4. To indicate the file that should be imported to the log set, select the checkbox next to the log file.
5. To import the log files, click Finish.

What to do next

To reuse an existing TADDM log set, complete the following steps:
1. To indicate the file should be imported to the log set, select the checkbox next to the log file.
2. To import the log files, click Finish.

You can create and reuse as many log sets as you need. For example, when importing log files from multiple servers, you need more than one log set.

Analyzing TADDM log files with the Log Analyzer

Using the Log Analyzer, you can correlate multiple TADDM log files into a single view.

Procedure

The TADDM log files can be combined in a single view, ordered by time stamp, to correlate the operation of the TADDM components. There are two ways to correlate log files:
1. Simple - To correlate all imported log file, complete the following steps:
   a. In the Log Analyzer navigation tree view, right-click Logs.
   b. Click View All Logs.
2. Advanced - To correlate a set of log files by creating a custom correlation, complete the following steps:
   a. In the Log Analyzyer navigation tree view, right-click Correlations.
   b. Click New > Log Correlation.
   c. In the window that is displayed, type the name for the correlation.
   d. Add the log files that you want to include for the correlation.
   e. Click Finish.
f. Refresh the navigation tree view.

g. In the navigation tree view, right-click the correlation name you typed and click **Open With > Log View**.

**What to do next**

After you create a view of the logs, you can organize the log data to isolate problems. The following list identifies some of the ways that you can organize the data:

- **Sort log records**: For example, you can sort by time, component, and server name.
- **Highlight log records**: For example, you can highlight all error events in red or show all events from a specific component in blue. Highlighting is similar to filtering, but instead of eliminating data from a view, you can highlight the relevant information within the full list of events.
- **Filtering log records**: You can narrow the scope of a problem and the data shown based on filter criteria. Examples of filter criteria include time stamps, severity, component, and server.
- **Finding log records**: You can search for specific information in a log file. For example, you can search to see events related to interaction with a specific server or user.

For more information about how to organize the data, in the Log Analyzer online help, search for the Analyzing log files topic. Filtering, Sorting, Finding, and Highlighting is a subheading in this topic.

In addition, there are some other topics in the online help that you might find useful:

- **When trying to correlate log files from multiple servers**, the time clocks on those servers can be out-of-sync. This synchronization problem could be something simple, like different time zones, or more subtle, such as a clock being a few milliseconds off from another server's clock. The Log Analyzer imbeds a function to synchronize the time between multiple log files by allowing you to adjust the time stamps in a log file. For more information, refer to the topic titled Synchronizing time of log records for distributed applications in the Log Analyzer online help.

- **You can use symptom catalogs to quickly recognize known problems**. The Log Analyzer provides a log analysis capability that allows it to recognize known problems that are defined in a knowledge database, called the 'symptom catalog'. IBM provides a symptom catalog for known problems with several products, including TADDM. It also provides a way for you to capture and define your own symptom information. For more information, refer to the topic titled Synchronizing time of log records for distributed applications in the Log Analyzer online help.

---

**Solutions for problems that you might have**

This information describes some common problems that you might have with IBM Tivoli Application Dependency Discovery Manager (TADDM) and provides possible solutions.

To determine what version of TADDM is running, see the values of the following properties in the $COLLATION_HOME/etc/collation.properties file:
If you need to provide IBM Support with a list of fixes that you have installed, list all the files that match "efix*" in the $COLLATION_HOME/etc directory.

**Anchor problems**

You can recover from anchor problems such as missing scope details, incorrect firewall configuration or version of the product, and so on.

**General problems**

To troubleshoot problems, review the following logs:
- On the anchor server: ANCHOR_DIR/log or ANCHOR_DIR\log.
- On the TADDM server: $COLLATION_HOME/log/DiscoverManager.log.

The SSHD daemons must be configured to allow port forwarding for the anchor to start. Local port forwarding must be enabled in the remote anchor server for anchors. The configuration file for the sshd daemon must be located in either the /etc/ssh or /usr/local/etc/ssh directory. Open the sshd_config file, and ensure that the AllowTcpForwarding option on anchors is set to yes.

If you use SSH2, SSH2 adds four additional TcpForwarding options that restrict forwarding for groups and users. These options must also be either enabled or absent.

If you use a supported Solaris operating system, when running a discovery for a Solaris system, you can use the Bash shell (bash), C shell (csh), Z shell (zsh), and Korn shell (ksh). The Bourne shell (sh) is not supported.

Ensure that you can connect to the anchor from the TADDM server using ssh, for example ssh anchor_service_account@anchor_server.

On the anchor, check if any TADDM services are running using the command `ps -ef | grep collation`. If any processes are returned, stop them, as they could be using the port that TADDM needs to use to create the SSH tunnel.

Check that there is nothing listening on the anchor port using the command `netstat -an | grep 8502`.

Ensure that AllowTcpForwarding is turned on in /etc/ssh/sshd_config. Additionally, the user that starts the anchor process must have read access to the sshd_config file.

**Gathering troubleshooting information for support**

To establish why TADDM is having difficulties deploying or using an anchor, you should gather and send the relevant information to support. You should include the following information about the problem and the environment:
- Error message
- Time of the error
- Screenshot showing the problem
- IP of the anchor server and the discovery target server
- Anchor port
- TADDM version
- TADDM server operating system
- Anchor server operating system

Also, you should include the appropriate logs and configuration files. Ensure that TADDM logging is in DEBUG mode and that split sensor logging is enabled. The settings are managed using the `com.collation.log.level=DEBUG` `com.collation.discover.engine.SplitSensorLog` property in the `collation.properties` file. If you make changes to the `SplitSensorLog`, you must restart the TADDM server for the changes to take effect. You must then reproduce the problem before gathering logs.

Gather the following logs and configuration files:
- `$COLLATION_HOME/log/*`
- `$COLLATION_HOME/log/services/*`
- `$COLLATION_HOME/log/sensors/*`
- `$COLLATION_HOME/collation.properties`
- `$COLLATION_HOME/anchor.properties`
- `$COLLATION_HOME/scope.properties`

On a UNIX anchor server, gather the log files under the `colltaddm_version` directory in the home directory of the anchor service account. On a Windows anchor server, gather the log files under the `%SystemRoot%\Temp\colltaddm_version\log` folder.

Place all of the gathered information into a TAR or ZIP file.

**Anchors configured for use with a NAT firewall are no longer listed after a discovery**

**Problem**
Anchors configured for use with a NAT firewall are no longer listed after a discovery.

**Solution**
When anchors are configured for use with a NAT firewall, you must ensure that the anchor for each NAT zone has a defined scope. For more information about how to specify a scope for a NAT zone anchor, see the Configuring for discovery through NAT firewalls topic in the TADDM User’s Guide.

**Anchor problem occurs on Windows system**

**Problem**
An anchor problem occurs on a Windows system.

**Solution**
Ensure that the version of the Secure Shell (SSH) server that you are using is supported by TADDM.

**Some sensors do not run on an anchor on a Windows system**

**Problem**
The following sensors do not run on the anchor that is started on a Windows system:
• WebSphere Application Server 5.x or 6.0 sensor (WebSphere Application Server 6.1 sensor does run)
• Oracle Application Server sensor
• WebLogic 8 sensor (WebLogic 9 or 10 sensor does run)

Solution
If the value of the com.collation.discover.anchor.lazyDeployment property is set to true in the collation.properties file, these sensors do not run. To prevent this problem, deploy the anchor with the following property set to false which is the default value in the collation.properties file:
com.collation.discover.anchor.lazyDeployment=false

After the first successful anchor deployment, you can change the property value to true.

When you run a discovery that requires anchors, the scope details area of the discovery history pane is blank

Problem
The anchor is included in the scope but no sensor is used during the discovery. The scope details area of the discovery history pane is blank.

Solution
When you add an anchor, you can select that the anchor host is limited to search across a specified discovery scope. Verify that the root anchor scope limitation is set correctly. This error occurs when a root anchor scope restriction or limit is set to a different scope than the one that is used in the discovery.

When you run a discovery that requires anchors the sensor fails

Problem
When you run a discovery that requires anchors, the scope details area of the discovery history pane show that the Ping sensor fails.

Solution
When you run a discovery that requires anchors, ensure that each anchor is included in the discovery scope. For example, to discover a target that is in a scope set assigned to an anchor, both the anchor and the scope set must be included in the discovery run.

Discovery fails when running an anchor on Windows Server 2012

Problem
Discovery fails when running an anchor on Windows Server 2012.

Solution
To run an anchor on Windows Server 2012, you must install Microsoft .NET Framework 3.5. The default version is 4.5. For more information about installing Microsoft .NET Framework 3.5, see http://technet.microsoft.com/en-us/library/hh831809.aspx#BKMK_FoD.

Also, check the version of the SSH server on the anchor and install the supported one. For more information about the supported software, see Windows gateways.
**Discovery fails when running a Windows anchor with Cygwin**

**Problem**
Discovery fails when running a Windows anchor with Cygwin, and the log files show the following message:

CTJTD2072E An error occurred. The server cannot install Java on the remote host.
CTJTD2231E The file is not copied. A subdirectory or file C:\WINDOWS\temp\coll7.2 already exists.

**Solution**
The problem occurs because the SSH daemon runs as a local user. You must properly configure a Cygwin OpenSSH server. For more information about setting up Cygwin, see the related reference on the bottom of this page or refer to Setting up a Cygwin OpenSSH Server for Windows Domains on a TADDM Gateway Server in the TADDM Wiki.

**API problems**
This information covers common problems that occur with the API for TADDM.

**General problems**

If you have problems with the API for the TADDM, refer to the TADDM SDK Developer’s Guide, and review the following log files:

- `$COLLATION_HOME/sdk/log/api-client.log`
- `$COLLATION_HOME/log/services/ApiServer.log`

If you cannot correct the problem, send these log files and the API query and output to IBM Support.

**api.sh script displays file permission errors for SDK log files**

**Problem**
When you install TADDM as a non-root user, the `api.sh` script displays file permission errors for the SDK log files.

**Solution**
This problem occurs under the following circumstances:

1. A user runs the `api.sh` script, and the script creates SDK log files.
2. Another user tries to run the `api.sh` script. The script displays the file permission errors because this user does not have the permissions to remove or update the SDK log files that were generated when the first user ran the script.

To prevent this problem, perform any of the following actions:

- Have users remove or rename SDK log files after their work session is complete.
- Use a shared user ID to run SDK commands so that no file permission problems occur.
- Copy the SDK directory and adjust scripts appropriately so that each user has a copy of the SDK.

**AttributeNotSetException is returned from a get() method but the attribute exists**

**Problem**
The data that is returned from a query contains only the Globally Unique Identifier (GUID), but you know that the other attributes were written to the database. When the `get()` method is run for one of these attributes, an AttributeNotSetException error is returned.
Solution
Increase the depth on the query. For example, if a depth of 1 returns the GUID but no other attributes, specifying a depth of 2 returns the GUID and the populated attributes for the object. To see the data that is being returned from a query, use the `api.sh/api.bat` command in the `sdk/bin` directory, as shown in the following example:

```
./api.sh -u userid -p password find --depth 2 ComputerSystem
```

**ApiConnectionFailureException occurs due to an SSLHandshakeException**

**Problem**
When the API tries to obtain a connection to TADDM, an `ApiConnectionFailureException` error occurs due to a `javax.net.ssl.SSLHandshakeException` error.

**Solution**
Check the following items:

- Determine whether the certificate file that is used on the connection matches the one on the TADDM server. To obtain the correct certificate file, click **Show SSL Options** in the TADDM Discovery Management Console, and download the truststore. Use this certificate in the connection call.
- Verify that the `getApiConnection()` method specifies the correct SSL port on the TADDM server. The SSL port is defined by the `com.collation.api.ssl.port` property in the `$COLLATION_HOME/etc/collation.properties` file.

**java.net.ConnectException is returned from getApiConnection() method**

**Problem**
When the API tries to obtain a connection to TADDM, the connection attempt fails.

**Solution**
Check the following items:

- Verify that the port that is used in the `getApiConnection()` method matches the port that the TADDM server is using.
- Verify that the host name that is used in the `getApiConnection()` method is correct and that the TADDM server is started.

**List of active user sessions continues to grow**

**Problem**
The list of active user sessions in the `login.log` file of the TADDM log directory continues to grow.

**Solution**
Verify that all code that is written to access TADDM properly closes the session before exiting by calling the `api.close()` and `session.close()` methods.

**Query does not return all expected model objects**

**Problem**
A query is run, and model objects that are known to exist are not returned.

**Solution**
If the query is run with data level security enabled, verify that the user ID
that is used to query the data has the correct authority to view the data. For details on data security, see the TADDM Administrator’s Guide.

**Change history returned from API does not match change history in the user interface**

**Problem**
The change history that is returned from the API does not match the change history that is shown in the TADDM user interface.

**Solution**
Check the following items:
- Verify that the time zone in the client and the server are similar. If changes occurred in the past few minutes and you cannot see the changes, the problem might be due to mismatched time zones.
- Change history is recursive. Each change history object has a getCauses() method that returns additional change histories that influence the high-level change history.

**Change history for contained application servers is not returned with change history for computer system**

**Problem**
The change history for a computer system is requested using the Globally Unique Identifier (GUID) for the computer system, but the change history for the contained application servers is not returned.

**Solution**
You must provide the GUIDs for all components for which you want the change history. For example, if you want the change history for an Apache server that is running in a Linux computer system, you must include the GUIDs of both the Apache server and the Linux computer system.

**taddm-api-client.jar file reports incorrect checksum**

**Problem**
After installation of the TADDM server, a client request for the checksum value of the taddm-api-client.jar file returns 11111111 instead of the correct checksum.

**Solution**
This problem happens if the TADDM server is started as part of the installation process. Restart the server after installation is complete; subsequent client requests return the correct checksum.

**Using the find API method fails with a StackOverflowError**

**Problem**
When using the find API method, either called from the api.sh script or from a configured cross-product integration, a StackOverflowError message is displayed. The following is an example of a typical error message:

```
CTJOX0101E There is an API processing error:
java.rmi.ServerException: RemoteException occurred in server thread;
    nested exception is: java.rmi.RemoteException:
    CTJOX0193E The application cannot get objects from the Topology Manager: java.rmi.RemoteException:
    CTJOX0193E The application cannot get objects from the Topology Manager: java.rmi.RemoteException: [TopologyManagerFactory.E.3]
```
An unexpected error occurred.; nested exception is: 
java.rmi.ServerError: Error occurred in server thread; 
nested exception is: java.lang.StackOverflowError...

Solution
You must update the JVM argument for the appropriate services.

On a domain server, increase the XSS value for the Topology and Proxy JVMs. You can configure this value in the cmdb-context.xml file.

On a synchronization server, increase the XSS value for the EcmdbCore JVM. You can configure this value in the ecmdb-context.xml file.

On a streaming server, increase the XSS value for the StorageService JVM. You can configure this value in the storage-server-context.xml file.

BIRT report problems
This information covers common problems that occur with Business Intelligence and Reporting Technology (BIRT) reports in TADDM.

You see the message “There is no report design object available”

Problem
In the BIRT Report Designer, you create a simple BIRT report, and you can successfully preview the BIRT report in Eclipse. You upload the report in the Data Management Portal, and you can find the new report in the list. However, when you run the report, you see the following error message:
There is no report design object available.

Solution
Verify the file size of the report on the TADDM server:
2. If the report file size is zero, delete the file report_name.rptdesigncompiled.

Otherwise, use BIRT Report Designer v2.2.1, which you can download from [http://www.ibm.com/software/brandcatalog/ismlibrary/](http://www.ibm.com/software/brandcatalog/ismlibrary/) Later versions of the BIRT Report Designer cause this error. Also, upload the RPT file to the server.

Apache Tomcat fails and non-English letters are in collation.properties file

Problem
If Apache Tomcat fails with a MalformedInputException error and if non-English letters (especially Finnish letters) are present in the collation.properties file, the TADDM BIRT report function also fails.

Solution
Use only ASCII characters in the collation.properties file.

TADDM server has OutOfMemoryError exceptions

Problem
When you run the TADDM BIRT report function for a TADDM server that is running on a Solaris operating system using a Sun JVM, the TADDM server has OutOfMemoryError exceptions. The default maximum memory size for the Sun JVM is 64 MB.
Solution
In the $COLLATION_HOME/bin/control script, change the following line as indicated:

Change from:
```bash
[ -z "$JVMARGS" ] && JVMARGS="-Xms64M -Xmx256M"
```

Change to:
```bash
[ -z "$JVMARGS" ] && JVMARGS="-Xms64M -Xmx256M -XX:MaxPermSize=256M"
```

Error when running a custom BIRT report that uses an XML data source

Problem
Running a custom BIRT report fails if the report design uses an XML data source rather than a Java Data Objects (JDO) datastore, even though the report works correctly in the BIRT designer tool. After you upload the report to TADDM and run it, the following error appears in the $COLLATION_HOME/log/tomcat.log file:

```
2010-03-08 04:50:37,256 [http-9430-Processor17] ERROR util.BirtUtil - the following entry from /opt/IBM/taddm/dist/deploy-tomcat/birt-viewer/reports.txt was not parsable ==>
Recoverable error on line 1524 of file:///opt/IBM/taddm/dist/deploy-tomcat/birt-viewer/WEB-INF/DataSource.JDO/report.XSLT:
Recoverable error on line 1525 of file:///opt/IBM/taddm/dist/deploy-tomcat/birt-viewer/WEB-INF/DataSource.JDO/report.XSLT:
Error on line 722 of file:///opt/IBM/taddm/dist/deploy-tomcat/birt-viewer/WEB-INF/DataSource.JDO/report.XSLT:
XPTY0004: An empty sequence is not allowed as the second argument of index-of() - Servlet.service() for servlet CompilerServlet threw exception
```

Solution
As a workaround, replace the compiled version of the uploaded report with the original version. Complete the following steps:

2. Delete the compiled version of the report you uploaded (report_name.rptdesigncompiled).
3. Copy the original version of the report (report_name.rptdesign) to the reports directory, renaming it to report_name.rptdesigncompiled.

