

IBM Tivoli Composite Application Manager for WebSphere  
Application Server  
Version 7.2

*Installation and User Guide*





IBM Tivoli Composite Application Manager for WebSphere  
Application Server  
Version 7.2

*Installation and User Guide*



**Note**

Before using this information and the product it supports, IBM Tivoli Composite Application Manager for WebSphere Application Server, read the information in “Notices” on page 183.

This edition applies to Version 7.2 of IBM Tivoli Composite Application Manager for WebSphere Application Server and to all subsequent releases and modifications until otherwise indicated in new editions.

© **Copyright IBM Corporation 2008, 2011.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

---

## About this guide

This guide provides instructions for installing, configuring, using, and troubleshooting IBM® Tivoli® Composite Application Manager for WebSphere® Application Server (ITCAM for WebSphere Application Server).

### Intended audience

This publication is for administrators or users who want to install and use ITCAM for WebSphere Application Server. The publication assumes that readers are familiar with maintaining operating systems, administering IBM WebSphere Application Server, maintaining databases, and general information technology (IT) procedures. Specifically, readers of this publication must have some knowledge of the following topics:

- Operating systems on which you intend to install product components
- IBM WebSphere Application Server
- Internet protocols such as HTTP, HTTPS, TCP/IP, Secure Sockets Layer (SSL), and Transport Layer Security (TLS)
- Digital certificates for secure communication

---

## ITCAM for WebSphere Application Server publications

The following is a list of the publications in the ITCAM for WebSphere Application Server library:

- *IBM Tivoli Composite Application Manager for WebSphere Application Server: Installation and User Guide*  
Provides instructions for installing, configuring, using, and troubleshooting ITCAM for WebSphere Application Server.

### Related publications

The following documentation also provide useful information:

- IBM WebSphere Application Server Information Center  
<http://www-3.ibm.com/software/webservers/appserv/was/library>
- IBM Tivoli Composite Application Manager for Application Diagnostics Information Center  
[http://publib.boulder.ibm.com/infocenter/tivihelp/v10r1/index.jsp?toc=/com.ibm.ccmdb.doc/ccmdb\\_ic.xml](http://publib.boulder.ibm.com/infocenter/tivihelp/v10r1/index.jsp?toc=/com.ibm.ccmdb.doc/ccmdb_ic.xml)
- IBM Support Assistant  
<http://www-306.ibm.com/software/support/isa/index.html?rcss=rtlrrr>

### Accessing terminology online

The IBM Terminology website consolidates the terminology from IBM product libraries in one convenient location. You can access the Terminology website at <http://www.ibm.com/software/globalization/terminology>

## Accessing publications online

IBM posts publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli Information Center website at <http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp>.

The ITCAM for WebSphere Application Server Installation and User Guide is available here: [http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/index.jsp?topic=/com.ibm.itcamfad.doc\\_7101/itcam\\_ecam\\_installation\\_72.pdf](http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/index.jsp?topic=/com.ibm.itcamfad.doc_7101/itcam_ecam_installation_72.pdf)

**Note:** If you print PDF documents on other than letter-sized paper, set the option in the **File** → **Print** window that allows Adobe Reader to print letter-sized pages on your local paper.

## Ordering publications

### About this task

There are several ways to order IBM publications:

- You can order many IBM publications online at the following website:  
<http://www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi>
- You can order by telephone by calling one of these numbers:
  - In the United States: 800-879-2755
  - In Canada: 800-426-4968
- In other countries, contact your software account representative to order IBM publications. To locate the telephone number of your local representative, perform the following steps:
  1. Go to the following website: <http://www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi>
  2. Select your country from the list and click **Go**.
  3. Click **About this site** in the main window to see an information page that includes the telephone number of your local representative.

---

## Accessibility

Accessibility features help users with 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. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface.

For additional information, see Appendix G, “Accessibility,” on page 179.

---

## Tivoli technical training

For Tivoli technical training information, refer to the following IBM Tivoli Education website: <http://www.ibm.com/software/tivoli/education/>

---

## Support information

If you have a problem with your IBM software, IBM provides the following ways for you to obtain the support you need:

- Go to the IBM Software Support website: <http://www.ibm.com/software/support/probsub.html>
- IBM Support Assistant:  
IBM Support Assistant (ISA) is a free local software serviceability workbench that helps you resolve questions and problems with IBM software products. ISA provides quick access to support-related information and serviceability tools for problem determination.

---

## Typeface conventions

This publication uses the following typeface conventions:

### **Bold**

- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as **Tip:** and **Operating system considerations**)
- Keywords and parameters in text

### *Italic*

- Citations (titles of publications, diskettes, and CDs)
- Words defined in text (such as "a nonswitched line is called a *point-to-point line*.")
- Emphasis of words and letters: words as words (such as "Use the word *that* to introduce a restrictive clause." letters as letters (such as "The LUN address must start with the letter *L*.")
- New terms in text, except in a definition list, (such as "a *view* is a frame in a workspace that contains data.")
- Variables and values you must provide (such as "where *myname* represents...")

### **Monospace**

- Examples and code examples
- File names, programming keywords, and other elements that are difficult to distinguish from surrounding text
- Message text and prompts addressed to the user
- Text that the user must type
- Values for arguments or command options

## Tivoli command syntax

The following special characters define Tivoli command syntax:

- [ ] Identifies elements that are optional. Required elements do not have brackets around them.
- ... Indicates that you can specify multiple values for the previous element. Separate multiple values by a space, unless otherwise directed by command information.

If the ellipsis for an element follows a closing bracket, use the syntax within the brackets to specify multiple values. For example, to specify two administrators for the option `[-a admin]....`, use `-a admin1 -a admin2`.

If the ellipsis for an element is within the brackets, use the syntax of the last element to specify multiple values. For example, to specify two hosts for the option `[-h host...]`, use `-h host1 host2`.

- | Indicates mutually exclusive information. You can use the element on either the left or right of the vertical bar.
- { } Delimits a set of mutually exclusive elements when a command requires one of them. Brackets ([ ]) are around elements that are optional.

In addition to the special characters, Tivoli command syntax uses the typeface conventions described in “Typeface conventions” on page v. The following examples illustrate the typeface conventions used in Tivoli command syntax:

- **wcrtpr** `[-a admin]... [-s region] [-m resource]... name`  
 The *name* argument is the only required element for the **wcrtpr** command. The brackets around the options indicate they are optional. The ellipses after the `-a admin resource` option means that you can specify multiple administrators multiple times. The ellipses after the `-m resource` option means that you can specify multiple resources multiple times.
- **wchkdb** `[-o outfile] [-u] [-x] {-f infile | -i | object...}`  
 The `-f`, `-i`, and *object* elements are mutually exclusive. Braces that surround elements indicate that you are including a required element. If you specify the *object* argument, you can specify more than one object.

---

## Variables for directories

This guide refers to the following variables:

- *WebSphere\_home*: the directory where ITCAM for WebSphere Application Server is installed. The following are the default locations:

Table 1. Default locations for *WebSphere\_home*

<b>UNIX or Linux</b>	/opt/IBM/WebSphere/
<b>Windows</b>	C:\Program Files\IBM\WebSphere
<b>IBM i</b>	/QIBM/ProdData/WebSphere/AppServer/V8/Base or /QIBM/ProdData/WebSphere/AppServer/V8/ND

- *DC\_home*: the directory where the ITCAM for WebSphere Application Server Data Collector is installed. The following are the default locations:

Table 2. Default locations for *DC\_home*

<b>UNIX or Linux</b>	/opt/IBM/WebSphere/itcam/DC
<b>Windows</b>	C:\Program Files\IBM\WebSphere\itcam\DC
<b>IBM i</b>	/QIBM/ProdData/WebSphere/AppServer/V8/Base/itcam/DC or /QIBM/ProdData/WebSphere/AppServer/V8/ND/itcam/DC

- *ITM\_home*: the top level directory for installation of IBM Tivoli Monitoring components. The following table shows the default locations:

Table 3. Default locations for *ITM\_home*

<b>UNIX or Linux</b>	/opt/IBM/ITM
<b>Windows</b>	C:\IBM\ITM



- *IM\_home*: The directory where the IBM Installation Manager core product files are installed. The following table shows the default locations:

Table 4. Default locations for *IM\_home*

<b>UNIX or Linux</b>	/opt/IBM/InstallationManager
<b>Windows</b>	C:\Program Files\IBM\InstallationManager

- *Appserver\_home*: the directory where the application server core product files are installed. The following table shows the default locations:

Table 5. Default locations for *appserver\_home*

<b>UNIX or Linux</b>	/opt/IBM/WebSphere/AppServer
<b>Windows</b>	C:\Program Files\IBM\WebSphere\AppServer
<b>IBMz/OS®</b>	/u/was8000
<b>IBM i</b>	/QIBM/ProdData/WebSphere/AppServer

**Note:** If there are multiple application server installations in the same directory path, the path will end in a directory named after the particular application server installation. For example, *AppServer\_home* will be *IBM\_home/WebSphere/WAS8/appserver\_instance*.

- *install\_home*: on IBM z/OS, a read only directory where the ITCAM for WebSphere Application Server files are installed. By default, /usr/lpp/itcamwr/WebSphere/DC.
- *config\_home*: IBM z/OS, a read-write directory that is a mirror of the *install\_home* for ITCAM for WebSphere Application Server on IBM z/OS. This directory contains configuration for ITCAM for WebSphere Application Server, including runtime directories for monitored application server instances. The default is /u/ecam.



# Contents

## About this guide. . . . . iii

ITCAM for WebSphere Application Server publications . . . . .	iii
Related publications . . . . .	iii
Accessing terminology online . . . . .	iii
Accessing publications online . . . . .	iv
Ordering publications . . . . .	iv
Accessibility . . . . .	iv
Tivoli technical training . . . . .	iv
Support information . . . . .	iv
Typeface conventions . . . . .	v
Tivoli command syntax. . . . .	v
Variables for directories . . . . .	vi

## Tables. . . . . xiii

## Chapter 1. Monitoring performance with IBM Tivoli Composite Application Manager for WebSphere Application Server . . . . . 1

Communication with the ITCAM for Application Diagnostics Managing Server . . . . .	1
Communication with ITCAM for Transactions . . . . .	2

## Chapter 2. Getting Started with ITCAM for WebSphere Application Server . . . . . 3

Starting ITCAM for WebSphere Application Server . . . . .	4
Stopping ITCAM for WebSphere Application Server . . . . .	4
Enabling ITCAM for WebSphere Application Server counters . . . . .	4
Disabling ITCAM for WebSphere Application Server counters . . . . .	5
Viewing ITCAM for WebSphere Application Server monitoring data . . . . .	5
Disabling ITCAM for WebSphere Application Server . . . . .	7
Customizing ITCAM for WebSphere Application Server counters . . . . .	7

## Chapter 3. Installing and Configuration of ITCAM for WebSphere Application Server on Windows. . . . . 9

Installing ITCAM for WebSphere Application Server . . . . .	9
Prerequisites for ITCAM for WebSphere Application Server on Windows . . . . .	9
Preinstallation Tasks . . . . .	11
GUI installation of ITCAM for WebSphere Application Server on Windows . . . . .	11
Silent installation of ITCAM for WebSphere Application Server on Windows . . . . .	16
Configuring ITCAM for WebSphere Application Server on Windows. . . . .	17
Pre-configuration notes . . . . .	18

Configuration of ITCAM for WebSphere Application Server on Windows . . . . .	19
Silent configuration of ITCAM for WebSphere Application Server on Windows . . . . .	30

## Chapter 4. Installing and configuring ITCAM for WebSphere Application Server on Linux and UNIX systems . . . . . 33

Installing ITCAM for WebSphere Application Server on Linux and UNIX systems. . . . .	33
Prerequisites and preinstallation tasks for ITCAM for WebSphere Application Server on Linux and UNIX systems . . . . .	33
GUI installation of ITCAM for WebSphere Application Server on UNIX and Linux systems . . . . .	38
Silent installation of IBM Tivoli Composite Application Manager for WebSphere Application Server on UNIX and Linux systems . . . . .	42
Configuring ITCAM for WebSphere Application Server on Linux and UNIX systems . . . . .	43
Pre-configuration notes . . . . .	44
Configuration of ITCAM for WebSphere Application Server on Linux and UNIX systems . . . . .	47
Silent configuration of ITCAM for WebSphere Application Server on UNIX and Linux systems . . . . .	59

## Chapter 5. Installing and configuring ITCAM for WebSphere Application Server on IBM i . . . . . 61

Checklist for installation and configuration on IBM i . . . . .	61
Prerequisites and preinstallation tasks for ITCAM for WebSphere Application Server on IBM i . . . . .	61
System and software prerequisites. . . . .	61
Permissions . . . . .	62
Restrictions on the installation path . . . . .	63
Checking the heap size . . . . .	63
Adjusting ports for firewalls or for use with other applications . . . . .	63
Information to know before the installation. . . . .	63
Installation and configuration of ITCAM for WebSphere Application Server on IBM i. . . . .	64
Silent installation . . . . .	64
Silent configuration. . . . .	65
Reconfigure ITCAM for WebSphere Application Server on IBM i . . . . .	66
Manually unconfigure ITCAM for WebSphere Application Server on IBM i. . . . .	66

## Chapter 6. Installing and Configuring ITCAM for WebSphere Application Server on IBM z/OS . . . . . 69

Installing ITCAM for WebSphere Application Server . . . . .	69
Configuring ITCAM for WebSphere Application Server on IBM z/OS . . . . .	69

Overview of the runtime environment . . . . .	70
Configuration in a Network Deployment environment . . . . .	70
Preconfiguration Steps. . . . .	71
Verify prerequisite information before running the runtime setup script . . . . .	76
Execute the runtime setup script . . . . .	76
Additional configuration tasks . . . . .	90
Upgrading or applying maintenance for ITCAM for WebSphere Application Server on IBM z/OS . . . . .	91

**Chapter 7. Unconfiguring and uninstalling ITCAM for WebSphere Application Server. . . . . 93**

Unconfiguring ITCAM for WebSphere Application Server using the Configuration Tool on Windows, UNIX, and Linux . . . . .	93
Silent unconfiguration of ITCAM for WebSphere Application Server on Windows, UNIX, and Linux . . . . .	100
Uninstalling ITCAM for WebSphere Application Server on Windows, UNIX, and Linux . . . . .	101
Unconfiguring ITCAM for WebSphere Application Server on IBM i . . . . .	104
Uninstalling ITCAM for WebSphere Application Server on IBM i . . . . .	105
Unconfiguring ITCAM for WebSphere Application Server on IBM z/OS . . . . .	106
Unconfiguration options for IBM z/OS. . . . .	106
Unconfiguring ITCAM for WebSphere Application Server in prompt mode on IBM z/OS . . . . .	109
Unconfiguring ITCAM for WebSphere Application Server in batch (auto-run) mode on IBM z/OS . . . . .	111
Unconfiguring ITCAM for WebSphere Application Server manually . . . . .	113
Uninstalling ITCAM for WebSphere Application Server on IBM z/OS . . . . .	114

**Chapter 8. Troubleshooting a problem 117**

Known issues and solutions . . . . .	119
Deleted profiles are listed in the Data Collector Configuration Tool . . . . .	119
Cannot run the Data Collector Configuration Tool . . . . .	119
Warnings or errors during uninstallation because of lock files . . . . .	119
Installation fails if the repository is on a different network segment . . . . .	120
Manual ITCAM for WebSphere Application Server removal. . . . .	120
Missing runtime tab . . . . .	122
Missing runtime tab after configuration . . . . .	122
No login details requested during configuration/unconfiguration . . . . .	123
When WebSphere Application Server Global Security is enabled, setupdc.sh fails . . . . .	123
WebSphere Application Server entry appearing in the MSVE. . . . .	124

Warnings or errors during uninstallation because of lock files . . . . .	125
Configuration of communication with ITCAM for Transactions . . . . .	125
Slow Configuration on HP/UX . . . . .	125
Installation Manager cannot find WebSphere Application Server packages . . . . .	126
Installation Manager cannot find the ITCAM for WebSphere Application Server offering package..	126
Connection timeout errors to server in the trace-install.logs file . . . . .	126
Unconfiguration of ITCAM for WebSphere Application Server generates error . . . . .	127
The Data Collector cannot be unconfigured and removed from the Managing Server . . . . .	127
Advanced Configuration/Unconfiguration of ITCAM for WebSphere Application Server generates error . . . . .	128
Tivoli Performance Viewer reports requests as servlets not web services . . . . .	128
Configuration Permissions . . . . .	128
Searching knowledge bases. . . . .	131
Getting fixes. . . . .	132
Getting fixes from Fix Central . . . . .	132
Contacting IBM Support. . . . .	133
Exchanging information with IBM . . . . .	134
Sending information to IBM Support . . . . .	134
Receiving information from IBM Support . . . . .	134

**Appendix A. Obtaining installation images for Windows, Linux, and UNIX systems. . . . . 137**

**Appendix B. Starting an installation for Windows, UNIX, or Linux from the WebSphere Application Server LaunchPad . . . . . 139**

**Appendix C. Guidelines for specifying silent values on Windows, UNIX, and Linux . . . . . 141**

Options for configuring ITCAM for WebSphere Application Server on Windows, UNIX, and Linux . . . . .	142
Options for unconfiguring ITCAM for WebSphere Application Server on Windows, UNIX, and Linux . . . . .	144
Installation Response File Template for Windows, Linux and UNIX systems, and IBM i . . . . .	147
Uninstallation Response File template for Windows, UNIX, and Linux and IBM i . . . . .	148
Configuration Response File Template for Windows, UNIX, and Linux . . . . .	150
Advanced Configuration Response File Template for Windows, UNIX, and Linux . . . . .	154
Unconfiguration Response File Template for Windows, UNIX, and Linux . . . . .	157
Sample templates . . . . .	159
Advanced unconfiguration Response File Template for Windows, and Linux . . . . .	162
Configuration Response File Template for IBM i . . . . .	164

Reconfiguration Response File Template for IBM i	167
Unconfiguration Response File Template for IBM i	168

**Appendix D. What to do if ITCAM for WebSphere Application Server configuration fails . . . . . 171**

Restoring the application server configuration after a failed ITCAM for WebSphere Application Server configuration . . . . .	171
--	-----

**Appendix E. Setting up security . . . . 173**

Setting up the user ID and password for ITCAM for WebSphere Application Server on z/OS with global security enabled . . . . .	173
---	-----

Enabling privacy filtering . . . . .	175
--------------------------------------	-----

**Appendix F. Using regular expressions . . . . . 177**

**Appendix G. Accessibility . . . . . 179**

**Trademarks . . . . . 181**

**Notices . . . . . 183**



---

## Tables

1.	Default locations for <i>WebSphere_home</i> . . . . .	vi	22.	Data Collector IP Address. . . . .	54
2.	Default locations for <i>DC_home</i> . . . . .	vi	23.	TTAPI connection . . . . .	56
3.	Default locations for <i>ITM_home</i> . . . . .	vi	24.	Response file options . . . . .	57
4.	Default locations for <i>IM_home</i> . . . . .	vii	25.	Pre-configuration tasks. . . . .	71
5.	Default locations for <i>appserver_home</i> . . . . .	vii	26.	List of options for the <i>createcfg.sh</i> script	73
6.	Getting Started. . . . .	3	27.	List of options for the <i>setupdc.sh</i> script	83
7.	Descriptions of counters displayed in the Tivoli Performance Viewer . . . . .	6	28.	Managing Server configuration . . . . .	87
8.	ITCAM for WebSphere Application Server configuration parameters . . . . .	8	29.	ITCAM for Transactions Configuration	89
9.	Options available . . . . .	16	30.	Order of unconfiguring and uninstalling ITCAM for WebSphere Application Server by operating system. . . . .	93
10.	Port Configuration . . . . .	19	31.	Running the <i>serverStatus</i> command . . . . .	94
11.	Fields for establishing ITCAM for WebSphere Application Server and application server communication . . . . .	22	32.	Fields for establishing ITCAM for WebSphere Application Server and application server communication . . . . .	99
12.	Managing Server Configuration. . . . .	25	33.	Running the <i>serverStatus</i> command . . . . .	100
13.	Data Collector Configuration. . . . .	26	34.	Running the silent unconfiguration command	101
14.	TTAPI connection . . . . .	28	35.	Examples of running the silent unconfiguration command . . . . .	101
15.	Response File . . . . .	28	36.	List of options for the <i>unconfig.sh</i> script	106
16.	Options available . . . . .	42	37.	Configuration options for ITCAM for WebSphere Application Server . . . . .	142
17.	Port Configuration . . . . .	45	38.	Unconfiguration options for ITCAM for WebSphere Application Server . . . . .	144
18.	Required packages on several Linux distributions. . . . .	46	39.	Syntax of <i>restoreConfig</i> command, non-ND environment . . . . .	171
19.	Data Collector shared libraries on SELinux	47	40.	Syntax of <i>restoreConfig</i> command, Network Deployment environment . . . . .	172
20.	Fields for establishing ITCAM for WebSphere Application Server and application server communication . . . . .	50			
21.	Managing Server configuration . . . . .	53			





---

## Chapter 1. Monitoring performance with IBM Tivoli Composite Application Manager for WebSphere Application Server

IBM Tivoli Composite Application Manager for WebSphere Application Server (ITCAM for WebSphere Application Server) is an optional component that can be installed during the installation of WebSphere Application Server.

ITCAM for WebSphere Application Server monitors the performance of WebSphere Application Server applications and provides real-time status information about the health of applications. You can view this data in the Tivoli Performance Viewer console in WebSphere Application Server.

The ITCAM for WebSphere Application Server component is composed of a Data Collector. After you install ITCAM for WebSphere Application Server, you configure the Data Collector to a WebSphere Application Server instance. The Data Collector then runs within the same JVM as the WebSphere Application Server and captures information about the running applications.

The ITCAM for WebSphere Application Server Data Collector Configuration Tool adds a new Performance Monitoring Infrastructure (PMI) module in WebSphere Application Server. The data that ITCAM for WebSphere Application Server provides augments the data that is provided by WebSphere Application Server through the existing PMI statistics.

For a complete set of monitoring functionality for WebSphere Application Server, use ITCAM for Application Diagnostics. For more information about the features and benefits of ITCAM for Application Diagnostics, see the IBM Software website or the ITCAM for Application Diagnostics information center.

---

### Communication with the ITCAM for Application Diagnostics Managing Server

After you configure a WebSphere Application Server instance for data collection, basic monitoring information is available in the Tivoli Performance Viewer in the WebSphere Application Server console. If you have ITCAM for Application Diagnostics 7.1 Fix Pack 2 or earlier installed in your environment, you can configure communication between the Data Collector and the ITCAM for Application Diagnostics Managing Server. When you have configured communication, you can perform deep-dive diagnostics on applications.

After successful configuration, the Data Collector is registered in the Managing Server and is visible in the Managing Server Visualization Engine (MSVE). Some of the diagnostic activities you can perform in MSVE include:

- Detect transactions failing
- Detect memory leaks
- Examine detailed method traces, which help to detect application code hotspots
- Generate reports to analyze historical information, such as application performance and OS performance

Once you have configured communication with the Managing Server, you can then also configure communication with ITCAM for Transactions, see “Communication with ITCAM for Transactions.”

## Scenario

This scenario describes how you use ITCAM for WebSphere Application Server in conjunction with the ITCAM for Application Diagnostics Managing Server to monitor application performance.

1. Users are reporting slow response times and time-out errors for an application.
2. A ticket is raised and Annette the level 2 operator routes the ticket to Jim, the Middleware/Application SME.
3. Jim opens the Tivoli Performance Viewer and observes the Average Response Time and Average CPU counters. He observes that there is degradation in response time, and that processor and memory usage are at normal levels.
4. Jim notifies Dave, the Application Developer, and requests in-depth diagnosis.
5. Dave opens MSVE and observes that the database connection pool is exhausted and that the transaction failure rate is high.
6. Dave observes that the SQL statistics show a low rate of statements per minute, but a high average response time.
7. Dave sets a trap to capture details about SQL statements which are processed over a long time period.
8. Dave determines, based on the trap information, that database performance can be improved by partitioning one of the database tables.
9. After the optimization is implemented, response time is improved, and the failing transactions issue is resolved.

## Communication with ITCAM for Transactions

IBM Tivoli Composite Application Manager for Transactions (ITCAM for Transactions) is an IBM Tivoli Monitoring-based product that provides a unified, end-to-end transaction tracking solution for the IT Operations segment. ITCAM for Transactions tracks transactions within and among applications. It determines the time spent by a transaction in each application and, where possible, the time spent communicating between applications.

Through the Transaction Tracking Application Programming Interface (TTAPI), the ITCAM for WebSphere Application Server Data Collector provides request and transaction data to ITCAM for Transactions and enables seamless integration between the ITCAM for Application Diagnostics and ITCAM for Transactions products.

