



**IBM Tivoli Directory Integrator 6.1.1:
Problem Determination Guide**



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Problem Determination Guide**

Note

Note: Before using this information and the product it supports, read the general information under Appendix B, "Notices," on page 41.

Second Edition (February 2007)

This edition applies to version 6.1.1 of the IBM Tivoli Directory Integrator and to all subsequent releases and modifications until otherwise indicated in new editions.

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Preface

This book provides information about possible problems and corrective actions that can be tried before contacting IBM® Software Support. It also includes information about tools you can use for problem determination with IBM Tivoli® Directory Integrator IBM Tivoli Directory Integrator 6.1.1.

Who should read this book

This book is intended for those responsible for the identification and resolution of problems in the IBM Tivoli Directory Integrator.

Publications

Read the descriptions of the IBM Tivoli Directory Integrator library and the related publications to determine which publications you might find helpful. After you determine the publications you need, refer to the instructions for accessing publications online.

IBM Tivoli Directory Integrator library

The publications in the IBM Tivoli Directory Integrator library are:

IBM Tivoli Directory Integrator 6.1.1: Getting Started

A brief tutorial and introduction to IBM Tivoli Directory Integrator 6.1.1.

IBM Tivoli Directory Integrator 6.1.1: Administrator Guide

Includes complete information for installing the IBM Tivoli Directory Integrator. Includes information about migrating from a previous version of IBM Tivoli Directory Integrator. Includes information about configuring the logging functionality of IBM Tivoli Directory Integrator. Also includes information about the security model underlying the Remote Server API.

IBM Tivoli Directory Integrator 6.1.1: Users Guide

Contains information about using the IBM Tivoli Directory Integrator 6.1.1 tool. Contains instructions for designing solutions using the IBM Tivoli Directory Integrator tool (**ibmditk**) or running the ready-made solutions from the command line (**ibmdisrv**). Also provides information about interfaces, concepts and AssemblyLine/EventHandler creation and management. Includes examples to create interaction and hands-on learning of IBM Tivoli Directory Integrator 6.1.1.

IBM Tivoli Directory Integrator 6.1.1: Reference Guide

Contains detailed information about the individual components of IBM Tivoli Directory Integrator 6.1.1 AssemblyLine (Connectors, EventHandlers, Parsers, Plug-ins, and so forth).

IBM Tivoli Directory Integrator 6.1.1: Problem Determination Guide

Provides information about IBM Tivoli Directory Integrator 6.1.1 tools, resources, and techniques that can aid in the identification and resolution of problems.

IBM Tivoli Directory Integrator 6.1.1: Messages Guide

Provides a list of all informational, warning and error messages associated with the IBM Tivoli Directory Integrator 6.1.1.

IBM Tivoli Directory Integrator 6.1.1: Password Synchronization Plug-ins Guide

Includes complete information for installing and configuring each of the five IBM Password Synchronization Plug-ins: Windows® Password Synchronizer, Sun ONE Directory Server Password Synchronizer, IBM Directory Server Password Synchronizer, Domino® Password Synchronizer and Password Synchronizer for UNIX® and Linux®. Also provides configuration instructions for the LDAP Password Store and MQe Password Store.

IBM Tivoli Directory Integrator 6.1.1: Release Notes®

Describes new features and late-breaking information about IBM Tivoli Directory Integrator 6.1.1 that did not get included in the documentation.

Related publications

Information related to the IBM Tivoli Directory Integrator is available in these publications:

- IBM Tivoli Directory Integrator 6.1.1 uses the JNDI client from Sun Microsystems. For information about the JNDI client, refer to the *Java™ Naming and Directory Interface™ 1.2.1 Specification* on the Sun Microsystems Web site at <http://java.sun.com/products/jndi/1.2/javadoc/index.html>.
- The Tivoli Software Library provides a variety of Tivoli publications such as white papers, datasheets, demonstrations, redbooks, and announcement letters. The Tivoli Software Library is available on the Web at: <http://www.ibm.com/software/tivoli/library/>
- The *Tivoli Software Glossary* includes definitions for many of the technical terms related to Tivoli software. The *Tivoli Software Glossary* is available, in English only, from the **Glossary** link on the left side of the Tivoli Software Library Web page <http://publib.boulder.ibm.com/tividd/glossary/tivoliglossarymst.htm>

Accessing publications online

The publications for this product are available online in Portable Document Format (PDF) or Hypertext Markup Language (HTML) format, or both in the Tivoli software library: <http://www.ibm.com/software/tivoli/library>.

To locate product publications in the library, click **Product manuals** link on the left side of the Library page. Then, locate and select the name of the product on the Tivoli software information center page.

Information is organized by product and includes READMEs, installation guides, user's guides, administrator's guides, and developer's references as necessary.

Note: To ensure proper printing of PDF publications, select the **Fit to page** check box in the Adobe Acrobat Print window (which is available when you click **File->Print**).

Accessibility

Accessibility features help for a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. With this product, you can use assistive technologies to hear and navigate the interface. After installation you also can use the keyboard instead of the mouse to operate all features of the graphical user interface.

Contacting IBM Software support

Before contacting IBM Tivoli Software support with a problem, refer to IBM System Management and Tivoli software Web site at:

<http://www.ibm.com/software/sysmgmt/products/support/>

If you need additional help, contact software support by using the methods described in the *IBM Software Support Handbook* at the following Web site:

<http://techsupport.services.ibm.com/guides/handbook.html>

The guide provides the following information:

- Registration and eligibility requirements for receiving support
- Telephone numbers and e-mail addresses, depending on the country in which you are located
- A list of information you must gather before contacting customer support

Chapter 1. Introduction to problem determination

This guide provides information about IBM Tivoli Directory Integrator 6.1.1 tools, resources, and techniques that can aid in the identification and resolution of problems.

IBM Tivoli Directory Integrator 6.1.1 overview

IBM Tivoli Directory Integrator (TDI) manages the technicalities of connecting to and interacting with the various data sources that you want to integrate, abstracting away the details of their APIs, transports, protocols and formats. Instead of focusing on data, TDI lifts your view to the information level, enabling you to concentrate on the transformation, filtering and other business logic required to perform each exchange.

The architecture of IBM Tivoli Directory Integrator is divided into two parts:

- The kernel, where most of the system's functionality is provided, and which you leverage to quickly build the framework of your solution.
- The components, which abstract away the technical details of the data systems, platforms and formats that you want to work with. TDI provides you with a number of component types, such as: Connectors, Parsers and Function Components.

When faults and errors occur, several built in diagnostic tools are used to collect information and determine the exact cause of the problem.

Troubleshooting topics

This guide contains troubleshooting information for the following topics:

- Installation: See Chapter 3, "Installation and uninstallation," on page 7 for more information.
- Configuration Editor: See Chapter 4, "Configuration Editor," on page 15 for more information.
- Administration and Monitoring Console: See "Administration and Monitoring Console (AMC) Problem Determination" on page 19 for more information.
- Components: See Chapter 6, "Components," on page 21 for more information.
- Known Limitations and general troubleshooting: See Chapter 8, "Known limitations and general troubleshooting," on page 29 for more information.
- Scenarios: See Chapter 9, "Troubleshooting scenarios," on page 33 for more information.

Built-in troubleshooting features

Note: Many of the built-in troubleshooting features are documented elsewhere in the IBM Tivoli Directory Integrator 6.1.1 documentation library. The following sections tell you where to look for information about these features.

Logging

IBM Tivoli Directory Integrator relies on log4j as a logging engine. It is a very flexible framework that lets you log to file, NT eventlog, Unix syslog

and more, and can be tuned so it suits most needs. It can be a great help when you want to troubleshoot or debug your solution.

For information about IBM Tivoli Directory Integrator logging, see the "Logging and debugging" chapter in the *IBM Tivoli Directory Integrator 6.1.1: Administrator Guide*.