Report parameters window is displayed in incorrect language

Problem
If your TADDM server and client systems use different locales, the BIRT report parameters window is displayed by using the language of the server rather than the client.

Solution
To avoid this problem, use Tivoli Common Reporting to run the BIRT report.

Error when opening multiple reports

Problem
If you try to open multiple reports at the same time, you might see the following error in your browser:

```
Report document instance is empty.
```
Solution
This error occurs when you try to open a report before a previous report has finished running. To correct the problem, refresh the page in your browser.

BIRT reports do not run after changing database properties in the collation.properties file

Problem
After changing the URL, user name, or password properties for the TADDM database in the collation.properties file BIRT reports do not run.

Solution
After modifying the URL, user name, or password database properties in the collation.properties file, complete the following steps:
2. Remove the .rptdesigncompiled files.
3. Restart the TADDM server.

Tivoli Monitoring systems are incorrectly marked as unmonitored in Monitoring Coverage reports

Problem
IBM Tivoli Monitoring systems are incorrectly marked as unmonitored in the Monitoring Coverage reports.

The Monitoring Coverage report checks for the existence of a managedSystemName attribute. If the attribute is populated, the system is considered monitored. If the attribute is not populated, the system is considered unmonitored.

Solution
To solve this problem, complete the following steps, depending on the report:

Monitoring coverage for operating system report:
To populate the managedSystemName attribute, run a Level 1 or Level 2 discovery using a profile that includes the IBM Tivoli Monitoring Scope sensor (ITMScopeSensor) with the value of the discoverITMEndpoints attribute set to true.

Other monitor coverage reports:
You must ensure that the product support was installed for the monitoring agents so that the IBM Tivoli Monitoring DLA provides the required data.

TADDM becomes unresponsive after running a BIRT report

Problem
After gathering a large amount of data and running BIRT reports, an “out of memory” error is displayed and TADDM might become unresponsive.

Solution
You can prevent “out of memory” errors by increasing the heap size available to TADDM.
1. Navigate to the $COLLATION_HOME/deploy-tomcat/ROOT/WEB_INF directory.
2. Update the configuration file. The file you must edit depends on the type of TADDM deployment you are using. Edit one of the following configuration files:
   - For a domain server deployment, edit cmdb-context.xml.
   - For a synchronization server deployment, edit ecmbd-context.xml.
   - For a streaming server deployment, edit storage-server-context.xml on the storage server.

3. Update the value setting the maximum assigned memory. Edit one of the following configuration files:

   cmdb-context.xml
   In the `<bean>`
   class="com.collation.platform.jini.ServiceLifecycle"
   id="Proxy" init-method="start" destroy-method="stop">
   element, locate the `<property name="jvmArgs">` element. Change the `-Xmx1024M` value to `-Xmx1900M`, for example:
   ```xml
   <property name="jvmArgs">
     <value>-Xms128M|-Xmx1900M|
     -Djava.nio.channels.spi.SelectorProvider=sun.nio.ch.SelectorProvider|
     -Dsun.rmi.transport.tcp.handshakeTimeout=0</value>
   </property>
   
   ecmbd-context.xml
   In the `<bean>`
   class="com.collation.platform.jini.ServiceLifecycle"
   id="EcmdbCore" init-method="start" destroy-method="stop">
   element, locate the `<property name="jvmArgs">` element. Change the `-Xmx1640M` value to `-Xmx1900M`, for example:
   ```xml
   <property name="jvmArgs">
     <value>-Xms768M|-Xmx1900M|-DTaddm.xmx64=4g|
     -Dcom.ibm.CORBA.ConfigURL=file:${Home}/etc/sas.client.props|
     -Djava.security.auth.login.config=${Home}/etc/wsjaas_client.conf|
     -Djava.naming.factory.initial=com.ibm.websphere.naming.MinInitialContextFactory|
     -DtraceSettingsFile=${Home}/etc/trace.props|
     -Djava.util.logging.manager=com.ibm.ws.bootstrap.WsLogManager|
     -Djava.util.logging.configureByServer=true|
     -Djava.util.logging.config.file=${Home}/var/policy/authzlogging.properties|
     -Dsun.rmi.transport.tcp.handshakeTimeout=0|
     -Djava.util.logging.config.file=${Home}/etc/nrslogging.properties
     </value>
   </property>
   
   storage-server-context.xml
   In the `<bean>`
   class="com.collation.platform.jini.ServiceLifecycle"
   id="StorageService" init-method="start"
   destroy-method="stop">
   element, locate the `<property name="jvmArgs">` element. Change the `-Xmx1512M` value to `-Xmx1900M`, for example:
   ```xml
   <property name="jvmArgs">
     <value>-Xms768M|-Xmx1900M|-DTaddm.xmx64=4g|
     -Dcom.ibm.CORBA.ConfigURL=file:${Home}/etc/sas.client.props|
     -Djava.security.auth.login.config=${Home}/etc/wsjaas_client.conf|
     -Djava.naming.factory.initial=com.ibm.websphere.naming.MinInitialContextFactory|
     -DtraceSettingsFile=${Home}/etc/trace.props|
     -Djava.util.logging.manager=com.ibm.ws.bootstrap.WsLogManager|
     -Djava.util.logging.configureByServer=true|
     -Djava.util.logging.config.file=${Home}/var/policy/authzlogging.properties|
     -Dsun.rmi.transport.tcp.handshakeTimeout=0|
     -Djava.util.logging.config.file=${Home}/etc/nrslogging.properties
     </value>
   </property>

Polish language characters are not displayed correctly when exporting a BIRT report

Problem
If the system locale is Polish and you export a BIRT report to a PostScript or PDF file, the polish characters are not displayed correctly.
Solution
Use the English locale to export BIRT reports.

Files cannot be opened after a BIRT report is exported to a PowerPoint or Excel file

Problem
Not all BIRT reports exported to a PowerPoint or Excel file can be opened with its associated application.

Solution
Export the report and select a different format.

Error occurs when you move through the hierarchy of information in a BIRT report

Problem
If you click a segment of a chart or click a link to open a drill through report the following error message might be displayed:
Report document instance is empty.

Solution
Run the BIRT report again and drill through the report to view the detailed information.

Word wrap can occur in a column heading of a BIRT report window in non-English locales

Problem
For non-English locales, word wrap can occur in a column heading of a report window. This behavior might result in an inconsistent background.

Some BIRT reports, windows, and legends are partially displayed in English in non-English locales

Problem
The following list identifies the BIRT reports, windows, and legends that are partially displayed in English:
- Monitoring Coverage report
- System Utilization Hourly Peak report
- System Utilization report
- Sensor reports
- Parameter window used to specify values before running a report
- Legends used to explain components of a chart

BIRT Reports Charts are not displayed

Problem
BIRT requires a graphical user interface API to render charts. This error occurs only on the UNIX-like systems, where a graphical user interface is an optional component.

Solution
Install the X system. The following list contains the packages that help for SUSE Linux (for other distributions, similar packages are available):

Linux SLES (9.156.46.78) [10:44] root /usr/lib # rpm -qa | grep xorg
- xorg-x11-server-6.9.0-50.58
BIRT Reports cannot be printed

Problem
When trying to print a BIRT report, the following exception occurs:
+ org.eclipse.birt.report.service.api.ReportServiceException: Error happened while running the report; nested exception is:
  java.lang.UnsatisfiedLinkError: fontmanager (libstdc++.so.5: cannot open shared object file: No such file or directory).

Solution
Install the libstdc++ package on the TADDM server.

Bulk load program problems
This information covers common problems that occur with the bulk load program in TADDM.

General problems
If you have problems with the bulk load program, review the following items:
• Place the input XML file in a directory that is accessible by the TADDM user, which is the user that starts the TADDM server. This directory can be a shared directory. Do not place the file in the following directories:
  – $COLLATION_HOME/bulk
  – $COLLATION_HOME/results
  – $COLLATION_HOME/log
• Review the results in the bulk/results directory for errors.
• Record the time when the error occurs, and review the log files in the following order:
  1. $COLLATION_HOME/log/bulkload.log
  2. $COLLATION_HOME/log/services/ApiServer.log
  3. $COLLATION_HOME/log/services/TopologyManager.log
• In the TADDM information center or the TADDM User’s Guide, review the information about using the bulk load program to ensure that all limitations are addressed.

Errors occur when processing an XML file

Problem
Parsing errors occur when processing an XML file.
Solution

Ensure that the XML markup in the Identity Markup Language (IDML) file is valid, and that it conforms to the IDML specification:

• You can validate the XML markup using the W3C Markup Validation Service at [http://validator.w3.org/](http://validator.w3.org/).

• You can validate the conformance of the XML to the IDML specification using the `idmlcert.jar` tool. To use this tool, go to the `$COLLATION_HOME/sdk/dla/validator/v2` directory and run the following command:

```
java -jar idmlcert.jar idml_book_xml
```

where `idml_book_xml` is the path and file name of an IDML book XML file.

Problem

The following message occurs when processing an XML file:

```
The file was already processed and will not be processed again. The logs may contain more information. Return code is: 14
```

Solution

The bulk load program has already processed the file. To overwrite previous data, run the appropriate bulk load command for your operating system with the `-o` option.

The bulk load process takes too long to complete

Problem

The bulk load process takes too long to complete, and you think that you should stop it before it completes.

Solution

Use the `-g` option on the command line of the `loadidml.sh` or `loadidml.bat` script. The `-g` option causes data to be passed into the TADDM server in large chunks, which improves the performance for XML files with certain types of data. However, the `-g` option cannot be used if any objects in the XML file contain errors.

Typically, pressing Ctrl-C to stop the bulk load process is not a good solution. While the bulk load client is running, review the time that the following logs were last modified:

• `$COLLATION_HOME/log/bulkload.log`

• `$COLLATION_HOME/log/services/TopologyManager.log`

If these logs are updated regularly, especially the `TopologyManager.log` file, the TADDM server stores the data and the bulk load program waits for the TADDM server to complete the storage operation.

For better performance, complete the following steps:

• Increase the bulk cache size to 2000 in `/etc/bulkload.properties`. For instructions, see the Bulk load parameters tuning section of this documentation.

• You can collect thread dumps of TADDM processes and review them to make sure that a Java virtual machine is not running out of memory. If necessary, increase the memory size to 2 GB for proxy (domain server deployment) or 6 GB for storage service (streaming server deployment) by updating the `-DTaddm.xmx64=4g` parameter in `./deploy-tomcat/ROOT/WEB-INF/storage-server-context.xml`.

Troubleshooting 41
The following example illustrates an updated parameter for streaming server deployment:
<value>-Xms768M|-Xmx1512M|-DTaddm.xmx64=6g|

- You can also increase the memory size to 2 GB (2048) in the com.ibm.cdb.bulk.allocpoolsize property in the bulkload.properties file. This property specifies the maximum amount of memory that can be allocated to the Bulk Loader process. It is an Xmx value that is passed to the main Java class of the Bulk Loader. Specify the value in megabytes.

Unable to load CICS® Transaction Server IDML books

Problem
The discovery library adapter (DLA) for CICS Transaction Server 4.1 creates IDML books but these books cannot be loaded into TADDM.

Solution
Apply PTF R60M PSY UK71451 for CICS Transaction Server 4.1 and recreate the IDML books.

Connectivity problems
This information covers common problems that occur with connectivity to the TADDM server.

General problems
The most common cause of connectivity and startup problems for the TADDM server is that the host name is indicated as an alias for the loopback interface. For example, if the /etc/hosts file on the TADDM server has the following entry, where taddm_server_name is the name of the TADDM server, connectivity and startup problems occur:

127.0.0.1 localhost taddm_server_name

To prevent problems, change the entry in the /etc/hosts file to the following line:

127.0.0.1 localhost

Server is not running or cannot be contacted

Problem
The following message occurs when the TADDM client is launched:

“One TADDM server is not running or not reachable.”

Solution
Verify the following items:
- Verify that all services are started. On the lower left side of the startup page, you can see a green check mark beside all services.
- Verify that no firewall is blocking the connection between client and server.
- Use the nslookup command to validate the server and client DNS.
- If the Establish a secure (SSL) session check box is selected, verify that the appropriate truststore was downloaded, and that the directory containing the downloaded truststore file was specified correctly.
- Servers with more than one IP interface, can cause the Remote Method Invocation (RMI) server to be bound to another or different IP address.
instead of the actual IP address. In some servers, forward DNS and reverse DNS lookups do not match, which causes the Remote Method Invocation (RMI) server to be bound to localhost instead of the actual IP address. To prevent this occurring, set the following property in the collation.properties file to the IP address of the server:

com.collation.clientproxy.rmi.server.hostname

You must save the file and restart the server for this change to take effect. When you add the IP address of the server, the java.rmi.server.hostname system property is set on the Java Virtual Machine (JVM), which corrects the DNS problem.

**TADDM server does not start due to a connection problem to the RDBMS**

**Problem**

You see the following message as a result of entering the *control status* command, and the TADDM server does not start due to a connection problem to the RDBMS:

DbInit: Failed

**Solution**

To determine the error condition, run the following command from the $COLLATION_HOME/log directory:

grep "ERROR jdo.JdoDbInit" tomcat.log

If the password for the RDBMS server has changed, you can update the password on the TADDM server by editing the $COLLATION_HOME/etc/collation.properties file. For details, see the TADDM Administrator’s Guide.

**TADDM does not discover a Windows target because of an SSH connection error**

**Problem**

One or more of the following error messages is displayed when you try to run a discovery of a Windows 2003 system:

CTJTP1203E
CTJTP1235E
CTJTP1135E

**Solution**

On the Windows 2003 target, change the connection protocol from SSH2 to SSH1. For systems running SSH through Cygwin, complete the following steps:

1. Open a Cygwin bash shell window.
2. To stop the SSH daemon, enter the following command: `net stop sshd`
3. Change directories to /etc.
4. (Optional) Make a backup copy of the sshd_config file in /cygwin/etc.
5. Change the line *Protocol 2* to *Protocol 1.2*.
6. Save the file and close the editor.
7. To start the SSH daemon, from the bash command prompt, enter the following command: `net start sshd`
8. From TADDM, rescan the Windows 2003 system. TADDM discovery must be able to connect and discover the Windows system.
CMS and DIS problems

This information covers common problems that occur with the Context Menu Service (CMS) and Data Integration Service (DIS) in TADDM.

Using the find API method fails with a StackOverflowError

Problem
When using the find API method, either called from the api.sh script or from a configured cross-product integration, a StackOverflowError message is displayed. The following is an example of a typical error message:

```
CTJ0X0101E There is an API processing error:
java.rmi.ServerException: RemoteException occurred in server thread;
nested exception is: java.rmi.RemoteException:
CTJ0X0193E The application cannot get objects from
the Topology Manager: java.rmi.RemoteException:
CTJ0X0193E The application cannot get objects from the Topology Manager:
java.rmi.RemoteException: [TopologyManagerFactory.E.3]
An unexpected error occurred.; nested exception is:
java.rmi.ServerException: Error occurred in server thread;
nested exception is: java.lang.StackOverflowError...
```

Solution
You must update the JVM argument for the appropriate services.

On a domain server, increase the XSS value for the Topology and Proxy JVMs. You can configure this value in the cmdb-context.xml file.

On a synchronization server, increase the XSS value for the EcmdbCore JVM. You can configure this value in the ecmdb-context.xml file.

On a streaming server, increase the XSS value for the StorageService JVM. You can configure this value in the storage-server-context.xml file.

Custom query problems in the Data Management Portal

This information covers common problems that occur with the custom query in the TADDM Data Management Portal.

Cannot run queries with Mac OS, IBM i, and Tru64 computer system classes

Problem
You cannot run queries with Mac OS, IBM i, and Tru64 computer system classes (for example, Tru64.guid is-not-null). You can recognize a broken query because after the query is run, the Result Attributes field is empty.

Solution
Perform one of the following actions:
• Use the custom query function in the Discovery Management Console.
• Explicitly select required columns in the query using the Result Attributes window.

Query that includes units does not return expected results

Problem
A custom query that includes criteria specifying units (for example, 4000 MHz) does not return the expected results.

Solution
Units are not stored in the database. Instead, all attribute values are stored in the database with units converted to a least common denominator; for
example, the value 4000 MHz is stored as 4000000000 Hz. To return these values, a query must specify the value in the same terms used to store it.

The unit used in the database varies depending upon the type of value. To determine the unit for a particular attribute, you can run a test query on that attribute to see how the values are stored. You can then calculate the correct values for your custom query by converting to the appropriate units.

**Custom query cannot handle array attributes**

**Problem**

The Custom Query function in the Data Management Portal has a limitation in that the attributes that are selected as part of the query cannot be array attributes (for example, ipInterfaces).

This occurs because the query engine that is called by the Custom Query UI does not support the parsing of attributes that are arrays.

The attributes that are included in the custom query are checked and if any of the attributes are arrays, the following error message is displayed:

Custom Query does not currently support attributes which are arrays, such as {0}.

**Solution**

Use the `api.sh` script, which returns all available data for the object that is selected, instead of using the Data Management Portal to run a custom query.

For more information on how to use the `api.sh` function, see the TADDM SDK Developer’s Guide.

**Custom server template problems**

This information covers common problems that occur with the custom server templates in TADDM.

**ls/of command is not fully functional on custom server**

**Problem**

The `ls/of` command is not fully functional on the custom server.

**Solution**

Check the logs to verify that the `ls/of` command has the appropriate privileges. For example, the logs contain the following types of message:


**Custom server is written to match but does not match**

**Problem**

You write a custom server template to match a process, but the custom server template does not match.

**Solution**

Determine whether the process has a listening port. If it does not, TADDM ignores it. To prevent TADDM from ignoring the custom server, add the
process name for the custom server as a value of one of the forcedServerList properties in the collation.properties file, as shown in the following example:

```
# Special servers to be recognized by OS layer
# despite having no listening ports
com.collation.platform.os.WindowsOs.forcedServerList=w3wp;nsserver;amqzxma0
com.collation.platform.os.UnixOs.forcedServerList=amqzxma0;vxconfigd
com.collation.platform.os.OpenVmsOs.forcedServerList=
```

**Custom server is matched by a previous template**

**Problem**
The custom server is matched by a previous discover template or by an ignore template, regardless of the order of the custom server in the list.

**Solution**
Change the templates so that the custom server is not matched by a previous discover template or by an ignore template. To determine which template is the matching one, look in the logs.

- If the matching template is not an internal template, change the matching template using the UI.
- If the matching template is an internal template, export the template, change the value within the <internal> element to false, and import the template again, according to the following instructions:
  1. To export, enter the following command:
     ```
     $ api.sh -u admin -p pass find --depth -1 Template >/tmp/data/t.xml
     ```
  2. Edit the XML output from the previous command, and change `<internal>true</internal>` to `<internal>false</internal>`.
  3. To import, enter the following command:
     ```
     $ api.sh -u admin -p pass import /tmp/data
     ```

**Discovery using custom server templates does not retrieve configuration files from Tru64 UNIX systems**

**Problem**
Discovery of Tru64 UNIX systems fails to retrieve configuration files specified on the Config Files tab of the custom server template.

**Solution**
This problem occurs because TADDM uses the scp1 protocol to retrieve configuration files, but the Tru64 UNIX operating system does not support scp1 by default. (The scp2 protocol, which is supported by Tru64 UNIX, is not compatible with scp1.)

For more information about this limitation, refer to the following Web page: [http://h21007.www2.hp.com/portal/download/files/unprot/STK/Tru64_STK/impacts/i352.html](http://h21007.www2.hp.com/portal/download/files/unprot/STK/Tru64_STK/impacts/i352.html)

As a workaround, you can install an scp1 package such as OpenSSH on the Tru64 UNIX system: [http://www.openssh.com/portable.html](http://www.openssh.com/portable.html)

**Database problems**
This information covers common problems that occur in the TADDM database.
Database deadlocks or storage errors occur while running a discovery

Problem
The discovery stops because database deadlocks occur or because storage retry exceptions are logged to the TADDM log files.

Solution
The database deadlocks are the root cause of storage retry exceptions. While either of these types of errors can occur at any time, the errors are especially noticeable with a new database if database statistics have not been generated because of lack of data.

Database deadlocks
During discovery, TADDM runs parallel threads to improve throughput and performance. When the database is first created and still empty, TADDM assigns default values to the catalog statistics. Because of this method, some of the access paths that are used by the database manager can cause deadlocks to occur during a discovery run. To identify a deadlock, perform the following steps:

1. From a DB2 command window, run the following SQL statements:

   ```sql
   db2 UPDATE MONITOR SWITCHES USING BUFFERPOOL ON
   db2 UPDATE MONITOR SWITCHES USING LOCK ON
   db2 UPDATE MONITOR SWITCHES USING SORT ON
   db2 UPDATE MONITOR SWITCHES USING STATEMENT ON
   db2 UPDATE MONITOR SWITCHES USING TABLE ON
   db2 UPDATE MONITOR SWITCHES USING UOW ON
   db2 UPDATE MONITOR SWITCHES USING TIMESTAMP ON
   ```

2. Also from a DB2 command window, run the following command:

   ```sql
   db2 get monitor switches
   ```

   All switches must be set to ON.

3. Run a discovery.

4. After the discovery completes, from the same DB2 command window as in the preceding steps, run the following command, where `dbname` is the name of your database:

   ```sql
   db2 get snapshot for all on `dbname` > `dbname`-dbsnap.out
   ```

5. To see the number of deadlocks that are detected, look for the following words in the `dbname`-dbsnap.out file:

   ```
   Deadlocks detected
   ```

For optimal performance and throughput, and to reduce the possibility of database deadlocks, use the following database commands to ensure that your database statistics are updated on a regular basis:

- For DB2 databases:

  ```
  runstats on table cmdbuser.compsys and indexes all
  ```

- For Oracle databases:

  ```
  dbms_stats.gather_table_stats(ownname=> 'CMDBUSER', tabname=> 'COMPSYS', partname=> NULL);
  ```

Also, the `gen_db_stats.jy` script in the `$COLLATION_HOME/bin` directory outputs the database commands for either DB2 or Oracle...
databases to update the statistics on the TADDM tables. The following example shows how to use this script:

1. cd $COLLATION_HOME/bin
2. ./gen_db_stats.jy > tmpdir/TADDM_table_stats.sql, where tmpdir is a directory where this file can be created. When this is complete, copy the file to the database server, and run the following command:
   db2 -tvf tmpdir/TADDM_table_stats.sql

You can also use either the DB2 Control Center or the Oracle Enterprise Manager to update the database statistics, which is especially important after an initial discovery of your environment.


**Storage errors**

When using DB2 and running your first discovery against an empty database, you might see storage retry exceptions in the TADDM log files. These errors occur because no data exists in the database for calculating indexes to store the data efficiently. As data is added to the database and the database is properly tuned, these errors resolve and are no longer shown in the logs. You are not required to perform any action other than tuning the database after the first discovery. However, to mitigate the problem, you can perform the following steps:

1. In the $COLLATION_HOME/etc/collation.properties file, change the value of the com.collation.discover.observer.topopumpcount property from 16 to either 4 or 8.
2. Restart TADDM.
3. Run a discovery.
4. When discovery completes, run the RUNSTATS and the db2updatestats.sh programs, according to the following instructions:
   a. cd $COLLATION_HOME/bin
   b. ./gen_db_stats.jy > tmpdir/TADDM_table_stats.sql, where tmpdir is a directory where this file can be created. When this step is complete, copy the file to the database server, and run the following command:
      db2 -tvf tmpdir/TADDM_table_stats.sql
   c. cd $COLLATION_HOME/bin
   d. ./db2updatestats.sh
5. In the $COLLATION_HOME/etc/collation.properties file, change the value of the com.collation.discover.observer.topopumpcount property back to 16 (or to another value that you prefer).
6. Restart TADDM.
7. Again run a discovery.
You are using an Oracle database, and the upgrade from a previous release of TADDM fails

Problem
You are using an Oracle database, and the upgrade from a previous release of TADDM fails. An ORA-01555 error during the upgrade indicates that the rollback segment in the Oracle database is too small and must be increased.

Solution
Ensure that the `UNDORETENTION` parameter is set to an appropriate value based on the size of the database. Refer to the Oracle documentation for information about how to calculate the appropriate value.

TADDM cannot connect to a DB2 database running on Red Hat Enterprise Linux version 6

Problem
If the DB2 database is installed on a server running Red Hat Enterprise Linux version 6, the TADDM server might be unable to connect to the database. After three failed attempts, the following error message is displayed in the `tomcat.log` file:

```
ERROR jdo.JdoDbInit -
java.sql.SQLException: [JdoDbInit.E.2] An error occurred attempting to
   connect to the jdbc:db2://host.example.com:50000/cmdb:deferPrepares=
false;
database, db2inst1, com.ibm.db2.jcc.DB2Driver,
at com.ibm.cdb.topomgr.jdo.JdoDbInit.getDbConnection(JdoDbInit.java:451)
at com.ibm.cdb.topomgr.jdo.JdoDbInit.initDb(JdoDbInit.java:158)
at com.ibm.cdb.topomgr.jdo.DbInit.start(DbInit.java:83)
```

Solution
This error is caused by the default password hashing algorithm used by Red Hat Enterprise Linux version 6, which is not compatible with versions of DB2 earlier than 9.7. To avoid the problem, follow these steps:

1. On the Linux DB2 server, change the system password hashing algorithm to MD5. (You can also use the SHA256 algorithm, if you are running DB2 9.5 Fix Pack 3 or later). Run this command to change the algorithm to MD5:
   ```bash
   authconfig --passalgo=md5 --update
   ```
2. Change the passwords for the TADDM database users (typically `db2inst1` and `archuser`). Changing the passwords forces reencryption with the new hashing algorithm.

   **Note:** The TADDM database users are specified in the `collation.properties` file on the TADDM server:
   ```properties
   com.collation.db.user=db2inst1
   com.collation.db.archive.user=archuser
   ```
3. Verify that the passwords are encrypted using MD5 by viewing them in the `/etc/shadow` file. If the passwords are encrypted by using MD5, each is preceded by the string `'$1$'` (MD5). The following example shows that the `db2inst1` password is encrypted using MD5:
   ```bash
   db2inst1:$1$BuZ4l/S5$HjFa4JFtQ05C4pFTxesP:/14193:0:99999:7:::
   ```
4. You can optionally change the system hashing algorithm back to the default SHA512. This change does not affect the passwords already encrypted using MD5. (However, if you are required to change the TADDM passwords in the future, you must change the algorithm again.) Run this command to change the algorithm back to SHA512:
   ```bash
   authconfig --passalgo=sha512 --update
authconfig --passalgo=sha512 --update

**Error when installing the primary storage server if the DB2 database password contains special characters**

**Problem**
When you specify the DB2 user password during the primary storage server installation, the installer cannot verify the password if it contains special characters.

**Solution**
You can continue with the installation without carrying out this verification.

**Errors when verifying duplicates**

**Problem**
When you verify duplicates, the following errors might occur:

- **ERROR_INVALID_DURABLE_GUID**
- **ERROR_INVALID_TRANSIENT_GUID**

The errors might occur because some aliases are missing in the ALIASES table or the object is invalid.

**Solution**
Wait until the cleanup agents delete the invalid objects.

**Discovery problems**

Fix Pack 6

This information covers common problems that occur when running a discovery.

**TADDM server crashes with OutOfMemory error**

**Problem**
The TADDM server crashes with the OutOfMemory error.

**Solution**
Ensure that you are not running a discovery against too large scope. Try limiting the discovery scope for the discovery.

**Discovery fails with the Previous authorization attempt failed message**

**Problem**
During the discovery, sensor fails and the following message is displayed:

`Previous authorization attempt failed`.

**Solution**
The message indicates that the previous discovery was not able to find valid credentials for the specified discovery target, and this information is cached.

To solve the problem, choose either of the following solutions:

- Use the cachemgr utility to remove the cached value.
- Set the `com.ibm.cdb.security.auth.cache.fallback.failed` property to `true`. New valid credentials might be found, even though they were not found during the previous discovery.
Discovery does not use profiled access credentials

Problem
A user adds new access list entry to a profile, but discovery keeps using some other credentials.

Solution
Use the cachemgr utility to remove cached value. If you often use different profiles with different access entries against the same discovery target or scope, you can disable caching for them.

Discovery keeps using other access credentials

Problem
A user adds new credentials at the top of the access list, but discovery keeps using one of the current entries.

Solution
Some credentials from the currently present access list were cached and are reused in new discoveries. Use the cachemgr utility to remove the cached entry and run a new discovery.

Duplicate computer system problems

This information covers the problems that occur when duplicate computer systems are created but never resolved by TADDM during discovery.

General problems

During discovery, duplicate computer systems are created, and this behavior is expected. Duplicate systems are typically created when a sensor creates a configuration item (CI) in the database but does not have enough information to uniquely identify it. For example, assume during a discovery, both the Stack Scan sensor and the Ip device sensor learn that an IP device exists. However, the sensors cannot uniquely identify the device. For example, if a device has two network interfaces, the sensors cannot identify if it is one device with two interfaces or two devices with one interface. Another example is a VMware sensor that has enough information to uniquely identify the computer. However, the information is different from information reported by another sensor for the same computer.

If a credentialed discovery is performed after running a credential-less discovery, objects created might not be reconciled. Check the MSS tab of any duplicate objects to confirm if a custom application sensor and a specific application sensor discovered the object.

Sensors provide the attribute data that they can collect for a CI. However, if there is insufficient information to identify that the naming attributes match or overlap between different copies of a CI, then it is not possible to determine that the CIs are the same object. The result is duplicate objects.

In most cases, logic in the TADDM server can resolve and eliminate duplicate computer systems while they are being stored. In some circumstances, for example when Level 1 and Level 2 discovery sensors are enabled in the same profile and a computer is discovered for the first time, duplicates can be stored temporarily. These duplicates are resolved by background reconciliation after a few minutes. When duplicate computers remain beyond several minutes, TADDM has insufficient information to automatically resolve these duplicates. You must merge
these duplicates in the Data Management Portal. For more information, see the “Discovery tasks” section in the TADDM User’s Guide.

If the duplicates have matching signatures, send the following information to IBM Support:

- The API query results. To obtain these results, run the following command:
  
  ```sh
  api.sh -u user_id -p password find "Select * from ComputerSystem"
  ```

- The topology manager and discovery logs, with the logging level set to DEBUG

- The results files (`$COLLATION_HOME/var/dwitem/result/*` files) from the discovery in which the duplicate computer systems were created

**Merging CIs within an access collection based on a custom query might cause inconsistencies**

**Problem**

Merging CIs within an access collection based on a custom query might cause duplicate instances in the `COLLECTIONJDO_MEMBERS_X` database table. These duplicates can lead to inconsistencies and errors in the UI. If a merged CI in an access collection is also a member of another collection, it might be removed from the other collection.

**Solution**

Use an SQL statement to remove all duplicates from the database. The following statement can be run, on one line, on DB2 or Oracle databases:

```sql
DELETE from COLLECTIONJDO_MEMBERS_X where (PK__JDOIDX, MEMBERS_X, JDOORDERX) in (SELECT PK__JDOIDX, MEMBERS_X, JDOORDERX FROM COLLECTIONJDO_MEMBERS_X, (SELECT PK__JDOIDX as JDOIDX, MEMBERS_X as MEMBERS, MIN(JDOORDERX) as MINORDER FROM COLLECTIONJDO_MEMBERS_X GROUP BY PK__JDOIDX, MEMBERS_X HAVING COUNT(MEMBERS_X) > 1)) TO LEAVE where COLLECTIONJDO_MEMBERS_X.PK__JDOIDX = TO LEAVE.JDOIDX and COLLECTIONJDO_MEMBERS_X.MEMBERS_X = TO LEAVE.MEMBERS and COLLECTIONJDO_MEMBERS_X.JDOORDERX > TO LEAVE.MINORDER)
```

**Computer systems merged incorrectly**

**Problem**

Sensors run against individual computer systems, but after discovery, those computer systems are not available in the UI or using the API.

**Solution**

If the serial number is the same on multiple computer systems, then those computer systems are merged into one.

Use the

```java
com.collation.discover.agent.sys.ComputerSystem.serialNumberSanityChecks
```

property to configure how reused serial numbers are handled.

**Gateway problems**

If you have gateway problems, check the deployed gateway files for TADDM. Gateway files are deployed to the `%SystemRoot%\temp\taddm.mnnn` directory, where `mnnn` is a string that identifies the TADDM gateway directory (an example is `taddm.dsfewf`).
**Session sensor ends with an error that the server cannot find a gateway for the target computer system**

**Problem**
The session sensor ends with an error that the server cannot find a working gateway for a target computer system.

**Solution**
There are two possible causes for this problem:
- The gateway is not defined in the Discovery Management Console, the access list does not have the correct access list credentials or both. Ensure that the gateway is defined and the correct access list credentials are used.
- Add the following entry to the `collation.properties`, when you are using both an anchor and a gateway on the same system:

  ```
  com.collation.platform.session.GatewayForceSsh=true
  ```

  This entry specifies whether to force the gateway to act independently of the anchor. When the value is set to true, an SSH session is used to transfer traffic between the gateway and anchor rather than a local session.

**Discovery fails when running a gateway on Windows Server 2012**

**Problem**
Discovery fails when running a gateway on Windows Server 2012.

**Solution**

Also, check the version of the SSH server on the gateway and install the supported one. For more information about the supported software, see [Windows gateways](http://)

**IBM Tivoli Monitoring DLA problems**

This information covers common problems that occur with the IBM Tivoli Monitoring discovery library adapter (DLA).