For more details, see the ITCAM for Transactions Information Center: [http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/index.jsp?topic=/com.ibm.itm.doc\\_6.2.1/welcome.htm](http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/index.jsp?topic=/com.ibm.itm.doc_6.2.1/welcome.htm), or view the *Configuring and using TTAPI* guide in the ITCAM for Application Diagnostics information center.

## Chapter 2. Getting Started with ITCAM for WebSphere Application Server

To begin using ITCAM for WebSphere Application Server, perform the following tasks:

Table 6. Getting Started

Step	Description
Install ITCAM for WebSphere Application Server.	Install ITCAM for WebSphere Application Server using IBM Installation Manager. You can install at the same time as you install WebSphere Application Server or you can install on an existing installation of WebSphere Application Server. See:  Installing on Windows Installing on UNIX/Linux Installing on IBM i Installing on z/OS
Configure ITCAM for WebSphere Application Server.	Following installation, you cannot use ITCAM for WebSphere Application Server until it is configured. ITCAM for WebSphere Application Server is comprised of a Data Collector. Configure communication between the Data Collector and a WebSphere Application Server instance using the Data Collector Configuration Tool. This enables data collection on the WebSphere Application Server instance. See:  Configuring on Windows Configuring on UNIX/Linux Configuring on IBM i Configuring on z/OS
Restart WebSphere Application Server.	When you have completed the configuration of ITCAM for WebSphere Application Server, restart the WebSphere Application Server instance. See WebSphere Application Server Information Center
Start ITCAM for WebSphere Application Server in the WebSphere Integrated Console.	Following installation and configuration, start ITCAM for WebSphere Application Server in the WebSphere Integrated Console. See:  Starting ITCAM for WebSphere Application Server Stopping ITCAM for WebSphere Application Server
Enable counters in the WebSphere Integrated Console.	After you start ITCAM for WebSphere Application Server, you do not automatically see monitoring data in the Tivoli Performance Viewer. You must first enable counters in the WebSphere Integrated Console. See “Enabling ITCAM for WebSphere Application Server counters” on page 4.
View counters in Tivoli Performance Viewer.	When you have enabled counters, you can view monitoring data in the Tivoli Performance Viewer. See “Viewing ITCAM for WebSphere Application Server monitoring data” on page 5
Customize counters.	You might need to customize counter settings, see “Customizing ITCAM for WebSphere Application Server counters” on page 7.

Table 6. Getting Started (continued)

Step	Description
Disable ITCAM for WebSphere Application Server in the WebSphere Integrated Console.	You might need to disable ITCAM for WebSphere Application Server, for example if you are upgrading WebSphere Application Server . See “Disabling ITCAM for WebSphere Application Server” on page 7

---

## Starting ITCAM for WebSphere Application Server

Complete the following steps to start ITCAM for WebSphere Application Server:

1. In the WebSphere Integrated Solutions console navigation tree, select **Monitoring and Tuning > Performance Monitoring Infrastructure (PMI)**.
2. Select the application server instance you want to monitor.
3. Under **Additional Properties**, click **ITCAM for WebSphere Application Server**. You should see that **Enable IBM Tivoli Composite Application Manager for WebSphere Application Server** is selected.
4. Click the **Runtime** tab.
5. Click **Start Monitoring**.

The system starts monitoring the ITCAM for WebSphere Application Server module, and the Tivoli Performance Viewer sends the signal to ITCAM for WebSphere Application Server through a JMX call. ITCAM for WebSphere Application Server registers all performance modules from the PMI registry and starts monitoring.

---

## Stopping ITCAM for WebSphere Application Server

Complete the following steps to stop ITCAM for WebSphere Application Server:

1. In the WebSphere Integrated Console navigation tree, select **Monitoring and Tuning > Performance Monitoring Infrastructure (PMI)**.
2. Select the application server instance you want to stop monitoring.
3. Click **Additional Properties**, then **ITCAM for WebSphere Application Server**.
4. Click the **Runtime** tab.
5. Click **Stop Monitoring**.

The system stops monitoring the ITCAM for WebSphere Application Server module, and Tivoli Performance Viewer sends the signal to ITCAM for WebSphere Application Server through a JMX call. ITCAM for WebSphere Application Server unregisters all performance modules from the PMI registry and stops monitoring.

---

## Enabling ITCAM for WebSphere Application Server counters

**Important:** Before enabling ITCAM for WebSphere Application Server counters, start ITCAM for WebSphere Application Server.

Complete the following steps to enable ITCAM for WebSphere Application Server counters:

1. In the WebSphere Integrated Solutions console navigation tree, expand **Monitoring and Tuning > Performance Monitoring Infrastructure (PMI)**.

2. Select the application server instance you want to start monitoring.
3. Click the **Runtime** tab and select **Custom**.
4. Expand **ITCAM Application Performance**.
5. Select the counters that you want to monitor, and select **Enable**. Some counters are only applicable at application level. When you enable these application counters, they appear disabled, but when you navigate to the Tivoli Performance Viewer, they are enabled.

---

## Disabling ITCAM for WebSphere Application Server counters

Complete the following steps to disable ITCAM for WebSphere Application Server counters:

1. In the WebSphere Integrated Console, from the **Monitoring and Tuning** menu, select **Performance Monitoring Infrastructure (PMI)**.
2. Select the application server instance you want to start monitoring.
3. Click the **Runtime** tab.
4. Select the **Custom**.
5. Select **ITCAM Application Performance**.
6. Clear the counters that you do not want to monitor, and click **Disable**.

---

## Viewing ITCAM for WebSphere Application Server monitoring data

Complete the following steps to view ITCAM for WebSphere Application Server monitoring data:

1. In the WebSphere Integrated Solutions console navigation tree, expand **Monitoring and Tuning > Performance Viewer > Current<sup>®</sup> Activity**.
2. Expand **Performance Modules** and click **ITCAM Application Performance**.
3. Select the application server instance you want to start monitoring. The Tivoli Performance Viewer displays the monitoring data.
4. To refresh the view, click **Tivoli Performance Viewer** and select the application server instance again.

**Note:** Some data does not display when correlative counters are disabled.

The Tivoli Performance Viewer presents the data in charts. Use the charts to determine how performance metrics have changed over a time period and whether WebSphere Application Server server is experiencing any performance issues. The following table provides details of the metrics displayed in the Tivoli Performance Viewer:

Table 7. Descriptions of counters displayed in the Tivoli Performance Viewer

Counters	Descriptions of counters
90%CPUUsage	<p>Ninety percent median of the processor usage of requests in milliseconds, where 90% of the response times are less than this value. This counter is only available at application level.</p> <p>There is a maximum limit on the number of processor usage requests stored to calculate the 90% processor usage median. You can set this limit by defining the <code>eCAM.90Percent.buffer.limit</code> property in the <code>toolkit_custom.properties</code> file.</p> <p>The 90% median is calculated by taking the sample at the 90% of the total samples. The formula to calculate the 90% median sample is:  <math>(number\ of\ samples - 1) * 0.9</math></p> <p>For example, if the current sample size is 31, then the formula is: <math>(31 - 1) * 0.9 = 27</math> and the 27th sample is returned.</p> <p>If the result is not an integer, for example, when the current sample size is 32, then the formula is: <math>(32 - 1) * 0.9 = 27.9</math>. In this case, 10% of the 27th sample and 90% of the 28th sample is returned.</p>
90%ResponseTime	<p>Ninety percent median of requests in milliseconds, where 90% of the response times are less than this value. This counter is available only at the application level.</p> <p>There is a maximum limit on the number of request response times stored to calculate the 90% response time median. Set this limit by defining the <code>eCAM.90Percent.buffer.limit</code> property in the <code>toolkit_custom.properties</code> file. The default is 50.</p> <p>The 90% median is calculated by taking the sample at the 90% of the total samples. The formula to calculate the 90% median sample is:  <math>(number\ of\ samples - 1) * 0.9</math></p> <p>For example, if the current sample size is 31, then the formula is: <math>(31 - 1) * 0.9 = 27</math> and the 27th sample is returned.</p> <p>If the result is not an integer, for example, when the current sample size is 32, then the formula is: <math>(32 - 1) * 0.9 = 27.9</math>. In this case, 10% of the 27th sample and 90% of the 28th sample is returned.</p>
AverageCPUUsage	The average processor usage of requests in milliseconds.
AverageResponseTime	The average response time of requests in milliseconds.
LastMinuteAverageCPUUsage	The average processor usage of requests completed in the last minute (when the counter value is retrieved) in milliseconds.

Table 7. Descriptions of counters displayed in the Tivoli Performance Viewer (continued)

Counters	Descriptions of counters
LastMinuteAverageResponseTime	The average response time of requests completed in the last minute (when the counter value is retrieved) in milliseconds.
MaximumCPUUsage	The most intensive processor usage since the counter is enabled or reset in milliseconds. This counter is available only at the application level.
MaximumResponseTime	The slowest response time since the counter is enabled or reset in milliseconds. This counter is available only at the application level.
MinimumCPUUsage	The least intensive processor usage since the counter was enabled or reset in milliseconds. This counter is available only at the application level.
MinimumResponseTime	The fastest response time since the counter is enabled or reset in milliseconds. This counter is available only at the application level.
RequestCount	The number of requests completed since the counter is enabled or reset.

---

## Disabling ITCAM for WebSphere Application Server

Complete the following steps to disable ITCAM for WebSphere Application Server:

1. In the WebSphere Integrated Console, click **Monitoring and Tuning>Performance Monitoring Infrastructure (PMI)**.
2. Select the application server instance you want to stop monitoring. Then click the server instance.
3. Click the **Configuration** tab.
4. Under **Additional Properties**, click **ITCAM for WebSphere Application Server**.
5. Clear the **Enable ITCAM for WAS Data Collector** check box and click **OK**. The system saves the change to the local repository, while Tivoli Performance Viewer sends the status to ITCAM for WebSphere Application Server through a MBean call. ITCAM for WebSphere Application Server will update the status to the local repository. For example, ITCAM for WebSphere Application Server will set the ITCAM\_DC\_ENABLED environment variable to false for the selected application server.
6. Restart the instance of the application server that was being monitored by ITCAM for WebSphere Application Server.

---

## Customizing ITCAM for WebSphere Application Server counters

You might need to customize how counter values are calculated. To customize counters, use the `DC_home/runtime/server/custom/toolkit_custom.properties` file. If the file does not exist, create it. Use the `parameter=value` format.

Restart the application server after you change parameter values.



Table 8. ITCAM for WebSphere Application Server configuration parameters

Configuration parameter	Description
eCAM.90Percent.buffer.limit	<ul style="list-style-type: none"> <li>• This parameter controls the number of samples used to calculate the 90% metrics.</li> <li>• All statistics instances have one buffer for 90% request time and one for 90% processor usage if both are enabled.</li> <li>• All buffers have the same size, the default value is 50.</li> </ul>
eCAM.PMI.Threadpool.size	<ul style="list-style-type: none"> <li>• This parameter controls the thread pool size to update the PMI statistics. Updating the PMI statistics is decoupled from the application thread so it does not lengthen the application response time.</li> <li>• The default value is 2. If the thread pool size is too small, updating the PMI statistics slows down and more memory is used. Unless the application server is running out of memory, you do not have to fine-tune this parameter.</li> </ul>
eCAM.memory.limit	<p>This parameter controls the amount of memory in megabytes that the ITCAM for WebSphere Application Server uses.</p> <p>The default value is 20. When the memory limit is reached, new PMI statistics are not be created. New applications and requests are not show in the PMI.</p> <p>The following error message is displayed:            △Exceeding memory limit defined in eCAM.memory.limit=size limit. New counter will not be created, please increase memory limit.△ is logged in the log file.</p>
eCAM.disable.BCI	<p>When this parameter is set to <i>true</i>, ITCAM for WebSphere Application Server disables the BCI engine when it first starts. This parameter is used to reduce the memory usage of the ITCAM for WebSphere Application Server. The default value is <i>true</i>.</p>



---

## Chapter 3. Installing and Configuration of ITCAM for WebSphere Application Server on Windows

ITCAM for WebSphere Application Server is an optional component that can be installed and configured during the installation of IBM WebSphere Application Server. It can also be installed on an existing WebSphere Application Server.

---

### Installing ITCAM for WebSphere Application Server

ITCAM for WebSphere Application Server is included in the WebSphere Application Server 8.0 installation media. Use IBM Installation Manager 1.4.3 or later to install ITCAM for WebSphere Application Server. Install ITCAM for WebSphere Application Server once for each installation of WebSphere Application Server. If multiple installations of WebSphere Application Server exist on the same computer, install ITCAM for WebSphere Application Server separately for each installation. An installation cannot span over multiple computers.

For a Network Deployment environment, supply the host name of the Deployment Manager to configure ITCAM for WebSphere Application Server for a node. You do not need to install or configure ITCAM for WebSphere Application Server on the Deployment Manager.

ITCAM for WebSphere Application Server can be installed on the following versions of WebSphere:

- WebSphere Application Server Base
- WebSphere Application Server Network Deployment
- WebSphere Application Server Express®

The ITCAM for WebSphere Application Server installation directory is the following fixed location: C:\Program Files\IBM\WebSphere\_home\AppServer\itcam\DC (32 bit) C:\Program Files(x86)\IBM\WebSphere\_home\AppServer\itcam\DC (64 bit)

There are two methods of installation available:

- GUI installer: Installs ITCAM for WebSphere Application Server using the IBM Installation Manager.
- Silent: Installs ITCAM for WebSphere Application Server using the IBM Installation Manager from a command-prompt. Installation options are provided through a response file. Choose a silent installation for the following options:
  - Installation in a demonstration environment and then later in a production environment with similar options.
  - Installation of multiple instances of ITCAM for WebSphere Application Server that have shared options.

### Prerequisites for ITCAM for WebSphere Application Server on Windows

There are a number of hardware and software prerequisites for ITCAM for WebSphere Application Server.

## Hardware prerequisites for ITCAM for WebSphere Application Server

The installation image requires 162 MB. The installation requires 386 MB.

### Supported operating systems

ITCAM for WebSphere Application Server supports the following Windows versions that WebSphere Application Server supports:

- Windows Vista Business x86-32
- Windows Vista Enterprise x86-32
- Windows Vista ultimate x86-32
- Windows Server 2008 Standard Edition x86-32
- Windows Server 2008 Enterprise Edition x86-32
- Windows Server 2008 Datacenter Edition x86-32
- Windows Server 2008 Standard Edition x86-64
- Windows Server 2008 Datacenter Edition x86-64
- Windows Server 2008 Enterprise Edition x86-64
- Windows 7 Professional x86-32
- Windows 7 Professional x86-64
- Windows 7 Enterprise x86-32
- Windows 7 Enterprise x86-64
- Windows 7 Ultimate x86-32
- Windows 7 Ultimate x86-64
- Windows Server 2008 R2 Datacenter Edition x86-64
- Windows Server 2008 R2 Enterprise Edition x86-64
- Windows Server 2008 R2 Standard Edition x86-64

For the operating system requirements for the IBM WebSphere Application Server 8.0, see

<http://www-01.ibm.com/software/webservers/appserv/doc/latest/prereq.html>.

### Supported JDKs for ITCAM for WebSphere Application Server

The supported JDKs for ITCAM for WebSphere Application Server are the same as the supported JDKs for the application server that you are monitoring.

### IBM Installation Manager

Use IBM Installation Manager to install ITCAM for WebSphere Application Server. Ensure IBM Installation Manager is installed before you begin an installation of ITCAM for WebSphere Application Server.

### Previous Data Collectors

You cannot install ITCAM for WebSphere Application Server if there is already a Data Collector configured as a result of previous installations of any of the following ITCAM systems:

- ITCAM for WebSphere Application Server
- ITCAM for WebSphere Resources

- ITCAM for WebSphere
- ITCAM for Application Diagnostics

If a Data Collector is present, it must be unconfigured. However, these products can be installed on the same host and configured for different application server instances.

## Preinstallation Tasks

A number of tasks must be performed before installing ITCAM for WebSphere Application Server on Windows.

### Checking Permissions

The user who installs ITCAM for WebSphere Application Server requires the following permissions:

- The user who installs ITCAM for WebSphere Application Server must have read, write, and execute privileges on the application server.
- Administrator privileges are not required unless the application server is owned by a user with administrator privileges.
- The application server instance owner ID must have write permission to the directory where the installer creates log files. By default, it is C:\Program Files\IBM\tivoli\common\CYN\logs (32 bit) C:\Program Files\IBM\tivoli\common\CYN\logs (64 bit).

### Checking the heap size

Ensure that the JVM heap size is sufficient. The default value is enough, but if the heap size was configured in WebSphere Application Server, make sure that it is not less than 384 MB. Complete the following steps for each server that you want to configure for ITCAM for WebSphere Application Server:

1. Log on to the IBM WebSphere Application Server administrative console.
2. Click **Servers > Server Types > WebSphere Application Servers** and select the *server\_name*.
3. In the **Configuration** tab, go to **Server Infrastructure > Java and Process Management > Process Definition > Additional Properties: Java Virtual Machine**.
4. If the value in the **Maximum Heap Size** field is less than 384, set it to 384.

## GUI installation of ITCAM for WebSphere Application Server on Windows

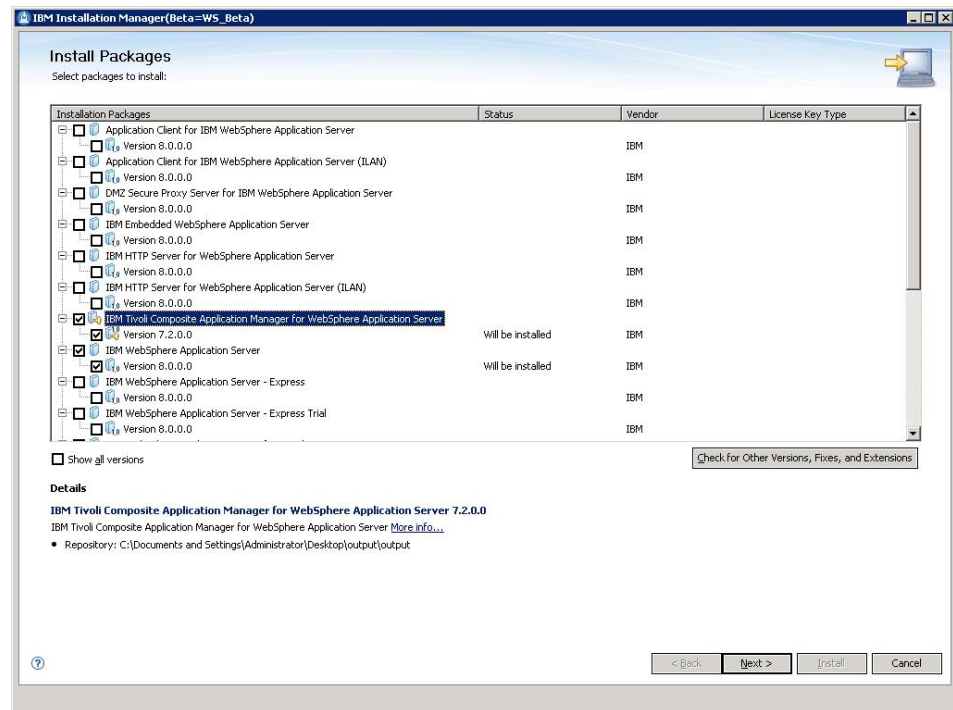
### About this task

Complete the following procedure to install and configure ITCAM for WebSphere Application Server:

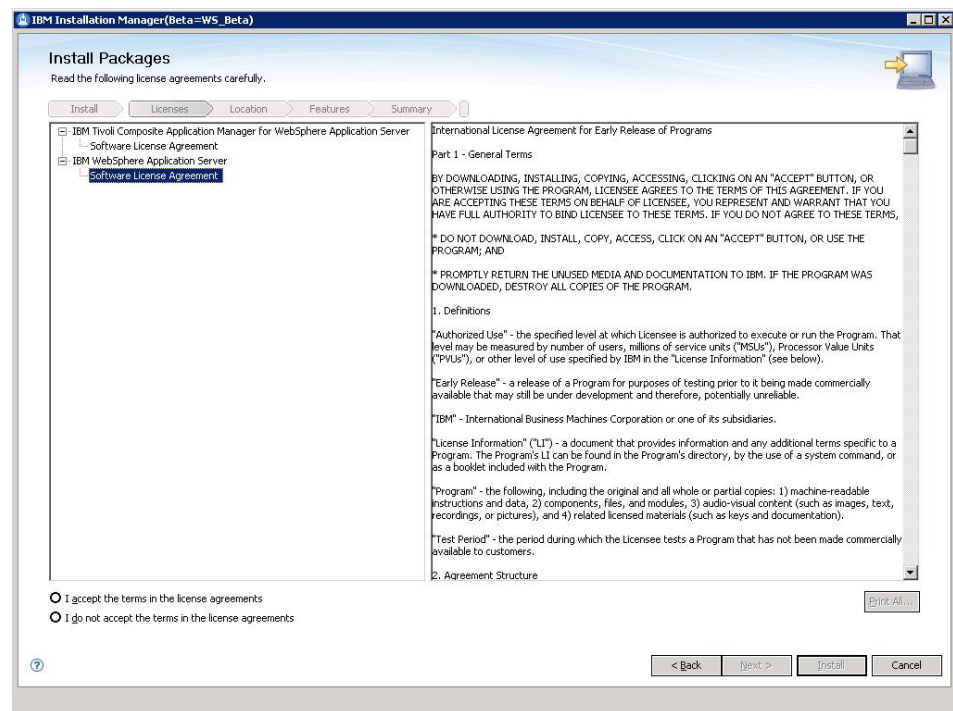
### Procedure

1. Access the installation files, for details, see Appendix A, "Obtaining installation images for Windows, Linux, and UNIX systems," on page 137.
2. In Installation Manager, select **Install**. Select **IBM Tivoli Composite Application Manager for WebSphere Application Server** and select **Version 7.2.0.0**. To search for fixes, updates, and extensions to the available packages, select **Check for Other Versions, Fixes and Extensions**. Installation Manager searches for updates in the default update repositories for the packages. Click

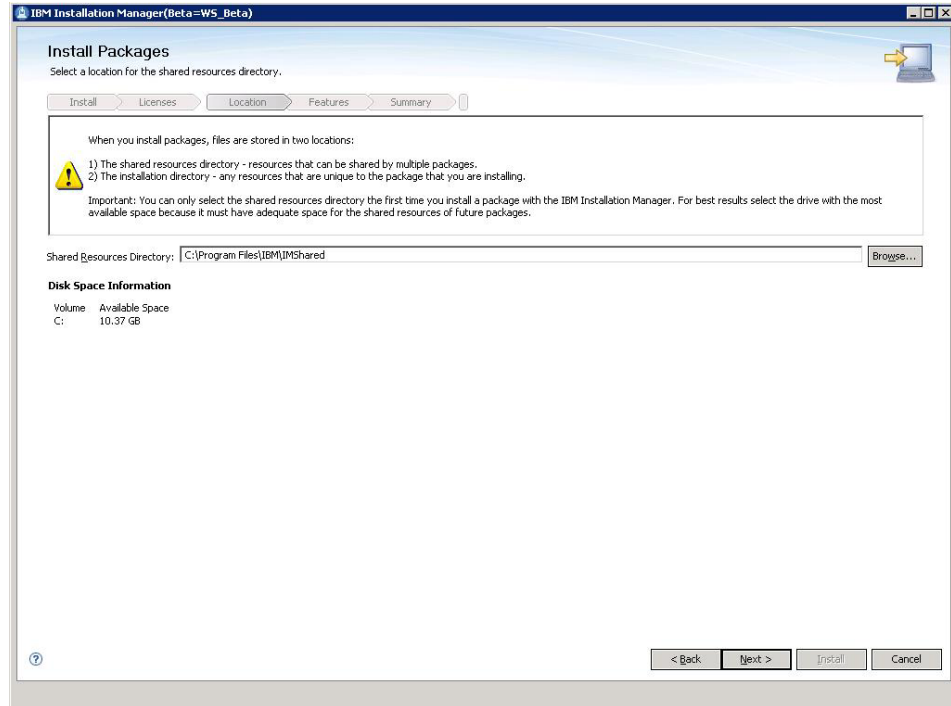
Next. The Licenses window opens.