To see examples of the logging windows of the Config Editor see the "Config Editor" chapter in the *IBM Tivoli Directory Integrator 6.1.1: Users Guide*

Debugging

TDI 6.1.1 offers an AssemblyLine debugging tool called the AL Stepper. The AL Stepper allows you to:

1. Define breakpoints for AssemblyLines.
2. Pause AssemblyLine processing at the defined breakpoints to examine the AssemblyLine for errors.

The AL Stepper is part of the Config Editor. For more information about how to use the AL Stepper, refer to the "Config Editor" chapter of the *IBM Tivoli Directory Integrator 6.1.1: Users Guide* for more information about this feature.

Tracing and First Failure Data Capture (FFDC)

IBM Tivoli Directory Integrator is instrumented throughout its code with tracing statements, using the JLOG framework, a logging library similar to log4j, but which is used inside TDI specifically for tracing and First Failure Data Capture (FFDC).

For information about IBM Tivoli Directory Integrator logging, see the "Tracing and FFDC" chapter in the *IBM Tivoli Directory Integrator 6.1.1: Administrator Guide*.

Action Manager (AM)

The Action Manager is an error management mechanism that allows you to create Action Manager rules for your AssemblyLines.

An Action Manager rule consists of two parts:

1. The condition under which the rule is to be invoked, called a "trigger." Some examples of triggers are Server API failure, AssemblyLine failure, or failure of the AssemblyLine to run at specified intervals.
2. A set of alternate actions to be performed when the trigger is encountered.

The Action Manager is part of the Administration and Monitoring Console (AMC). For instructions on how to use the Action Manager, consult the Administration and Monitoring Console chapter in the *IBM Tivoli Directory Integrator 6.1.1: Administrator Guide*

Performance Test and Debug Utilities

IBM Tivoli Directory Integrator 6.1.1 includes Performance Test and Debug Utilities tools. The Performance Test Tool monitors the system level parameters and the server, records and logs information for the system and server at specified intervals of time. Performance test parameters are then used for throughput measurement and capacity planning.

The Debug utilities tool identifies memory usage and memory leaks in specific TDI components by collecting information at specific intervals and upon certain actions.

See Chapter 2, “Performance Test Utilities and Debugging,” on page 5 for more information about TDI's benchmarking tools.

Using the Messages Guide to resolve errors

See the *IBM Tivoli Directory Integrator 6.1.1: Messages Guide* for information about why the error occurred and how to resolve it.

Chapter 2. Performance Test Utilities and Debugging

There are two performance tools included with TDI 6.1.1: a performance test utilities tool and a performance debugging tool. These tools monitor and log system and server information at specified intervals of time. The information gathered can then be used for throughput measurement and capacity planning.

This chapter describes these tools and explains how to configure and gather information from them.

Performance test utilities

The Performance test utilities are shell scripts that launch a server instance for a particular configuration and logs system-level (io, cpu, network) and jvm level information. The test utilities can be used to benchmark macro parameters such as throughput, application memory and CPU usage. Data is logged into the performance logs at user specified intervals.

Running the performance test utilities scripts

There are two shell scripts: The `ibmdisrvtp.sh` utility and the `ibmdibenchmark.sh` utility. The `ibmdisrvtp.sh` utility measures server throughput. The `ibmdibenchmark.sh` utility logs system level information. The utilities must be executed separately.

Note: The performance test utilities shell scripts are not supported on Windows operating systems.

Running the `ibmdisrvtp.sh` utility

1. Copy the `ibmdisrvtp.sh`, `benchmark.properties`, and `tdiperfhead.sh` files from the `<itdi_install_dir>/performance` directory to the solution directory.
2. Open the `benchmark.properties` file, and specify the following settings:
 - `ibmdiroot`: Specify the TDI install directory:
 - `solutiondir`: Specify TDI solution directory
 - `configfile`: The name of the Config file to be loaded
 - `assemblyline`: The AssemblyLine to be started
 - `eventhandlers`: The Event handler to be started
 - `cmdoptions`: The `ibmdisrv` command line options. By default, the value for `cmdoptions` is None.
 - `jvmcmdoptions`: The JVM command line options. By default, the value for `jvmcmdoptions` is None.
3. At a command prompt, execute the following command from command line:
`./ibmdisrvtp.sh -f benchmark.properties`

Running the `ibmdibenchmark.sh` utility

1. Copy the `ibmdibenchmark.sh`, `benchmark.properties`, and `tdiperfhead.sh` files from `<itdi_install_dir>/performance` directory to solution directory.
2. Open the `benchmark.properties` file, and specify the following properties:
 - `duration`: Duration time in seconds, set -1 so as to run it for infinite time period.

- interval: Interval time in seconds to collect system level information. If duration is not set to -1 then interval should be less than the duration.
 - ios: enable/disable input-output information recording (y to enable, n to disable)
 - vms: enable/disable memory usage/information recording (y to enable, n to disable)
 - nets: enable/disable network information recording (y to enable, n to disable)
3. From the command line, execute the following command:
- ```
./ibmdibenchmark.sh -f benchmark.properties
```

---

## Performance debugging

The performance debugging tool identifies memory usage and memory leaks in specific TDI components by collecting information at specific intervals and upon certain actions.

### Data collected by the performance debugging tool

This feature logs the following information:

- Component name
- Time (in milliseconds)
- Memory usage

Component names are prefixed with name of AssemblyLine instance which uniquely identifies each component.

Memory usage is the difference between total memory available (JVM) at start and total memory available at end for each component during its execution.

Before AssemblyLine terminates, the performance entry which contains performance statistics is logged. This is then followed by logging of the overall AssemblyLine performance statistics.

### Running the performance debugging tool

To run the performance debugging tool, use one of the following methods:

- Start the server using the -T parameter  

```
ibmdisrv -T
```
- Start the server by setting the following property in the global.properties./solution.properties file:  

```
Enable\Disable performance logging
com.ibm.di.server.perfStats=true
```

**Note:** The -T parameter takes precedence over the solution.properties file setting. If the com.ibm.di.server.perfStats value is set to false, you can still obtain performance statistics by starting the server using the -T parameter.



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## Chapter 3. Installation and uninstallation

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### Troubleshooting Installation

Installation and un-installation of IBM Tivoli Directory Integrator (TDI) is scripted and implemented by means of Macrovision FLEXnet Publisher Installation Module 1.2.1.

**Note:** Throughout the following sections you will be asked to gather information for the IBM Solution Install directory (*SI\_install\_dir*). The location of this directory varies based on operating system and user type:

- On Windows operating systems:
  - If IBM Solution Install was installed by an Administrator (root) user, the IBM Solution Install directory is: C:\Documents and Settings\*<username>*
  - If IBM Solution Install was installed by a non-Administrator (non-root) user, the IBM Solution Install directory is: C:\Program Files\IBM\Common\asci\_*<username>*
- On UNIX operating systems:
  - If IBM Solution Install was installed by an Administrator (root) user, the installation directory is: /var/ibm/common/asci
  - If IBM Solution Install was installed by a non-Administrator (non-root) user, the installation directory is: ~/.asci\_*<username>*/
- On i5/OS operating systems:
  - The Solution Install directory can be found at the following location:  
QSECOFR (Admin):  
/QOpenSys/QIBM/ProdData/asci
  - Non-OSECOFR (non-Admin):  
~/.asci\_*<username>*/
  - Macrovision files (such as installation logs, etc.) are found in the  

/tmp/InstallShield

directory.

- The commands used on i5/OS are the same as on UNIX:  
si\_inst.sh  
listIU.sh  
setenv.sh
- The executable on i5/OS is a shell script and not a native executable. If you need to turn on debugging, you should invoke the .jar file directly.  
/QIBM/ProdData/Java400/jdk14/bin/java" -Dis.debug=1 -jar <path where jar is> /TDIV611.

The install directory for DEUI is the same as for SI.

/QOpenSys/QIBM/ProdData/ci

or

~/.ci\_*<username>*/

Uninstalling DEUI is the same as on UNIX. The path is:

<DEUI\_install\_dir>/\_uninst/uninst

## Attempting to install TDI version 6.1 or 6.1.1 to the same version and location

If you try to install TDI (version 6.1 or 6.1.1) with a TDI (version 6.1 or 6.1.1) installer to the same directory where the identical TDI version (version 6.1 or 6.1.1) is already installed, you will get an error indicating:

Nothing selected to install, or the product is already installed at this location.