**Two DLA programs are present in IBM Tivoli Monitoring installation**

**Problem**
The following two DLA programs exist in the IBM Tivoli Monitoring installation:
- KfwTmsDla
- Tmsdla

**Solution**
**KfwTmsDla** is an earlier version of the DLA that is compatible with IBM Tivoli Monitoring 6.1.

**Tmsdla** is the DLA program to use if you are using IBM Tivoli Monitoring 6.2.1 IF2 or later and you want to publish data to TADDM.
DLA data sometimes does not reconcile with data that is discovered by the IBM Tivoli Monitoring Scope sensor

DLA data sometimes does not reconcile with data that is discovered by the IBM Tivoli Monitoring Scope sensor due to any of the following problems:

Problem 1
The problem might be due to mismatches in signature. When populating computer systems after a discovery, TADDM uniquely identifies each system based on the IP address and MAC address of the network interface. When multiple network interfaces are present, TADDM selects the interface with the IP address that is lowest based on a string evaluation of its representation. In contrast, the IBM Tivoli Monitoring DLA selects the interface with the MAC address that is lowest based on numerical evaluation. This mismatch introduces duplicate computer systems in TADDM when native discovery is combined with IBM Tivoli Monitoring data.

Solution for problem 1
Upgrade to IBM Tivoli Monitoring 6.2.2 Fix Pack 2.

Problem 2
The problem might be due to mismatches in serial number. Sometimes, the IBM Tivoli Monitoring DLA populates the serialNumber attribute of computer systems with the value UNKNOWN, which causes erroneous merges between different computer systems when the DLA data is loaded into TADDM.

Solution for problem 2
Upgrade to IBM Tivoli Monitoring 6.2.2 Fix Pack 2.

Problem 3
The problem might be due to filtering of private networks. The IBM Tivoli Monitoring DLA does not populate computer systems with data from private network interfaces that are configured according to Internet Engineering Task Force (IETF) RFC 1918 and IETF RFC 4193 (for details about RFCs, see http://tools.ietf.org/rfc/index). This behavior prevents the incorrect merging of computer systems when multiple private networks use overlapping address ranges. However, in environments where private network addresses are not duplicated, you can change this behavior so that the DLA populates these computer systems.

Solution for problem 3
Edit the IP address filters in the XML template files that control the DLA behavior. Back up the template files before editing.

On Linux and UNIX systems, the template files are stored in $ITM_HOME/arch/ca/tmsdla on the Tivoli Enterprise Portal Server. On Windows systems, the template files are stored in %ITM_HOME%\CNPS\tmsdla on the Tivoli Enterprise Portal Server. The stored templates are platform-specific to the systems that are managed by IBM Tivoli Monitoring in the environment. The file names are:
- knt_tmsdla.xml for Windows computers
- kux_tmsdla.xml for UNIX computers
- klz_tmsdla.xml for Linux computers

Ensure that each of the multiple filter sections in each of the template files contains only the filters for loopback addresses (127.0.0.1 for IPv4 and ::1 for IPv6), as shown in the following example:
Problem 4
The problem might be due to mismatches in operating system name. The IBM Tivoli Monitoring DLA inconsistently populates the operating system name attribute, which causes multiple operating system objects to be on a single computer system when the DLA data is loaded into TADDM.

Solution for problem 4
Add an OSId attribute to the XML template files that control the DLA behavior. Back up the template files before editing.

On Linux and UNIX systems, the template files are stored in $ITM_HOME/arch/cq/tmsdla on the Tivoli Enterprise Portal Server. On Windows systems, the template files are stored in %ITM_HOME%\CNPS\tmsdla on the Tivoli Enterprise Portal Server. The stored templates are platform-specific to the systems that are managed by IBM Tivoli Monitoring in the environment. The file names are:

- knt_tmsdla.xml for Windows computers. Add the OSId attribute as shown in the following example:

  ```xml
  <cdm:sys.windows.WindowsOperatingSystem
    id="%{IPADDR}-WindowsOperatingSystem"
    sourceToken="managed_system_name=%{MSYSN}&object_id=p0%{MSYSN}"
    outputonce="true">...
  <cdm:OSId>1</cdm:OSId>
  </cdm:sys.windows.WindowsOperatingSystem>
  ```

- kux_tmsdla.xml for UNIX computers. Add the OSId attribute as shown in the following example (this change must be made in two places in the template file for UNIX computers):

  ```xml
  <cdm:sys.unix.Unix id="%{IPADDR}-UNIX"
    sourceToken="managed_system_name=%{MSYSN}&object_id=p0%{MSYSN}"
    <cdm:ManagedSystemName>%{MSYSN}</cdm:ManagedSystemName>...
  <cdm:OSId>1</cdm:OSId>
  </cdm:sys.unix.Unix>
  ```

- klz_tmsdla.xml for Linux computers. Add the OSId attribute as shown in the following example:

  ```xml
  <cdm:sys.linux.Linux id="%{IPADDR}-Linux"
    sourceToken="managed_system_name=%{MSYSN}&object_id=p0%{MSYSN}"
    <cdm:ManagedSystemName>%{MSYSN}</cdm:ManagedSystemName>...
  <cdm:OSId>1</cdm:OSId>
  </cdm:sys.linux.Linux>
  ```

Logging problems
This information covers common problems that occur with logging in TADDM.

**tomcat.log file is too large**

**Problem**
The tomcat.log file is too large, which can cause the TADDM server to hang.

**Solution**
Too many open files error

Problem
When you open an error log, you see the following error message:
java.rmi.ConnectIOException: Exception creating connection to: 9.167.41.1; nested exception is:
java.net.SocketException: Too many open files.

Solution
Add the following line to the /etc/security/limits.conf file:
* hard nofile 65536

Stop and restart all servers.

Memory problems
This information covers common problems that occur with memory on the computer where the TADDM server is installed.

The discovery is never completed

Problem
The discovery is never completed.

Solution
Send the following information to IBM Support:
- Any javacore.* and heapdump.* files
- Logs with the logging level set to DEBUG
- $COLLATION_HOME/etc/collation.properties file
- $COLLATION_HOME/deploy-tomcat/ROOT/WEB-INF/cmdb-context.xml file

On a Red Hat Linux system, Topology JVM runs out of memory and Proxy service stops

Problem
When the TADDM server is running discovery on a Red Hat Linux system, the Topology JVM runs out of memory, and the Proxy service stops.

Solution
Run the up2date command to ensure that your Red Hat server is running the latest service levels. Disable Security-Enhanced Linux (SElinux).

Fix Pack 3
Multiple LogicalConnections to be processed

Problem
When processing multiple LogicalConnections, the agent retrieves all the LogicalConnections with the lastModifiedTime parameter older than the lastRunTime parameter of the agent from the database. This might result in OutOfMemory (OOM) errors that lead to processing the same data after each run of the agent.

Solution
1. Specify a new property in the collation.properties file:
   com.ibm.cdb.topomgr.topoBuilder.agents.ConnectionDependencyAgent2.timeframeBunch=

2. Specify the value of this property in milliseconds.
   The value represents the timeframe that is used to retrieve LogicalConnections from the database. For example, if you specify the value as 60000 milliseconds, the agent retrieves the group of
LogicalConnections for which the lastModifiedTime parameter is not older than a minute. Each group is processed and the lastModifiedTime parameter of the agent is updated.

**Iosf problems**

Understand why TADDM runs `lsof` and the most frequently encountered problems with `lsof`.

**Why does TADDM run `lsof`?**

`lsof` is used for dependency mapping in TADDM.

`lsof` provides process to port mapping, so TADDM knows what applications are working on the network, communicating to applications on other computer systems.

`lsof` stands for "list open files". Why does listing files give network mapping information? It is because on UNIX "everything is a file". Network ports and addresses of internet connections can be listed with `lsof`. TADDM uses `lsof` on UNIX operating systems. TADDM uses `netstat` on Windows to obtain the same type of information.

**How to verify `lsof` is running correctly?**

Ensure that the sensor logs are in DEBUG, look in the `GenericServerSensor-IP.log` where IP is the IP of the target system.

Search for `lsof -nP -i`. The output from the command is written to the log file.

The output looks slightly different depending on the operating system of the target system.

For Solaris, the output in the log looks like the following output:

```
DEBUG session.SshSessionClient - Executed command 
[PATH=/PATH:/usr/local/bin:/bin:/usr/bin:/usr/X11R6/bin:/usr/sbin:/sbin:/opt/SUNWSMS/bin;LC_ALL=en_US.646;LANG=en_US.646;] export LANG LC_ALL;

lsof -nP -i | awk '{print $2, $5, $9, $10}' | sort -k 2 | uniq -f 1 on session ssh2:/HostAuthcom.collation.platform.security.auth.HostAuth[root][XXXXX]/null@9.9.9.35
```

DEBUG session.SshSessionClient - Command stdout:

```
374 IPv4 127.0.0.1:898 (LISTEN)
20190 IPv4 9.9.9.35:1522 (LISTEN)
20190 IPv4 9.9.9.35:1522->9.9.9.35:55133 (ESTABLISHED)
24500 IPv4 9.9.9.35:55133->9.9.9.35:1522 (ESTABLISHED)
639 IPv6 *:177
358 IPv6 *:21 (LISTEN)
358 IPv6 *:23 (LISTEN)
```

There are four columns of output that represent the following headings:

- PID
- Protocol Type (IPv4 or IPv6)
- IP:port source and, optionally, target

Troubleshooting 57
• (optional) Connection state

What can go wrong?

Environment does not point to lsof

If lsof fails in the logs with a lsof not found error, attempt to run the command on the target as the user TADDM uses to run the discovery.

From a command-line run: lsof -v. If lsof is installed and in the PATH, it returns version information. For example:

[root@host ~]# lsof -v
lsof version information:
revision: 4.78
latest revision: ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/
latest FAQ: ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/FAQ
constructed by and on: brewbuilder@hs20-bc2-4.build.redhat.com
compiler: cc
compiler version: 4.1.1 20060802 (Red Hat 4.1.1-14)
compiler flags: -DLINUXV=26016 -DGLIBCV=204 -DHASIPv6 -DHASSELINUX
-D_FILE_OFFSET_BITS=64 -DLSOF_VSTR="2.6.16" -O2 -g -pipe -Wall -Wp,
-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector
--param=ssp-buffer-size=4 -m64 -mtune=generic
loader flags: -L./lib -llsof -lselinux
system info: Linux hs20-bc2-4.build.redhat.com 2.6.9-34.ELsmp
#1 SMP Fri Feb 24 16:56:28 EST 2006 x86_64 x86_64 x86_64 GNU/Linux
Anyone can list all files.
/dev warning are disabled.
Kernel ID check is disabled.

If lsof -v fails, either lsof is not installed or it is not in the system PATH.

If lsof succeeds from the command line, but not in the sensor logs, it is likely because the sensor is setting the PATH to a different value in which lsof is not located. Check the PATH in the logs and ensure that lsof is installed in that path.

Alternatively, modify the PATH which TADDM uses to run lsof by changing the appropriate property in the $COLLATION_HOME/etc/collation.properties file on the TADDM Server:

com.collation.discover.agent.path= /usr/local/bin/bin:/usr/bin:/usr/sbin:/usr/sbin:/usr/X11R6/bin

ensure that the path location of lsof on the target is in the path property for the appropriate OS of the target. For example, Linux:

com.collation.discover.agent.path.Linux= /usr/local/bin/bin:/usr/bin:/usr/sbin:/usr/sbin:/usr/X11R6/bin

lsof not installed

lsof does not ship with many operating systems, so install it separately. Finding the right one to install can be challenging. See the TADDM 7.2.1 lsof requirements document on DeveloperWorks for the list of websites for downloading lsof for each operating system.

Permissions

TADDM needs a listing of all network connections that are held by all applications on the server, therefore lsof requires root like levels of permissions to run.
To test or verify permissions, look for the command `lsof -nP -i` in the GenericServerSensor log or run it on the command line. There are two symptoms to help identify incorrect permissions:

- Output shows only processes that the user owns versus all processes.
- Output seems "short" (<~50 lines)

The following error can indicate permission problems:

```
CTJTD0312E No Listening Processes Found.
Check for missing lsof/netstat or lsof/netstat misconfiguration.
```

There are different ways to enable the "root like" permissions. The most common are `setuid` or `sudo`:

- **setuid**: The set user ID access right flag must be set for the `lsof` program file.
- **sudo**: The sensor that runs the discovery must be configured to allow the `sudo` command to run the `lsof` program.

For `sudo` setup, add the ITADDM Service Account to the sudoers file to allow execution of the `lsof` binary as root:
```
coll ALL=(root) NOPASSWD: /usr/sbin/lsof
```

Specify the full path of the command and ensure that the user does not need to enter a password for the command to run.

Edit the collation.properties and prefix the `lsof` command to run with `sudo`.

For example, on Linux change:
```
com.collation.discover.agent.command.lsof_LINUX=lsof
```

```
com.collation.discover.agent.command.lsof_LINUX=sudo lsof
```

This property can be scoped by operating system type or IP.

**Wrong version or build**

The correct version of `lsof` is required for the operating system, the operating system version and occasionally the kernel level and kernel build date. If there is a problem with the version or build of `lsof` the following error is display:

```
CTJTD0312E No Listening Processes Found.
Check for missing lsof/netstat or lsof/netstat misconfiguration.
```

The version of `lsof` that is installed must support IPv6.

Older versions of `lsof`, pre-IPv6, return the following output as an example:
```
1699 inet *:* (LISTEN)
23453 inet *:* (UNBOUND)
1628 inet *:* (IDLE)
1750 inet *:* (Idle)
```

Newer versions of `lsof` return the following output as an example:
A version of \texttt{lsof} that report IPv4/IPv6 rather than just \texttt{inet} is required.

The version of \texttt{lsof} must also match the operating system of the server. A warning message is displayed if there is a problem with the version of \texttt{lsof}, for example:

\texttt{lsof: WARNING: compiled for AIX version 4.3.2.0; this is 5.1.0.0.}

The correct version of \texttt{lsof} must be installed to correct the problem. See the TADDM 7.2.1 \texttt{lsof} requirements document on DeveloperWorks for the list of websites for downloading \texttt{lsof} for each operating system.

For Solaris, the version requirement can depend on both the release date and the kernel patch.

\textbf{Sudo requires \texttt{tty}}

The \texttt{lsof} command returns no value and following error is reported in the GenericServerSensor:

\texttt{CTJTD0311E The following processes and connections have not been discovered: CTJTD0312E No Listening Processes Found. Check For missing lsof/netstat or lsof/netstat misconfiguration. .}

The solution is to edit the \texttt{/etc/sudoers} file on the target machine and comment out the following line:

\texttt{Defaults requiretty}

and add the following line to allow the taddmuser to run the \texttt{lsof} command:

\texttt{taddmuser ALL=(root) NOPASSWD: /usr/sbin/lsof}

\textbf{The discovery of the AIX computer system fails with the CTJTD0312E error}

The discovery of the AIX computer system, where the \texttt{en_US} language pack is missing, fails with the following error:

\texttt{CTJTD0312E No Listening Processes Found. Check For missing lsof/netstat or lsof/netstat misconfiguration.}

The \texttt{en_US} language pack is used by TADDM to avoid receiving corrupted English return messages from the system commands. To resolve the problem, you must set the entry for the \texttt{lsof} command in the \texttt{collation.properties} customization file properly. For example, if the \texttt{lsof} command is \texttt{pbrun lsof}, the entry in the properties file is:

\texttt{com.collation.discover.agent.command.lsof.AIX=LC_ALL=;LANG=C;export LANG LC_ALL;pbrun lsof}

\textbf{Discovery of short names and fully qualified domain names in TADDM}

TADDM uses a number of methods to discover system names in the discovery process.

\textbf{TADDM out of the box name resolution}

\textbf{How TADDM uses nslookup}

TADDM uses a Java library called \texttt{InetAddress} to do name resolution in
Local machine configuration information and network naming services such as the Domain Name System (DNS) and Network Information Service (NIS) are used to resolve host name-to-IP addresses. The particular naming services that are used is, by default, the local machine configured one. For any host name, its corresponding IP address is returned.

Reverse name resolution means that for any IP address, the host associated with the IP address is returned.

The InetAddress class provides methods to resolve host names to their IP addresses and vice versa.

TADDM uses IP addresses to do discovery. All sensors run against IP addresses. Name resolution is done within the sensor code.

The SessionSensor is the first to do name lookup. Other sensors also perform name lookup: the main class for discovering computer systems, the OracleSensor, the WASSensor, and others.

Additional name lookups are run when new data is discovered that TADDM needs to correlate or merge with data that is already discovered or present.

For instance name lookup in the WebSphere sensor is run to gather additional information about other nodes or servers. Often configuration information has shortnames or IPs and TADDM needs to resolve to IP or FQDN to correlate it to other discovered data.

By default, the TADDM server (or the anchor, acting as a surrogate TADDM server) does all name resolution.

Network devices or devices discovered using the SnmpMIB2Sensor act differently. The sysname is retrieved from SNMP, priority is put on that over FQDN. SnmpMIB2Sensor fills in FQDN using the sysname. Unfortunately, sysname is not always a FQDN.

A working name resolution is required to do discovery in TADDM. If there is no working name resolution, some data might be missing.

Troubleshooting the default configuration

To work correctly, TADDM requires full name resolution of the shortname and of the fully qualified domain name (FQDN), and reverse lookup resolution of the IP address. Run the following commands and review the output:

```
nslookup shortname
nslookup fqdn
nslookup ip_address
```

The following is a list of examples of successful nslookups:

```
[root@server1 ~]# nslookup server1
Server: 203.0.113.12
Address: 203.0.113.12#53
Name: server.somedomain.com
Address: 203.0.113.9

[root@cyborg ~]# nslookup server2.somedomain.com
Server: 198.51.100.21
Address: 198.51.100.21#53
Name: server2.somedomain.com
```
The TADDM API can be used to look up a shortname, FQDN, or address when given an IP address or FQDN. A Java program is required to do use the API. For more information, see the TADDM SDK Developer Guide.