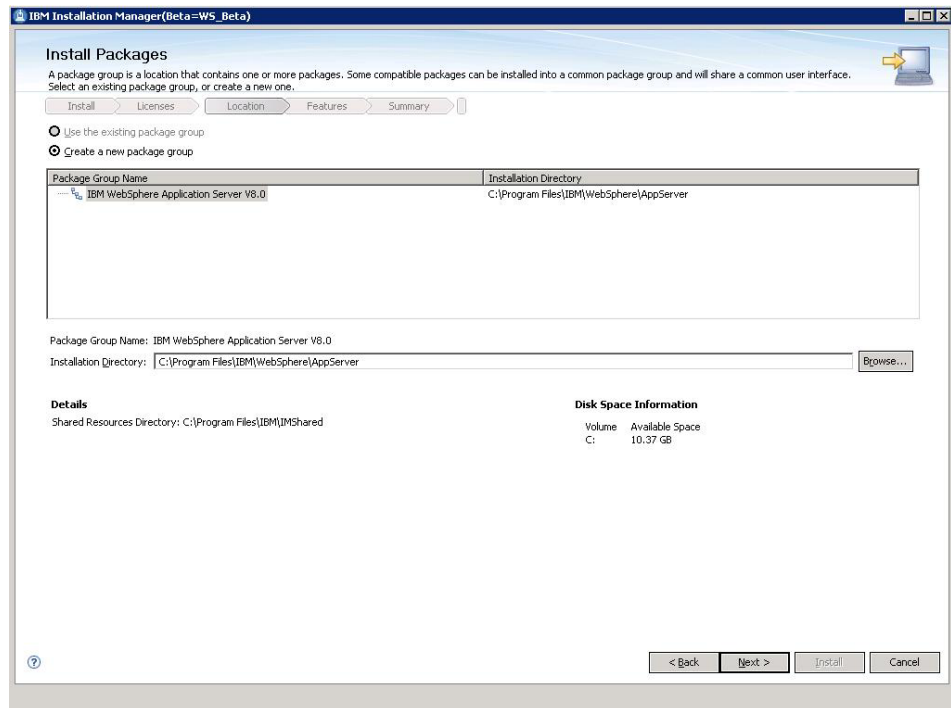
3. Select **I Accept the Terms** in the license agreements. Click **Next**. The Location window opens.



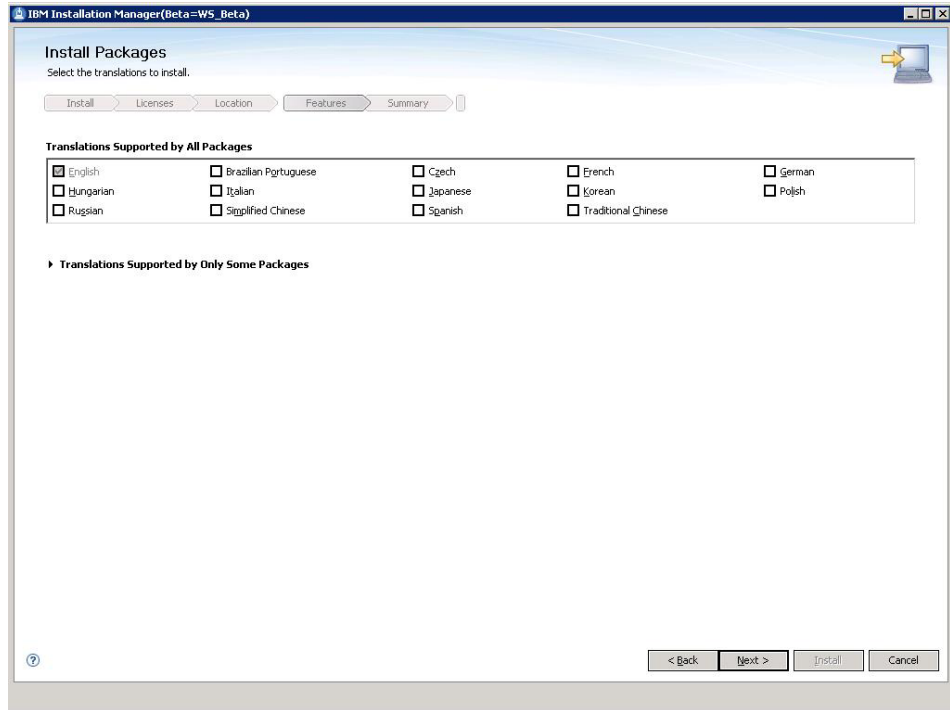
4. Enter the shared resources directory. You only need to specify the shared resources directory the first time that you use Installation Manager. This window is not displayed, if you previously used Installation Manager on this host. Click **Next**.



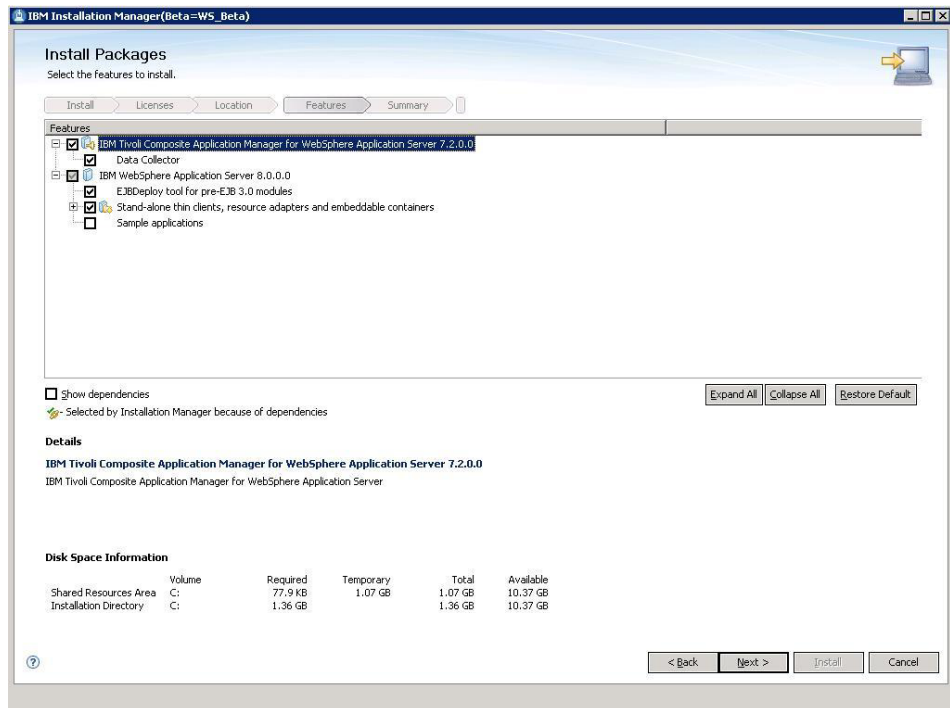
5. A package group represents a directory in which packages share resources with other packages in the same group. When you install packages with Installation Manager, you can choose to create a package group or install the packages into an existing package group. ITCAM for WebSphere Application Server is an extension offering. It can only be installed under the IBM WebSphere Application Server v8.0 package group. Select **IBM WebSphere Application Server v8.0**. Click **Next**. The Features view opens.



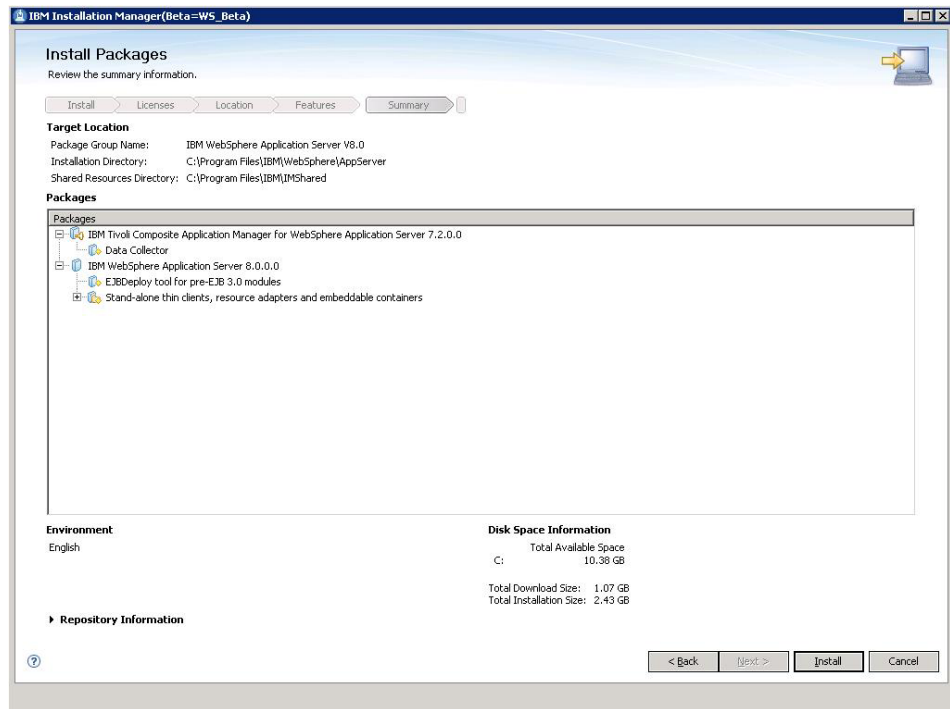
6. Select the language to use for this installation. Click **Next**.



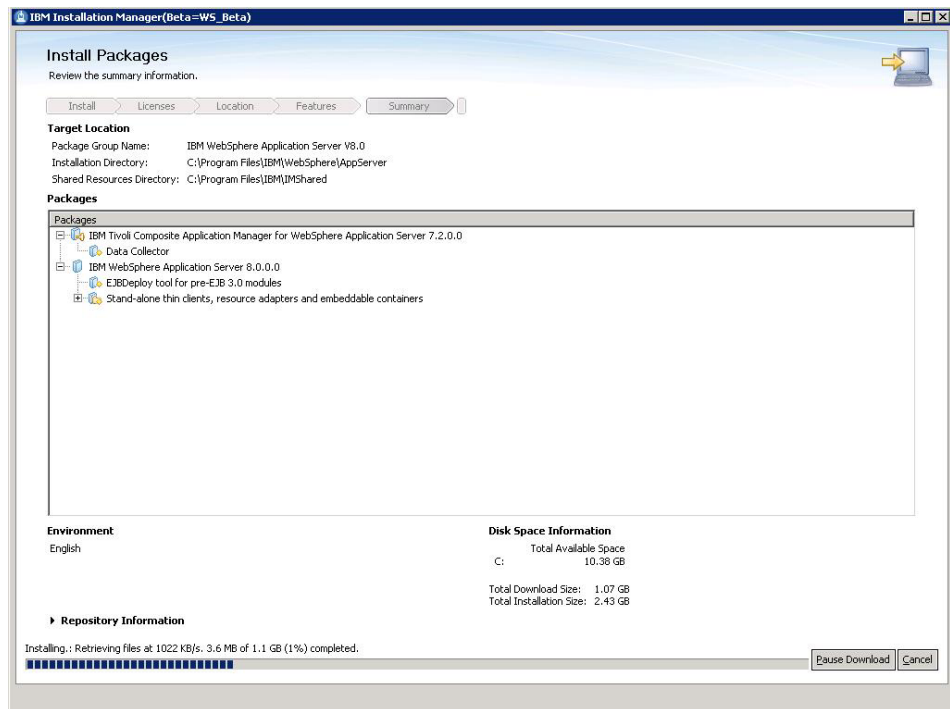
- To check if there are dependent features that must be installed, select **Show Dependencies**. Any dependent features are listed. Click **Next**. The Summary window opens.



- Review the installation information and select **Install**.



9. You can pause or cancel the download.

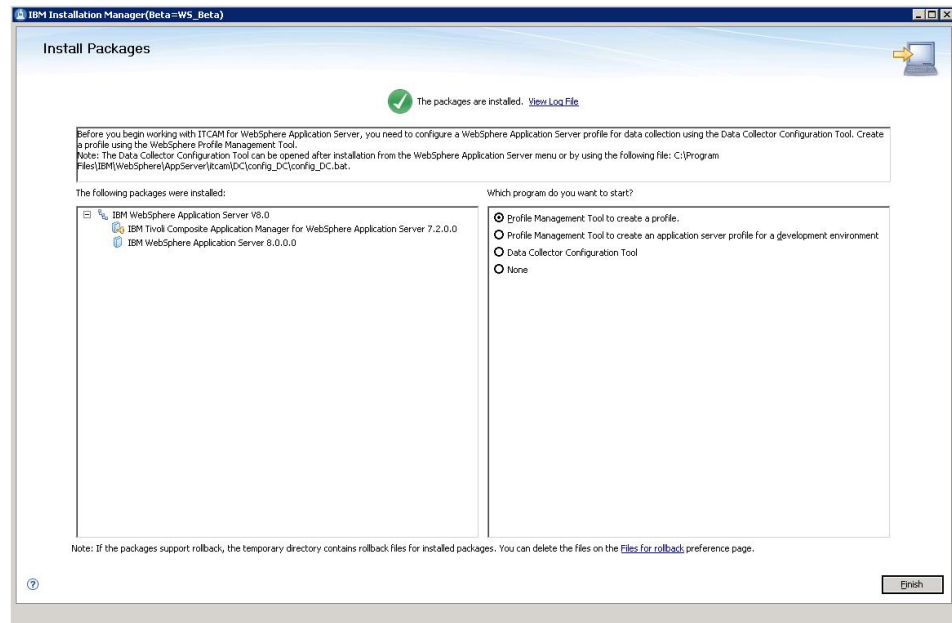


10. When the installation is complete, there are a number of options available. If you are installing ITCAM for WebSphere Application Server and WebSphere Application Server at the same time, create a WebSphere profile before you start configuration. After you create the profile, manually start the Data Collector Configuration Tool. See “Configuring ITCAM for WebSphere Application Server on Windows” on page 17. Make your selection based on the descriptions in the following table and select **Finish**:



Table 9. Options available

Option	Description
Profile Management Tool to create a profile	Select this option to create a customized profile.
Profile Management Tool to create an application server profile for a development environment	Select this option to create a default profile. Use this option to customize performance settings for development environments. Also, an application server is created.
Data Collector Configuration Tool	Use the Data Collector Configuration Tool to configure an application server instance for data collection. Also, use the Data Collector Configuration Tool to configure communication between ITCAM for WebSphere Application Server and an ITCAM for Application Diagnostics Managing Server.



## Silent installation of ITCAM for WebSphere Application Server on Windows

### About this task

Using a command-prompt pointing to a response file to install ITCAM for WebSphere Application Server is called *silent* installation.

During a silent installation, the IBM Installation Manager references a response file located on a local hard disk or network. The response file contains the required installation parameters. The response file is available in the ITCAM for WebSphere Application Server repository root directory. You can also generate a response file when you run a GUI installation. Performing a silent installation instead of a GUI installation provides the following advantages:

- You can reuse the response file for multiple installations.
- The response file provides a record of installation settings so you can identify installation setting details at a later date.



Complete the following steps to perform a silent installation:

### Procedure

1. Specify configuration options in the `responsefile.xml` file template, which is available in the ITCAM for WebSphere Application Server repository root directory. The following parameters are required:

```
<repository location='${itcam_repositoty_path}' />
<profile id='${was_profile}' installLocation='${was_home_path}'>
<data key='eclipseLocation' value='${im_eclipse_home_path}' />
<preference name='com.ibm.cic.common.core.preferences.eclipseCache'
  value='${shared_location_path}' />
```

For a sample of the response file template, and details of parameters, see “Installation Response File Template for Windows, Linux and UNIX systems, and IBM i” on page 147.

2. Using a command-prompt, change to the `IM_home\eclipse\tools` directory and run the following command:  

```
./imcl -input responsefile.xml -acceptLicense
```
3. After the Installation Manager runs in silent installation mode, a successful installation is indicated by an empty line. After a successful installation, the following folder is created: `WebSphere_home\AppServer\itcam\DC`.

---

## Configuring ITCAM for WebSphere Application Server on Windows

Configure ITCAM for WebSphere Application Server using the Data Collector Configuration Tool.

The Data Collector Configuration Tool can be opened at the end of the installation. After you complete the installation, use one of these methods to open the Data Collector Configuration Tool:

- From the WebSphere Application Server menu, click **Start>All Programs>IBM WebSphere>IBM WebSphere Application Server V8.0>Tools>ITCAM for WebSphere Application Server Data Collector Configuration Tool**.
- Run the `WebSphere_home\AppServer\itcam\DC\config_dc\config_dc.bat` batch file.

Use the Data Collector Configuration Tool to perform the following configuration:

- Configure application server instances for data collection. At a minimum, for ITCAM for WebSphere Application Server to function, configure one application sever instance for data collection. It is possible to configure multiple application server instances for data collection, but each instance must be configured separately. After successful configuration, you can view monitoring data in the Tivoli Performance Viewer console in WebSphere Application Server.
- Configure communication between the ITCAM for WebSphere Application Server Data Collector and ITCAM for Application Diagnostics Managing Server. After successful configuration, the Data Collector is registered in the Managing Server and is visible in the Managing Server Visualization Engine (MSVE). Here are some of the diagnostic activities you can perform in MSVE:
  - Detect transactions failing
  - Detect memory leaks
  - Examine detailed method traces, which help to detect application code hotspots

- Generate reports to analyze historical information, such as application performance and OS performance
- Configure communication between the ITCAM for WebSphere Application Server Data Collector and ITCAM for Transactions. You can only configure communication with ITCAM for Transactions if you have configured communication with ITCAM for Application Diagnostics Managing Server. See, “Communication with ITCAM for Transactions” on page 2.

For more information about ITCAM for Application Diagnostics Managing Server, see [http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/index.jsp?topic=/com.ibm.itcamfad.doc\\_7101/ic-homepage.html](http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/index.jsp?topic=/com.ibm.itcamfad.doc_7101/ic-homepage.html).

## Pre-configuration notes

Before you begin configuration, check the permissions of the user who will run the Data Collector Configuration Tool, see “Configuration Permissions” on page 128.

### Using the Data Collector Configuration Tool to retrieve the username and password

Use the Data Collector Configuration Tool to retrieve the user ID and password from a property file.

### Enabling user ID and password input from soap.client.props for SOAP connector types

When you use a SOAP connection to WebSphere Application Server and global security is enabled, you can use the Data Collector Configuration Tool to retrieve the user ID and password from the soap.client.props file.

1. Set the following properties in the *AppServer\_home/profiles/profile\_name/properties/soap.client.props* file:
 

```
com.ibm.SOAP.securityEnabled=true
com.ibm.SOAP.loginUserId=user_ID
com.ibm.SOAP.loginPassword=password
```
2. To encrypt the password, run the following command from the *AppServer\_home/profiles/profile\_name/bin* directory:
 

```
PropFilePasswordEncoder.bat path_to_props_file/soap.client.props com.ibm.SOAP
.loginPassword
```

### Enabling user ID and password input from sas.client.props for RMI connector types

When you use an RMI connection to WebSphere Application Server and global security is enabled, you can use the Data Collector Configuration Tool to retrieve the user ID and password from the sas.client.props file.

1. Set the following properties in the *AppServer\_home/profiles/profile\_name/properties/sas.client.props* file:
 

```
com.ibm.CORBA.loginSource=properties
com.ibm.CORBA.securityEnabled=true
com.ibm.CORBA.loginUserId=user_ID
com.ibm.CORBA.loginPassword=password
```
2. To encrypt the password, run the following command from the *AppServer\_home/profiles/profile\_name/bin* directory:
 

```
PropFilePasswordEncoder.bat path_to_props_file/sas.client.props com.ibm.CORBA
.loginPassword
```

## Adjusting ports for firewalls or for use with other applications

During configuration in a Network Deployment environment, specify the SOAP or RMI port numbers that is used by ITCAM for WebSphere Application Server to communicate with the application server or the ITCAM for Application Diagnostics Managing server. Ensure that the firewall does not prevent communication between ITCAM for WebSphere Application Server and the specified ports. The following table specifies the ports numbers that you specify, depending on your environment and the configuration options that you select:

Table 10. Port Configuration

Environment/Configuration	Ports you must specify
WebSphere Application Server Express	None
WebSphere Application Server stand-alone	None
WebSphere Application Server Network Deployment	Deployment Manager port
WebSphere Application Server Express with Managing Server communication	ITCAM for Application Diagnostics Managing Server port number  ITCAM for Application Diagnostics Managing Server Controller port number
WebSphere Application Server stand-alone with ITCAM for Application Diagnostics Managing Server communication	ITCAM for Application Diagnostics Managing Server port number  ITCAM for Application Diagnostics Managing Server Controller port number
WebSphere Application Server Extended Deployment with ITCAM for Application Diagnostics Managing Server communication	Deployment Manager port  ITCAM for Application Diagnostics Managing Server port number  ITCAM for Application Diagnostics Managing Server Controller port number

## Configuration of ITCAM for WebSphere Application Server on Windows

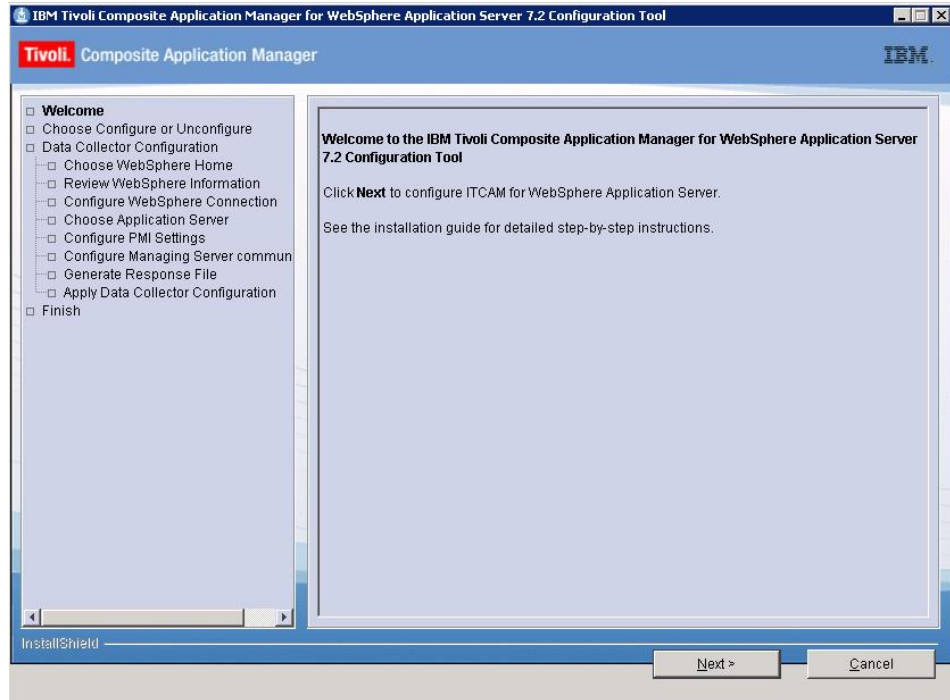
### About this task

Complete the following procedure to configure ITCAM for WebSphere Application Server:

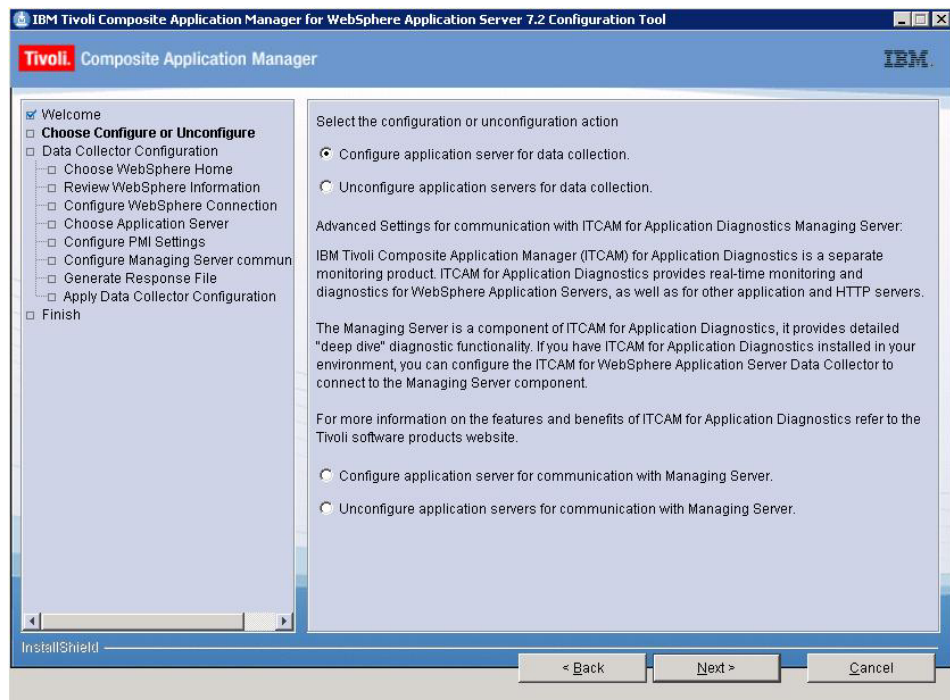
### Procedure

1. Open the Data Collector Configuration Tool using one of the following methods:
  - In the last window of the Installation Manager, select **Data Collector Configuration Tool**.
  - Open the Data Collector Configuration Tool. From the WebSphere Application Server menu, click **Start>All Programs>IBM WebSphere>IBM WebSphere Application Server V8.0>Tools>ITCAM for WebSphere Application Server Data Collector Configuration Tool**.
  - Open the Data Collector Configuration Tool using the following file:  
*WebSphere\_home\AppServer\itcam\DC\config\_dc\config\_DC.bat*

The **Welcome** window opens. Click **Next**.