The following steps produce the error:

1. The user selects to install TDI to a new location.
2. When prompted for the installation directory, the user selects the same directory and version as are already installed for the existing installed instance.
3. The following errors appear:  
Nothing selected to install, or the product is already installed at this location.  
Instance exists.

The solution is to install TDI to a different directory from the one where it is already installed.

If you select to install new features when prompted, the new features will be added to the existing installation instance, just like they would if you selected **Adding Features**.

## Gathering installation information

Gathering information about your installation can help IBM Support determine the source of your problem. The following sections describe troubleshooting information that you can generate for different segments within the install.

There are four segments to a TDI install:

1. The initialization, during which the IBM Tivoli Directory Integrator 6.1.1 Installer either installs or upgrades IBM Solution Install (SI), and the SI service is created/started.
2. The pre-install, which involves stepping through the TDI Installer windows and selecting installation options.
3. The installation action, which occurs after you have selected all the installation options and you begin the product installation.
4. The post-install, which occurs when the installation action is completed, and the TDI install is handling post-install actions such as migration and installing Deployment Engine Update Installer (DEUI).

### Troubleshooting initialization

If the IBM Tivoli Directory Integrator install fails to open, or the Initializing Installation Data window hangs, collect the following logs and send them to IBM Support for analysis:

1. <tempdir>/acu\_si.log
2. <tempdir>/<userid>/SIInstall.log
3. <SI\_install\_dir>/logs/si\_trace.log

To determine if IBM Solution Install (SI) is installed on your machine, run the following two commands:

1. Run the setenv command from the IBM Solution Install directory:

- Windows operating systems:  
setenv
  - UNIX operating systems:  
setenv.sh
2. Run the listIU command
    - Windows operating systems:  
listiu
    - Unix operating systems:  
listIU.sh

After running these commands, if IBM Solution Install is installed, you should see two entries for IBM Solution Install at 1.2.1.16 or higher. If other products have been installed using IBM Solution Install, you will also see those entries.

To gather debug information about this segment of the installation, run the installation in console mode with debugging enabled:

1. Create an .sp file that has the same name as the launcher. This file needs to be in the same place as the launcher too; for example:
  - install\_tdiv61\_windows.sp
  - install\_tdiv61\_linux.sp

This .sp file contains the following line `is.debug=1`

2. Invoke the launcher with the following command:  
`-is:log<pathname>`

Send the resulting log and the console output to the IBM Support team.

## Troubleshooting the pre-install

If the TDI installer does not recognize that a previous version of TDI has been installed, or if the TDI installer does not detect that IBM WebSphere® Application Server is present, please gather the following files and send them to IBM Support:

1. The tdiv61install.log file. This file is located in the following directory:  
`<tempdir>/tdiv61install.log`
2. The vpd.properties file. On Windows operating systems, this file is located in the C:\WINDOWS or C:\WINNT directory. On UNIX operating systems, this file is located in either in the /root or / directory. On AIX® operating systems, this file is located in the /usr/lib/objrepos/ directory

For any other problem with the TDI wizard windows, please gather the tdiv61install.log. If you are uninstalling, gather the tdiv61uninstall.log.

## Troubleshooting the installation

To troubleshoot installation, gather at the following log files and send them to IBM Support:

1. Collect the `<SI install directory>/logs/si_trace.log` file.
2. `<tempdir>/tdiv61install.log` or the `<tempdir>/tdiv61uninstall.log`

## Troubleshooting the post installation

If the Deployment Engine Update Installer (DEUI) fails to install, gather at the following log files and send them to IBM Support:

1. All DEUI logs found in the `<tempdir>`.
2. `<SI install directory>/logs/si_trace.log`

If there is a problem migrating TDI from 6.0 to 6.1, gather the following files and send them to IBM Support:

1. `<tempdir>/tdiv61install.log`
2. All TDI migration logs found in the `<tempdir>`

## Performing a manual uninstallation

If an unexpected error causes uninstallation to fail, you must manually remove IBM Tivoli Directory Integrator, Deployment Engine Update Installer (DEUI) and the IBM Solution Install.

**Attention:** Removing IBM Solution Install also removes information about all products installed using IBM Solution Install. Before removing IBM Solution Install, make sure there is no necessary information that will be lost as part of the removal.

To manually uninstall on a Windows operating system:

1. Uninstall the Deployment Engine Update Installer (DEUI) using the following command:  
`<DEUI_install_dir>\uninst\uninst.cmd`
2. Remove SI:
  - Run the following command from the IBM Solution Install directory:  
`setenv`
  - Run the following command from any location:  
`si_inst -r`
  - Remove any remaining files from the IBM Solution Install installation directory.
3. Delete the TDI installation directory. Optionally, delete the TDI Solutions Directory as well.

To manually uninstall on a UNIX operating system:

1. Uninstall the Deployment Engine Update Installer (DEUI) using the following command:  
`<DEUI_install_dir>\uninst\uninst`
2. Remove SI:
  - Remove IBM Solution Install by running the `setnev` command from the IBM Solution Install directory.
  - From any directory, run the following command:  
`si_inst.sh -r`
  - To confirm that IBM Solution Install has been uninstalled, run the following command to verify that the IBM Solution Install directory no longer exists.
    - `ls /usr/ibm/common`
    - `ls /var/ibm/common`
3. Delete the TDI installation directory. Optionally, delete the TDI Solutions Directory as well.

## ikeyman file needs executable permissions on HP-UX and Solaris operating systems

On HP-UX and Solaris operating systems, the `ikeyman` file requires executable file permissions; for example, 555. The `ikeyman` file is located in the `jre/bin` directory.

## Unable to migrate Cloudscape System Store of TDI 6.0 to TDI 6.1.

These conditions are symptoms of a failed migration from Cloudscape™ System Store 6.0 to Cloudscape System Store 6.1.

- The TDISysStore folder is empty.
- Unable to access TDI 6.0 System Store data.
- Installer failed with message similar to: Unable to migrate Cloudscape Database.

The migration failed because the Cloudscape Database could not be migrated by the installer.

TDI 6.1 uses Derby (Cloudscape v 10) drivers that are not compatible with previous versions of Cloudscape. Because TDI 6.0 uses Cloudscape version 5.1 as its System Store, Cloudscape must be migrated to a Cloudscape version 10 database in 6.1.

To migrate to Cloudscape version 10, you need the migrateCS script shipped with TDI 6.1. This script is located in the following directory:

`<Install_dir>/tools/CSMigration`

To migrate your older Cloudscape database, invoke the migrateCS script as follows:

```
migrateCS <oldCSdirectoryDB> <newCSdirectoryDB>
```

For example, if your old Cloudscape DB is in the E:\MyDB directory, and you wish to create a new one in the E:\TDI61\MyDB\_10 directory, you would run the following command:

```
migrateCS E:\MyDB E:\TDI61\MyDB_10
```

**Note:** Note: The MyDB\_10 folder will be automatically created by the script. It must not exist before invoking the script.

---

## Known Limitations

### Glibc package 2.3 or higher required for installation on Linux operating systems

When installing IBM Tivoli Directory Integrator 6.1.1 (TDI) on a Linux operating system, the glibc package must be at level 2.3 or higher.

To determine the level of the glibc package, run the following command:

```
rpm -qa|grep glibc
```

### Maintenance Level 3 required for installation on an AIX 5.3 operating system

Make sure that Maintenance Level 3 has been applied before installing IBM Tivoli Directory Integrator 6.1.1 on an AIX 5.3 operating system.

### Incorrect text emphasis when installing TDI on a Windows operating system in Simplified Chinese

During TDI installation on a Windows operating system in Simplified Chinese, some text strings in normal text should be in bold text.