The TADDM API includes the following functions:

- DNS functions: `getLocalDNSLookup`
- Name lookup on the TADDM server: `getRemoteDNSLookup`
- Perform a lookup of a name extracted from a remote configuration which may not resolve on the TADDM server: `validateFqdn`

**Environments where DNS resolution does not work**

If name resolution does not work as expected, or name resolution does not work from the TADDM server, there are certain properties in the `collation.properties` file that can work around the limitations of the environment.

Most of the properties are documented in the product documentation in the Administration Guide, but there are additional notes on when to use them here.

- `com.collation.platform.os.disableDNSLookups=false`
  Valid values are `true` or `false`.
  If the property is changed to `true`, name lookups (for example, JAVA and DNS) are disabled for the TADDM server. If the TADDM server cannot resolve the names, then set the value to `true`.

- `com.collation.platform.os.disableRemoteHostDNSLookups=false`
  Valid values are `true` or `false`. The default is `false`.
  If the property is changed to `true`, name lookups (DNS only) are disabled on remote discovered hosts. This property forces all name lookups to occur on the TADDM server.

  **Note:** This is very slow. TADDM has to establish a session on the remote host, run the lookup, and return the results. This would be done for every server.

- `com.collation.platform.os.disableRemoteInterfaceFQDNLookups=true`
  Valid values are `true` or `false`. The default is `true`.
  If the property is changed to `false`, it enables the remote lookup of IP interface names. Performance can decline if the property is set to `false`. The command runs a `nslookup` on the command line of the target or remote server.

- `com.collation.platform.os.forceDNSLookupForFqdn.1.2.3.4=true`
  The command specifies whether to use DNS lookup for fully-qualified domain names. Valid values are `true` or `false`. A value of `true` means to use DNS. A value of `false` means that the Java API is used to lookup names as per Network File System (NFS) and Network Information Service (NIS) settings on the host.
  The command is enabled only for Linux and Solaris.
Linux:
```
host IP | grep -v 'is an alias for' | awk '{print $5}'
# host 203.0.113.12
198.51.100.11.in-addr.arpa domain name pointer server1.somedomain.com.
198.51.100.11.in-addr.arpa domain name pointer server2.somedomain.com.
```

Solaris:
```
nslookup -querytype=PTR IP | grep "name =" | awk '{print $4}'
```

These commands are run on the TADDM server.

- **com.collation.platform.os.cacheTTLSuccessfulNameLookups=60**

  The command is specified in the `java.security` file to indicate the caching policy for successful name lookups from the name service. The value is specified as an integer to indicate the number of seconds to cache the successful lookup. A value of 0 means never cache. A value of -1 means cache forever.

- **com.collation.platform.os.command.fqdn=nslookup $1 | grep Name | awk '{print $2}''

The command is used to find the fully-qualified domain name (FQDN). In most situations, this property is not needed because the default FQDN algorithm works in most production environments.

If this property is not needed, comment it out. However, in environments where the fully-qualified domain name is to be derived from the host name, enable this property. For example, enable this property if the host names are configured as aliases in DNS.

If this property is used, ensure that DNS is available and properly configured. Otherwise, the `nslookup` command is likely to fail or have a slow response time.

If enabled, the property is only used on the TADDM server. Currently, only AIX, Linux, and SunOS operating systems are supported. The property is not supported on a Windows TADDM server. It can only be scoped by OS, not by IP or scopeset. The command could be replaced with any command that returns the FQDN.

- **com.collation.platform.os.command.hostOfHostname**

  The command allows FQDN be set to any command that can be run on the target. The default value for the property is `host `hostname` | awk {'print $1'}.

  The property is run during discovery and can retrieve either the hostname or the IP address, or both, and set the FQDN.

  The rules for setting the FQDN are as follows:
  - Set a valid hostname as FQDN
  - Set hostname as FQDN if the IP address starts with host name
  - Set FQDN from command value

---

**Report problems**

This information covers common problems that occur with non-BIRT reports in TADDM.

**Large reports exported to a PDF file might be difficult to read**

**Problem**

If a report exported to a PDF file contains a large number of columns, the
columns might be wrapped onto separate pages in the generated PDF file. This behavior might result in column headers being displayed in the middle of a page.

Solution
Consider adjusting the report content so that it contains fewer columns, or use a different export format.

Unreadable characters in a PDF report for non-English languages

Problem
The PDF file generated by the report function of the Discovery Management Console contains unreadable characters for some non-English languages.

If the Discovery Management Console is running in a non-English language, the PDF file that is generated for reports includes the language-dependent font for the operating system on which the TADDM server runs. Sometimes the operating system does not have the appropriate font to display the language-dependent characters.

This problem also happens in various languages if the TADDM database has the language-dependent characters discovered from the remote systems.

Solution
Complete the steps listed in either of the following two solutions.

1. Copy the WorldType font from the TADDM Disk 1 installation DVD to your client machine:
   a. Insert the TADDM Disk 1 installation DVD into your client machine.
   b. Copy the following four WorldType font files:
      /other/tnr_s__b.ttf
      /other/tnr_j__b.ttf
      /other/tnr_k__b.ttf
      /other/tnr_tt_b.ttf
   c. Stop and restart the Discovery Management Console.

2. Enable the automatic download function of the WorldType font:
   a. Open the $COLLATION_HOME/etc/collation.properties file on the TADDM server computer.
   b. Specify the following parameters and save the collation.properties file:
      com.collation.report.pdf.enableWorldTypeFont=true
   c. Stop and restart the TADDM server.

Note: If this function is enabled, the Discovery Management Console automatically downloads the WorldType font on the first startup. Because the WorldType font is approximately 20-25 megabytes, the first startup of
the Discovery Management Console is slower. Once it is downloaded, the font file is cached for the next time the Discovery Management Console is started.

**After migrating to TADDM 7.2.1, the Inventory Summary report is empty**

**Problem**

Following a migration to TADDM 7.2.1, the Inventory Summary report contains no data.

Log messages similar to the following might be displayed:

In the BIRT report:

```
FINE: ENTRY org.eclipse.birt.report.data.oda.jdbc
{OdaPropertyConfigId=org.eclipse.birt.report.data.oda.jdbc_TADDM Data Source, odaURL=jdbc:db2://localhost:50000/cmdb, odaDriverClass=com.ibm.db2.jcc.DB2Driver, odaUser=db2inst1}
```

In the `tomcat.log` file:

```
SEVERE: Cannot open connection.
org.eclipse.birt.report.data.oda.jdbc.JDBCException: Failed to get connection.
SQL error #1: [jcc][t4][2043][11550][3.59.81] Exception
java.net.ConnectException: Error opening socket to server localhost/127.0.0.1 on port 50000 with message: Connection refused: connect. ERRORCODE=-4499, SQLSTATE=08001
```

During the migration, default database connection parameters are inserted into the report. Because a connection to the database cannot be made using these incorrect parameters, the report is not populated correctly.

**Solution**

To fix the problem, complete the following steps:

1. Stop the TADDM server.
3. Open the `compSys_byType.rptdesign` report design file and locate the following section:
   ```xml
   <data-sources>
   ...
   </data-sources>
   ``
4. Open the `taddm_inventory_details.rptdesign` report design file and locate the `<data-sources>` section.
5. Copy the `<data-sources>` section from `compSys_byType.rptdesign` and paste it into `taddm_inventory_details.rptdesign`, replacing the existing `<data-sources>` section.
6. Start the TADDM server.

**Security problems**

This information covers common problems that occur with security in TADDM.

**General problems with single sign-on**

When you login within Tivoli Integrated Portal, the LtpaToken and LtpaToken2 cookies are created for authentication with TADDM during single sign-on login. When you attempt to connect to a TADDM URL, those cookies are attached to the request and used by TADDM to perform authentication.

To troubleshoot single sign-on problems, complete the following steps:
1. Verify that the cookie exists. The cookie name includes the word LTPAToken or LTPAToken2 and has the domain of the Tivoli Integrated Portal server.
   To do this using Internet Explorer version 8, or later, use F12 to open Developers tools and click **Cache > View Cookie information**.
   To do this using Firefox 3.6, or later, install the Cookies Manager+ add-on.

2. Ensure that the cookies are sent with the request to TADDM. In the `tomcat.log` file, look for the following text:
   Attempting to logon with SSO
   Logged in with SSO successfully
   
   This indicates that the cookie is sent correctly.

   The following text indicates that the cookie is not being sent:
   util.SSOAuthenticationHelper - Could not log in with available cookies.
   
   If the cookie isn't sent, you are redirected to a TADDM login page.

3. If the cookie is not sent correctly, verify that the domain name on the cookie matches the domain name of the TADDM server. If it doesn’t, update the Tivoli Integrated Portal configuration with the correct domain name for those cookies. If you are using Internet Explorer, ensure that the cookie domain name contains at least two dots, for example, .ibm.com.

**Logins to Data Management Portal take too long to complete**

**Problem**
When memory is low on the TADDM server, and TADDM is configured to use the federated repositories functionality of IBM WebSphere Application Server, logging in to the Data Management Portal might take as long as 25 minutes to complete successfully.

**Solution**
Free system resources on the TADDM server. You might need to restart the computer where the TADDM server is installed.

**Password changes not supported for users defined in external user registries**

**Problem**
Either the Lightweight Directory Access Protocol (LDAP) or the WebSphere federated repository is configured as the TADDM user registry. In the Discovery Management Console, if an LDAP user or WebSphere federated repository user tries to change the user password using **File > Change Password**, the following message is displayed:
Unexpected system error. Contact IBM support.

TADDM does not support password changes for users that are defined in external user registries.

**Solution**
Use registry-specific tools to change user passwords. For example, LDAP users can change passwords using LDAP tools, and WebSphere federated repository users can change passwords in the WebSphere administrator console.
Users are not displayed in the Data Management Portal UI

Problem
If you have more than 100 users in your LDAP or WebSphere Federated Repositories, all users are not displayed in the Data Management Portal UI. Instead, the Data Management Portal UI either contains no users or missing users.

The default in the collation.properties file for the com.collation.security.auth.searchResultLimit= property has the default value of 100.

For LDAP, the error.log contains the following message:
SecurityManager [RMI TCP Connection(198)-9.42.31.44]
ERR ROR jini.SecurityManagerServiceImpl - LdapUserRegistry:getUsers() --
Search Result Limit Exceeded: Exception received from
getUserNames(): CTJTS0085E
The following search result limit is exceeded: 100.

For WebSphere Federated Repositories, the error log contains the following message:
The Data Management Portal only displays 100 users by default.

Solution
Edit the com.collation.security.auth.searchResultLimit=nnn property statement. Increase the value of nnn to accommodate the expected number of users. For example:
com.collation.security.auth.searchResultLimit=150

LDAP users cannot be displayed in the Data Management Portal UI

Problem
With LDAP properly configured, the administrator is unable to display users by clicking the Users icon in the Data Management Portal. The browser might become unresponsive, and an InvalidUserException might appear in the logs.

Solution
Make sure that your LDAP user groups contain only valid users. If you delete an LDAP user, you must also manually remove that user from any LDAP user groups of which it is a member. If TADDM encounters an invalid user as a member of a user group, an error occurs, and no users can be displayed.

Errors when trying to log in with an SSL connection

Problem
When you log in to the Discovery Management Console with an SSL connection, you select the Establish a secure (SSL) session check box, but an SSL connection is not completed. An error message is displayed that states that the server is not running.

Solution
Ensure that you have downloaded the truststore and specified the location of the truststore file on the client system. To download the truststore, click Show SSL Options on the TADDM launch page and follow the displayed instructions. To use the truststore correctly, complete the following tasks:
• Make sure that the specified directory contains a valid truststore file, and that the truststore file has not been renamed.
When specifying the location of the truststore file, do not include the file name.

Ensure that the name of the directory that contains the truststore file does not have a trailing path separator at the end. For example, if you saved the truststore file as:

C:\domain_certs\Domain.cert

enter the directory for the truststore as:

C:\domain_certs

Ensure that the directory that you specify exists.

If the problem persists, delete the truststore file, and download it again.

For more information, refer to the TADDM Installation Guide.

Secure connection fails when opening the TADDM launch page or Discovery Management Console using Firefox

Problem
When attempting to connect to the TADDM launch page or log in to the Discovery Management Console using Transport Layer Security (TLS) 1.0 and Firefox version 3.0 or later, the following error is displayed:

Secure Connection Failed
An error occurred during a connection to taddm.mycompany.com:9431.
Cannot communicate securely with peer: no common encryption algorithm(s).
(Error code: ssl_error_no_cypher_overlap)

Solution
To allow secure connection to the TADDM UI with Firefox 3 and later, you must ensure that TLS has been enabled. To enable TLS in Firefox 3.6, follow these steps:

1. In Firefox, click Tools > Options.
2. In the Options notebook, click the Advanced tab.
3. Click the Encryption tab.
4. In the Protocols section, click Use TLS 1.0.
5. Click OK.
6. Attempt to open the TADDM launch page. An Untrusted Connection message is displayed.
7. Click Add Exception. The Add Security Exception window is displayed.
8. Click Confirm Security Exception. The TADDM launch page is displayed.

Connections to LDAP server are refused

Problem
On Windows operating systems, if clients are attempting many connections to the LDAP server, these connections can be refused. Error messages are logged by the LDAP server. Check in the ibmslapd.log file that an error like the following example is present:

Feb 11 14:36:04 2004 Communications error:
Exceeding 64 connections/OCH - dropping socket.

Solution
If such an error exits, complete the following steps:

1. Stop the server.
2. Save a copy of your ibmslapd.conf file.

3. Insert the following information in the section that starts with 'dn:
   ```
   cn=FrontEnd,cn=Configuration:
   ibm-slapdSetenv: SLAPD_OCHANDLERS=5
   ```

4. Restart your server.

If you continue to receive similar error messages, increase the value of the SLAPD_OCHANDLERS environment variable by increments of five until you stop receiving error messages. This workaround can be found in the IBM Tivoli Directory Server, Problem Determination Guide, Version 6.1 at [http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc/pdguide16.htm](http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc/pdguide16.htm) under Known limitations and general troubleshooting, in the section, Platform-specific problems, Communications error: Exceeding 64 connections/OCH.

**Domain Management Portal login fails when using WebSphere Federated Repositories authentication**

**Problem**

When using WebSphere Federated Repositories for authentication, attempts to log in to the Domain Management Portal fail, although logging in to the Discovery Management Console is successful.

**Solution**

This problem indicates that the TADDM server was not able to connect to the WebSphere Virtual Member Manager (VMM). To correct the problem:

1. Make sure the correct WebSphere host is specified in the following configuration files (located in the `$COLLATION_HOME/etc` directory):
   - `collation.properties`
   - `ibmssclientauthncfg.properties`
   - `sas.client.props`

   If the host name is incorrect, the `$COLLATION_HOME/log/services/SecurityManager.log` log file shows the following error message:
   ```
   Fatal NamingException initializing VMM user management module: A communication failure occurred while attempting to obtain an initial context with the provider URL: host
   ```

2. Make sure the `$COLLATION_HOME/etc/sas.client.props` file specifies the correct WebSphere instance bootstrap port number in the following entry:
   ```
   com.ibm.CORBA.securityServerPort=port
   ```

   If you are using the CCMDB WebSphere instance, the default bootstrap port is 9809. Other WebSphere Application Server products use a default bootstrap port of 2809.

   If the specified bootstrap port is incorrect, the `$COLLATION_HOME/log/services/SecurityManager.log` log file shows the following error message if the TADDM log level is set to DEBUG:
   ```
   Fatal NamingException initializing VMM user management module: NO_PERMISSION exception caught
   ```

3. Make sure the WebSphere Virtual Member Manager EJB interface is correctly installed on the WebSphere Application Server instance that TADDM is configured to use. If the VMM interface is not correctly installed, the `$COLLATION_HOME/log/services/SecurityManager.log` log file shows the following error message:

To verify the VMM installation on the WebSphere Application Server system, check the SystemOut.log log file in the /profiles/ctgDmgr01/logs/dmgr/ subdirectory of the WebSphere Application Server directory. This file should include lines similar to the following:


To install the VMM interface on a Tivoli Integrated Portal (TIP) server, follow these steps:

a. Copy the wim.ear file from a WebSphere Application Server installation to the \IBM\tivoli\tip\installableApps directory on the Tivoli Integrated Portal server.

b. On the Tivoli Integrated Portal server, go to the \IBM\tivoli\tip\profiles\TIPProfile\bin directory and run the following command:

   wsadmin.bat $AdminApp install "path\wim.ear"
   {-appname wim -cell TIPCell -server server1} $AdminConfig save

   where path is the fully qualified path to the installableApps directory where you copied the wim.ear file.

c. Restart the Tivoli Integrated Portal service.

Single sign-on fails after turning on VMM and federated repositories

Problem

When you turn on VMM and federated repositories, single sign-on (SSO) fails, and the server returns error 403.

Solution

1. Make sure that the All Authenticated parameter of TrustClientRole is set to Yes. To do this, complete the following steps:

   a. Navigate to the following directory:

      TIP_HOME/profiles/TIPProfile/bin

   b. Run the following command:

      wsadmin.sh -username TIP_user -password password

   c. At the wsadmin prompt, run the following command:

      AdminApp view authnsvc_ctges

      In the output, look for Role: TrustClientRole All Authenticated: Yes.

   d. If the Role is set to Yes, proceed to the next step. If it is set to No, complete the following steps:

      1) At the wsadmin prompt, run the following commands:

         AdminApp edit authnsvc_ctges {-MapRolesToUsers
         {{"TrustClientRole" No Yes ""}}} $AdminConfig save

         AdminApp view authnsvc_ctges
2) Restart the Tivoli Integrated Portal server:
   stopServer.sh server1
   startServer.sh server1

2. Propagate the changes to external Java Authorization Contract for Containers (JACC) provider:
   a. Log on to the Tivoli Integrated Portal console.
   b. Expand Settings > Websphere Administrative Console, and click Launch Websphere administrative console.
   c. In WebSphere Application Server, expand Security > Global security, and click the External authorization providers link.
   d. Select the Update with application names listed check box.
   e. In the text field, type authnsvc_ctges, and click Apply.
   f. In the messages area at the top of the page, click Save.
   g. Stop and restart the Tivoli Integrated Portal console.

**Error when starting the TADDM server**

**Problem**
The `./control status` command displays the status of Topology and Proxy service as starting but not started.

**Solution**
Verify the location of the TADDM encryption key file:
1. Open the collation.properties file.
2. Locate the following line in the file:
   ```plaintext
   com.collation.security.key=etc/TADDMSec.properties
   ```
3. Note the location of the TADDMSec.properties file.
4. Verify that TADDMSec.properties file is in the location as specified in collation.properties file. If not, move the file to the correct location.
5. Restart your server.

**Discover permission granted to user but receives an error when viewing the objects created**

**Problem**
Users with the Discover permission can create an object, but can receive an error message when viewing the created object.

**Solution**
Grant Discover permission and at least Read access to DefaultAccessCollection (all objects) to users who are allowed to create objects manually, including collections and access collections. Although users with only the Discover permission can create an object, they can encounter an error message when viewing the created object.

**When launching in context to TADDM, single sign-on does not work**

**Problem**
You have configured TADDM to use WebSphere federated repositories, and you can successfully log in to the TADDM Data Management Portal and Discovery Management Console. However, when you launch in context to
TADDM, single sign-on (SSO) does not work. To have the launch in context displayed properly, you must log in to TADDM again.

**Solution**

A WebSphere SSO token is not passed to TADDM. To solve this problem, complete the following steps:

1. Ensure that the correct WebSphere SSO domain has been configured correctly. See the WebSphere documentation for details.
2. In the Web address that you use to access the WebSphere installation, use a fully qualified domain name (FQDN) rather than a short host name. For example, use `yourmachine.yourcompany.com` rather than `yourmachine`.

WebSphere compares the host name from the Web address to the configured SSO domain to determine whether to forward an SSO token to TADDM. If you do not access WebSphere using an FQDN, no SSO token is passed to TADDM during a launch-in-context operation.

**When TADDM data-level security is enabled, an error can occur when deleting a CI**

**Problem**

When TADDM data-level security is enabled and you delete a Configuration Item (CI), if you do not have access to all related Configuration Items, the delete operation fails.

**Solution**

If a delete fails, in order to remove the CI, the delete operation must be carried out again. This task must be carried out by the TADDM administrator or by a user with equivalent permissions. Administrator has Read, Update, Discover, and Admin permissions.

Read & Update are data permissions applicable to access collections:
- DefaultAccessCollection (virtual collection of all objects)
- Specific access collections created programmatically or using the UI

In order to delete a particular CI, the user must have Read and Update permissions on access collections containing all CIs related to the CI to be deleted.

**Users can perform Delete or Merge options on CIs that are in access collections to which they have not been granted access**

**Problem**

From the Discovery Management Console tree, you can right-click any object (CI) that you do not have access for and you are able to use the Delete or Merge function. You can merge all objects (except the durable object) and delete them.

**Solution**

This condition is a current limitation.

**When editing a user, the Administrator predefined role cannot be removed**

**Problem**

When using an external registry for authentication, attempting to remove the Administrator role results in the following error: Select a role for selected access collection.
Solution

In general, you cannot remove all of the predefined roles from a user. To narrow the permissions of a user, you can change the role from Administrator to Operator, which gives read only access.

Alternatively, to remove all of the predefined roles assigned to a user in the UI, complete the following steps:

1. Stop the TADDM server.
2. Backup the contents of the $COLLATION_HOME/var/policy directory.
3. Navigate to the following directory: $COLLATION_HOME/var/policy/ibmsecauthz/policy/rolemapping/AuthorizationManagerPolicyContextId_role
4. Edit the following file:
   jacc:roles:AuthorizationManagerPolicyContextId_role:mapping.xml
5. Locate and delete the section for the user for which you want to remove the permissions. For example,
   
   `<PolicyIdReference>
   jacc:roles:AuthorizationManagerPolicyContextId_role:mapping:principal:rohunt
   </PolicyIdReference>
   
   where rohunt is the user name.
6. In the same folder, locate and delete a file for the user, for example
   
   jacc:roles:AuthorizationManagerPolicyContextId_role:mapping:principal:rohunt.xml
7. Start the TADDM server.

Searching for some LDAP groups might fail when using VMM

Problem

When TADDM is configured to use an LDAP registry via Virtual Member Manager (VMM), searching for some LDAP groups from the TADDM Administration panel might display an HTTP Error 500 or fail to return results.

The SecurityManager.log file might include an error similar to the following one:

2012-08-20 11:59:16,000 SecurityManager [RMI TCP Connection(71)-10.0.35.30] DEBUG jini.SecurityManagerServiceImpl - VMMUserRegistry:getGroupMembership(): error getting group members: null

Also, the WebSphere Application Server logs might show a null

    com.ibm.ws.wim.adapter.ldap.LdapAdapter.getMembersByMember(LdapAdapter.java:2390)

You might encounter similar NullPointerException errors when you try to read the nested group members.

Solution

The problems are caused by an error in the VMM code. The attributes that are set to null are not processed correctly. You can easily solve them by installing one of the following fixes for WebSphere Application Server:

- WebSphere Application Server V8.0 Fix Pack 1, or later
- WebSphere Application Server V7.0 Fix Pack 19, or later
- WebSphere Application Server V6.1 Fix Pack 41, or later

For the latest fixes, see Recommended fixes for WebSphere Application Server

Troubleshooting 73
Self-monitoring tool problems

This information covers common problems that occur with the TADDM self-monitoring tool.

Process Availability fails on an AIX system when using the self-monitoring tool

Problem
On some versions of the AIX operating systems, running the UNIX ps command returns truncated Java CLASSPATH strings that are not recognized by the TADDM self-monitoring tool, which results in a failed discovery.

Solution
Upgrade to the AIX 5.3. FP5 (5.3.0.50) version or later.

Default polling interval for the self-monitoring tool might cause system performance degradation

Problem
The self-monitoring tool polls the database at five minute default intervals. In a heavily loaded database accessed by multiple applications, this short polling interval might have a negative impact on database and server performance.

Solution
Increase the default polling interval from five minutes to one day by modifying the following two files:

- conf_itsm.mdl
- perf_itsm.mdl

These files are located in the following Tivoli Monitoring directory: `itm home/arch/um/metafiles`. For example, `/opt/IBM/ITM/li6263/um/metafiles` in a Linux 64 bit system.

To modify the `conf_itsm.mdl` file, complete the following steps:

1. After the `//NAME ConfITSM`, change the `P 300` to `P 86430`.
2. Add the string, `Interval=86400` after `AddTimeStamp`.

The following example shows a modified file:

```plaintext
//APPL ConfITSMAppl @Application class defined to monitor conf. item changes in the CMDB server
//NAME ConfITSM P 86430 AddTimeStap Interval=86400 //Attribute group used to gather the conf. item change
//SOURCE SCRIPT /bin/bash confinfo.sh *
  //ATTRIBUTES
  -TotalCompsStr D 999
  TotalComps C 999999 @Total number of Configuration Components
  -TotalCompChgsWeekStr D 999
  TotalCompChgsWeek C 999999 @Total number of Configuration Comp. changes in the last week
  -SysCompStr D 999
  SysComp C 999999 @Total number of System CPs
  -AppCompStr D 999
  AppComp C 999999 @Total number of Application CPs
  -NetCompStr D 999
  NetComp C 999999 @Total number of Network CPs
  -StorCompStr D 999
  StorComp C 999999 @Total number of Storage CPs
  *
```

To modify the `perf_itsm.mdl` file, complete the following steps:

1. After the `//NAME ConfITSM`, change the `P 300` to `P 86430`.
2. Add the string, `Interval=86400` after `AddTimeStap`.

The following example shows a modified file:

```plaintext
```
Installation of IBM Tivoli Monitoring workspaces for TADDM fails

Problem
The installation of IBM Tivoli Monitoring workspaces for TADDM fails and the following message is displayed in the /tmp/ITM_ApplicationSupport_Install.log log file:

KUICAB018E: The directory /tmp/itm-selfmon-support/CD_ROOT/kum_cmdb/UA_APP/BUNDLE contains no bundles.

Solution
Ensure that you do not select the option to install into the Tivoli Enterprise Monitoring Server depot because it is not supported.

Sensor problems
The Sensor Reference contains troubleshooting information for each sensor, if applicable.

Shutdown problems
This information covers common problems that occur when TADDM shuts down.

Processes remain running on SUSE Linux Enterprise Server after control stop

Problem
On computers that are running the SUSE Linux Enterprise Server, some TADDM processes might remain after you shut down TADDM using the provided control scripts.

Solution
To identify the remaining processes, use the following command, where taddmuser is the user ID that is used to start TADDM:

```
ps -ef | grep taddmuser
```

To force the processes to stop, use the UNIX kill command and the correct process IDs.

Startup problems
This information covers common problems that occur when the TADDM starts.

General problems
The most common cause of connectivity and startup problems for the TADDM server is that the host name is indicated as an alias for the loopback interface. For
example, if the /etc/hosts file on the TADDM server has the following entry, where *taddm_server_name* is the name of the TADDM server, connectivity and startup problems occur:

```
127.0.0.1 localhost taddm_server_name
```

To prevent problems, change the entry in the /etc/hosts file to the following line:

```
127.0.0.1 localhost
```

### Checking logs files for information about startup of the proxy component

If the proxy component in TADDM fails to start or takes a long time to start, check the following log files for more information:

- `$COLLATION_HOME/log/services/ApiServer.log`
- `$COLLATION_HOME/log/services/ViewManager.log`
- `$COLLATION_HOME/log/services/ClientProxy.log`

To get clean logs, complete the following steps:

1. Stop the TADDM server with the `$COLLATION_HOME/bin/control stop` command.
2. In the `collation.properties` file, set the following property:
   ```
   com.collation.log.level=DEBUG
   ```
3. Clear the view cache. To do this, remove the `$COLLATION_HOME/var/viewmgr/views_in_cache.ser` file.
4. Backup and remove the contents of the `$COLLATION_HOME/log` directory.
5. Start the TADDM server with the `$COLLATION_HOME/bin/control start` command.

In each of the log files, look for lines with the keyword “joinmanager”. The following lines are examples of relevant log file entries:

```
```

### After TADDM is installed, TADDM services do not start completely

**Problem**

When TADDM is started for the first time after it is installed, it creates database tables. This process can take some time to complete. If the process of creating database tables is interrupted, TADDM services do not start completely.

**Solution**

Drop the database, and restart TADDM. The `$COLLATION_HOME/support/bin` directory contains the scripts for dropping and recreating the database tables. For DB2, use the `make_db2_db.sh` command, and for Oracle, use the `make_ora_user.sh` command.

### Discovery is stopped and restarted

**Problem**

If a discovery is stopped for any reason (for example, you stop the
discovery, the discovery fails, or TADDM is shut down) while it is in progress, TADDM processes the discovered items when discovery restarts. At that time, error messages state that the change manager is still running and to try again later. The change manager is completed after about 30 minutes, but if it does not, a problem has occurred.

Solution
To solve the problem, you can disable the fault recovery by setting faultretries=0 in the $COLLATION_HOME/etc/collation.properties file. However, setting faultretries=0 can cause data to be lost, which results in an inaccurate change history. Use this solution with care and knowledge of the consequences in the specific environment.

Error messages occur when you start TADDM
Problem
You install TADDM to run as a non-root user (for example, cmdbuser). When you log in to the computer as cmdbuser and start TADDM with the /etc/init.d/collation start command, you see the following error message:
/etc/init.d/collation: line 114: ulimit: open files:
cannot modify limit: Operation not permitted

TADDM does not have enough file descriptors. A known limitation on Linux systems is that any daemon that is running with privilege separation does not allow the specification of nondefault user limits (ulimits) as set in the /etc/security/limits.conf file.

Solution
Add the following lines to the /etc/security/limits.conf file:

```
cmdbuser soft nofile 8192
cmdbuser hard nofile 16000
```

Problems occur during startup on a Linux for System z system
Problem
The following error occurs in the $COLLATION_HOME/log/tomcat.log file:
rmid: (WARNING) restart service throws: java.rmi.activation.
ActivationException:timeout creating child process

Solution
Add the following entry to the $COLLATION_HOME/etc/collation.properties file: com.collation.jini.rmidtimeout = 300000.

Start the TADDM server.

Problem
The following error occurs in the ClientProxy.log file:

```
jini.JiniServiceFactory - retry limit reached breaking
```

Solution
Add the following entry to the $COLLATION_HOME/etc/collation.properties file: com.collation.jini.service.timeout = 100.

Start the TADDM server.

UnknownHostException is returned when you start the Discovery Management Console
Problem
When connecting to the TADDM server using the Discovery Management Console, the Java RMI layer uses the short host name. If there is another
server on the same subnet with the same short host name as the TADDM server, when you start the Discovery Management Console, the duplicate host names cause an UnknownHostException to be returned.

Solution
Ensure that the short host name of the TADDM server is unique on the subnet.

The server is not running or not reachable is displayed when you start the Discovery Management Console

Problem
If you set the security setting com.collation.security.enforceSSL=true in the $COLLATION_HOME/etc/collation.properties file but do not download the SSL certificate then you cannot start the Discovery Management Console. The message server is not running or not reachable is displayed. If this problem occurs the following messages might be displayed in the Java console:

```
java.io.FileNotFoundException: /jssecacerts.cert (The system cannot find the file specified.)
    at java.io.FileInputStream.<init>(FileInputStream.java:95)
    at com.collation.proxy.ssl.RMISSLClientSocketFactory.createSocket(RMISSLClientSocketFactory.java:97)
    at sun.rmi.transport.tcp.TCPChannel.newSocket(TCPChannel.java:204)
    at sun.rmi.transport.tcp.TCPChannel.newConnection(TCPChannel.java:190)
    at sun.rmi.server.UnicastRef.newCall(UnicastRef.java:321)
    at sun.rmi.transport.GGCImpl$Stub$Call.Dispatch$Call$1.run().
    at java.lang.Thread.run(Thread.java:810)
```

Solution
Download the SSL certificate. To obtain the certificate, click Show SSL Options in the TADDM Discovery Management Console, and download the truststore.

TADDM cannot be started after the provision of additional disk space

Problem
When running DB2 on Windows, errors related to a lack of disk space are displayed. After making additional disk space available, the TADDM service cannot be started.

Solution
If, as a result of DB2 errors, you make additional disk space available, you must restart DB2 for the changes to take effect.

Error messages occur when you start TADDM and the storage server does not start

Problem
When TADDM starts for the first time after it is installed, the storage server does not start. In the ClientProxy.log file, the following message is displayed:

```
ClientProxy fails with error ERROR cdb.ClientProxyService - java.rmi.ConnectException:
Connection refused to host: 172.xx.yyy.zzz; nested exception is: java.net.ConnectException:
A remote host refused an attempted connect operation
```

This problem occurs if the TADDM server host name contains an “_” (underscore) character.
Solution
Remove the underscore character from the host name. Change the host name if the name exists in the /etc/hosts file. Set the following property in the collation.properties file:
com.collation.clientproxy.rmi.server.hostname=default

TADDM does not start and the CWRGS4008E error is displayed

Problem
TADDM does not start and the following error message is displayed:
CWRGS4008E The policy with identifier 'jacc:roles:
AuthorizationManagerPolicyContextId_role:mapping:principal:testuser'
was not found in context '/opt/IBM/Taddm/dist/var/policy/ibmsecauthz/
policy/rolemapping/AuthorizationManagerPolicyContextId_role'.

Solution
The policy for the testuser user might be corrupt. To resolve this issue, complete the following steps:
1. Open the following file:
   $COLLATION_HOME/var/policy/ibmsecauthz/policy/rolemapping/
   AuthorizationManagerPolicyContextId_role/
   jacc:roles:AuthorizationManagerPolicyContextId_role:mapping.xml
2. Locate the PolicyIdReference for the testuser user and comment it out.
3. Save the changes you made to the file.
4. Start TADDM and log in as an administrator.
5. In the Data Management Portal, edit the testuser user and assign roles as appropriate.

TADDM does not start and an error is displayed in TopologyManager.log

Problem
TADDM does not start and the following error message is displayed in TopologyManager.log:
jdo.JdoStartup -JdoStartup failed - kodo.util.DataStoreException : Db2
SQL error: SQLCODE -443 SQLSTATE: 38553 SQLERMC:
SYSEIB.SQLCOLUMNS:COLUMNS;SYSEIB:CLI:-805

Solution
This is DB2 error message SQL0443N, which is usually observed after upgrading to DB2 Version 8.1 Fix Pack 10 (also known as DB2 Version 8.2 Fix Pack 3), and then invoking a DB2 Call Level Interface (CLI) catalog function such as SQLTables(), SQLColumns(), or SQLStatistics().

To resolve the issue, bind the db2schema.bnd file against each database by entering the following commands at a command prompt:
db2 terminate
db2 connect to database_name
db2 bind path\db2schema.bnd blocking all grant public sqlerror continue
db2 terminate

where database_name is the name of the database to which the utilities must be bound, and path is the full path name of the directory where the bind files are located. For example, the default location on Windows is C:\Program Files\IBM\SQLLIB\bnd\ (on Windows 32-bit editions) or C:\Program Files(x86)\IBM\SQLLIB\bnd\ (on Windows 64-bit editions).
To list all the names of databases for a particular DB2 instance, run the DB2 CLI command `db2 list database directory`. For further information, see the DB2 documentation.

**The TADDM server does not start because Gigaspaces does not start**

**Problem**

The TADDM server does not start because Gigaspaces does not start. Messages similar to the following are displayed in the log:

```plaintext
2010-10-26 16:00:15,840 [ReadStream] DEBUG util.OsCommand - Sink {GigaSpaces Platform(TM) 4.1 Build: 1177 is starting...}
```

**Solution**

It is possible that some configuration files have become corrupt because the filesystem is full.

Restore the following files from a backup or from another TADDM server running the same TADDM version:

- `collation-config.xml`
- `collation-server.xml`

**TADDM does not start and an error is displayed in tomcat.log**

**Problem**

TADDM does not start and the `tomcat.log` file shows the following error:

```
SEVERE: Error initializing endpoint java.io.IOException: Keystore was tampered with, or password was incorrect
```

**Solution**

The error means that either the `serverkeys` file, which is a keystore file, has been tampered with or that the SSL passphrase has been changed.

You can set the SSL passphrase by editing the following entry in the `collation.properties` file:

```
com.collation.sslpassphrase=
```

The server cannot start after this error occurred, that is why you must also restore the `serverkeys` file. You can find it in the `$COLLATION_HOME/etc` directory.

**TADDM does not start and status shows "Topology: Starting"**

**Problem**

TADDM does not start and the output of the `/etc/init.d/collation status` command shows: Topology: Starting instead of Started. For example,
DbInit: Started
Tomcat: Started
GigaSpaces: Started
Discover: Started
EventsCore: Starting
Topology: Starting
DiscoverAdmin: Stopped
Proxy: Stopped

Solution

Check the TADDM status using the $COLLATION_HOME/bin/control status command. Look for the DbInit status. DbInit: Started indicates that the database has been contacted successfully. If the log level was set to DEBUG and this is the first start, SQL statements that create the database are displayed in the tomcat log. Check these statements to ensure that communication with the database is working correctly.

While the Topology status is Starting, the other components will not start. To investigate why the Topology component is not starting correctly, check the following log files:

- services/TopologyBuilder.log
- services/TopologyManager.log

Storage problems

This information covers common problems that occur with storage in TADDM.

Storage errors occur when you run application sensors

Problem
Storage errors occur when you run application sensors.

Solution
Verify that the corresponding computer system sensors are enabled in the discovery profile. Application sensors are dependent on computer system sensors. For example, the Microsoft SQL Server and Citrix Server sensors require the Windows computer system sensor to be enabled during discovery.

Storage error occurs when you run a discovery

Problem
Storage errors occur when you run various sensors.

Solution
A sensor can fail to store the model object if a database error occurs. Check the $COLLATION_HOME/log/error.log file for messages similar to the following error:

An unexpected database system error has occurred

For more information about the database error, check the log/services/NamingReconService.log file. After fixing the database error, start the discovery again.

TADDM GUI problems

This information covers common problems that occur with the graphical user interfaces (GUIs) for TADDM, which are the Discovery Management Console (client user interface) and the Data Management Portal (web-based user interface).
If a problem applies to both user interfaces, it is described directly in the GUI problems section. If the problem applies only to one of the user interfaces, it is described in the section for that respective user interface.

**Naming of access collection fails and panel is unresponsive**

**Problem**
If a user enters a certain combination of characters, such as 1-8, for the name of an access collection, the panel for access collection creation is unresponsive, and the new access collection is not created. For example, the characters 1-8 do not generate a valid name for an access collection.

**Solution**
Enter a different set of characters for the access collection name. A best practice is to use only alphanumeric characters in the names for access collections.

**Discovery Management Console problems**
This information covers common problems that occur with the Discovery Management Console.

**General problems**
To debug problems in the Discovery Management Console, you might need to put the Discovery Management Console in debug mode. To do this, complete the following steps:

1. From the command prompt of the computer where the Discovery Management Console is running, enter the `javaws` command. The Java Application Cache Viewer opens.
2. Click Edit > Preferences. The Java Control Panel window opens.
3. In the Java Control Panel window, click the Advanced tab.
4. Expand Java console.
5. Click Show console.
6. Restart the Discovery Management Console.

As you navigate the Discovery Management Console, a Java console is shown with messages. Reproduce the problem that you were having. If an error message is shown, copy and paste the message and stack trace into a file for IBM Support. If no error message is shown (especially if the problem is related to performance), cut and paste the entire console window into a file for IBM Support.

If you cannot access the Discovery Management Console, you can have the Discovery Management Console debug messages copied to a text file. To do this, complete the following steps:

1. From the command prompt of the computer where the Discovery Management Console is running, enter the `javaws` command. The Java Application Cache Viewer opens.
2. Click Edit > Preferences. The Java Control Panel window opens.
3. In the Java Control Panel window, click the Advanced tab.
4. Expand Debugging.
5. Click Enable logging.
6. Click Enable tracing.
7. Restart the Discovery Management Console.
On Linux, Solaris, AIX, and Linux on System z operating systems:

The log and trace files must be in the `user_home/.java/deployment/log/` directory, where `user_home` is your home directory. An example is `/home/cmdbuser/.java/deployment/log/javaws`.

On Windows operating systems:

The log and trace files must be in the `IBM\Java\Deployment\log` directory. Examples are `C:\Documents and Settings\Administrator\Application Data\IBM\Java\Deployment\log` or `C:\java_home\IBM\Java\Deployment\log`, where `java_home` is the directory where Java is installed.

Collect the log and trace files in to a compressed file, and send that file to IBM Support.

**IP addresses that have been assigned to specific subnets as a result of Level 2 or Level 3 discoveries are reassigned to different subnets after running a Level 1 discovery**

**Problem**

In some cases, a Level 2 or Level 3 IP address might be incorrectly reassigned to another subnet when you run the `$COLLATION_HOME/bin/adjustL1Networks.sh` command after changing the configuration variable in the `DefaultNetmask` property.

**Solution**

Run a Level 2 or Level 3 discovery for the reassigned IP addresses to restore them to their correct subnet.

**Console stops after running the Clear Topology Data function in DB2**

**Problem**

When running the Clear Topology Data function to remove discovery data from a DB2 database, you receive an error message stating that the transaction log in the DB2 database is full. The Clear Topology Data function then ends in failure, and the Discovery Management Console stops.

**Solution**

The default value of the DB2 `logsecond` parameter is not adequate for large transactions. Increase the value of the DB2 `logsecond` parameter to have DB2 create more temporary transaction logs.

**Unreadable characters in a PDF report for non-English languages**

**Problem**

The PDF file generated by the report function of the Discovery Management Console contains unreadable characters for some non-English languages.

If the Discovery Management Console is running in a non-English language, the PDF file that is generated for reports includes the language-dependent font for the operating system on which the TADDM server runs. Sometimes the operating system does not have the appropriate font to display the language-dependent characters.

This problem also happens in various languages if the TADDM database has the language-dependent characters discovered from the remote systems.
Solution
Complete the steps listed in either of the following two solutions.

1. Copy the WorldType font from the TADDM Disk 1 installation DVD to your client machine:
   a. Insert the TADDM Disk 1 installation DVD into your client machine.
   b. Copy the following four WorldType font files:
      `/other/tnr_s__b.ttf`
      `/other/tnr_j__b.ttf`
      `/other/tnr_k__b.ttf`
      `/other/tnr_tt_b.ttf`
   to the following location:
      (For Windows) C:\WINNT\Fonts or C:\WINDOWS\Fonts
      (For UNIX or Macintosh /usr/share/fonts or
      /usr/lib/X11/fonts
   c. Stop and restart the Discovery Management Console.

2. Enable the automatic download function of the WorldType font:
   a. Open the $COLLATION_HOME/etc/collation.properties file on the TADDM server computer.
   b. Specify the following parameters and save the collation.properties file:
      com.collation.report.pdf.enableWorldTypeFont=true
   c. Stop and restart the TADDM server.

Note: If this function is enabled, the Discovery Management Console automatically downloads the WorldType font on the first startup. Because the WorldType font is approximately 20-25 megabytes, the first startup of the Discovery Management Console is slower. Once it is downloaded, the font file is cached for the next time the Discovery Management Console is started.

National language characters are not shown properly
Problem
For Windows computer system discovery, if all of the following conditions are true, some national language characters are not shown properly in the Discovery Management Console:
- The system locale is Arabic.
- You are in the Discovery Management Console looking at the File System column.
- You are using the SNMP option for discovery of your Windows computer system.

Solution
For Windows computer system discovery, use the Windows Management Instrumentation (WMI) option.

After a discovery is complete, certain functions can be temporarily unavailable
Problem
For a brief period after a discovery is complete, you might be unable to
access certain functions. For example, immediately after a discovery completes you might be unable to open the Access List pane.

**Solution**

Wait for a few minutes to ensure that all the sensor processes are complete before carrying out the next task.

**An icon defined in the Discovery Management Console is displayed differently in the Data Management Portal**

**Problem**

An icon set up in a custom template might be displayed differently when shown in the **Discovered Components** pane of the Data Management Portal.

**Solution**

Because the technology used in the Data Management Portal differs from that of the Discovery Management Console, an icon in one user interface (UI) might be displayed differently to the same icon in the other UI. This effect is cosmetic and does not affect the operation of the TADDM deployment.

**The default page layout size for printed details is set to “letter” in the Discovery Management Console**

**Problem**

The default page layout size of the printed details is fixed as ‘letter’ size. In Japan, “letter” size is not supported; therefore, the default page layout size must be changed to “A4” size.

**Solution**

You can change the default page layout size from “letter” to “A4” by editing the value parameter in the following property statement:

```xml
<property name="printPageLayoutSize" value="letter" />
```

Administrators can change the value parameter in the **template.jnlp** file. Discovery Management Console users can change the value parameter in the **confignia.jnlp** file.

To change the default page layout, log in as administrator, and complete the following steps from the discovery server:

1. Go to `/opt/IBM/cmdb/dist/deploy-tomcat/install/template.jnlp`.
2. In the **template.jnlp** change the value “letter” to “A4” for the **printPageLayoutSize** property:

   ```xml
   <property name="printPageLayoutSize" value="A4" />
   ```

3. Stop and restart the Discovery Management Console
4. Optional: Most users use a page layout size of “A4” but you need a page layout size of letter, complete the following steps:
   a. Save the **confignia.jnlp** locally.
   b. In the **confignia.jnlp** change the value “A4” to “letter” for the **printPageLayoutSize** property:

      ```xml
      <property name="printPageLayoutSize" value="letter" />
      ```
   c. Run the configuration file as shown in the following example:
      - If the **confignia.jnlp** is associated with Java Web Start, double-click the **confignia.jnlp** file.
      - If not, enter the following command:
On Windows operating system:
JAVA_HOME\bin\javaws.exe
SAVED_DIRECTORY\confignia.jnlp

On UNIX operating system:
JAVA_HOME/bin/javaws
SAVED_DIRECTORY/confignia.jnlp

where JAVA_HOME is the directory where Java is installed
and SAVED_DIRECTORY is the directory where
confignia.jnlp is saved.

You can use step 4 without carrying out the preceding steps to change
locally the default page layout size parameter in the confignia.jnlp
file.

Discovery console stops responding when you try to log on using SSL
certificate

Problem
The certificate is generated by using a host name or an IP address and to
access TADDM Discovery Console, the same address must be used. When
the certificate host name is different, the user is unable to authenticate and
the console might stop responding.

Solution
Make sure that you use the same name to access TADDM Discovery
Console as the one used for certificate generation.

Data Management Portal problems
This information covers common problems that occur with the Data Management
Portal.

An error occurs when you log on

Problem
When you log on to the Data Management Portal in your browser, the
following error message is displayed:
file:/C:/ibm/taddm/dist/lib/guiserver-dep.jar: Size mismatch, found
28,420,460 bytes, 1599 was expected.

Solution
To resolve this problem, clear your browser cache and Java plug-in cache:
1. Clear the browser cache by using the appropriate method for your
browser:
   • In Internet Explorer, click Tools > Internet Options. On the General
tab, click Delete.
   • In Firefox, click Tools > Clear Recent History.
For more information, see the documentation for your browser.
2. Use the Java control panel to clear the Java plug-in cache. The steps for
clearing the Java plug-in cache vary depending on which operating
system and JRE you are using. See the documentation for your JRE, for
more information.
3. Restart the browser and log on.

Note: The first logon attempt after clearing the cache might take longer
than usual, because the required JAR files must be downloaded again.
An error occurs when you change the administrator password

Problem
Each time you access the TADDM server from the Data Management Portal session, you must use the user ID and password credentials. Therefore, after you have changed the administrator password, you can no longer access the TADDM server.

The following steps describe how this problem occurs:
1. Log on as administrator to the Data Management Portal.
2. Change the administrator password.
3. Click Change password.

After changing the administrator password, you get the following results:
• A window with [object] [object] is displayed.
• When you click the Users icon, an Error loading ' /cdm/usersInfo.do' (500 Internal Server Error) message is displayed.

Solution
Log off from the Data Management Portal and log on again using the new password. The user ID and password credentials are now valid and you can access the TADDM server.

Note: To prevent this problem from occurring, you must not modify the password of the user who has logged on to the Data Management Portal. For example, assume that there are two administrators, named admin1 and admin2, for TADDM. If admin1 is logged on to the Data Management Portal, “admin1” must not change their own password, but instead, “admin1” can change the password of admin2.

You get logged off

Problem
You get logged off from the Data Management Portal. The use of the Backspace key might cause you to get logged off if the cursor focus is not on an input field that you are manipulating.

Solution
If you press the Backspace key, ensure that the cursor focus is on an input field that you are manipulating.

Display problems in Internet Explorer browser following upgrade of synchronization server

Problem
After you upgrade a synchronization server from one TADDM release to another, the Data Management Portal does not display properly when viewing it in a Microsoft Internet Explorer browser.

Solution
Clear your Microsoft Internet Explorer browser cache by completing the following steps:
1. Click Tools > Internet Options > General.
2. In the Temporary Internet files section click Delete files.
3. In the Delete files window, select Delete all off-line content.
4. Click OK.
5. Close the Microsoft Internet Explorer browser before logging back on to the TADDM Data Management Portal.

**Display problems in Firefox browser**

**Problem**
If you view the Data Management Portal in the Firefox browser, the layout might be displayed incorrectly, or the margins might be misaligned.

**Solution**
Disable unnecessary Firefox plug-ins. Alternatively, and if possible, disable individual plug-ins when connecting to the TADDM server.

**Error message is shown when viewing Application Infrastructure topology graph**

**Problem**
When you view the Application Infrastructure topology graph, the following error message is displayed:
The requested graph has exceeded the number of allowed nodes.

**Solution**
This problem can occur when running several types of built-in reports. One way to resolve the problem is to create business applications for your data center. Use the business applications to drill through to the software topology. For more information, see the topic on creating business applications in the TADDM information center.

You can also create smaller groups of configuration items to view the topologies.

**DB2 license information not found during discovery**

**Problem**
After performing a discovery, under the License tab, the Details panel for a discovered DB2 server running on UNIX and Linux operating systems can be blank. No error message is returned.

**Solution**
On UNIX and Linux operating systems, the db2licm program must have correct permissions for the user specified in the Discovery Management Console that is designated to connect to the databases.

Specifically, to get the license information, the discovery user must have the primary group of the DB2 instance owner in the group list.

**Unknown servers not displayed**

**Problem**
You do not see “unknown servers” listed in the Data Management Portal.

**Solution**
The report “unknown servers” is a pop-up menu option on Computer Systems in the Data Management Portal. The report can be used in a synchronization server deployment or streaming server deployment.
After exporting a report to a PDF file, the first line of the report shows an error message

**Problem**

After you export a report to a PDF file, the following error message is displayed at the start of the report:

- Number of rows to be exported to a PDF file exceeded maximum value supported for a PDF export.
- Only first 1000 rows have been exported.
- Try to export partial data or choose other export format such as CSV or XML to get all data exported.

**Solution**

This problem can occur when exporting any analytical report that has a table containing more than 1000 rows. This limitation does not apply to BIRT reports. To resolve the problem, export the information in sections to a PDF file or select a different file format for example, CSV or XML file.

When creating a custom query, the comparison criteria are in reverse order in non-English locales

**Problem**

In non-English locales, when you create a custom query and select Match all criteria or Match any criteria, the description of the comparison criteria can be displayed in reverse order. These criteria specify a logical AND or logical OR for multiple comparison criteria.

**Solution**

To correct this problem in non-English locales, select the reverse order to what is displayed. The Match any criteria (logical OR) is the rightmost criteria.

An icon defined in the Discovery Management Console is displayed differently in the Data Management Portal

**Problem**

An icon set up in a custom template might be displayed differently when shown in the Discovered Components pane of the Data Management Portal.

**Solution**

Because the technology used in the Data Management Portal differs from that of the Discovery Management Console, an icon in one user interface (UI) might be displayed differently to the same icon in the other UI. This effect is cosmetic and does not affect the operation of the TADDM deployment.

Cannot connect to a selected discovery server from the TADDM Servers Summary pane

**Problem**

Server not found message is displayed when you try to connect to a selected discovery server from the TADDM Servers Summary pane.

**Solution**

The primary storage server must resolve the fully qualified domain name (FQDN) for each secondary storage server and discovery server. You can configure the host name resolution order for your system to use DNS resolution. Alternatively, you can edit the /etc/hosts file on primary storage server. Include the IP address and host name for each discovered
secondary storage server and discovery server to this file. The client running the Data Management Portal must also be able to resolve the FQDN and host names.

**Tooltip is visible even after the window that contains it is closed**

**Problem**
You still see a tooltip even after you close the window that contains the tooltip.

**Solution**
Reopen the respective window, and move the cursor over the area where the tooltip was first shown.

**Viewing a very large configuration file fails with an error**

**Problem**
When attempting to view the contents of a very large configuration file (typically 1MB, or larger), an error with the following text is displayed: 
Script stack space quota is exhausted

**Solution**
Because of a quota on the script stack space imposed by the web browser, very large configuration files cannot be viewed in the Data Management Portal. The maximum sized file that you can successfully view is dependent on the browser that you are using, and different browsers might have different quotas.

**Viewing a topology graph fails with an error**

**Problem**
When you view a topology graph within the Data Management Portal, an error with the following text is displayed:
An error occurred. Please contact support

**Solution**
This error can occur because of a missing library on the TADDM Linux server. For more information about the required libraries, see  
server software requirements

You can check which library is missing. To do so, you must turn on the global DEBUG, re-create the issue, and check the log files in 
$COLLATION_HOME/log/tomcat/catalina.log for errors such as the following one:

```java
FINER: RMI TCP Connection(16)-10.15.120.19: [10.15.120.19:  
com.collation.cdm.others.listeners.CDMListenerImpl[2]: public abstract  
void net.jini.core.event.RemoteEventListener.notify(net.jini.core.e  
vent.RemoteEvent) throws  
net.jini.core.event.UnknownEventException,java.rmi.RemoteException]  
javax.servlet.ServletException: fontmanager (libX11.so.6: cannot open  
shared object file: No such file or directory)
```

The error states which library is missing. In the example above, it is the libX11.so.6 library.
Data displayed in one view does not match data displayed in other views

In some cases, data displayed in connection with a group of discovered configuration items in one view of the Data Management Portal might not match data displayed for the same group of discovered configuration items in another view of the Data Management Portal.

TADDM uses different kinds of graphs to display statistics for identical groupings of discovered configuration items, depending on how the graphs are accessed from the Data Management Portal, and these graphs may appear to display different data for the same group of discovered configuration items. For example, if you view a graph of network switches in a discovery, and you access the graph by selecting Physical Infrastructure in the Discovered Components pane, the resulting tree graph might display $x$ switches. However, when you view a graph of those same network switches by first selecting the Topology tab, and then choosing Physical Infrastructure, the resulting topology graph might display $y$ switches.

This is because the Physical Infrastructure topology, as viewed by means of the Topology tab, is not meant to show all devices. As a Layer 3 topology, it displays only IP network clouds and devices with ipForwarding enabled. It will show the subnets (IpNetworks) and their interconnecting devices and provide a quick drilldown to the subnet topology which shows every single device on that subnet. Interconnecting devices are defined as:

- Firewalls: ComputerSystem with type set to Firewall
- Load balancers: ComputerSystem with type set to LoadBalancer
- Any device other than a firewall or a load balancer that is performing a routing function: ComputerSystem that has the router function and has forwarding on the router function set to true
- Manually-defined router: GenericRouter
- Manually-defined firewall: GenericFirewall
- Manually-defined load balancer: GenericLoadBalancer

TADDM server problems

This information covers common problems that occur with the TADDM server.

TADDM server

A generic term that can represent any of the following terms:

- domain server in a domain server deployment
- synchronization server in a synchronization server deployment
- discovery server in a streaming server deployment
- storage server (including the primary storage server) in a streaming server deployment

If a problem applies to all of the TADDM servers, it is described directly in the TADDM server problems section. If the problem applies only to specific servers, it is described in the sections for the respective servers to which it applies.

"Access denied" errors on Windows 2008 with User Account Control turned on

Problem

On a Windows Server 2008 system with User Account Control turned on,
you might see “access denied” error messages when trying to start or stop the TADDM server with any of the following commands:

- `control start`
- `control stop`
- `startserver.bat`
- `stopserver.bat`

**Solution**

To avoid this problem, run the server commands with administrator privileges. Use either of these methods:

- Right-click the Command Prompt icon and then click **Run as administrator** to open a command prompt window with administrator privileges. You can then run the server commands from this command prompt.
- Use the Windows **runas** command at any command prompt, as in the following example:
  
  ```
  runas /user:taddm_admin "control start"
  ```

  For more information about the **runas** command, refer to the Windows Server 2008 command help.

**Domain server problems**

This information covers common problems that occur with the domain server.

**Problems in logging in to a domain server**

**Problem**

You experience problems in logging in to a domain server.

**Solution**

On operating systems such as AIX or Linux, the use of the `$COLLATION_HOME/bin/control stop` command to stop a synchronization server might infrequently leave one or more processes running, which can cause erratic login behavior when logging in to a domain server that is connected to a synchronization server.

On the synchronization server, use the `ps -ef | grep collation` command to locate any lingering TADDM Java processes. Kill these processes, and use the `$COLLATION_HOME/bin/control start` command to restart the synchronization server.

**Synchronization server problems**

This information covers common problems that occur with the synchronization server in a synchronization server deployment.

**Access denied error when trying to access the domain**

**Problem**

You uninstall and reinstall the enterprise domain, but a red “X” is displayed with the message “access denied” when you try to access the domain.

**Solution**

When you create a domain, a domain password is generated, and this password is required to identify and connect to the domain. The password is called the `sslpassphrase` in the `$COLLATION_HOME/etc/collation.properties` file for the domain. A new password is generated
every time a domain is created. If you uninstall and reinstall a domain, the
data and password in the synchronization server no longer matches the
domain data or password.

To solve this problem, if you uninstall a domain, also delete it from the
synchronization server. When you reinstall a domain, also add it to the
synchronization server with the correct credentials, and synchronize the
data in the newly installed domain.

A red “X” is displayed for the domain status

Problem
A red “X” is displayed for the domain status on the main Domain
Summary page.

Solution
The synchronization server is trying to connect to the remote domain
services registry. Either the domain password that was generated in the
synchronization server when the domain was created is incorrect, or the
forward and reverse lookups for the domain and the synchronization
server do not match. Ensure that the fully qualified domain name (FQDN)
on the Domain Summary page resolves to an IP address, which, when it is
looked up, resolves back to this same FQDN.

DomainImportCallback.E.63 error is displayed in synchronization logs

Problem
The following error is displayed in the synchronization logs:
[DomainImportCallback.E.63] The application received a remote domain
error with message: RemoteException occurred in server thread;
nested exception is:

Solution
The synchronization server must have connectivity to the remote TADDM
database during the synchronization process. Database connectivity was
lost during synchronization. Verify the database connectivity for your
domain, and rerun the synchronization.

Time entered for scheduling a synchronization does not match next
synchronization time

Problem
The time that was entered for scheduling a synchronization does not match
the next synchronization time.

Solution
Your client and server clocks are not synchronized with a server that is
compliant with the Network Time Protocol (NTP). The next
synchronization time is the time, according to the time zone of the client,
that the server has scheduled the synchronization. Synchronize the client or
server with an NTP-compliant server.

Configuration information for NAT domains does not show up correctly

Problem
The configuration information for domains that use Network Address
Translation (NAT) to communicate with the Internet does not show up
correctly in the synchronization server.
Solution
Domains that use Network Address Translation (NAT) to communicate with the Internet are not supported in the synchronization server.

Topology views not updated immediately after a synchronization

Problem
The topology views are not updated immediately after a synchronization of the domain server with the synchronization server.

Solution
Depending on the amount of information to be synchronized, it might take a long time for topology views to be updated. After a synchronization has completed, the topology views are rebuilt. While this is happening, a cached copy of the topology views are displayed.

The up-to-date topology views are available after the following message is displayed in the log/services/ViewManager.log file:

CTJOX2001I View build is stopping

Synchronization fails with a CT_SNAPSHOT table error

Problem
Synchronization fails, and an error similar to the following is displayed in the $COLLATION_HOME/log/error.log:

2010-12-14 22:13:33,568 Synchronizer [TableThread$1]
ERROR synchronizer.ConnWrapper - Exception creating prepared statement:
SELECT guid_x FROM ct_snapshot WHERE guid_x=?com.ibm.db2.jcc.am.SqlSyntaxErrorException:
  DB2 SQL Error: SQLCODE=-204, SQLSTATE=42704, SQLERRMC=DB2INST4.CT_SNAPSHOT, DRIVER=3.59.81

Solution
This error indicates that the CT_SNAPSHOT table was not found on the synchronization server. Ensure that you run the snapshot.sh command with no parameters on the synchronization server, and then restart TADDM. This creates the required snapshot table on the synchronization server.

For more information about setting up the snapshot table, see the “Using snapshot reports in a synchronization server deployment” topic in the TADDM User’s Guide.

Discovery server problems
This information covers common problems that occur with a discovery server in a streaming server deployment.

Discovery server does not start

Problem
A recently installed discovery server does not start.

Solution
Check the $COLLATION_HOME/log/tomcat.log file for errors, as not all errors are shown in $COLLATION_HOME/log/error.log during the initial stages of startup. Look for strings containing the text “ERROR”.

Ensure that the server has been allocated enough memory and that the database connection parameters are correct.
Set the `com.collation.log.level` and `com.collation.log.level.vm.StorageService` log levels to DEBUG. After the startup problems have been resolved, reset these logging properties to their previous values.

Ensure that the mode properties are set correctly. The `com.collation.cmdbmode` property should be commented out (with an initial #) or omitted. The `com.collation.taddm.mode` property should be set to DiscoveryServer. The `com.collation.PrimaryStorageServer.host` property should be a fully qualified host name or a valid IP address.

Ensure that the port specified by `com.collation.PrimaryStorageServer.port` is reachable at the supplied host address, using telnet or some other tool, to make sure that there are no firewall or other problems.

```bash
#com.collation.cmdbmode=domain
com.collation.taddm.mode=DiscoveryServer
com.collation.PrimaryStorageServer.host=hostname.domain.com
com.collation.PrimaryStorageServer.port=4160
```

### Storage server problems
This information covers common problems that occur with a storage server in a streaming server deployment.

#### Storage server does not start

**Problem**
A recently installed storage server does not start.

**Solution**
Check the `$COLLATION_HOME/log/tomcat.log` file for errors, as not all errors are shown in `$COLLATION_HOME/log/error.log` during the initial stages of startup. Look for strings containing the text “ERROR”.

Ensure that the server has been allocated enough memory and that the database connection parameters are correct.

Set the `com.collation.log.level` and `com.collation.log.level.vm.StorageService` log levels to DEBUG. After the startup problems have been resolved, reset these logging properties to their previous values.

If the storage server is a secondary storage server, ensure that the database configuration parameters match those of the primary storage server. The database configuration parameters are the parameters in the `$COLLATION_HOME/etc/collation.properties` file that begin with “com.collation.db”.

Ensure that the mode properties are set correctly:

- For a primary storage server, the `com.collation.cmdbmode`, `com.collation.PrimaryStorageServer.host`, and `com.collation.PrimaryStorageServer.port` properties should be commented out (with an initial #) or omitted.

```bash
#com.collation.cmdbmode=domain
com.collation.taddm.mode=DiscoveryServer
#com.collation.PrimaryStorageServer.host=hostname.domain.com
#com.collation.PrimaryStorageServer.port=4160
```

- For a secondary storage server the `com.collation.cmdbmode` property should be commented out (with an initial #) or omitted. The `com.collation.PrimaryStorageServer.host` property should be a fully
qualified host name or a valid IP address. Ensure that the port specified by `com.collation.PrimaryStorageServer.port` is reachable at the supplied host address, using telnet or some other tool, to make sure that there are no firewall or other problems.

```
#com.collation.cmdmode=domain
com.collation.taddm.mode=StorageServer
com.collation.PrimaryStorageServer.host=hostname.domain.com
com.collation.PrimaryStorageServer.port=4160
```

**Primary storage server fails**

**Problem**

The primary storage server is unavailable for a significant period of time.

**Solution**

Restart only the primary storage server. The rest of the environment should operate without disruption.

**Primary storage server fails because of a hardware fault**

**Problem**

The primary storage server is unavailable because of a hardware fault.

**Solution**

The following scenarios provide instructions on how to recover if a primary storage server fails and cannot be restarted. Select one of the following scenarios to recover from a primary storage server failure.

**Install a primary storage server**

1. Stop all TADDM servers.
2. Install a primary storage server using the installation wizard. See the TADDM Installation Guide, “Installing the primary storage server using the installation wizard” for details. After the installation, stop the primary storage server.
3. From any TADDM server, copy the following files to the primary storage server from the `$COLLATION_HOME/etc` directory:
   - serverkeys
   - jsseacerts.cert
   - TADDMSec.properties
   - userdata.xml
   - ibmessclientauthncfg.properties
   - sas.client.props
   - collation.properties
   - groupdata.xml
4. If the primary storage server was installed using a different account from that of the TADDM server from which the files were copied from, check the following items:
   - Ensure that the owner and group privileges of the copied files match those privileges of the primary storage server files.
   - Correct the `com.collation.unixuser` and `com.collation.unixgroup` properties in the `collation.properties` file.
5. Update the `collation.properties` file on the primary storage server with the following changes:
• Comment out the com.collation.cmdbmode property, as shown in the following example:
  
  #com.collation.cmdbmode=enterprise
  
• Set the value of com.collation.taddm.mode property to StorageServer, as shown in the following example,
  
  com.collation.taddm.mode=StorageServer
  
• Comment out the com.collation.PrimaryStorageServer.host property.
• Comment out the com.collation.PrimaryStorageServer.port property.
• Update the com.collation.AlwaysBusyStorageServer to the required value.

6. For all servers except for the primary storage server, the following properties must be set in the collation.properties file:
• com.collation.PrimaryStorageServer.host
• com.collation.PrimaryStorageServer.port

7. Start the TADDM servers.

Convert a secondary storage server to a primary storage server and install a secondary storage server
If you have a secondary storage server, you can convert it into a primary storage server and then install a new secondary storage server.

1. Stop all TADDM servers.

2. Update the collation.properties file on one secondary storage server to convert to a primary storage server with the following changes:
• Comment out the com.collation.PrimaryStorageServer.host property.
• Comment out the com.collation.PrimaryStorageServer.port property.
• Update the com.collation.AlwaysBusyStorageServer to the required value.

3. Restart the server, which is now a primary storage server.


5. For all servers except for the primary storage server, the following properties must be set in the collation.properties file:
• com.collation.PrimaryStorageServer.host
• com.collation.PrimaryStorageServer.port

6. Start the TADDM servers.

Temporarily convert a secondary storage server to a primary storage server and install a secondary storage server
If you have one secondary storage server you can temporarily convert it to a primary storage server and then install a secondary storage server. You can then convert the newly installed secondary storage server into a primary storage server.

1. Stop all TADDM servers.

2. Update the collation.properties file on one secondary storage server to convert to a primary storage server with the following changes:
- Comment out the `com.collation.PrimaryStorageServer.host` property.
- Comment out the `com.collation.PrimaryStorageServer.port` property.
- Update the `com.collation.AlwaysBusyStorageServer` to the required value.

3. Restart the server, which is now a primary storage server.


5. Stop the primary storage server.

6. Repeat steps 1 - 3 to convert the newly installed secondary storage server to a primary storage server.

7. For all servers, except the primary storage server you must modify the `collation.properties` file. Include the temporary primary storage server that was created in step 2. The following properties must be set in the `collation.properties` file:
   - `com.collation.PrimaryStorageServer.host`
   - `com.collation.PrimaryStorageServer.port`

8. Start the TADDM servers.
Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user’s responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785 U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan, Ltd.
1623-14, Shimotsuruma, Yamato-shi
Kanagawa 242-8502 Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement might not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.
IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
2Z4A/101
11400 Burnet Road
Austin, TX 78758 U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurement may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

If you are viewing this information in softcopy form, the photographs and color illustrations might not be displayed.

### Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at “Copyright and trademark information” at [http://www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml)
Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft and Windows are trademarks of Microsoft Corporation in the United States, other countries, or both.

PostScript is either a registered trademark or a trademark of Adobe Systems Incorporated in the United States, and/or other countries.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, and service names may be trademarks or service marks of others.