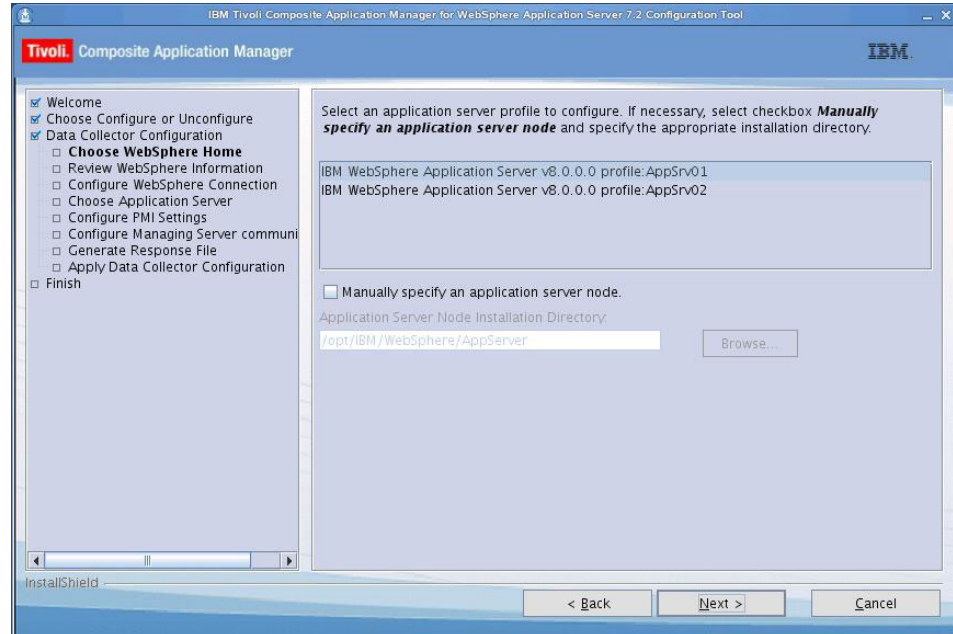


2. The **Choose Configure or Unconfigure** window opens. In this window, you can choose to configure or unconfigure an application server for data collection or configure or unconfigure communication with an ITCAM for Application Diagnostics Managing Server. To configure ITCAM for WebSphere Application Server to monitor a WebSphere Application Server, select **Configure application server for data collection**. Click **Next**.



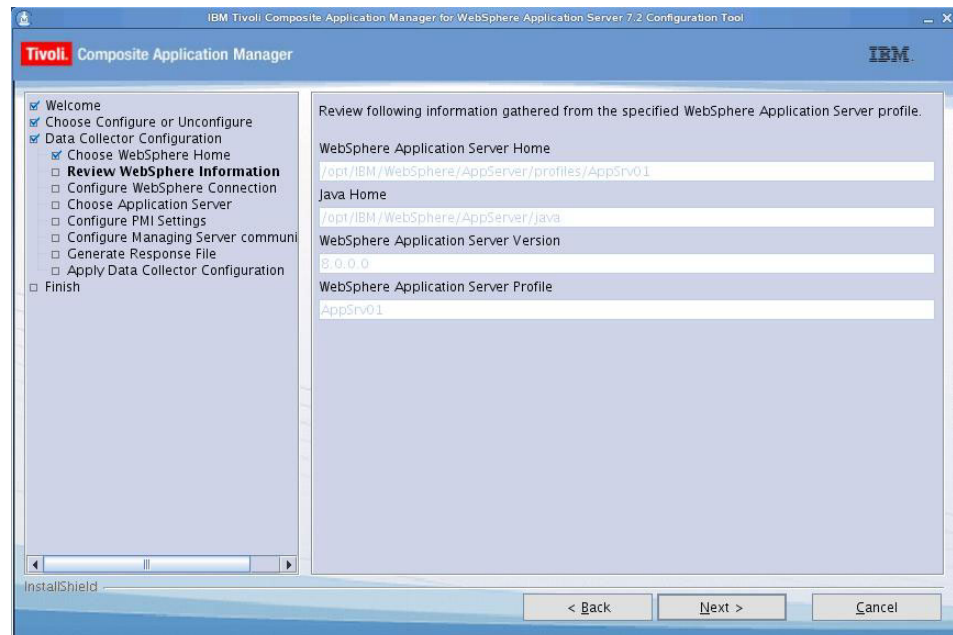
The **Choose WebSphere Home** window opens. The available WebSphere Application Server profiles are listed.

3. Select the profile on which you want to configure the Data Collector. In highly customized WebSphere Application Server environments, the Data Collector Configuration Tool might fail to discover an application server profile. If this happens, manually specify an application server node. Select **Manually specify an application server node** and browse to the application server node. Click **Next**.



The **Review WebSphere Information** window opens. Information is displayed about the detected application server instance.

4. This information is for review only and cannot be changed. Click **Next**.



The **Configure WebSphere Connection** window opens.

5. Complete the fields based on Table 11 on page 22 and click **Next**:



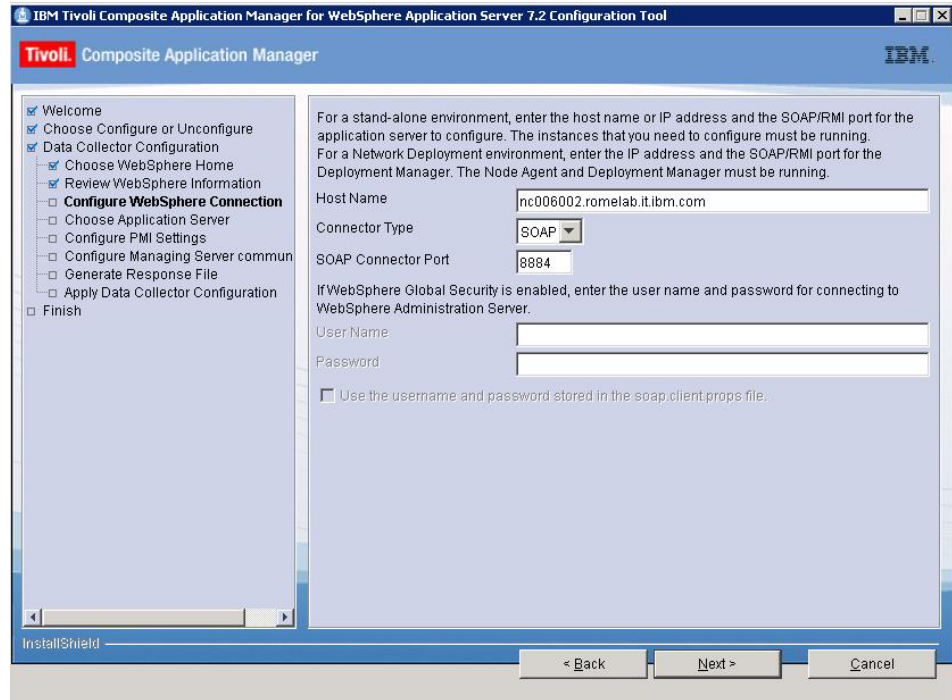


Table 11. Fields for establishing ITCAM for WebSphere Application Server and application server communication

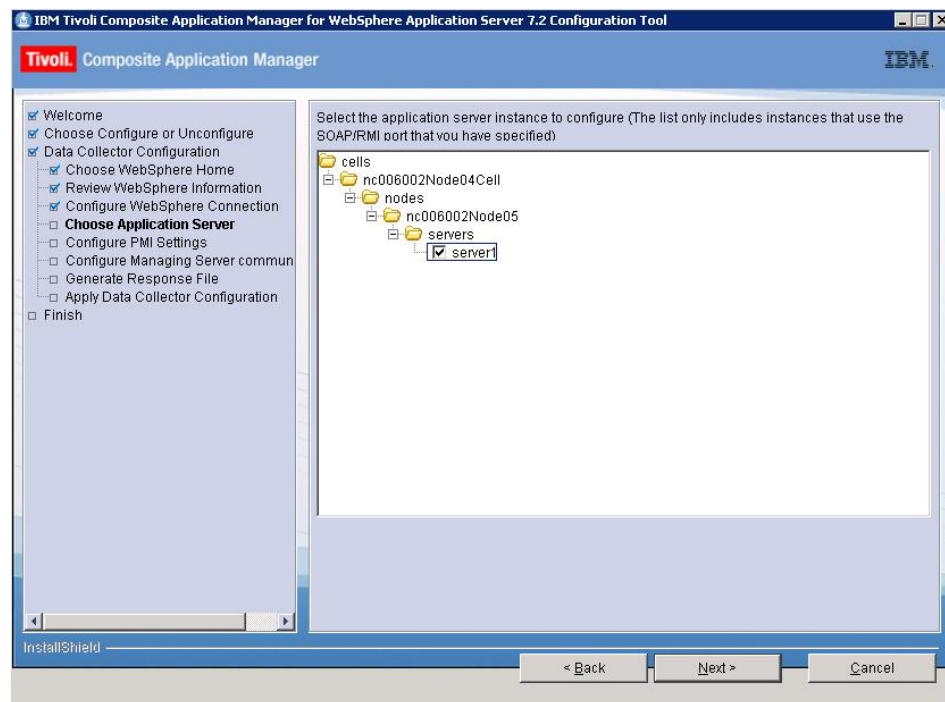
Field	What to do
Host Name	<p>For a stand-alone environment, enter the fully qualified host name or IP address of the application server instance that ITCAM for WebSphere Application Server monitors. If you are using a host name, do not include a protocol in the host name. For example, enter myserver.xyz.company.com, not https://myserver.ibm.tivoli.com.</p> <p>For a Network Deployment environment, enter the Deployment Manager host name or IP address.</p>
Connector Type	Select the type of connection that ITCAM for WebSphere Application Server and the application server uses for communication.
SOAP Connector Port	<p>For a stand-alone environment, enter the connector port used by the application server instance to send commands using the SOAP port. The SOAP port is identified in the following file for the instance of the application server that ITCAM for WebSphere Application Server monitors: <i>AppServer_home/profiles/profile_name/config/cells/cell_name/nodes/node_name/serverindex.xml</i></p> <p>For a Network Deployment environment, enter the SOAP port used by the Deployment Manager.</p>
RMI Connector Port	<p>For a stand-alone environment, enter the connector port used by the application server instance to send commands using RMI.</p> <p>For a Network Deployment environment, enter the RMI port used by the Deployment Manager.</p>

Table 11. Fields for establishing ITCAM for WebSphere Application Server and application server communication (continued)

Field	What to do
User name and Password (only if Global Security is enabled)	<p>Enter the user name and password of a user who is authorized to log on to the WebSphere Application Server administrative console. This user must have the agent role on the application server.</p> <p>Instead of typing the user name and password, you can configure the Data Collector Configuration Tool to retrieve them from a properties file. Complete the following steps to configure Data Collector Configuration Tool to retrieve the user name and password:</p> <ol style="list-style-type: none"> <li>1. Select <b>Use the username and password stored in the soap.clients.props file</b>.</li> <li>2. If the Connector Type is SOAP, the <b>Use the username and password stored in "soap.client.props"</b> option is displayed. Select this option.</li> <li>3. If the Connector Type is RMI, the <b>Use username and password stored in "sas.client.props"</b> option is displayed. Select this option.</li> </ol> <p>For more information, see "Using the Data Collector Configuration Tool to retrieve the username and password" on page 18.</p>

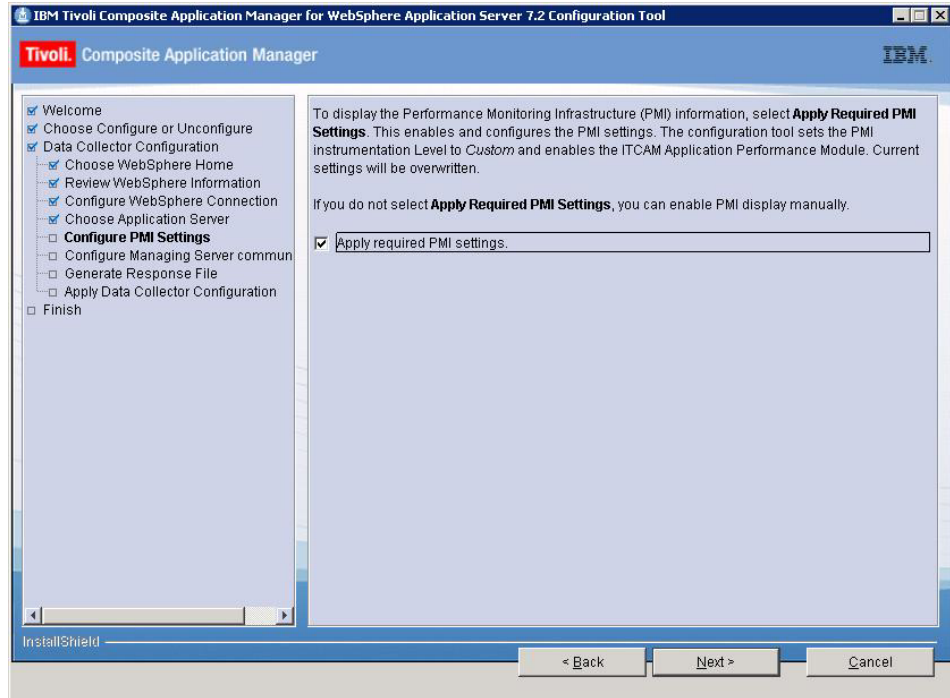
The **Choose Application Servers** window opens.

6. Select the application server instance that you want to configure for data collection. Click **Next**.



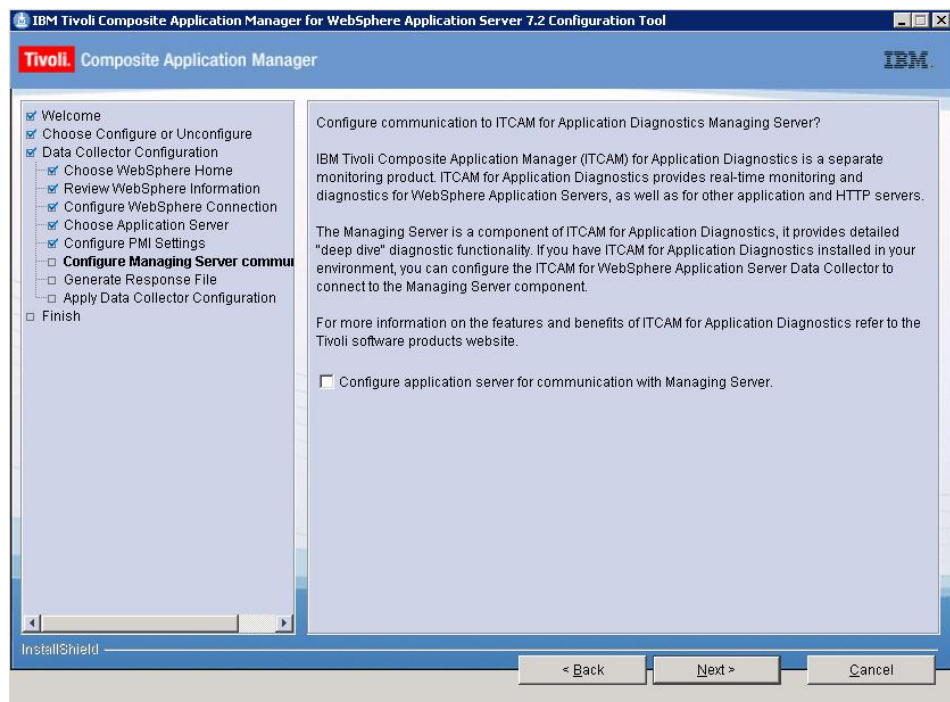
The **Configure PMI Settings** window opens.

7. To display Performance Monitoring Infrastructure (PMI) information in the Tivoli Performance Viewer console in WebSphere Application Server, select **Apply required PMI settings**. This enables and configures the PMI settings to the level that is required by ITCAM for WebSphere Application Server. The PMI instrumentation level is set to custom and the ITCAM Application Performance Module is enabled. Any current PMI settings are overwritten. If you do not select **Apply Required PMI Settings**, you can enable PMI settings manually in WebSphere Application Server. Click **Next**.



The **Configure Managing Server communication** window opens. For more information about customizing PMI settings in WebSphere Application Server, refer to the WebSphere Application Server Version 8 information center, see <http://publib.boulder.ibm.com/infocenter/wasinfo/beta/index.jsp?topic=/com.ibm.websphere.installation.nd.doc/info>.

8. To enable communication to the ITCAM for Application Diagnostics Managing Server, select **Configure application servers for communication with Managing Server**. Click **Next**.



The **Configure Managing Server connection** window opens.

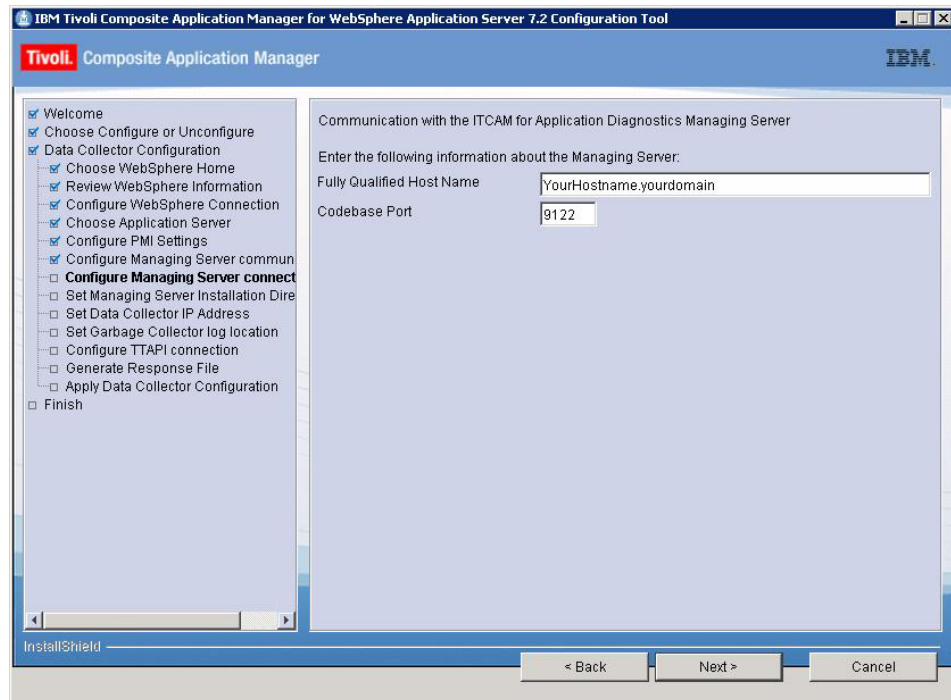


9. Enter the required information about the Managing Server based on the information in the following table:

Table 12. Managing Server Configuration

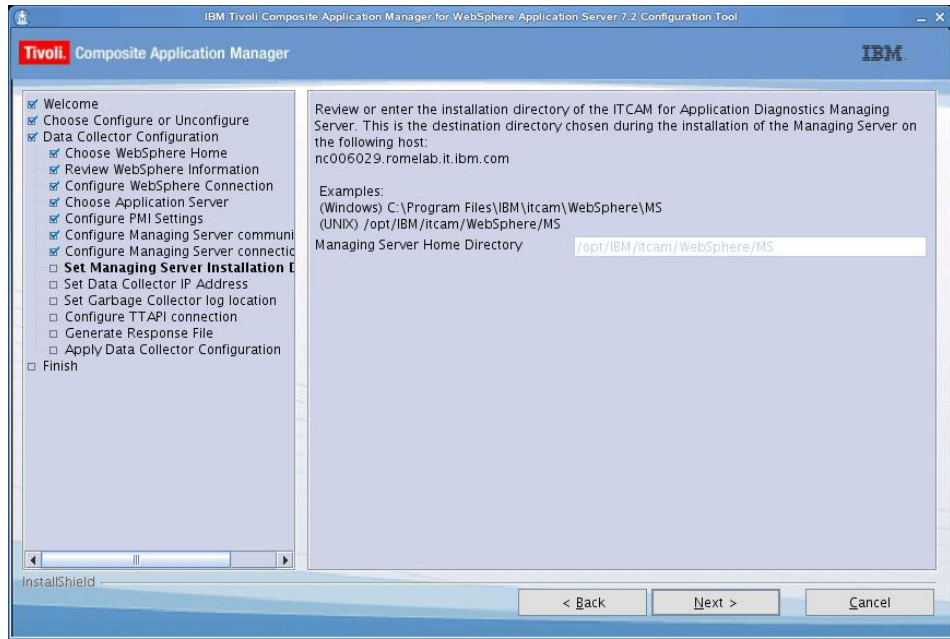
Field	What to do
Fully Qualified Host Name	Enter the fully qualified host name of the ITCAM for Application Diagnostics Managing Server.
Codebase Port	Enter the port number that the code base server in the Managing Server kernel listens to when accepting incoming requests.

Click **Next**.



The **Set Managing Server Installation Directory** window opens.

10. The Data Collector Configuration Tool determines the Managing Server Home Directory path using the host name and port that are provided in the previous window. If the Managing Server is running, and there are no firewall issues, the Managing Server Home Directory field is populated with the path. In this case, you cannot enter a path. If the Data Collector Configuration tool cannot determine the Managing Server Home Directory path, enter the path. Click **Next**.

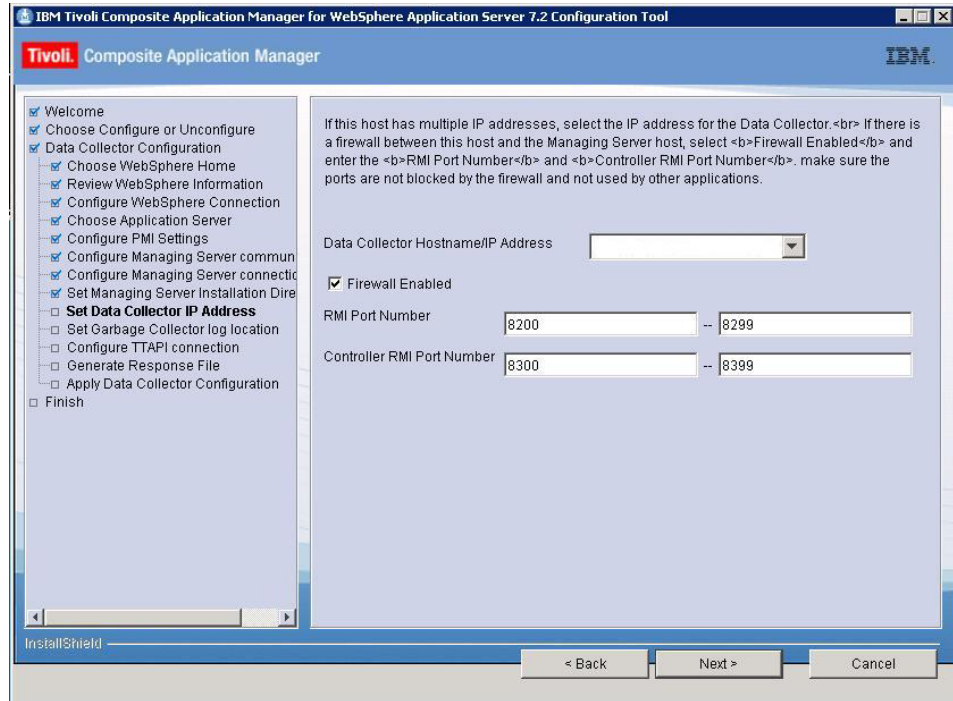


The **Set Data Collector IP Address** window opens.