## Some messages display when installing TDI 6.1 using the -console option on an HP-UX operating system

These messages might display when you install TDI 6.1 using the -console option on an HP-UX operating system:

```
rm: java not removed. Text file busy
rm: directory PA_RISC2.0 not removed. Directory not empty
rm: directory bin not removed. Directory not empty
rm: libhpi.sl not removed. Text file busy
rm: directory native_threads not removed. Directory not empty
rm: libjvm.sl not removed. Text file busy
rm: directory server not removed. Directory not empty
rm: libjava.sl not removed. Text file busy
rm: libnet.sl not removed. Text file busy
rm: libnio.sl not removed. Text file busy
rm: libverify.sl not removed. Text file busy
rm: libzip.sl not removed. Text file busy
rm: directory PA_RISC2.0 not removed. Directory not empty
rm: directory lib not removed. Directory not empty
rm: directory jre not removed. Directory not empty
rm: directory _bundledJRE_ not removed. Directory not empty
rm: directory /tmp/istemp8353117173137 not removed. Directory not empty
```

These messages do not cause the installer to fail. You can ignore these messages.

## Some messages display when uninstalling TDI 6.1 using the -console option on Windows and AIX operating systems

Messages similar to these could display when you uninstall TDI 6.1 using the -console option on Windows and AIX operating systems:

Windows:

```
Additional class path file not found: /tmp/istemp258274159235052/_bundledJRE_/jre/lib/ext/gskikm.jar
Additional class path file not found: /tmp/istemp258274159235052/_bundledJRE_/jre/lib/ext/oldcertpath.jar
Additional class path file not found: /tmp/istemp258274159235052/_bundledJRE_/jre/lib/ext/ibmjcefpis.jar
Additional class path file not found: /tmp/istemp258274159235052/_bundledJRE_/jre/lib/ext/ibmjseprovider2.jar
Additional class path file not found: /tmp/istemp258274159235052/_bundledJRE_/jre/lib/ext/ibmpkcs11impl.jar
Additional class path file not found: /tmp/istemp258274159235052/_bundledJRE_/jre/lib/ext/jaccess.jar
Additional class path file not found: /tmp/istemp258274159235052/_bundledJRE_/jre/lib/ext/indicim.jar
Additional class path file not found: /tmp/istemp258274159235052/_bundledJRE_/jre/lib/ext/dumpfmt.jar
Additional class path file not found: /tmp/istemp258274159235052/_bundledJRE_/jre/lib/ext/ldapsec.jar
Additional class path file not found: /tmp/istemp258274159235052/_bundledJRE_/jre/lib/ext/dtfj.jar
Additional class path file not found: /tmp/istemp258274159235052/_bundledJRE_/jre/lib/ext/svcdump.jar
```

AIX:

```
cat: 0652-050 Cannot open /tmp/istemp332024160032502/chunk2.
rm: /tmp/istemp332024160032502/chunk1: A file or directory in the path name does not exist.
rm: /tmp/istemp332024160032502/chunk2: A file or directory in the path name does not exist.
bash#
```

These messages do not cause the uninstaller to fail. You can ignore these messages.

## **Debug statements created when uninstalling TDI 6.1 using the -console option on UNIX operating systems**

Debug statements might display when you uninstall TDI 6.1 using the -console option on Windows and AIX operating systems. These statements do not cause the uninstall to fail.

## **Product name does not appear following uninstallation of TDI 6.1 using the -console option**

Following uninstallation using the -console option, the following message might appear:

```
{0} was successfully uninstalled from your computer
```

This message should read:

```
IBM Tivoli Directory Integrator was successfully uninstalled from your computer
```

This error does not cause the uninstallation to fail.

## **Migration from TDI 6.0 to TDI 6.1 on the HP-UX 11iv2 operating system is not supported**

TDI 6.0 does not support the HP-UX 11iv2 operating system. Because of this, migration from TDI 6.0 to TDI 6.1 is not supported on HP-UX 11iv2 (11.23) PA-RISC platforms.





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## Chapter 4. Configuration Editor

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### Troubleshooting the Config Editor

The Config Editor (CE) is a graphical interface that allows you to create, test and debug your integration solutions. Configs are created and maintained in the Config Editor and deployed with the Server.

The following chapter describes some problems you might encounter when using the Config Editor and suggests some workarounds.

#### **Config Creation Save As command not working properly**

This error occurs when the **Save As** command fails to save Autostart and Logconfig information in the Config file.

To work around this problem, use the shell copy command for your operating system to save Autostart and Logconfig information.

#### **Locking of parameter file**

If you use Config Editor to open the external parameter file the file might become locked.

To work around this problem, do not use Config Editor to open the external parameter file.

#### **Keyboard shortcuts might not work if JAWS is configured**

The left navigation pane of Config Editor provides a tree view of the current configuration, as well as all the current AssemblyLines, EventHandlers, Connectors, and so forth. When JAWS is configured for TDI, keyboard shortcuts in the left Config Editor pane might not work properly. To work around this problem, use the mouse to obtain focus on the required component or components in the left Config Editor pane.

#### **Error occurs when opening, closing or creating a Config file if JAWS is configured**

When JAWS is configured for TDI, an error dialog box might appear when you open, close or create a Config file in the Config Editor. This error does not cause any JAWS or TDI malfunction, and you can safely close the pop-up error dialog box.

#### **Drop-down elements in Config Editor do not have bottom border line the first time they are used**

When you select a drop-down menu in the CE, the horizontal line below the element does not display the first time you activate it. When you select the same drop-down menu for the second time, the horizontal line at the bottom appears.

## Resize Config Editor window if Password Store menu does not appear

The Password Store menu might not appear if the Config Editor window is too small. If the Password Store menu does not appear, resize the window to be bigger. The menu will reappear.

---

## Known Limitations

### Alignment of text boxes and buttons slightly off on Config window for ScriptConnector

On the **Config** tab of a ScriptConnector, the **External Files** text box is smaller than the **Include global scripts** text box. The boxes should be the same size. Additionally, the **Select . . .** button is smaller than the **Add Files** button. The buttons should also be the same size.

### Menu truncates the first time Inherit from: ibmdi.CSV button is clicked

Clicking **Inherit from: ibmdi.CSV** on a CSV Parser's **Config** tab launches the **Select** window. The first time you click **Inherit from: ibmdi.CSV**, the menu on the **Select** window truncates.

### Slight truncation of column names in Simplified Chinese on Windows 2003 operating systems

There might be a slight truncation of Config Editor column names in Simplified Chinese on Windows 2003 operating systems.

## IBM JavaScript limitations

The following sections describe limitations you might encounter when using IBM JavaScript™.

### java.lang.OutOfMemoryError: Failed to fork OS thread

This section explains the

`java.lang.OutOfMemoryError: Failed to fork OS thread`

error. This error occurs when thousands of threads are started in very quick succession (almost simultaneously). The error indicates that the upper limit on the number of concurrent threads for the JVM has been reached. Normally this error occurs when a Javascript loop starts thousands of threads in a very short period of time. This error should not occur in normal conditions in which TDI solutions usually operate. You can avoid this error by inserting a very small delay between starting successive threads (even as small as 1 millisecond). This delay can cause performance to decrease a little, but the error would be gone.

### String representations of numbers not represented in exponential format

String representations of numbers do not use exponential format. For example, the following string:

```
String(-100000000000000000000)
```

yields the following results:

```
"-100000000000000000000"
```

### **Package and class references do not return string values**

Package and class references do not return string values. For example, the following reference:

```
main.logmsg ("String: " + java.lang.String);
```

results in an exception.

### **Date constructors cannot take values higher than the maximum integer value**

Date constructors that use numeric values higher than 2.32 wrap and return the wrong date value.

### **All comparisons of prototypes return false**

Comparisons of prototypes return false; for example:

```
Math.__proto__ == Object.prototype --> false
```

### **Arrays with high numeric values truncate**

Creating an array with a numeric value higher than  $2^{32}$  results in a truncated value and a smaller array than requested.

### **Sandbox not supported with connectors that return nonserializable data**

Nonserializable data returned cannot be stored in a database. For this reason, Sandbox is not supported for connectors that return this kind of data.