11. Enter the required information about the Data Collector based on details in the following table:

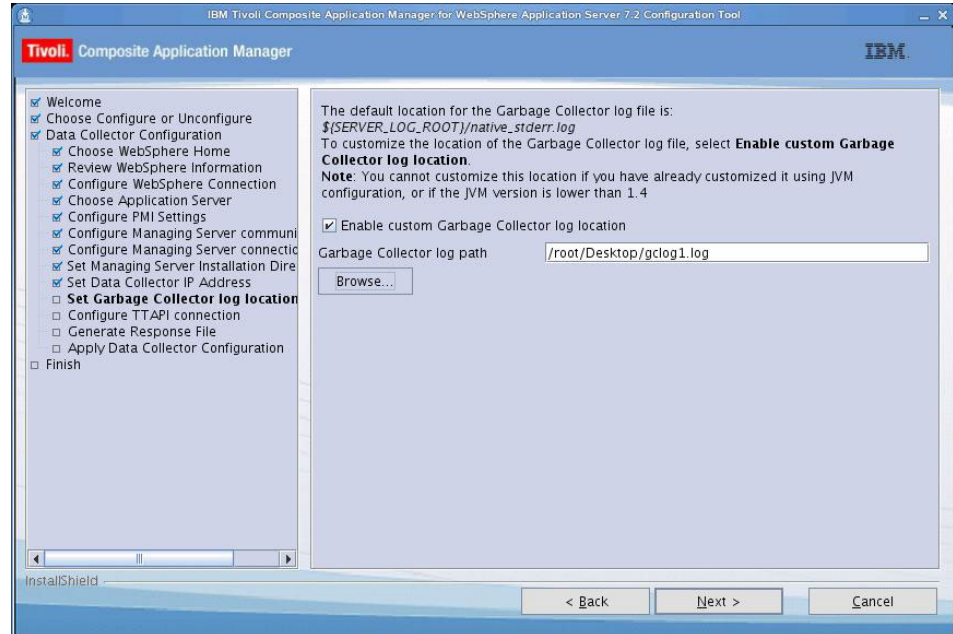
Table 13. Data Collector Configuration

Field	Description
Data Collector hostname/IP Address	If this host has multiple IP addresses, select the IP address for the Data Collector.
Firewall Enabled	If there is a firewall between this host and the Managing Server host, select <b>Firewall Enabled</b> .
RMI Port Number	Specify a range of ports for the Data Collector to communicate with the Managing Server. The port range does not have to be from 8200 - 8299 or 8300 - 8399. Any available port ranges can be used. The ports must be opened in the firewall.  The RMI port number is saved in the following Data Collector property file: <code>datacollector.properties</code> . The Data Collector property file is available under the Data Collector runtime directory, for example, <code>/opt/IBM/ITM/aix533/yn/wasdc/7.1.0.2/runtime/was80.devapp-aix-s06Node01.server1</code>
Controller RMI Port Number	Specify a range of ports for the Data Collector to communicate with the Managing Server. The port range does not have to be from 8200 - 8299 or 8300 - 8399. Any available port ranges can be used. The ports must be opened in the firewall.  The Controller RMI port number is saved in the Data Collector property file: <code>datacollector.properties</code> . The Data Collector property file is available under the Data Collector runtime directory, for example, <code>/opt/IBM/ITM/aix533/yn/wasdc/7.1.0.2/runtime/was80.devapp-aix-s06Node01.server1</code>



The **Set Garbage Collector log location** window opens.

12. If the garbage collection log location was previously customized in JVM or the JVM version is 1.4 or earlier, you cannot customize the location of the garbage collection log. Click **Next**.

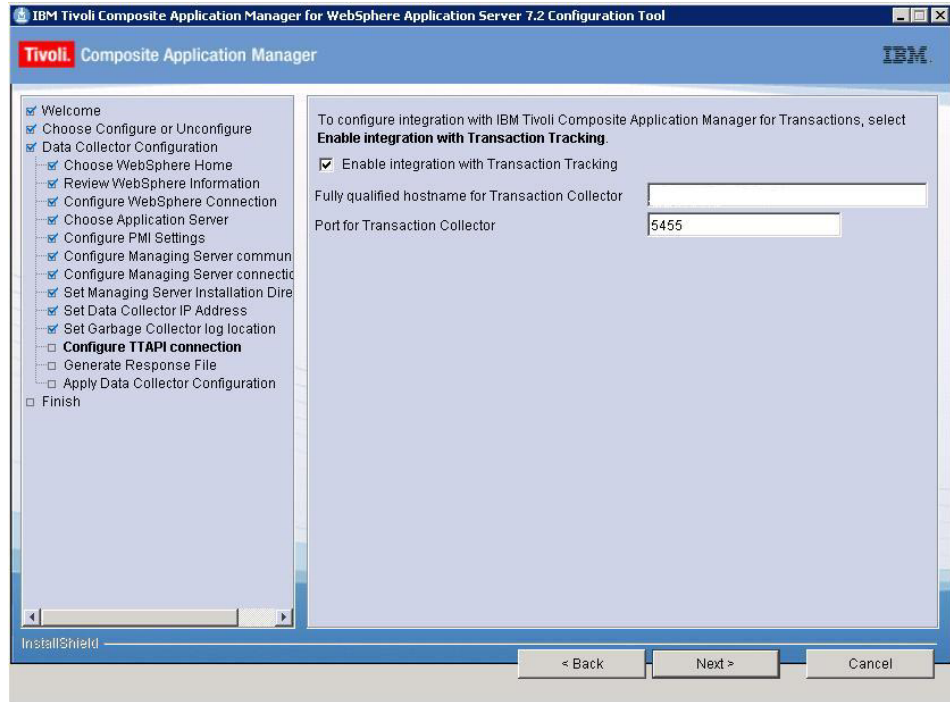


The **Configure TTAPI connection** window opens.

13. To configure the Data Collector to communicate with ITCAM for Transactions, complete the window based on the information in the following table and click **Next**:

Table 14. TTAPI connection

Field	Description
Fully qualified hostname for Transactions Collector	Enter the fully qualified host name or IP address of the ITCAM for Transactions that you want to communicate with.
Port for Transaction Collector	Enter the port for the Transaction Collector.

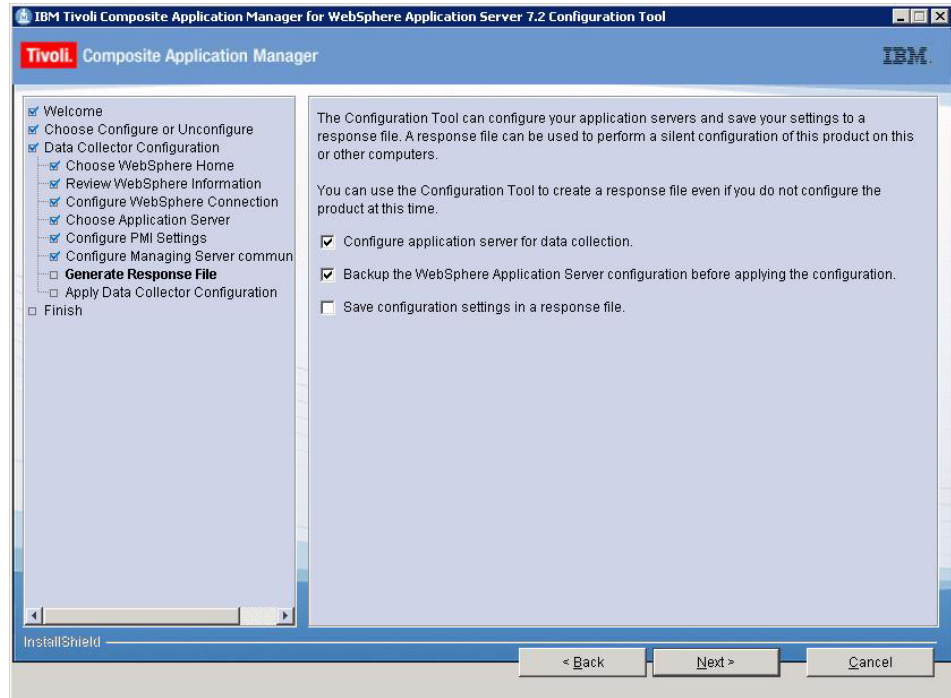


The **Generate Response File** window opens.

- Complete the window based on the information in the following table and click **Next**.

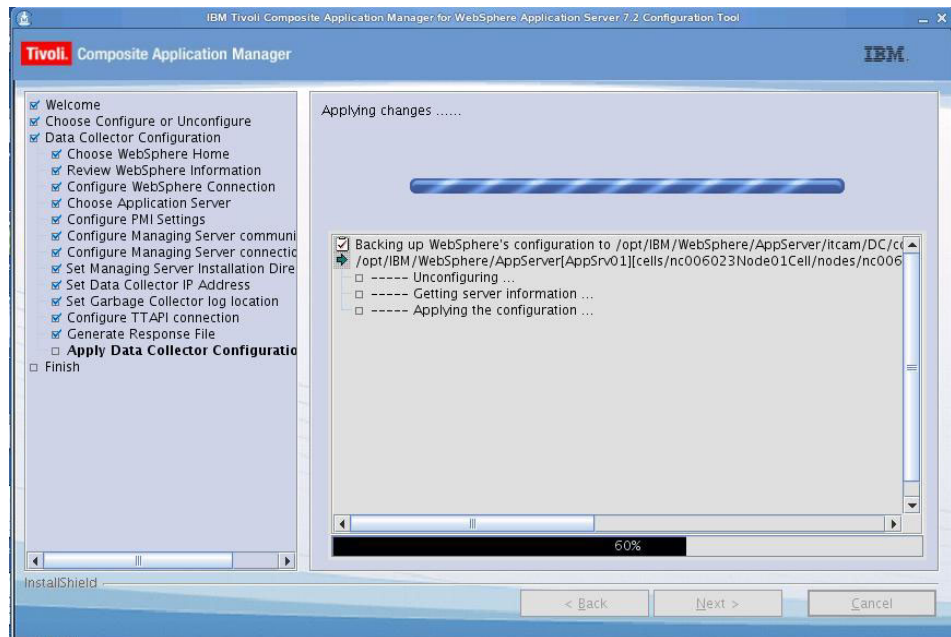
Table 15. Response File

Field	Description
Configure application servers for data collection	You might want to clear this option if you are performing the configuration procedure <i>only</i> for creating a response file for a subsequent silent configuration. By default, this option is selected.
Backup the WebSphere Application Server configuration before applying the configuration.	Backing up the WebSphere Application Server configuration before applying the Data Collector configuration is a good practice but it can result in a large backup file. If you are doing configuration to create a response file, it is not necessary to create a backup.
Save configuration settings in a response file	A response file is used to perform silent configuration of ITCAM for WebSphere Application Server to a WebSphere Application Server profile.



The **Apply Data Collector Configuration** window opens.

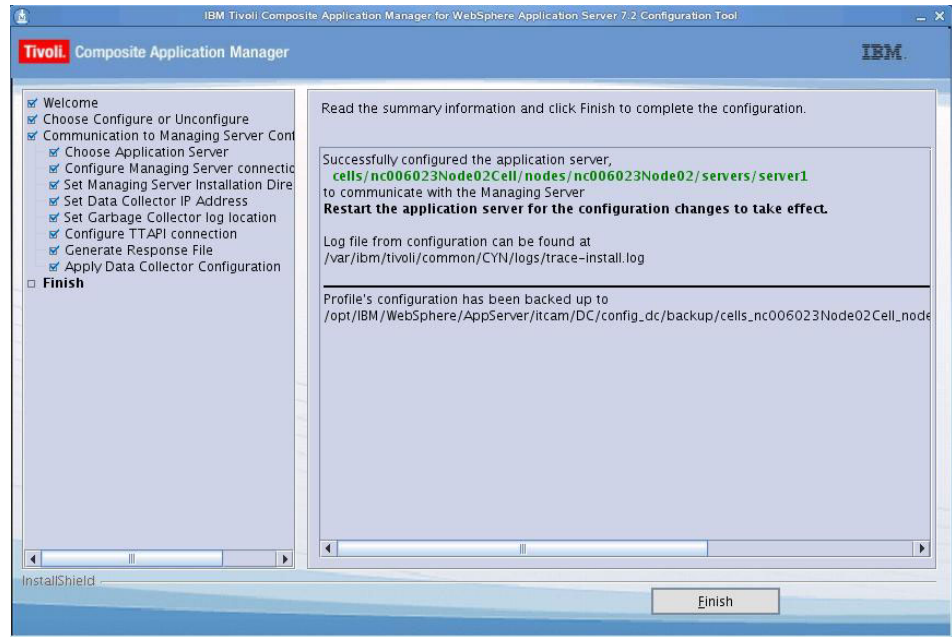
15. Click **Next**.



The **Finish** window opens.

16. Select **Finish** to complete the configuration.





17. When you have completed the configuration of ITCAM for WebSphere Application Server, restart the WebSphere Application Server instance.
18. To start using ITCAM for WebSphere Application Server, see Chapter 2, “Getting Started with ITCAM for WebSphere Application Server,” on page 3.
19. You know the ITCAM for WebSphere Application Server configuration has failed if any of the following events occur:
  - After the configuration, the application server does not restart.
  - During a GUI configuration, the summary window for the Data Collector Configuration Tool indicates the configuration failed.
  - After the configuration, there are messages in the log file that indicate the configuration failed.

If the ITCAM for WebSphere Application Server configuration fails, see Appendix D, “What to do if ITCAM for WebSphere Application Server configuration fails,” on page 171 or “Known issues and solutions” on page 119.

## Silent configuration of ITCAM for WebSphere Application Server on Windows

### About this task

Configuration through the response file is called a *silent* configuration.

During a silent configuration, you can optionally provide some of the configuration parameters at the command-prompt rather than through the response file. When you manually enter configuration options, instead of including them in the response file you can reuse the response file for multiple configurations where some of the options are unique for each configuration. Enter the unique options at the command-prompt during each configuration. The response file supplies the values that are valid only for multiple target computers.

To reuse a response file in multiple configurations, where some of the options are unique to each configuration, nullify those options in the response file by

commenting them out with a number sign (#). Configuration options specified in the response file take precedence over options entered at the command-prompt. If you are providing options at the command-prompt, comment them out in the response file. Some values in the response file have default values, if no value is specified, the default value is used.

Complete the following steps to perform a silent configuration:

## Procedure

1. Specify configuration options in the response file located here:  
*WebSphere\_home*\AppServer\itcam\DC\config\_dc\responsefile\_templates\  
DC\_Config\_Template.opt.
2. Go to the *WebSphere\_home*\AppServer\itcam\DC\config\_dc directory.
3. Run the following command:

```
config_dc.bat -silent -options response_file.opt
```

For example:

```
config_dc.bat -silent -options C:\itcam\images\silent  
\DC6.opt
```

For details of silent installation options, see “Options for configuring ITCAM for WebSphere Application Server on Windows, UNIX, and Linux” on page 142.

4. If you are performing a silent configuration (after ITCAM for WebSphere Application Server has been installed), you cannot use the `-is` option. Instead run the command in the following way:

```
config_dc.bat -silent [configuration_option...] -options response_file
```

where [*configuration\_option*] are values that override values in the response file. For example,

```
config_dc.bat -silent -V DC_CCUC_MS_CONFIG=true -options response_file.opt
```

or

```
config_dc.bat -silent -options response_file.opt -V DC_CCUC_MS_CONFIG=true
```

5. When you have completed the configuration of ITCAM for WebSphere Application Server, restart the WebSphere Application Server instance.
6. To start using ITCAM for WebSphere Application Server, see Chapter 2, “Getting Started with ITCAM for WebSphere Application Server,” on page 3.
7. You know the ITCAM for WebSphere Application Server configuration has failed if any of the following events occur:
  - After the configuration, the application server fails to restart.
  - During a silent configuration, the command line indicates a message that the configuration has failed.
  - After the configuration, there are messages in the log file that indicate configuration has failed.

If the ITCAM for WebSphere Application Server configuration fails, see Appendix D, “What to do if ITCAM for WebSphere Application Server configuration fails,” on page 171 or “Known issues and solutions” on page 119.





---

## Chapter 4. Installing and configuring ITCAM for WebSphere Application Server on Linux and UNIX systems

ITCAM for WebSphere Application Server is an optional component that can be installed and configured during the installation of WebSphere Application Server. It can also be installed on an existing WebSphere Application Server. Install ITCAM for WebSphere Application Server using Installation Manager. Configure ITCAM for WebSphere Application Server for data collection using the Data Collector Configuration Tool.

---

### Installing ITCAM for WebSphere Application Server on Linux and UNIX systems

ITCAM for WebSphere Application Server is included in the WebSphere Application Server 8.0 installation media. Use Installation Manager to install ITCAM for WebSphere Application Server. Install ITCAM for WebSphere Application Server once for each installation of WebSphere Application Server. If multiple installations of WebSphere Application Server exist on the same computer, install ITCAM for WebSphere Application Server separately for each installation. An ITCAM for WebSphere Application Server installation cannot span over multiple hosts. Install ITCAM for WebSphere Application Server separately on each host, and configure it for each application server instance. This applies to both Network Deployment and stand-alone environments.

Install with either of these methods:

- GUI installer: Installs ITCAM for WebSphere Application Server using the IBM Installation Manager.
- Silent: Installs ITCAM for WebSphere Application Server using the IBM Installation Manager from a command line, installation options are provided through a response file. Choose a silent for the following options:
  - Installation in a demonstration environment and then later in a production environment with similar options.
  - Installation of multiple instances of ITCAM for WebSphere Application Server that have shared options.

ITCAM for WebSphere Application Server can be installed on the following versions of WebSphere Application Server:

- WebSphere Application Server Base
- WebSphere Application Server Network Deployment
- WebSphere Application Server Express

The ITCAM for WebSphere Application Server installation directory is the following fixed location: *WebSphere\_home*/AppServer/itcam/DC (/opt/IBM/WebSphere/AppServer/itcam/DC)

### Prerequisites and preinstallation tasks for ITCAM for WebSphere Application Server on Linux and UNIX systems

There are a number of tasks that must be performed before installing ITCAM for WebSphere Application Server on Linux and UNIX systems.

## System and software prerequisites

The following hardware and software are requirements for installing and using ITCAM for WebSphere Application Server on Linux and UNIX systems.

### Hardware prerequisites for the ITCAM for WebSphere Application Server

The installation image requires 162 MB. Installation requires 390 MB.

#### Memory

ITCAM for WebSphere Application Server requires 1 GB of physical memory but 1.5 GB is recommended if the computer is running multiple installations of WebSphere Application Server or other applications that require a lot of memory.

### Supported operating system and application server combinations

ITCAM for WebSphere Application Server supports WebSphere Application Server Version 8.0 on the following UNIX and Linux platforms:

- AIX® 6.1 with the 6100-00-02 Service Pack or later (32-bit and 64-bit)
- Solaris 10 with the latest Patch Cluster (SPARC and Opteron) (64-bit)
- Red Hat Enterprise Linux 5.0 Update 1 and above (IA32/PPC/Z where Z=31-bit), (32-bit)
- Red Hat Enterprise Linux 5.0 Update 1 and above (Opteron/EM64T/PPC/Z), (64-bit)
- SuSE Linux Enterprise Server 10 SP1 (IA32/PPC/Z where Z=31-bit), (32-bit)
- SuSE Linux Enterprise Server 10 SP1 (Opteron/EM64T/PPC/Z), (64-bit)
- SuSE Linux Enterprise Server 11 SP1 (IA32/PPC/Z where Z=31-bit), (32-bit)
- SuSE Linux Enterprise Server 11 SP1 (Opteron/EM64T/PPC/Z), (64-bit)

#### Supported JDKs

The supported JDKs for the ITCAM for WebSphere Application Server are the same as the supported JDKs for the particular application server you will monitor.

### Additional requirements for the operating system

ITCAM for WebSphere Application Server must be installed on the same computer as the application server you will monitor. Thus, the set of supported operating systems is further limited by the supported operating systems for the application server you will monitor.

For operating system requirements for WebSphere Application Server 8.0, see:

<http://www-306.ibm.com/software/webservers/appserv/doc/latest/prereq.html>.

### Previous Data Collectors

ITCAM for WebSphere Application Server can be installed but cannot be configured if there is already a Data Collector configured as a result of previous installations of any of the following ITCAM systems:

- ITCAM for WebSphere Application Server
- ITCAM for WebSphere Resources

- ITCAM for WebSphere
- ITCAM for Application Diagnostics

If a Data Collector is present, it must be unconfigured.

## Permissions

The user who installs ITCAM for WebSphere Application Server requires the following permissions:

- The user must have read, write, and execute privileges on the application server.
- The user must own the files in the *AppServer\_home* directory.
- The application server instance owner ID must have write permission to the directory where the installer creates log files. By default, it is the `/var/ibm/tivoli/common/CYN/logs` directory.
- Root privileges are required if the application server is owned by the root user.
- If the application server instance has a non-root owner ID, use the same owner ID as the application server instance to install ITCAM for WebSphere Application Server.

### Additional requirements when using the application server ID (non-root owner ID):

#### About this task

If the application server instance has a non-root owner ID, use the same owner ID as the application server to install ITCAM for WebSphere Application Server. To use that ID, perform the following procedure to avoid communication problems:

#### Procedure

1. Make sure that the application server owner ID can write to the ITCAM for WebSphere Application Server installation directory: *WebSphere\_home/AppServer/itcam/DC*
2. For configuration purposes, make sure that the user can write to `/var/ibm/tivoli`. You might have to create this directory as the root user and use the `chown` command to change ownership to the user.
3. Make sure that the user has read and write privileges to the following application server log directory: *AppServer\_home/profiles/profile\_name/logs*. If the `wsadmin.traceout` and `wsadmin.valout` files exist in the *AppServer\_home/profiles/profile\_name/logs* directory, the user must also have read and write permissions to those files.

### If WebSphere Application Server was installed by the root user and the application server instance is owned by a non-root user:

#### About this task

If WebSphere Application Server was installed by the root user and the application server instance created from that installation of WebSphere Application Server is owned by a non-root user, perform the following procedure:

#### Procedure

1. As the root user, run the following commands:
 

```
chown -R wasuser:wasgroup AppServer_home/properties/version/history
chown wasuser:wasgroup AppServer_home/properties/version
```

 where *wasuser* and *wasgroup* are the user and group for the application server instance.
2. As the non-root user, run the following command:

```
./versionInfo.sh
```

## Results

Information about the application server version is displayed.

## Checking the heap size

### About this task

Ensure that the JVM heap size is sufficient. The default value is enough, but if the heap size was configured in WebSphere Application Server, make sure that it is not less than 384 MB. Complete the following steps for each server that you want to configure for ITCAM for WebSphere Application Server:

### Procedure

1. Log on to the WebSphere Application Server administrative console.
2. Go to the area for specifying the heap size in the administrative console by completing the following steps:
  - a. Click **Servers >Server Types>WebSphere Application Servers** and select the *server\_name*.
  - b. In the **Configuration** tab, go to **Server Infrastructure > Java and Process Management > Process Definition > Additional Properties: Java Virtual Machine**.
3. If the value in the **Maximum Heap Size** field is less than 384, set it to 384.

**Network Deployment environment:** In a Network Deployment environment, increase the maximum heap size to a value greater than 256. If you don't increase the heap size, the installation might fail and the following error message is displayed:

```
CYNCR8522E: The system was unable to retrieve a list of known servers from server server_name using SOAP port port_number.
```

## HP-UX: Tuning Java Hotspot VM garbage collection

For Java Hotspot VM, the default `NewSize` and `MaxNewSize` might be too small for applications that allocate large numbers of short living objects. The following tuning is recommended for an application that allocates many short living objects:

```
-XX:+DisableExplicitGC -XX:NewSize=128m -XX:MaxNewSize=256m
```

The default `MaxPermSize` might be too small for some applications. The following tuning is recommended `-XX:MaxPermSize=128m` or `-XX:MaxPermSize=256m`.

**Attention:** Change `NewSize`, `MaxNewSize`, and `MaxPermSize` based on the Maximum (`-Xmx`) and Minimum (`-Xms`) heap settings of the JVM. Before you modify these parameters, see the HotSpot JVM documentation:

<https://h20392.www2.hp.com/portal/swdepot/displayproductinfo.do?productnumber=hpujxjavahome#tools>.

## Ensure that there are no invalid mounted file systems

### About this task

There might be file systems that are specified as mounted in the `/etc/filesystems` file that are not mounted or have lost connection with the ITCAM for WebSphere Application Server server. If that is the case, the installation fails without producing any error messages.

Complete the following steps to prevent this failure:

### Procedure

1. Either mount all file systems that are listed in the `/etc/file_systems_file` file or comment out all files systems listed in the `/etc/file_systems_file` that are not mounted.

where `file_systems_file` is the file that lists the mounted file systems. For example, on AIX it is called `filesystems` and on Linux it is called `fstab`.

2. Verify that the following commands can be run successfully and without error messages:

```
df -a
df -k
```

## Mounting the ITCAM for WebSphere Application Server DVD on HP-UX

### About this task

ITCAM for WebSphere Application Server is included in the WebSphere Application Server 8.0 installation media. If you use the DVD to install ITCAM for WebSphere Application Server on HP-UX, run the following command when mounting the DVD:

```
mount -F cdfs -o ro,cdcase,rr /dev/dsk/dvd_device /mnt/cdrom
```

Make sure that the value for `dvd_device` corresponds to your particular DVD device.