### **Variable override of standard types allowed**

IBM JavaScript allows variables to override standard types; for example, the following string:

```
STRING = ""; new STRING()
```

does not result in an exception.

### **Declaring two or more functions on same line allowed**

IBM JavaScript allows you to declare more than one function on the same line.

### **Redeclared variable does not retain the previous value**

Redeclaring a variable does not retain the previous value, even if the declaration is unspecified; for example:

```
a = 10; var a; a --> null/undefined
```



---

## Chapter 5. Troubleshooting the Administration and Monitoring Console

---

### Administration and Monitoring Console (AMC) Problem Determination

#### Unable to delete TDI server or Config view

If AM rules are configured for a Config View, such that one rule references some other rule, the result is that the **Config View** and the corresponding **Server** cannot be deleted. A rule can reference another rule if an **Execute AM Rule** action or an **Enable/Disable AM rule** action is associated with the rule. To delete the Config view and the server, perform the following steps:

1. On the AM configuration screen, delete all AM rules for the Config view you want to delete.
2. On the Manage Config view window, delete the Config view.
3. On the Manage TDI Server window, delete the server.

#### AMC scripts might fail if ksh not on UNIX operating systems

The createProfile.sh script makes use of ksh. If ksh is not installed on the Unix operating system, the script may fail.

If the script fails, you can run the createProfile command in the script. The createProfile the command is:

```
"$APPSRV_INSTALLROOT/bin/wasprofile.sh" -create -profileName amcprofile -profilePath
"$APPSRV_INSTALLROOT/profiles/amcprofile" -templatePath "$APPSRV_INSTALLROOT/profileTemplates/defaultTemplate.xml" -nodeName DefaultNode -hostName localhost -cellName DefaultNode
```

Replace the \$APPSRV\_INSTALLROOT with the path of AppSrv directory.

#### Unable to start AMC via the start\_tdiamc script

If the TDI server error log contains the following exception it could mean that a port required by WAS is already in use:

```
ORBX0390E: Cannot create listener thread. Exception=[> java.net.BindException: Address already in use]
```

This error might also occur if you have Google Web Accelerator installed on the machine from which you are attempting to start the Administration and Monitoring Console (AMC). You may need to uninstall Google Web Accelerator to resolve this problem.

#### Unable to deploy AMC .war file on Red Hat Enterprise Linux s390 operating system

When running the WAS **createProfile.h** and **start\_tdiamc.sh** commands on a Red Hat Enterprise Linux s390 operating system, you might encounter the following error:

```
JVMG080: Cannot find class com/ibm/jvm/Trace
JVMXM012: Error occurred in final diagnostics initialization
Could not create JVM.
```

To workaroud this problem, disable the Java Just-In-Time (JIT) compiler.



---

## Chapter 6. Components

This chapter contains troubleshooting information about IBM Tivoli Directory Integrator (TDI) components.

---

### Components overview

Components abstract away the technical details of the data systems, platforms and formats that you want to work with, allowing you to integrate your information across various data sources.

IBM Tivoli Directory Integrator provides you with a number of components types:

- Connectors
- Function Components
- EventHandlers
- Parsers

**Note:** The concept of EventHandlers is deprecated with this release; future versions of IBM Tivoli Directory Integrator will not contain any Eventhandlers. Use AssemblyLines with Server Mode connectors instead.

The following sections contain troubleshooting information for each type of component.

---

### Connectors

Connectors help you to build your AssemblyLine. Each one is designed to tie a specific data source to your data flow.

#### Connectors whose libraries do not ship with TDI

Some third-party libraries for TDI Connectors must be obtained from their proprietary sources, and do not ship with TDI. Using the Configuration Editor (CE), you can configure Connectors. However, if a Connector is missing its required library (.jar) file, the Connector in the CE GUI looks as if it supports *all* Connector modes. For example, a Connector such as the `ibmdi.DominoChangeDetectionConnector` may support Iterator mode only, but if you configure the Connector in the CE with the required .jar file missing, it will show as supporting all other modes, such as Lookup, Update, Delete, etc. To avoid this problem, you must obtain and supply (to TDI) the library for these Connectors. The following Connectors have libraries that do not ship with TDI. Obtain the .jar files for these Connectors before attempting to configure them in the CE GUI:

- `ibmdi.DominoChangeDetectionConnector`
- `ibmdi.DominoUsersConnector`
- `ibmdi.Notes`
- `ibmdi.SapALEIDocConnector`
- `ibmdi.TAM`

For information on how to use Connectors, see the *IBM Tivoli Directory Integrator 6.1.1 Reference Guide*.

## BTree Connector

### **CTGDIS477W Unable to recover free-pointer list**

"CTGDIS477W Unable to recover free-pointer list." is received when attempting to use BTree connector in AddOnly mode to create a BTree database file.

**Cause:** The BTree Connector excels at handling small lists, but breaks down when sorted lists are entered containing a few thousand entries and gives a "CTGDIS477W Unable to recover free-pointer list." warning. Essentially, the BTree implementation is not balanced, and hence is not efficient for large lists, especially pre-sorted ones.

**Solution:** Using the System Store Connector ("ibmdi.PESConnector") is a better option when large number of entries are needed. The System Store Connector supports all databases supported by the System Store including CloudScape and DB2®. And this connector relies on the underlying SQL Engine of the System Store to provide read/write access functionality. Since most Database provide robust and persistent data, it is a much better option for large data lists.

## CommandLine Connector

### **AssemblyLine AssemblyLines/CommandLine failed with error: CreateProcess: dir error=2**

If you are running Windows, and trying to execute an internal shell command (such as dir or any command listed by the command), you might have forgotten to prepend cmd /c . For example, the correct syntax for the dir command is cmd /c dir.

### **DOS-encoded output on Windows operating systems**

When you use the Command Line Connector to run a program on a Windows operating system, the output from the program might be encoded using a DOS code page. This can cause unexpected results, because Windows programs usually use a Windows code page. Because a DOS code page is different from a Windows code page, it might be necessary to set the Character Encoding in the Command Line Connector's Parser to the correct DOS code page for your region; for example: cp850.

## JDBC Connector

### **COM.ibm.db2.jdbc.DB2Exception: CLI0616E Error opening socket. SQLSTATE=08S01**

A Server Service named DB2 JDBC Applet Server is required to be running on the Window machine where the DB2 Server is running. If The DB2 JDBC Applet Server service is not running you will get this message. Refer to the FAQ that has more information on connecting to a DB2 server.

### **CLI0616E Error opening socket**

The remote DB2 server is not configured for DB2 net driver communications. Refer to the FAQ that has more information on connecting to a DB2 server.

### **java.sql.SQLException: ORA-01830: date format picture ends before converting entire input string**

If you are getting this when inserting/updating date-fields, you are probably passing the Oracle driver dates as a string that does not match what the driver expects. Problem Scenario: (More detailed information about a situation where this can happen, skip to the Suggestion section if not interested) I have an



AssemblyLine with a JDBC Connector in addonly mode which writes some records to an Oracle table with a field of type DATE. Normally I would insert something like;

```
INSERT INTO table1 values (to_date('2005/03/01 10:05:13','YYYY/MM/DD HH:MI:SS'))
```

as part of my INSERT query. However with TDI, I can only do something like this in the output map;

```
ret.value = '2005/03/01 10:05:13';
```

but Oracle fails with the following error; java.sql.SQLException: ORA-01830: date format picture ends before converting entire input string

Suggestions: When dates are supplied as strings (which is what you do here) the TDI JDBC Connector will attempt to parse the data using the pattern provided in its **Date Format** configuration parameter, as explained in the reference guide. To debug your problem: What is your Data Pattern configuration? Find out how TDI sees this field (check in the schema tab of the Connector). A fair guess is that your JDBC driver will convert the Oracle Data type into a java.sql.Timestamp or java.sql.Date type (and note that there are differences between java.util.Date and java.sql.Date, in terms of precision for example). In case, for example, of a java.sql.Timestamp type, try specifying

```
ret.value = java.sql.Timestamp(java.util.Date().getTime());
```

and see if this helps. Then you will be able to use

```
ret.value = java.sql.Timestamp(system.parseDate(work.getString("yourDate"),
"yyyyMMddHHmmssz").getTime());
```

If none of the above helps, turn the Connector into detailed log mode and see whether the Connector is able to get the schema from the database. If not, the Connector does not use prepared statements which makes it less efficient and more error-prone - so you'll have to make sure that the Connector's **schema** configuration parameter is set correctly.