### Notes<sup>®</sup> about the installation:

1. To prepare for the installation, gather information that you will need during the installation. A good example of the values that you might need to provide is located here: Appendix C, “Guidelines for specifying silent values on Windows, UNIX, and Linux,” on page 141
2. For a Network Deployment environment, supply the host name of the Deployment Manager to configure ITCAM for WebSphere Application Server for a node. It is not necessary to install or configure ITCAM for WebSphere Application Server on the Deployment Manager itself.
3. If you are performing a silent installation, copy the response file to a hard disk drive.
4. By default, the Installation Manager creates log files in the following directory: `/var/ibm/tivoli/common/CYN/logs`.
5. To install on a cluster, run Installation Manager on each node that you want to install on. Create a response file and use the silent installer mode if you must install across multiple nodes in a cluster. See “Silent installation of IBM Tivoli Composite Application Manager for WebSphere Application Server on UNIX and Linux systems” on page 42.
6. The Installation Manager does not accept values for directory paths if the following special characters are included:  
`\u `!@#*$()*+=[]{}|:;'"<>,?`
7. The Installation Manager writes to the following log directory by default: `/var/ibm/InstallManagerversion/logs`

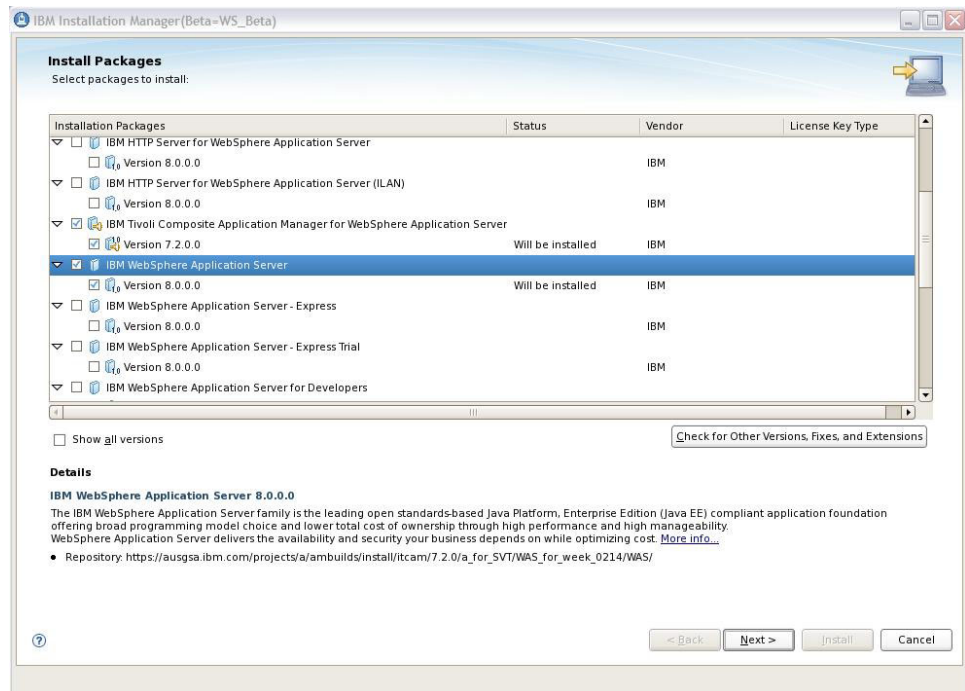
# GUI installation of ITCAM for WebSphere Application Server on UNIX and Linux systems

## About this task

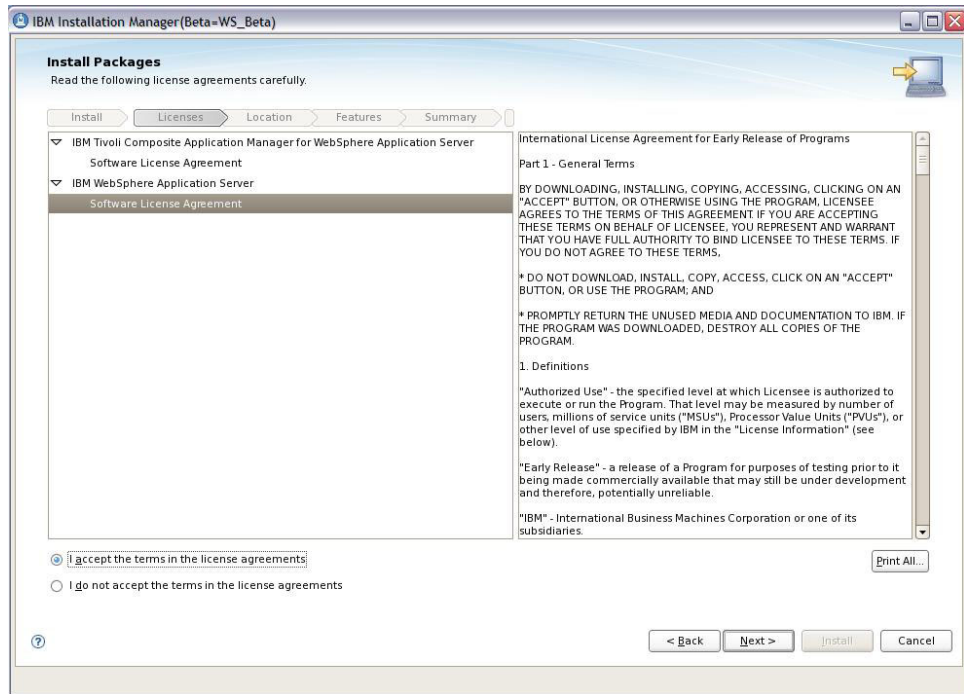
Complete the following procedure to install and configure ITCAM for WebSphere Application Server:

## Procedure

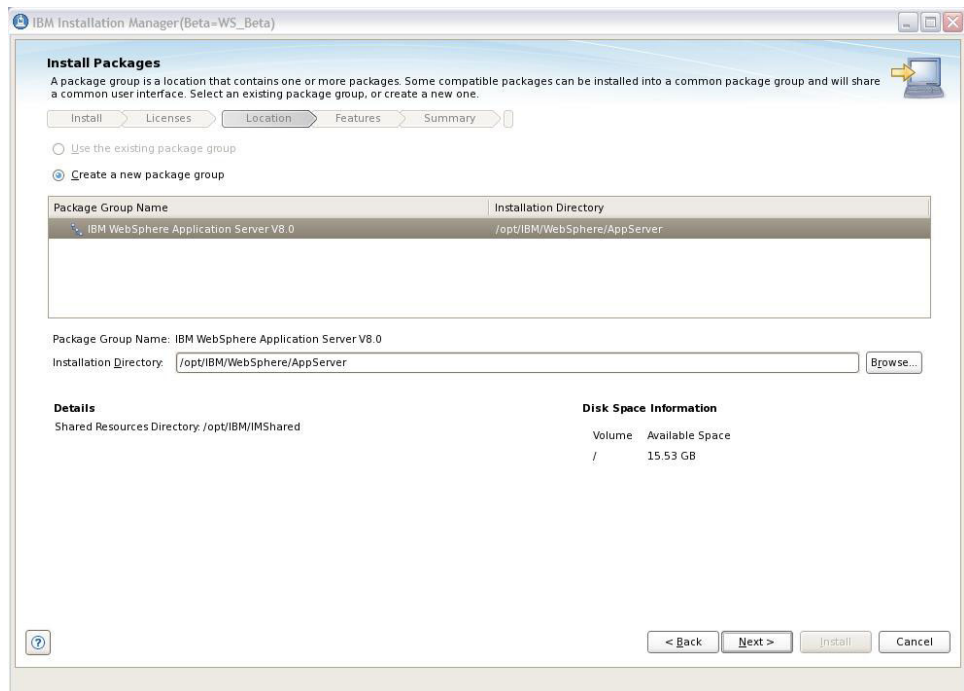
1. Access the installation files, for details, see Appendix A, “Obtaining installation images for Windows, Linux, and UNIX systems,” on page 137.
2. In Installation Manager, select **Install**. Select **IBM Tivoli Composite Application Manager for WebSphere Application Server** and select **Version 7.2.0.0**. To search for fixes, updates, and extensions to the available packages, select **Check for Other Versions, Fixes and Extensions**. Installation Manager searches for updates in the default update repositories for the packages. Click **Next**. The Licenses window opens.



3. Select **I Accept the Terms in the license agreements**. Click **Next**. The Location window opens.

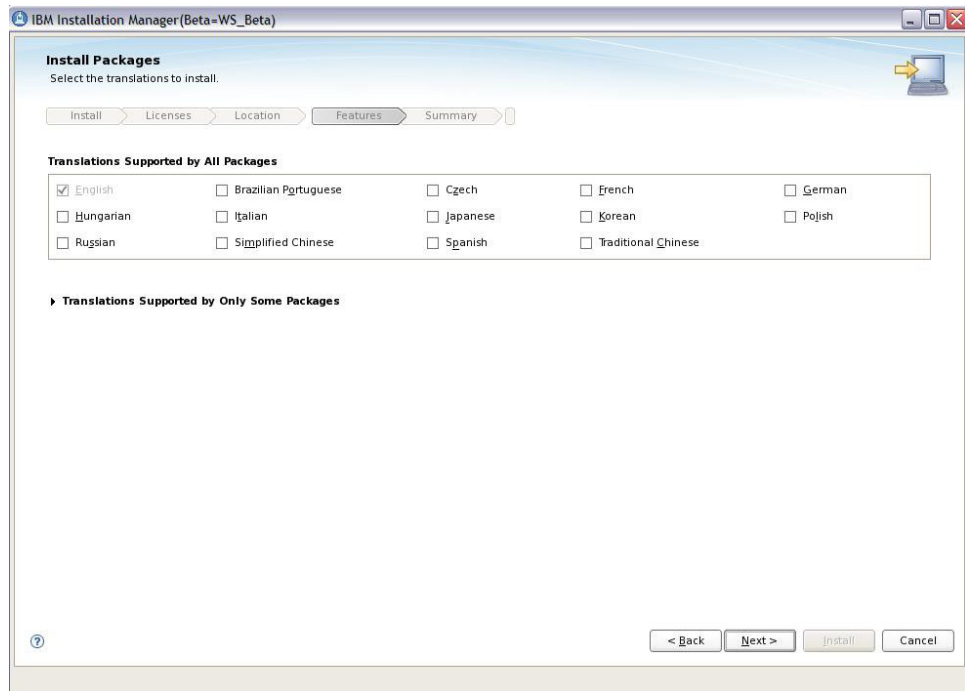


4. A package group represents a directory in which packages share resources with other packages in the same group. When you install packages with Installation Manager, you can choose to create a package group or install the packages into an existing package group. ITCAM for WebSphere Application Server is an extension offering, it can only be installed under the IBM WebSphere Application Server v8.0 package group. Select **IBM WebSphere Application Server v8.0**. Click **Next**. The Features view opens.

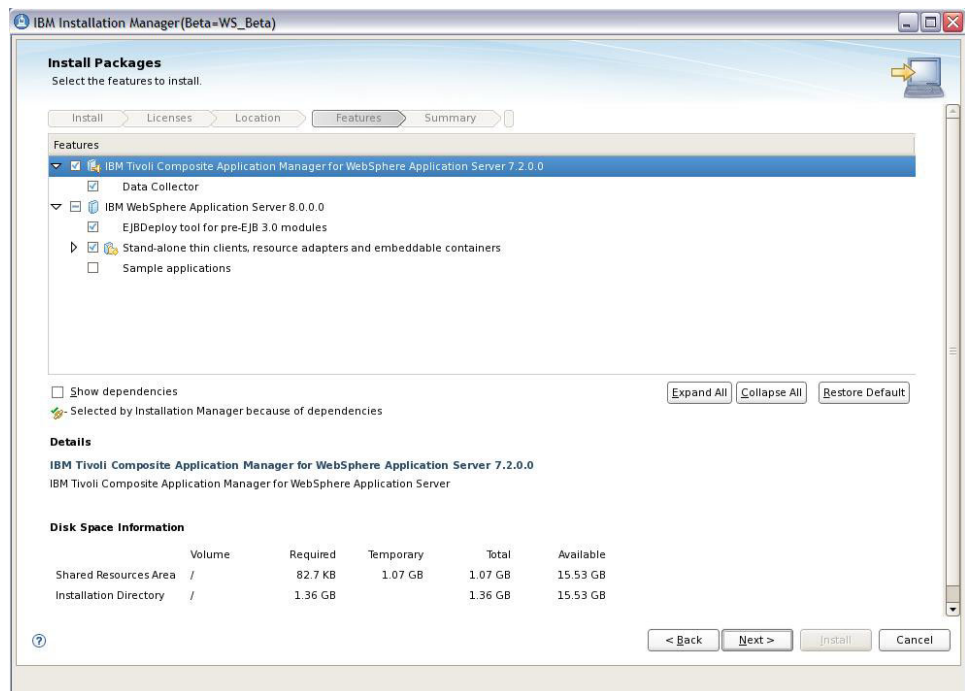


5. Select the language to use for this installation. Click **Next**.



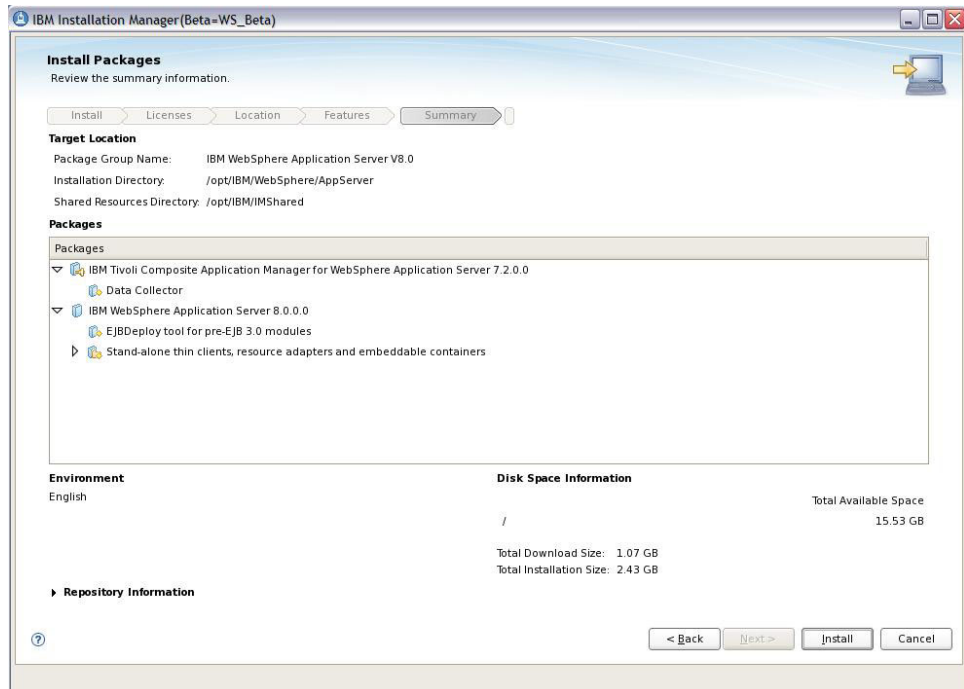


6. To verify if there are dependent features that must be installed, select **Show Dependencies**. Any dependent features are listed. Click **Next**. The Summary window opens.

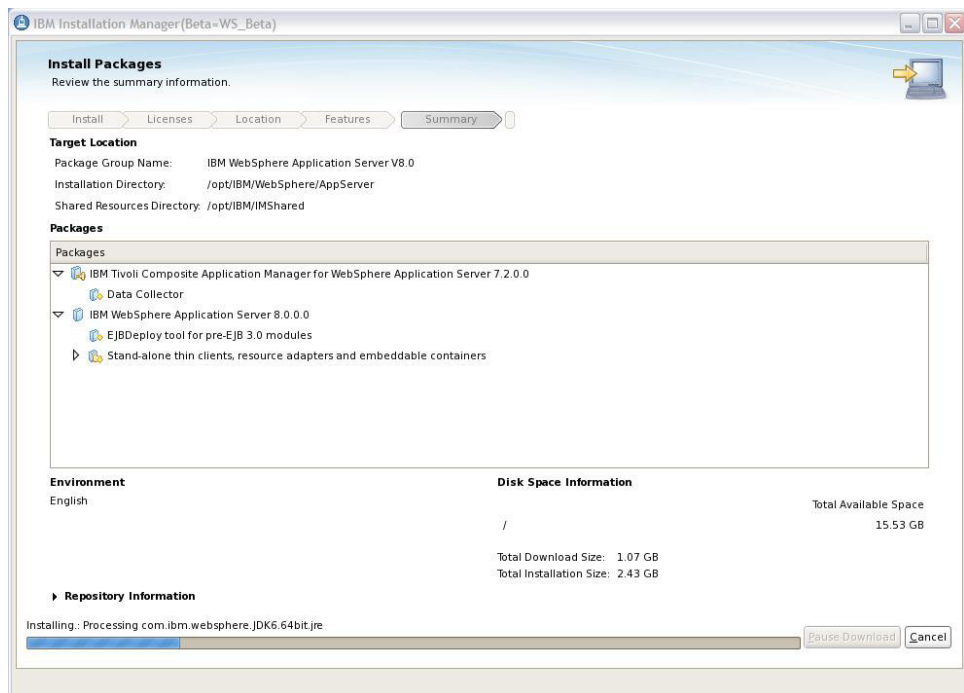


7. Review the installation information and select **Install**.





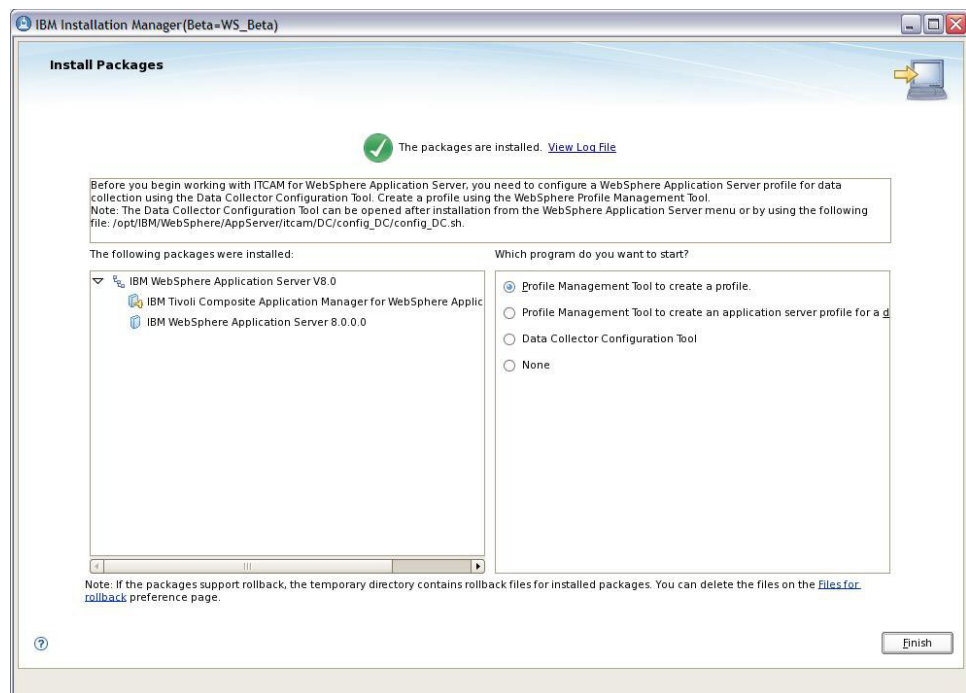
8. You can pause or cancel the installation.



9. When the installation is complete, there are a number of options available. If you are installing ITCAM for WebSphere Application Server and WebSphere Application Server at the same time, create a WebSphere profile before you start configuration. After you create the profile, manually start the Data Collector Configuration Tool, see “Configuration of ITCAM for WebSphere Application Server on Linux and UNIX systems” on page 47. Make your selection based on the descriptions in the following table and select **Finish**:

Table 16. Options available

Option	Description
Profile Management Tool to create a profile	Select this option to create a default profile.
Profile Management Tool to create an application server profile for a development environment	Select this option to create a profile customized for development purposes.
Data Collector Configuration Utility to configure ITCAM for WebSphere Application Server	Use the Data Collector Configuration Tool to configure an application server instance for data collection. Also, use the Data Collector Configuration Tool to configure communication between ITCAM for WebSphere Application Server and an ITCAM for Application Diagnostics Managing Server.



## Silent installation of IBM Tivoli Composite Application Manager for WebSphere Application Server on UNIX and Linux systems

### About this task

Installation through the response file is called a *silent* installation.

During a silent installation, the Installation Manager references a response file located on a hard disk in the network, which contains the required installation parameters. The response file is available in the ITCAM for WebSphere Application Server repository root directory. You can also generate a response file when you run a GUI installation. Performing a silent installation instead of a GUI installation has the following advantages:

- You can reuse the response file for multiple installations.

- The response file provides a record of installation settings enabling you to identify installation setting details at a later date.

Complete the following procedure to run the silent installation and configuration command:

### Procedure

1. Specify configuration options in the response file template. This file is called `responsefile.xml` and is in the ITCAM for WebSphere Application Server repository root directory. The following parameters are required:

```
<repository location='${itcam_repositoty_path}' />
<profile id='${was_profile}' installLocation='${was_home_path}'>
<data key='eclipseLocation' value='${im_eclipse_home_path}' />
<preference name='com.ibm.cic.common.core.preferences.eclipseCache'
value='${shared_location_path}' />
```

2. Using a command-prompt, change to `IM_home/eclipse/tools` directory and run the following command:

```
./imcl -input responsefile.xml -acceptLicense
```

3. After the Installation Manager runs in silent installation mode, a successful installation is indicated by an empty line. After a successful installation, the following folder is created: `WebSphere_home/AppServer/itcam/DC`.
4. The log files are created in the following default location: `/var/ibm/InstallManagerversion/logs`.

---

## Configuring ITCAM for WebSphere Application Server on Linux and UNIX systems

Configure ITCAM for WebSphere Application Server using the Data Collector Configuration Tool. The Data Collector Configuration Tool can be opened at the end of the installation or it can be opened later using either of the following methods:

- From the WebSphere Application Server menu
- Using the following file: `WebSphere_home/AppServer/itcam/DC/config_dc/config_DC.sh`, for example, `/opt/IBM/WebSphere/AppServer/itcam/DC/config_dc/config_DC.sh`

Use the Data Collector Configuration Tool to complete the following configuration:

- Configure application server instances for data collection. At a minimum, for ITCAM for WebSphere Application Server to function, configure one application sever instance for data collection. You can configure multiple application server instances for data collection, but each instance must be configured separately. After successful configuration, you can view monitoring data in the Tivoli Performance Viewer console in WebSphere Application Server.
- Configure communication between the ITCAM for WebSphere Application Server Data Collector and ITCAM for Application Diagnostics Managing Server. After successful configuration, the Data Collector is registered in the Managing Server and is displayed in the Managing Server Visualization Engine (MSVE). The Managing Server Visualization Engine provides a diagnostic function. Here are some of the diagnostic activities you can complete in MSVE:
  - Detect transactions failing
  - Detect memory leaks

- Examine detailed method traces, which help to detect application code hotspots
- Generate reports to analyze historical information, such as application performance and OS performance
- Configure communication between the ITCAM for WebSphere Application Server Data Collector and ITCAM for Transactions. You can only configure communication with ITCAM for Transactions if you have configured communication with ITCAM for Application Diagnostics Managing Server.

## Pre-configuration notes

Before you begin configuration, check the permissions of the user who will run the Data Collector Configuration Tool, see “Configuration Permissions” on page 128.

### Enabling user ID and password input from `sas.client.props` for RMI connector types

#### About this task

When you use an RMI connection to WebSphere Application Server and global security is enabled, use the Data Collector Configuration Tool to retrieve the user ID and password from the `sas.client.props` file.

#### Procedure

1. Set the following properties in the `AppServer_home/profiles/profile_name/properties/sas.client.props` file:
 

```
com.ibm.CORBA.loginSource=properties
com.ibm.CORBA.securityEnabled=true
com.ibm.CORBA.loginUserId=user_ID
com.ibm.CORBA.loginPassword=password
```
2. Change to the `AppServer_home/profiles/profile_name/bin` directory and run the following command to encrypt the password:
 

```
PropFilePasswordEncoder.bat path_to_props_file/sas.client.props com.ibm.CORBA
.loginPassword
```

### Enabling user ID and password input from `soap.client.props` for SOAP connector types

When you use a SOAP connection to WebSphere Application Server and global security is enabled, use the Data Collector Configuration Tool to retrieve the user ID and password from the `soap.client.props` file.

#### About this task

#### Procedure

1. Set the following properties in the `AppServer_home/profiles/profile_name/properties/soap.client.props` file:
 

```
com.ibm.SOAP.securityEnabled=true
com.ibm.SOAP.loginUserId=user_ID
com.ibm.SOAP.loginPassword=password
```
2. Change to the: `AppServer_home/profiles/profile_name/bin` directory and run the following command to encrypt the password:
 

```
PropFilePasswordEncoder.bat path_to_props_file/soap.client.props com.ibm.SOAP
.loginPassword
```

## Adjusting ports for firewalls or for use with other applications

During configuration in a Network Deployment environment, specify the SOAP or RMI port numbers that is used by ITCAM for WebSphere Application Server to communicate with the application server or the ITCAM for Application Diagnostics Managing server. Ensure that the firewall does not prevent communication between ITCAM for WebSphere Application Server and the specified ports. The following table specifies the ports numbers that you specify, depending on your environment and the configuration options that you select:

Table 17. Port Configuration

Environment/Configuration	Ports you must specify
WebSphere Application Server Express	None
WebSphere Application Server stand-alone	None
WebSphere Application Server Network Deployment	Deployment Manager port
WebSphere Application Server Express with Managing Server communication	ITCAM for Application Diagnostics Managing Server port number ITCAM for Application Diagnostics Managing Server Controller port number
WebSphere Application Server stand-alone with ITCAM for Application Diagnostics Managing Server communication	ITCAM for Application Diagnostics Managing Server port number ITCAM for Application Diagnostics Managing Server Controller port number
WebSphere Application Server Extended Deployment with ITCAM for Application Diagnostics Managing Server communication	Deployment Manager port ITCAM for Application Diagnostics Managing Server port number ITCAM for Application Diagnostics Managing Server Controller port number

### Prerequisite libraries

The ITCAM for WebSphere Application Server installer and configuration utility require several libraries to run in graphics mode.