### Handling of CLOB/BLOB (Character/Binary large object)

If your attributes are of CLOB/BLOB type, the Connector does not handle them on output. On input, you can do something like

```
desc = conn.getObject("yourCLOBAttribute"); ret.value = desc.getSubString(1,desc.length());
```

but it is slow and clumsy. Also it will only work if the JDBC driver actually returns a java.sql.Blob or java.sql.Clob interface object.

### Disabling Prepared Statement can result in an exception for queries that exceed the maximum length value

If Prepared Statement is disabled, the JDBC connector attempts to construct a complete SQL query. If the database has a restriction on the length of the SQL query, and the query exceeds the maximum length value, an exception is thrown. This is a common problem with BLOB/binary data types.

### Use ojdbc14.jar to transfer BLOB data from table to another in an Oracle database

Use ojdbc14.jar instead of using classes12.jar when using the JDBC Connector to transfer BLOB data from one table to another table in an Oracle database,

**InitConnectors: com.ibm.db2.jcc.a.SqlException: The version of the IBM Universal JDBC driver in use is not licensed for connectivity to QDB2/<OS> databases.**

To connect to this DB2 server, please obtain a licensed copy of the IBM DB2 Universal Driver for JDBC and SQLJ.

**Cause:** TDI 6.0 comes with updated Cloudscape and the driver needed for it, it also comes with a license file which is needed to connect to Cloudscape, but not to other DB2 databases.

**Solution:** As of DB2 UDB v8.1.2 the Universal JDBC driver requires a license JAR file to be in the CLASSPATH along with the db2jcc.jar file. Here are the names of the required license JAR files:

- For Cloudscape Network Server V5.1: db2jcc\_license\_c.jar
- For DB2 UDB V8 for Linux, UNIX, and Windows servers: db2jcc\_license\_cu.jar
- For DB2 UDB for iSeries™ and z/OS® servers (provided with DB2 Connect™ and DB2 Enterprise Server Edition): db2jcc\_license\_cisuz.jar

An appropriate location for this license file to be placed in a TDI system would be, <TDI Install Directory>\\_jvm\jre\lib\ext directory.

**See also:** Overview of Java Development in DB2 UDB for Linux UNIX

## Domino Users Connector

**java.lang.Exception: Connector Notes Thread not alive. Cannot perform.**

```
at com.ibm.di.connector.dominoUsers.DominoUsersConnector.executeCommand(Unknown Source)
at com.ibm.di.connector.dominoUsers.DominoUsersConnector.initialize(Unknown Source)
at com.ibm.di.server.AssemblyLineComponent.initialize(Unknown Source)
at com.ibm.di.server.AssemblyLine.initConnectors(Unknown Source)
at com.ibm.di.server.AssemblyLine.msInitConn(Unknown Source)
at com.ibm.di.server.AssemblyLine.executeMainStep(Unknown Source)
at com.ibm.di.server.AssemblyLine.executeMainLoop(Unknown Source)
at com.ibm.di.server.AssemblyLine.executeMainLoop(Unknown Source)
at com.ibm.di.server.AssemblyLine.executeAL(Unknown Source)
at com.ibm.di.server.AssemblyLine.run(Unknown Source)
```

**Cause:** The exception can be caused by a wrong directory or misspelling in the LD\_LIBRARY\_PATH set within the "ibmditk" or "ibmdisrv" startup files. (For example, LD\_LIBRARY\_PATH=/opt/lotus/notes/latest/linux.)

**Solution:** Add the following two lines to the shell script ( "ibmditk" or "ibmdisrv") after the PATH definition and before the startup line:

```
LD_LIBRARY_PATH=<Domino Binary>
export LD_LIBRARY_PATH
```

Where <Domino Binary> is the location of the Domino Binary folder.

**Example file: ibmdisrv.sh**

```
#!/bin/sh
start up script for Directory Integrator v6.1 for Unix platforms
JRE_PATH=_jvm/bin
OS=`uname`
if [$OS = "Linux" -o $OS = "AIX"];then
JRE_PATH=_jvm/jre/bin
fi
```

```

PATH="/opt/IBM/ITDI61/$JRE_PATH:$PATH:/opt/lotus/notes/latest/linux:/local/notesdata:"
export PATH

LD_LIBRARY_PATH=/opt/lotus/notes/latest/linux:
export LD_LIBRARY_PATH

#
Only set TDI_SOLDIR if it hasn't been set already in caller's shell
#
if [-z "$TDI_SOLDIR"]; then
TDI_SOLDIR="."
fi

#
-s overrides TDI_SOLDIR env
#
solnext=0
for s
do
case $s in
-s) solnext=1;;
-s*) TDI_SOLDIR="`echo $s | cut -c3-`";
-*) solnext=0;;
*) if [$solnext -eq 1]; then
TDI_SOLDIR=$s
solnext=0
fi;;
esac
done

if [-n "$TDI_SOLDIR"]; then
cd "$TDI_SOLDIR"
fi

Check solution directory files
if [! -f IDILoader.jar -a ! -f log4j.properties]; then
echo Copying log4j.properties to solution directory
cp -f "/opt/IBM/ITDI61/log4j.properties" log4j.properties
fi

"/opt/IBM/ITDI61/$JRE_PATH/java" -Dos.name=Linux -Djava.library.path=$PATH \
-Dlog4j.configuration=file:log4j.properties" -jar "/opt/IBM/ITDI61/IDILoader.jar" \
com.ibm.di.server.RS "$@"

```

**See also:** IBM Tivoli Directory Integrator: Post Release 6.0 Issue

## Windows Users and Groups Connector

### **java.lang.UnsatisfiedLinkError: can't find library NTMetaData (libNTMetaData.so)**

This error occurs when you attempt to use the Windows Users and Groups Connector on a non-Windows platform. The Windows Users and Groups Connector is supported on Windows platforms only.

## SAP Connection Suite

### **JCO.classInitialize(): Could not load middleware layer 'com.sap.mw.jco.rfc.MiddlewareRFC'JCO.nativeInit()**

After installation of the sapjco 2.1.7 SAP interface library, connections still fail. When the connector establishes a connection to the R/3 system, you get the aforementioned JCO.classInitialize exception.

**Cause:** You are unable to start 32-bit programs from SAP Release 6.40 (or higher) because Microsoft® runtime DLLs are missing (MSCVR71.dll and MSCVP71.dll).

**Solution:** Refer to SAP Note 684106 for a procedure as to how to fix this problem.

---

## Function Components

They are modelless components that facilitate wrapping of custom logic and external methods. Function components are not datasource specific.

Currently there is no troubleshooting information about specific Function Components.

---

## Event Handlers

EventHandlers extend the functionality of AssemblyLines and Connectors by providing a framework to control how they are run.

Currently there is no troubleshooting information about specific EventHandlers.

**Note:** The concept of EventHandlers is deprecated with this release; future versions of IBM Tivoli Directory Integrator will not contain any Eventhandlers. Use AssemblyLines with Server Mode connectors instead.

---

## Parsers

Parsers are used in conjunction with a transport Connector to interpret or generate the content that travels over the Connector's byte stream.

### LDIF Parser

#### Performance degradation

The TDI 6.1.1 LDIF Parser shows some performance degradation in terms of execution time compared to the TDI 6.0 LDIF Parser. This is due to underlying JVM changes in TDI 6.1.1, in which certain APIs experience a performance drop when working with very huge data sets.

The degradation is dependent on various considerations such as hardware, RAM, processor speed, and Disk IO.

---

## Chapter 7. Password Synchronization Plugins

This chapter contains problem determination information regarding the IBM Tivoli Directory Integrator 6.1.1 Password Synchronization Plugins. For general information about the Plugins, see *IBM Tivoli Directory Integrator 6.1.1: Password Synchronization Plug-ins Guide*.

---

### Verifying registry settings on Windows

On installation of the password plug-in on Windows, when choosing the MQe as the password store, the \*class\* registry entry is set to `com.ibm.di.plugin.mqe.store.MQeNTPasswordStore`. According to the documents, it should be `com.ibm.di.plugin.idipwsync.IDIPasswordSynchronizer`.

#### Cause

The `pluginsguide.pdf` mentions these items:

The IBM Tivoli Directory Integrator Password Synchronization Plug-ins Installer creates the following registry entries in the key folder:

HKEY\_LOCAL\_MACHINE\SOFTWARE\IBM\Tivoli Directory Integrator 6.1\Windows Password Synchronizer

The following keys should exist with the corresponding value:

**Class: REG\_SZ:** `com.ibm.di.plugin.idipwsync.IDIPasswordSynchronizer`  
**Classpath: REG\_SZ:** `"c:\<install_directory>"`  
**Java:REG\_SZ:** `"c:\<install_directory>\jvm\jre\bin\java.exe"`

#### Solution

1. When the "Storage Method" is chosen as "WebSphere MQ Everyplace<sup>®</sup>", it sets the class in registry settings as `"com.ibm.di.plugin.mqe.store.MQeNTPasswordStore"`.
2. When the "Storage Method" is chosen as "LDAP", it sets the class in registry settings as `"com.ibm.di.plugin.idipwsync.IDIPasswordSynchronizer"`.



---

## Chapter 8. Known limitations and general troubleshooting

This chapter contains miscellaneous problem determination information.

---

### Known limitations

#### JVM Verification fails while installing TDI 6.1 on some slower platforms

Verification of JVM fails during installation on some slower platforms. Failure usually results because the verification takes more time than the installer expects it to take.

To fix this problem, launch the installer on the command line. Add the following switch to the invocation of the platform-dependent installer.

Type: `-is:javatimer`

Use a longer time span to give the verification step more time on slower platforms. Specify the time span in seconds. The syntax of this parameter is:

`-is:javatimer <seconds>`

**Note:** Note that this is not a command, but a parameter that the user needs to specify along with the TDI installation executable.

#### SSL connects with expired self signed certificates

The TrustManager shipped with IBM JRE 1.5.0 verifies a certificate chain up to the trusted certificate; it does not verify the trusted certificate itself. If the self-signed certificate is the trusted certificate, CERTPATH will not examine it to see whether or not the certificate is expired. Because CERTPATH does not check for self-signed certificate expiration, an SSL connection can be established with an expired certificate.

The TrustManager shipped with IBM JRE 1.4.2 verifies the entire certificate chain up to and including the trusted certificate. As a result, if an expired certificate is encountered, an exception is thrown. If you are using IBM JRE 1.5.0, but want to revert to 1.4.2 behavior regarding expired certificates, make the following changes.

In the `java.security` file of the Client JVM, change the following entry:

```
ssl.KeyManagerFactory.algorithm=IbmX509
ssl.TrustManagerFactory.algorithm=PKIX
```

to

```
ssl.KeyManagerFactory.algorithm=IbmX509
ssl.TrustManagerFactory.algorithm=IbmX509
```

If the SSL Client-Auth value is set to True, make the same change in the Server JVM's `java.security` file.

## Programmatically disabling components

To disable components you will need to use the Initial Work Entry (IWE) to pass a control flag. If your AssemblyLine has an Iterator, store the value in a script variable and zero out the Work Entry; otherwise the Iterator will not engage on the first cycle.

For example, to disable a branch, you might scrip the following lines:

```
var branchEnabled = work.getString("enableBranch"); task.setWork(null);
```

Then set your Branch to "Match All" and include a scripted condition like this:

```
ret.value = branchEnabled.equals("yes");
```

If you intend to use IWE, you must you an extra attribute that you must clear out before continuing.

Disabling Connectors is difficult and requires modifying the Config object before starting the AssemblyLine. If the Connector is not disabled before you start the AssemblyLine, it will be initialized even if you disable it in the prolog before initialization. Modifying the in-memory Config object is possible, but not advised. An alternative is to set your Connector to passive, but this will not help if you are trying to avoid an initialization completely.

## "gg" script not required for execution of the pwsync\_racf example

In the *<TDI\_Install>/examples/pwsync\_racf/racf\_decrypt.xml* file, there is a script, gg, in the **Scripts** folder. The gg script is not used in the example and is not required for execution of the example.

## Specifying multiple Configs to the ibmdisrv command

The -c switch does not work with multiple filenames.

### Cause

The -c switch has been designed so that a single configuration filename can be passed to the ibmdisrv command. If you do not specify the -d switch, only one configuration file is allowed.

### Solution

*ibmdisrv* cannot be used to specify the AL's and EH's (using -r and the -h switch respectively) when the -c (config file) option specifies multiple Configs. Since the -r and -h options are not operative while loading multiple Configs, you have to either use the autostart option or use -d and start the AL or EH via the AMC Interface.

### Example:

(With the ALs and EHs put in the Autostart folder)

```
./ibmdisrv -d -c C1.xml,C2.xml
```

---

## General troubleshooting

The following sections describe general problems and solutions in IBM Tivoli Directory Integrator:



## java.io.IOException: The pipe has been ended.

The message "The java class is not found: Files\IBM\TDI\V6.1\IDILoader.jar com.ibm.di.server.RS - rAssemblyLines.allied -SC:\Documents" will be found in the TDI Configuration Editor Assemblyline output or in the ibmdisrv server log "<TDI Installation>\logs\ibmdi.log>".

### Cause

This is a problem with the PATH variable which TDI references from the OS. TDI sets the PATH variable in both the ibmditk.bat and ibmdisrv.bat, and ends the assignment with the system path - %PATH%. If the customer's system path ends with a "\", this will cause this error to occur.

### Solution

The reason the PATH variable possibly is misbehaving is because the last entry might have the PATH variable finishing with a "\" , instead of ";".

Hence,

```
PATH=C:\SomeProgram\bin;C:\TDI → This is OK.
PATH=C:\SomeProgram\bin;C:\TDI; → This is OK.
PATH=C:\SomeProgram\bin;C:\TDI\; → This is OK.
PATH=C:\SomeProgram\bin;C:\TDI\ → This is not OK.
```

## Error occurs when an encrypted password exceeds the size of the table column in which the password is stored

An error similar to the example occurs when an encrypted password exceeds the size of the column where the password is stored:

```
" ORA 12899 value too large for column "System".TESTPASSWD"."test1"(actual 178 , maximum 50)
```

To work around this problem, ensure that the tables used to store passwords are sufficiently large.

## AssemblyLine Flow

### Connector in Lookup mode with no match in a loop component causes error

Normally a Connector in Lookup mode expects only one hit, and if more than one hit occurs, you are given the opportunity to remedy the situation using **error**-hooks On Multiple Entries or On No Match. Connectors in the Loop Component behave differently:

- On Multiple Entry is never called.
- On No Match is called only if no match is returned by the Lookup Connector.

If the Lookup Connector finds no entries, the following error occurs:

```
java.lang.Exception: [IF_MgrFound] Entry not found
```

Occasionally a crash also occurs if the exception is not caught.

To work around this error, enable the "No Entry Found" hook without any code in it.

### **Advanced link criteria for a Lookup Connector in a Loop deleted when saving config**

To prevent deletion of advanced link criteria, put your advanced Link Crit in a Connector in your Library that you use in the Loop. Then you will inherit the Link Crit as well.

### **-c switch does not allow you to work with multiple file names**

If you want to use more than one configuration file, you must also specify the -d switch (Run in daemon mode) in addition to the -c switch. If you do not specify the -d switch, only one configuration file is allowed.