The following libraries are required for the ITCAM for WebSphere Application Server Data Collector Configuration Tool.

- X libraries, including libX11, libXmu and libXp
- The PAM library
- GLib 2
- libstdc++ versions 2.95 and 3.3 (known as libstdc++-compat in some distributions)
- libselinux, if the SELinux kernel is used

If the libraries are not available, the configuration utility fails.

You can perform silent configuration without installing the libraries.

The following packages are required in certain Linux distributions:

Table 18. Required packages on several Linux distributions.

Distribution	Packages
Red Hat Enterprise Linux for Mainframe Computing, version 5.0 (5.20.2 and later) 64-bit	compat-libstdc++-295-2.95.3-85.s390.rpm compat-libstdc++-33-3.2.3-61.s390.rpm libX11-1.0.3-8.el5.s390.rpm libXp-1.0.0-8.s390.rpm pam-0.99.6.2-3.14.el5.s390.rpm xorg-x11-xauth-1.0.1-2.1.s390.rpm
SUSE Linux Enterprise Server 10 for IBM System z® 64-bit	compat-32bit-2006.1.25-11.2.s390x.rpm pam-32bit-0.99.3.0-29.4.s390x.rpm pam-modules-32bit-10-2.2.s390x.rpm xorg-x11-libs-32bit-6.9.0-50.14.s390x.rpm xorg-x11-devel-32bit-6.9.0-50.14.s390x.rpm xorg-x11-6.9.0-50.14.s390x.rpm
Red Hat Enterprise Linux AS and ES, version 4.0 for x86-32 and x86-64	compat-libstdc++-296-2.96-132.7.2.i386.rpm compat-libstdc++-33-3.2.3-47.3.i386.rpm xorg-x11-6.8.1-23.EL.src.rpm pam-0.77-65.1.src.rpm
Red Hat Enterprise Linux, versions 5.0 and 5.1 for x86-32 and x86-64	libXp-1.0.0-8.i386.rpm libXmu-1.0.2-5.i386.rpm compat-libstdc++-33-3.2.3-61.i386.rpm compat-libstdc++-296-2.96-138.i386.rpm
SUSE Linux Enterprise Server 10 for x86-32	compat-libstdc++-5.0.7-6.x86_64.rpm xorg-x11-6.8.2-100.13.i586.rpm pam-0.99.6.3-29.1.i586.rpm
SUSE Linux Enterprise Server 10 for x86-64	compat-libstdc++-5.0.7-6.i586.rpm xorg-x11-6.8.2-100.13.x86_64.rpm pam-0.99.6.3-29.1.i586.rpm
SUSE Linux Enterprise Server 9 and 10 for IBM POWER®, 32-bit and 64-bit	compat-libstdc++-5.0.7-22.2.ppc.rpm xorg-x11-devel-6.9.0-50.54.5.ppc.rpm xorg-x11-libs-6.9.0-50.54.5.ppc.rpm pam-0.99.3.0-29.4.ppc.rpm

## If you install ITCAM for WebSphere Application Server using the root ID but the application server is not owned and operated by the root ID

### About this task

The Installation Manager can find most application server installations on the server, but in some cases if the application server is not owned and operated by the root ID, the Installation Manager fails to locate the application server. If this occurs, complete the following procedure:

### Procedure

1. Use the `chown` command to turn over ITCAM for WebSphere Application Server installation from root to the application server owner ID:

```
chown -R wasOwnerId:wasGroupId DC_home
```

2. Make sure that the application server owner ID can write to the `/var/ibm/tivoli/common/CYN` directory:

```
chown -R wasOwnerId:wasGroupId /var/ibm/tivoli/common/CYN
```

### Additional procedure for Security Enhanced Linux (SELinux)

After installing ITCAM for WebSphere Application Server on SELinux, perform an additional procedure to identify the Data Collector shared libraries.

To identify the Data Collector shared libraries on SELinux, run the following command as root, substituting the installation directory for DC\_home:

```
chcon -R -t texrel_shlib_t DC_home/toolkit/lib/architecture_code
```

Use one of the following values for *architecture\_code*, depending on your Linux platform:

Table 19. Data Collector shared libraries on SELinux

Linux platform	Architecture code
Linux Intel R2.6 (32 bit)	linux-ix86
Linux Intel R2.6 (64 bit)	linux-ix64
Linux ppc R2.6 (32 bit)	linux-ppc
Linux ppc R2.6 (64 bit)	linux-ppc64
Linux S390 R2.6 (32 bit)	linux-s390
Linux S390 R2.6 (64 bit)	linux-s390-64

## Configuration of ITCAM for WebSphere Application Server on Linux and UNIX systems

### About this task

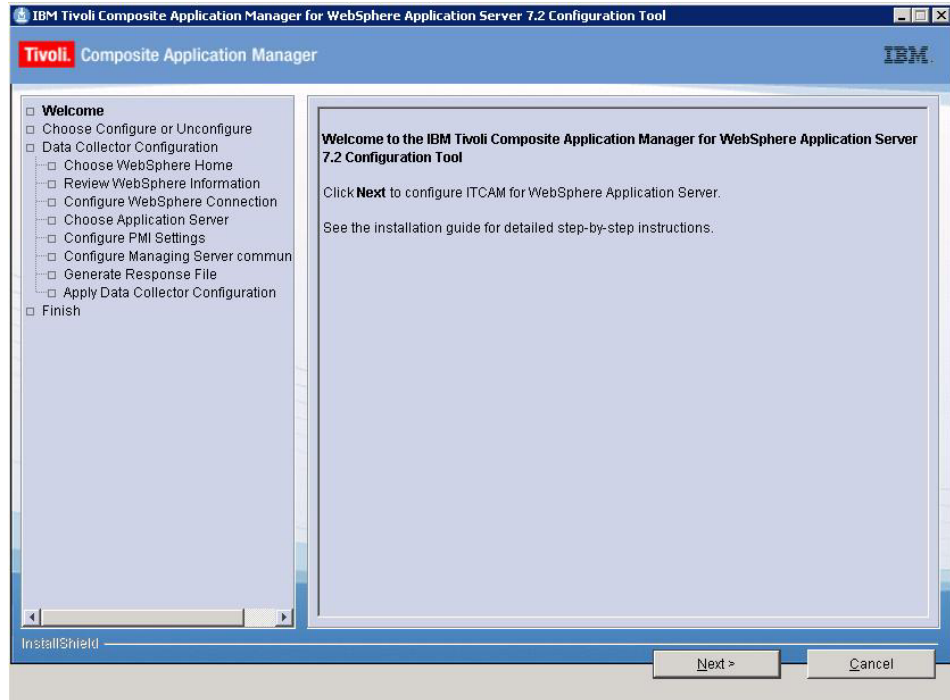
Complete the following procedure to configure ITCAM for WebSphere Application Server:

### Procedure

1. Open the Data Collector Configuration Tool to configure ITCAM for WebSphere Application Server using one of the following methods:
  - In the last window of the Installation Manager, select **Data Collector Configuration Tool**.
  - Open the Data Collector Configuration Tool from *WebSphere\_home/AppServer/itcam/DC/config\_dc/config\_DC.sh*, for example:  
*/opt/IBM/WebSphere/AppServer/itcam/DC/config\_dc/config\_DC.sh*

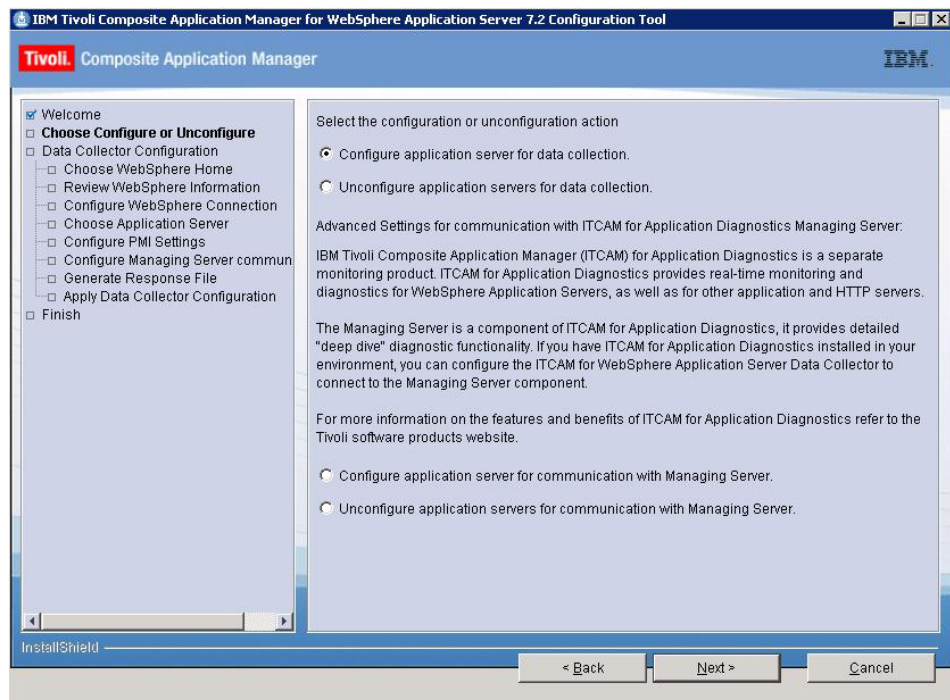
The **Welcome** window opens. Click **Next**.





The **Choose Configure or Unconfigure** window opens.

2. In this window, you can choose to configure or unconfigure an application server for data collection or configure or unconfigure communication with an ITCAM for Application Diagnostics Managing Server. To configure ITCAM for WebSphere Application Server to monitor a WebSphere Application Server, select **Configure application server for data collection**. Click **Next**.

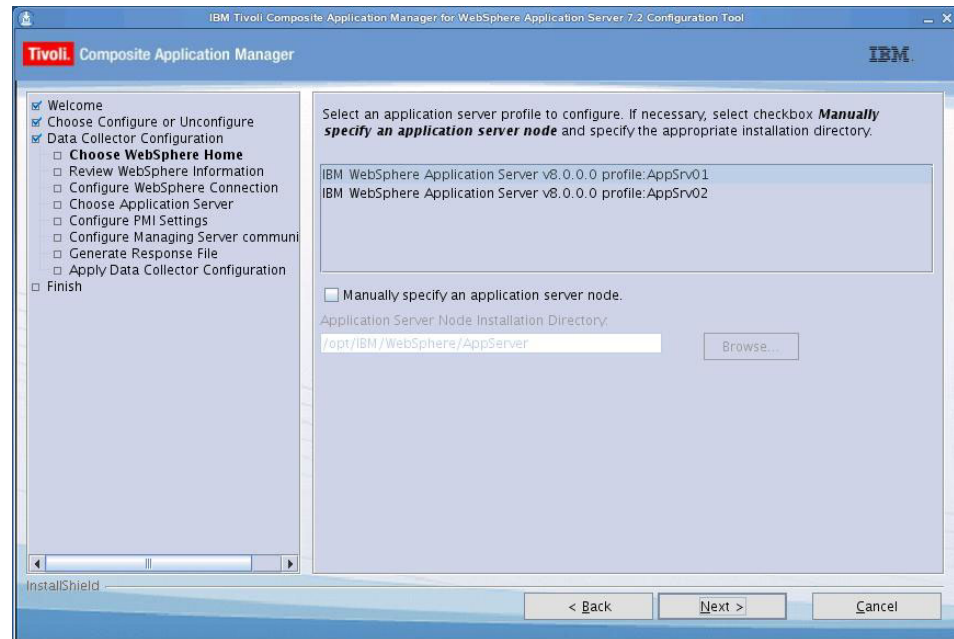


The **Choose WebSphere Home** window opens.

3. The available WebSphere Application Server profiles are listed. Select the profile on which you want to configure the Data Collector. Sometimes in

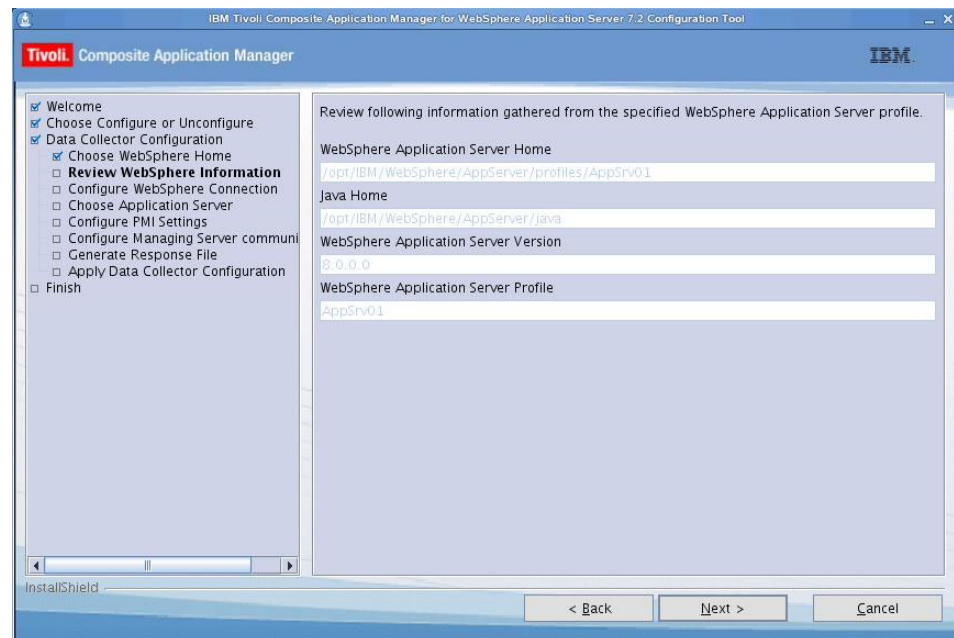


highly customized WebSphere Application Server environments, the Data Collector Configuration Tool fails to discover an application server profile. If this happens, manually specify an application server node. Select **Manually specify an application server node** and browse to the application server node. Click **Next**.



The **Review WebSphere Information** window opens.

- Information is displayed about detected application server instances. This information is for review only and cannot be changed. Click **Next**.



The **Configure WebSphere Connection** window opens.

- Complete the fields based on the following table and click **Next**:

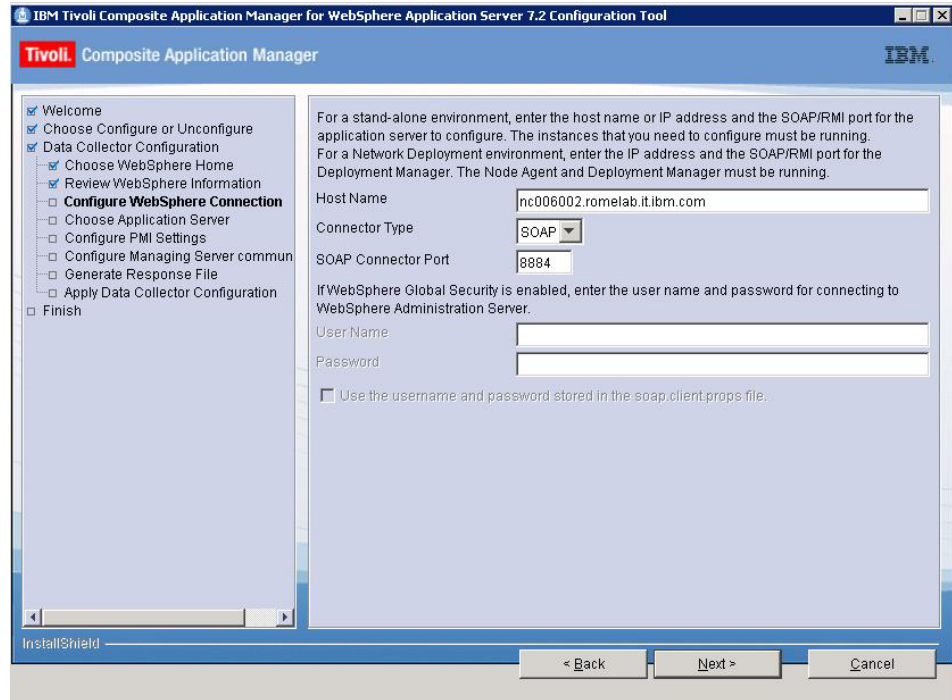


Table 20. Fields for establishing ITCAM for WebSphere Application Server and application server communication

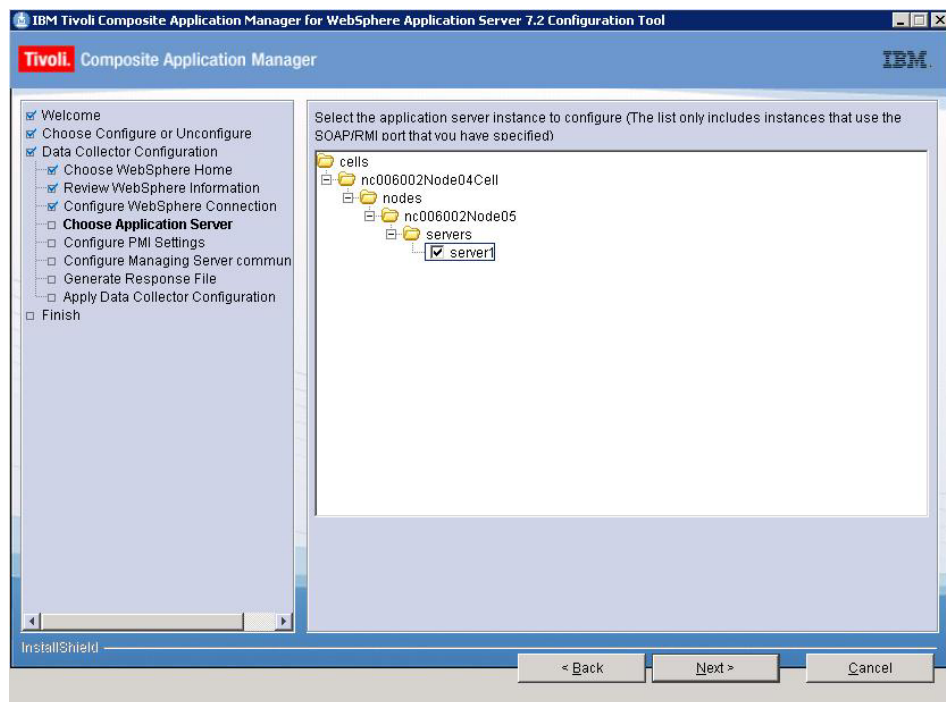
Field	What to do
Host Name	<p>For a stand-alone environment, enter the fully qualified host name or IP address of the application server instance that ITCAM for WebSphere Application Server will monitor. If you are using a host name, do not include a protocol in the host name. For example, enter <code>myserver.ibm.tivoli.com</code>, not <code>https://myserver.ibm.tivoli.com</code>.</p> <p>For a Network Deployment environment, enter the Deployment Manager host name or IP address.</p>
Connector Type	Select the type of connection that ITCAM for WebSphere Application Server and the application server will use for communication.
SOAP Connector Port	<p>For a stand-alone environment, enter the connector port used by the application server instance to send commands using the SOAP. The SOAP port is identified in the following file for the instance of the application server that ITCAM for WebSphere Application Server will monitor: <code>AppServer_home/profiles/profile_name/config/cells/cell_name/nodes/node_name/serverindex.xml</code></p> <p>For a Network Deployment environment, enter the SOAP port used by the Deployment Manager.</p>
RMI Connector Port	<p>For a stand-alone environment, enter the connector port used by the application server instance to send commands using RMI.</p> <p>For a Network Deployment environment, enter the RMI port used by the Deployment Manager.</p>

Table 20. Fields for establishing ITCAM for WebSphere Application Server and application server communication (continued)

Field	What to do
User name and Password (only if Global Security is enabled)	<p>Enter the user name and password of a user who is authorized to log on to the WebSphere Application Server administrative console. This user must have the agent role on the application server.</p> <p>Instead of typing the user name and password, you can configure the Data Collector Configuration Tool to retrieve them from a properties file. To configure the Data Collector Configuration Tool to retrieve the user name and password:</p> <ol style="list-style-type: none"> <li>1. Select <b>Use the username and password stored in the soap.clients.props</b> file.</li> <li>2. If the Connector Type is SOAP, the option <b>Use the username and password stored in "soap.client.props"</b> is displayed. Select this option.</li> <li>3. If the Connector Type is RMI, the option <b>Use username and password stored in "sas.client.props"</b> is displayed. Select this option.</li> </ol> <p>For more information, see “Enabling user ID and password input from sas.client.props for RMI connector types” on page 44 or “Enabling user ID and password input from soap.client.props for SOAP connector types” on page 44.</p>

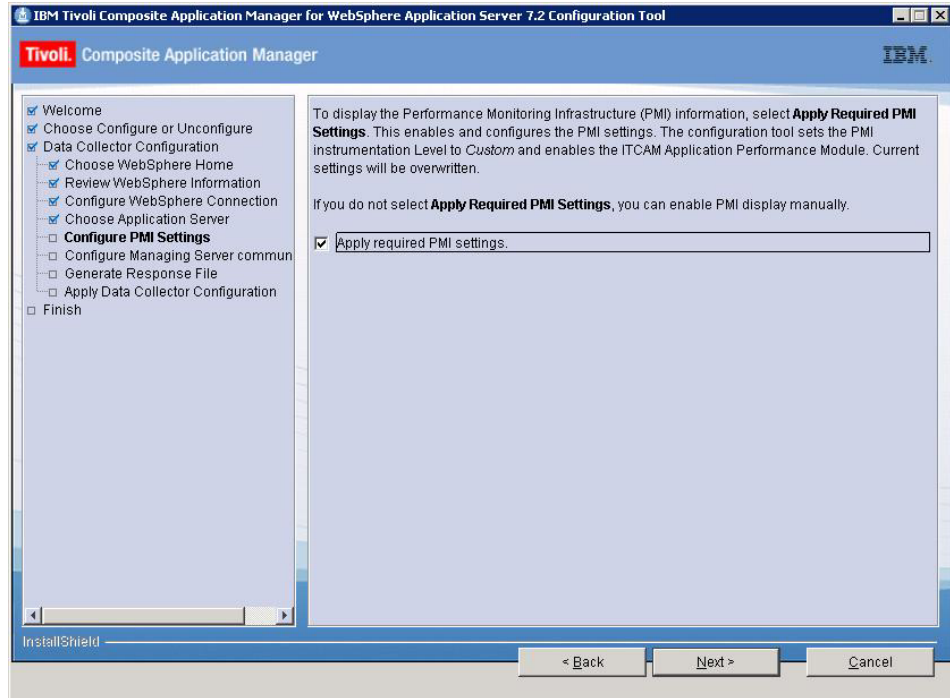
The **Choose Application Servers** window opens.

6. Select the application server instance you want to configure for data collection. Click **Next**.



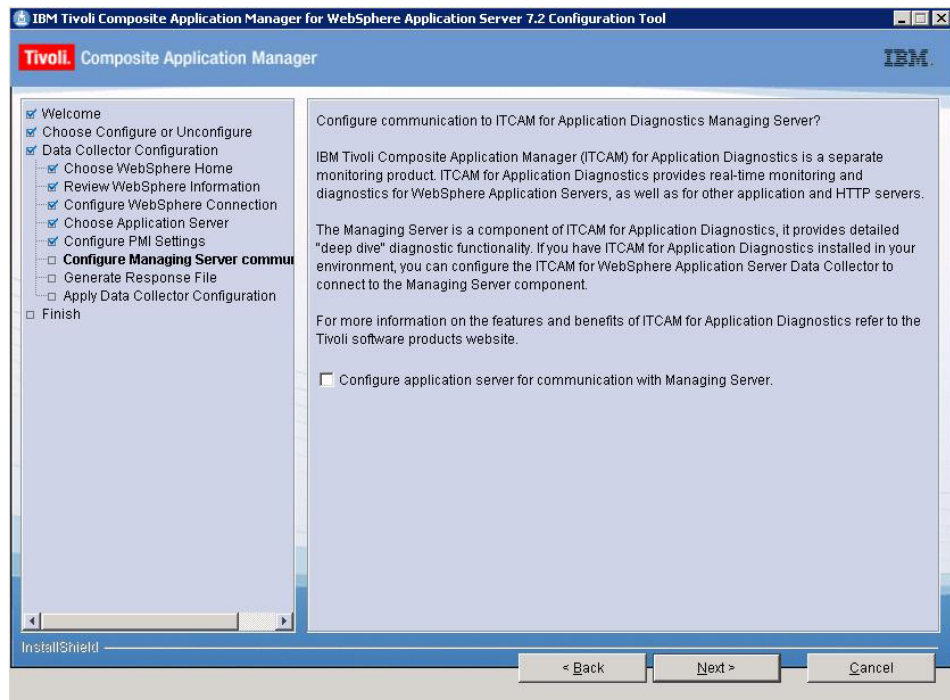
The **Configure PMI Settings** window opens.