## **Memory Leaks**

### **Reinitialization of Connectors**

If you reinitialize Connectors a lot, make sure to use their terminate() method before you call their initialize() method. The classic example is an AssemblyLine starting up but not able to connect to your data source. If the Connector is not terminated before being initialized again, you might leak memory.

---

## **Platform specific problems**

### **IBM Message Queue (MQ) Connector (JMS) on z/OS**

The following issue is for z/OS. An error results if you use the IBM MQ 6.0 and client jars from the MQ 6.0 installation. The following error is reported:

```
javax.jms.JMException: MQJMS2005: failed to create MQQueueManager for '9.182.182.232: at com.ibm.m
```

To avoid the error, use MQ 5.3 library jar files on the JMS Connector machine (z/OS).

When TDI runs on z/OS, the JMS Connector and the System Queue cannot use WebSphere MQ as the JMS provider, because of a limitation in WebSphere MQ (WebSphere MQ doesn't support client code on z/OS).

### **Domino User's Connector running on AIX 5.3 with Domino Server 7.0**

The following issue is for the AIX operating system only.

While running the Local Server Session on AIX, the Domino User's Connector generates an error during initialization.

To avoid the error, use the Domino User's Connector on a different system and connect to the Domino server on AIX using a Local Client Session.

---

## Chapter 9. Troubleshooting scenarios

This chapter contains some troubleshooting scenarios you might encounter and provides some solutions.

---

### Log files not showing up or showing up after only the second run of the server

If log files are not showing up, the problem is probably that log4j.properties does not exist in the solution directory before the server is run. The log4j.properties is one of the places where (default) log-files location is configured, so you might want to check out the file's content as well. For 6.0 this file is created by the server/ce batch-files that you start TDI with. If you are running TDI as a Windows service, make sure that you have followed the instructions on how to run TDI as a Windows service.



---

## Appendix A. Support information

This section describes the following options for obtaining support for IBM products:

- “IBM Support Assistant plug-in”
- “Searching knowledge bases” on page 36
- “Obtaining fixes” on page 36
- “Contacting IBM Software Support” on page 37

---

### IBM Support Assistant plug-in

The IBM Support Assistant (ISA) is a free local software serviceability workbench that helps resolve questions and problems with IBM software products. It is a stand-alone application that can be installed on any workstation and then enhanced by installing plug-in modules for IBM products.

The basic features of ISA are:

- **Concurrent Search tool** – This searches across the bulk of IBM documentation as well as product infocenters and returns the results categorized by source for easy reviews.
- **Product Information feature** – This has links to the product home page, support page, news groups, forums and other links relevant to the product.
- **Service Feature** - This consists of a data collection tool and a problem submission tool. There are two types of data collection tools.

The first type is the System Collector which is provided by ISA and gathers general information from your operating system, registry, etc.

The second type is the product specific tool and is responsible for collecting relevant logs and properties files for the particular problem situation. A portable text based version of this collector can also be defined. The portable text based version of the collector can be used to collect diagnostic data from a different computer which does not have an installation of ISA.

The problem submission tool helps in the creation and submission of problem reports. To log into the tool, called ESR (Electronic Service Request), you need the following information:

- IBM ID
- IBM password
- IBM customer number
- Country or region

### IBM Support Assistant for Tivoli Directory Integrator (TDI)

These are the steps to use IBM Support Assistant to generate problem records for TDI:

1. Download ISA version 3.0.
2. Open ISA, select the **Updater** tab and then select the **New Products and Tools** tab.
3. Select IBM Tivoli Directory Integrator 6.1.1 from the available plug-ins list and install TDI.
4. Restart ISA to start using the tool for TDI.

## Data Collection for TDI

Go to the ISA **Service** tab ->**Collect data** tab-> IBM Tivoli Integrator 6.1.1.

To use this TDI specific data collector, you must specify the TDI Installation Directory (and Solution directory if relevant). The TDI data collector gathers all logs from the logs folder and all property, xml and rules files from the etc folder. It also lists all jars the user has in the jars folder as well as the version of each of the TDI components. If the user has installed the default server shipped with TDI, all logs and property files related to AMC are also collected.

IBM Support Assistant can be downloaded from <http://www-306.ibm.com/software/support/isa/>

A useful demo on ISA and its features can be found at <http://publib.boulder.ibm.com/infocenter/ieduasst/v1r1m0/index.jsp>

---

## Searching knowledge bases

If you have a problem with your IBM software, you want it resolved quickly. Begin by searching the available knowledge bases to determine whether the resolution to your problem is already documented.

### Search the information center on your local system or network

IBM provides extensive documentation that can be installed on your local computer or on an intranet server. You can use the search function of this information center to query conceptual information, instructions for completing tasks, reference information, and support documents.

### Search the Internet

If you cannot find an answer to your question in the information center, search the Internet for the latest, most complete information that might help you resolve your problem. To search multiple Internet resources for your product, expand the product folder in the navigation frame to the left and select **Web search**. From this topic, you can search a variety of resources including:

- IBM technotes
- IBM downloads
- IBM Redbooks™
- IBM developerWorks®
- Forums and newsgroups
- Google

---

## Obtaining fixes

A product fix might be available to resolve your problem. You can determine what fixes are available for your IBM software product by checking the product support Web site:

1. Go to the IBM Software Support Web site (<http://www.ibm.com/software/support>).
2. Under **Products A - Z**, select your product name. This opens a product-specific support site.

3. Under **Self help**, follow the link to **All Updates**, where you will find a list of fixes, fix packs, and other service updates for your product. For tips on refining your search, click **Search tips**.
4. Select the name of a fix to read the description and optionally download the fix.

To receive weekly e-mail notifications about fixes and other news about IBM products, follow these steps:

1. From the support page for any IBM product, click **My support** in the upper-right corner of the page.
2. If you have already registered, skip to the next step. If you have not registered, click register in the upper-right corner of the support page to establish your user ID and password.
3. Sign in to **My support**.
4. On the My support page, click **Edit profiles** in the left navigation pane, and scroll to **Select Mail Preferences**. Select a product family and check the appropriate boxes for the type of information you want.
5. Click **Submit**.
6. For e-mail notification for other products, repeat Steps 4 and 5.

For more information about types of fixes, see the *Software Support Handbook* (<http://techsupport.services.ibm.com/guides/handbook.html>).

---

## Contacting IBM Software Support

IBM Software Support provides assistance with product defects.

Before contacting IBM Software Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. The type of software maintenance contract that you need depends on the type of product you have:

- For IBM distributed software products (including, but not limited to, Tivoli, Lotus®, and Rational® products, as well as DB2 and WebSphere products that run on Windows or UNIX operating systems), enroll in Passport Advantage® in one of the following ways:
  - **Online:** Go to the Passport Advantage Web page ([http://www.lotus.com/services/passport.nsf/WebDocs/Passport\\_Advantage\\_Home](http://www.lotus.com/services/passport.nsf/WebDocs/Passport_Advantage_Home)) and click **How to Enroll**
  - **By phone:** For the phone number to call in your country, go to the IBM Software Support Web site (<http://techsupport.services.ibm.com/guides/contacts.html>) and select the name of your geographic region.
- For IBM eServer™ software products (including, but not limited to, DB2 and WebSphere products that run in zSeries®, pSeries®, and iSeries environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, go to the IBM Technical Support Advantage Web page (<http://www.ibm.com/servers/eserver/techsupport.html>).

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

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

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

## Determine the business impact of your problem

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

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

## Describe your problem and gather background information

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

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

## Submit your problem to IBM Software Support

You can submit your problem in one of two ways:

- **Online:** Go to the "Submit and track problems" page on the IBM Software Support site (<http://www.ibm.com/software/support/probsub.html>). Enter your information into the appropriate problem submission tool.
- **By phone:** For the phone number to call in your country, go to the contacts page of the IBM Software Support Handbook on the Web ([techsupport.services.ibm.com/guides/contacts.html](http://techsupport.services.ibm.com/guides/contacts.html)) and select the name of your geographic region.

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



For more information about problem resolution, see [Searching knowledge bases](#) and [Obtaining fixes](#).



---

## Appendix B. Notices

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