7. To display Performance Monitoring Infrastructure (PMI) information in the Tivoli Performance Viewer console in WebSphere Application Server, select **Apply required PMI settings**. This enables and configures the PMI settings to the level required by ITCAM for WebSphere Application Server. The PMI instrumentation level is set to custom and the ITCAM Application Performance Module is enabled. Any current PMI settings are overwritten. If you do not select **Apply Required PMI Settings**, you can enable PMI settings manually in WebSphere Application Server. Click **Next**.



The **Configure Managing Server communication** window opens. For more information about customizing PMI settings in WebSphere Application Server, refer to the WebSphere Application Server Version 8 information center, see <http://publib.boulder.ibm.com/infocenter/wasinfo/beta/index.jsp?topic=/com.ibm.websphere.installation.nd.doc/info>.

8. To enable communication to the ITCAM for Application Diagnostics Managing Server, select **Configure application servers for communication with Managing Server**. Click **Next**.



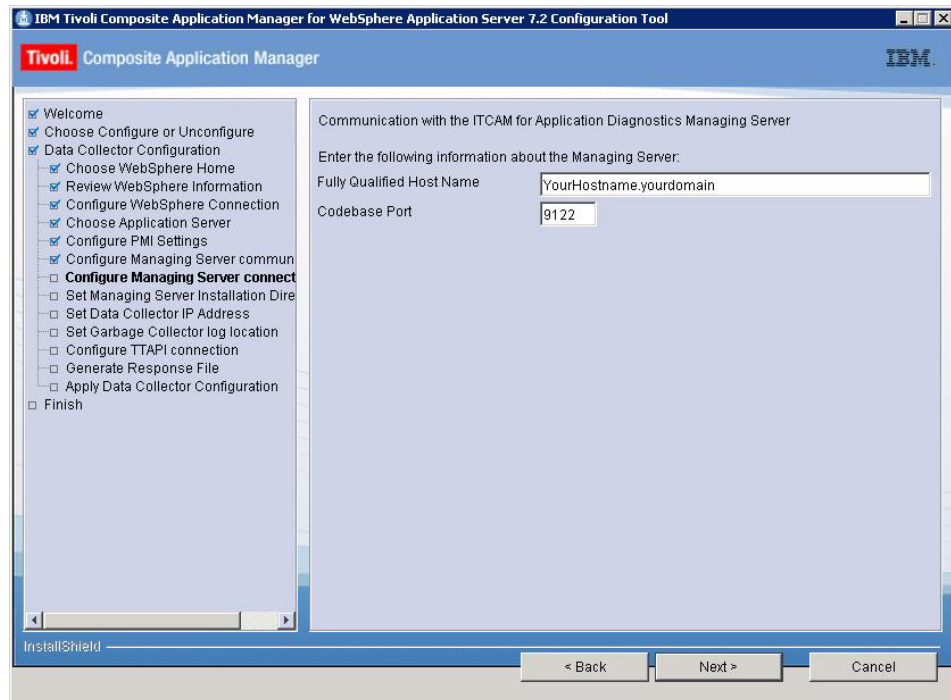
The **Managing Server Hostname** window opens.

- Enter the required information about the Managing Server based on the information in the following table:

Table 21. Managing Server configuration

Field	What to do
Fully Qualified Host Name	Enter the fully qualified host name of the ITCAM for Application Diagnostics Managing Server.
Codebase Port	This value is the port number that the code base server in the Managing Server kernel listens to when accepting incoming requests.

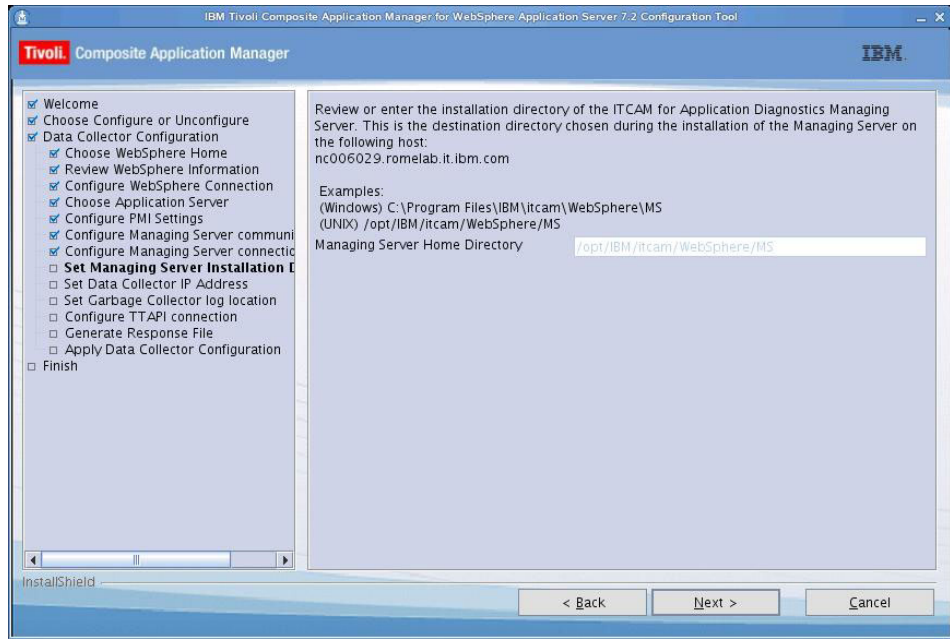
Click **Next**.



The **Set Managing Server Installation Directory** window opens.

- The Data Collector Configuration Tool determines the Managing Server Home Directory path using the host name and port that are provided in the previous window. If the Managing Server is running, and there are no firewall issues, the Managing Server Home Directory field is populated with the path. In this case, you cannot enter a path. If the Data Collector Configuration Tool cannot determine the Managing Server Home Directory path, enter the path. Click **Next**.





The **Set Data Collector IP Address** window opens.

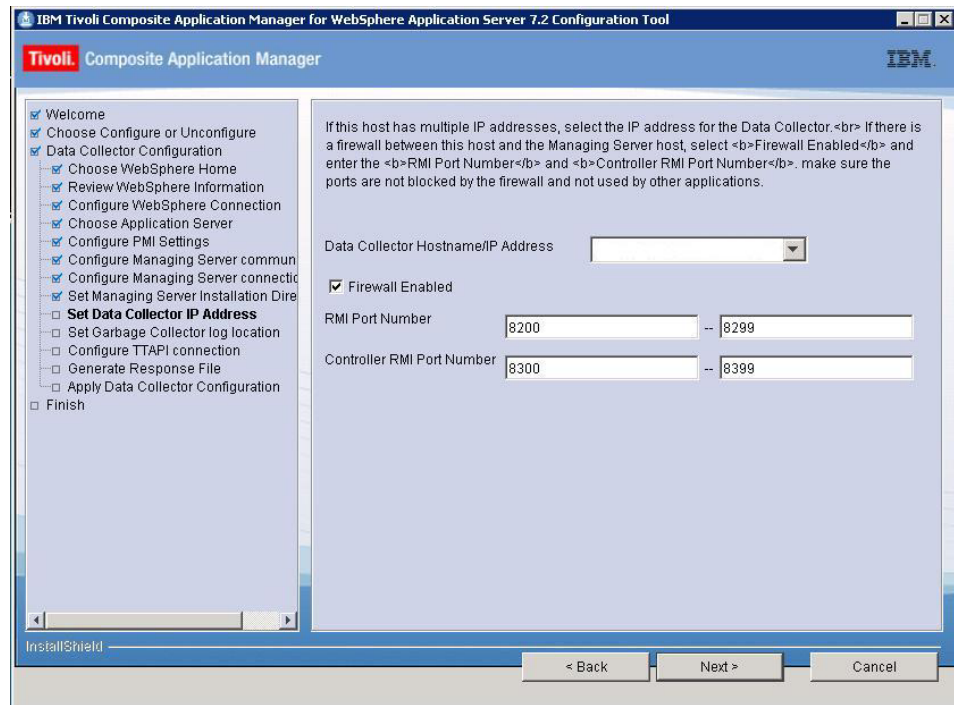
11. Enter the required information about the Data Collector based on the information in the following table:

Table 22. Data Collector IP Address

Field	Description
Data Collector hostname/IP Address	If this host has multiple IP addresses, select the IP address for the Data Collector.
Firewall Enabled	If there is a firewall between this host and the Managing Server host, select <b>Firewall Enabled</b> .
RMI Port Number	Specify a range of ports for the Data Collector to communicate with the Managing Server. The port range does not have to be from 8200 - 8299 or 8300 - 8399. Any available port ranges can be used. The ports must be opened in the firewall.  The RMI port number is saved in the following Data Collector property file: <code>datacollector.properties</code> . The Data Collector property file is available under the Data Collector runtime directory, for example, <code>/opt/IBM/ITM/aix533/yn/wasdc/7.1.0.2/runtime/was80.devapp-aix-s06Node01.server1</code>

Table 22. Data Collector IP Address (continued)

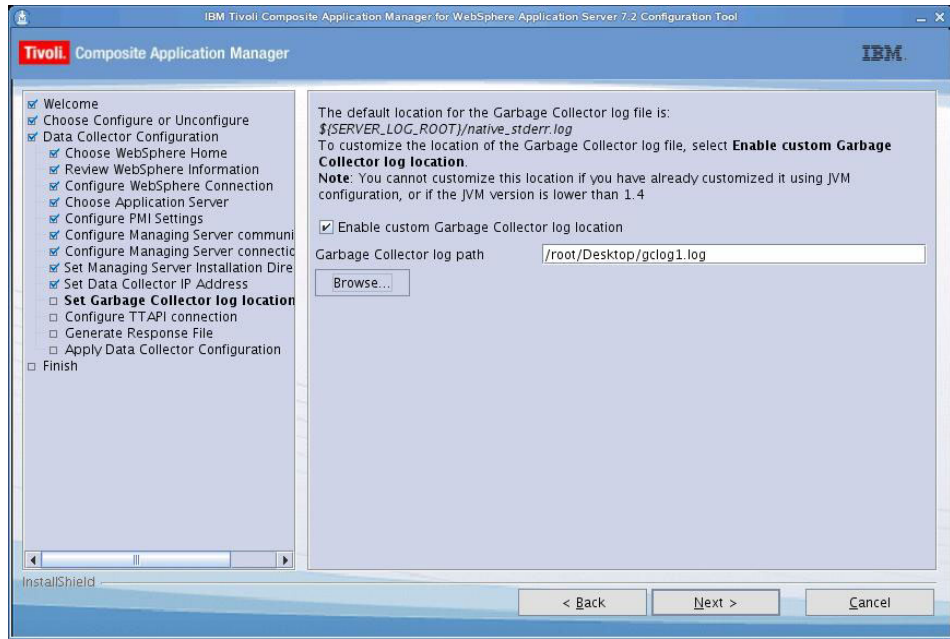
Field	Description
Controller RMI Port Number	<p>Specify a range of ports for the Data Collector to communicate with the Managing Server. The port range does not have to be from 8200 - 8299 or 8300 - 8399. Any available port ranges can be used. The ports must be opened in the firewall.</p> <p>The Controller RMI port number is saved in the Data Collector property file: <code>datacollector.properties</code>. The Data Collector property file is available under the Data Collector runtime directory, for example, <code>/opt/IBM/ITM/aiX533/yn/wasdc/7.1.0.2/runtime/was80.devapp-aix-s06Node01.server1</code></p>



The **Set Garbage Collector log location** window opens.

12. If the garbage collection log location was previously customized in JVM or the JVM version is 1.4 or earlier, you cannot customize the location of the garbage collection log. Click **Next**.



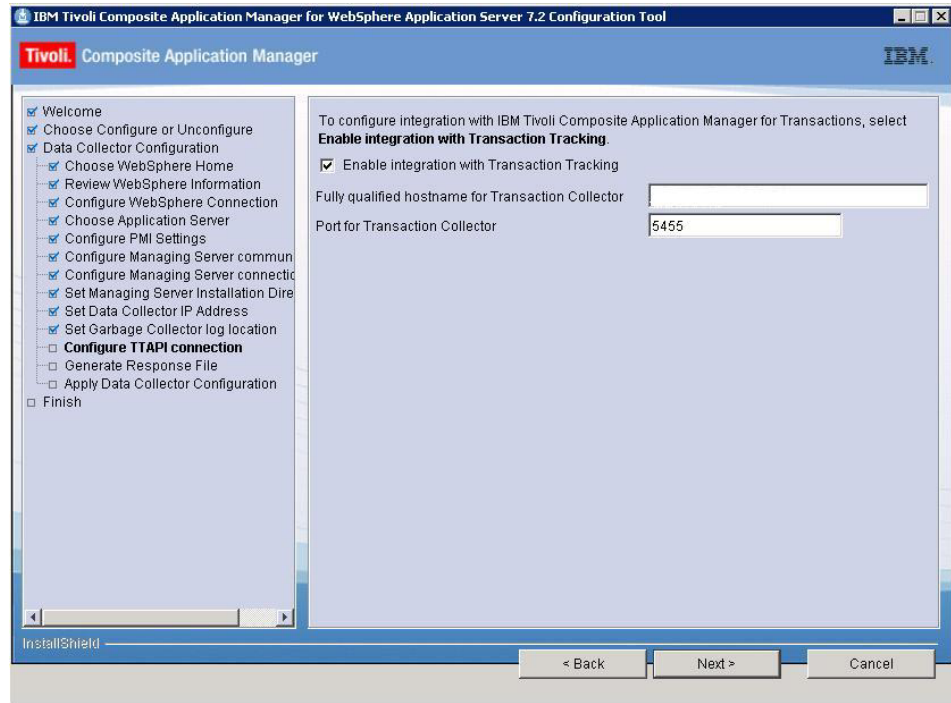


The **Configure TTAPI connection** window opens.

13. To configure the Data Collector to communicate with ITCAM for Transactions, complete the window based on the information in the following table and click **Next**.

Table 23. TTAPI connection

Field	Description
Fully qualified hostname for Transaction Collector	Enter the fully qualified host name or IP address of the IBM Tivoli Composite Application Manager for Transactions that you want to communicate with.
Port for Transaction Collector	Enter the port for the Transaction Collector.

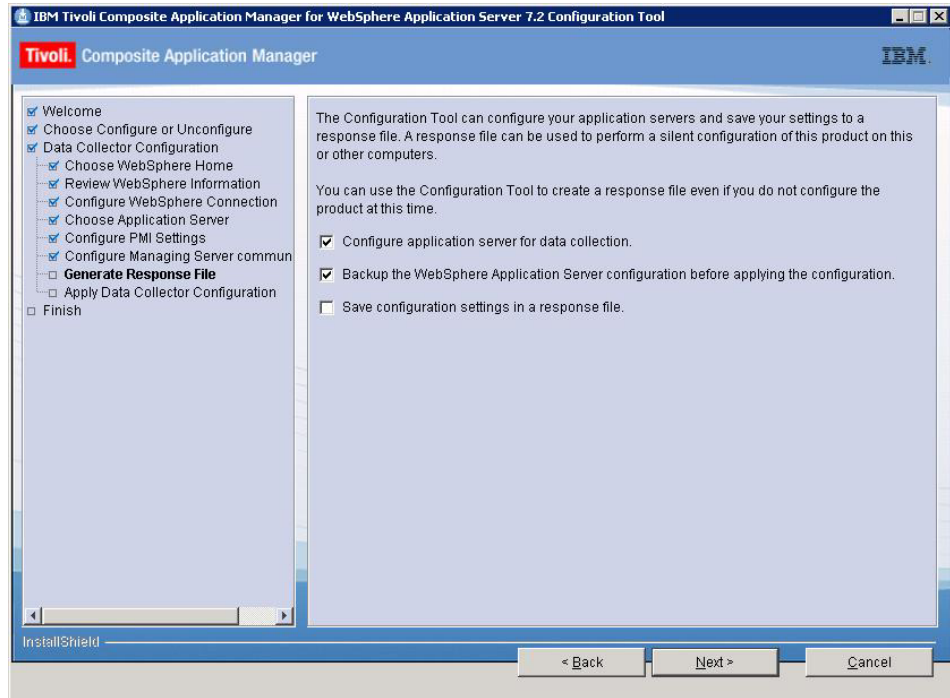


The **Generate Response File** window opens.

14. Complete the window based on the information in the following table and click **Next**.

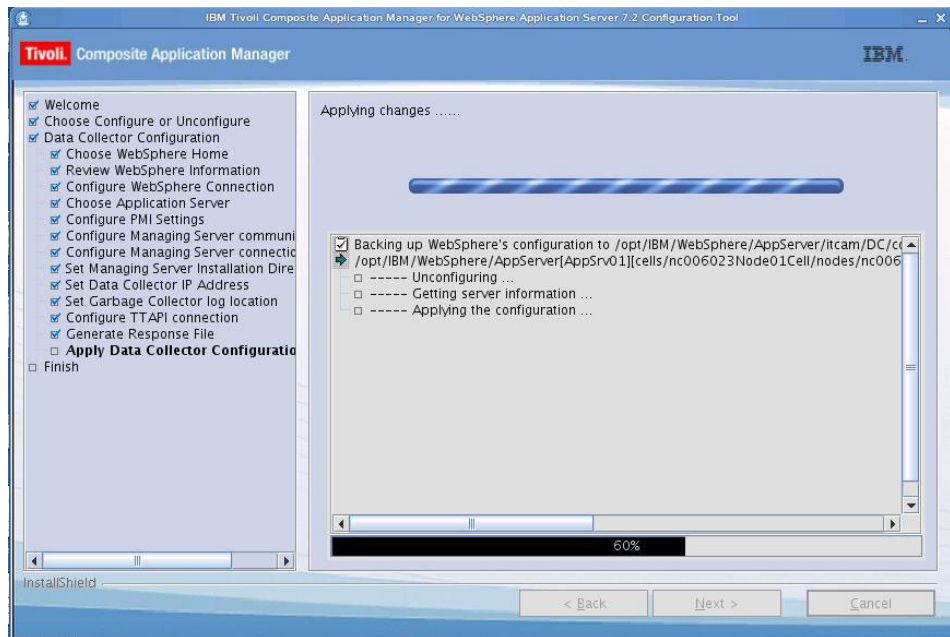
Table 24. Response file options

Field	Description
Configure application servers for data collection	You might want to clear this option if you are performing the configuration procedure <i>only</i> for creating a response file for a subsequent silent configuration. By default, this option is selected.
Backup the WebSphere Application Server configuration before applying the configuration.	Backing up the WebSphere Application Server configuration before applying the Data Collector configuration is a good practice but it can result in a large backup file. If you are doing configuration to create a response file, it is not necessary to create a backup.
Save configuration settings in a response file	A response file is used to perform a silent installation of ITCAM for WebSphere Application Server. A response file can be reused for multiple installations.

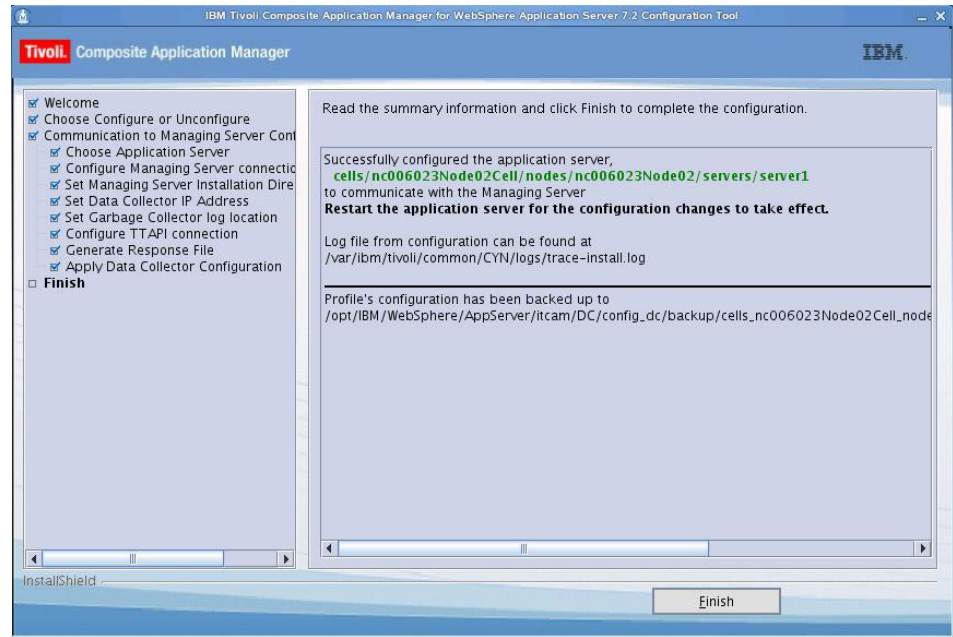


The **Apply Data Collector Configuration** window opens.

15. Click **Next**.



16. The **Finish** window opens. Click **Finish** to complete the configuration.



17. When you have completed the configuration of ITCAM for WebSphere Application Server, restart the WebSphere Application Server instance.
18. To start using ITCAM for WebSphere Application Server, see Chapter 2, “Getting Started with ITCAM for WebSphere Application Server,” on page 3.
19. You know the ITCAM for WebSphere Application Server configuration has failed if any of the following events occur:
  - After the configuration, the application server does not restart.
  - During a GUI configuration, the summary window for the Data Collector Configuration Tool indicates the configuration failed.
  - After the configuration, there are messages in the log file that indicate the configuration failed.

If the ITCAM for WebSphere Application Server configuration fails, see Appendix D, “What to do if ITCAM for WebSphere Application Server configuration fails,” on page 171 or “Known issues and solutions” on page 119.

## Silent configuration of ITCAM for WebSphere Application Server on UNIX and Linux systems

### About this task

Configuration through the response file is called *silent* configuration.

During a silent configuration, you can optionally provide some of the installation parameters at a command-prompt rather than through the response file. When you manually enter configuration options, instead of including them in the response file, you can reuse the response file for multiple configurations where some of the options are unique for each configuration. Enter the unique options at the command-prompt during each configuration. The response file supplies the values that are valid only for multiple target computers. To reuse a response file in multiple configurations, but some of the options are unique to each configuration, nullify those options in the response file by commenting them out with a number sign (#). Configuration options specified in the response file take precedence over

options entered at the command-prompt. If you are providing options at the command-prompt, comment them out in the response file. Some values in the response file have default values, if no value is specified, the default value is used.

Complete the following steps to perform a silent configuration:

## Procedure

1. Specify configuration options in the response file located here: *DC\_home/config\_dc/responsefile\_templates/DC\_Config\_Template.opt*. The following options require a value in the response file:

```
-V DC_CCUC_CONFIG="" - if true config DC
-V DC_CCUC_UNCONFIG="" - if true unconfig DC
-V DC_CCUC_MS_CONFIG="" - if true config DC-MS communication
-V DC_CCUC_MS_UNCONFIG="" - if true unconfig DC-MS communication
-V DC_RECONFIG_ALLOW=""
-V DC_CC_ITCAMFAS=""
-V DC_CAS_WAS=""
-V APP_SERVER_NAMES="" - server name
-V WS_NODE_NAME="" - node name
-V DC_ASL_CONNTYPE="" - connection type
-V DC_ASL_PORT="" - port for connection with WAS
-V DC_ASL_USECLIENTPROP=""
-V DC_ASL_USERNAME="" - WAS admin user
-V DC_ASL_PASSWD="" - WAS admin password
-V DC_MSKS_SERVERNAME="" - MS host name
-V DC_AM_SOCKET_BINDIP="" - IP address to which DC has to be binded
-V DC_OFFLINE_ALLOW="" - if true MS can be down
-V DC_MSKS_CODEBASEPORT="" - codebase port, default value 9122
-V DC_MSKS_RFSPORT="" - rfs port - if MS is up will be obtained automatically - default value 9120
-V DC_MS_AMHOME="" - MS home path - if MS is up will be obtained automatically
-V FIREWALL_ENABLED="" -if true provide rmi port range for DC and controller
-V PROBE_RMI_PORT="" - rmi port range for DC - default 8200-8299
-V PROBE_CONTROLLER_RMI_PORT="" - rmi port range for controller - default 8300-8399
```

2. Go to the *WebSphere\_home/AppServer/itcam/DC/config\_dc* directory.
3. Run the following command:

```
/config_DC.sh -silent -options response_file.opt
```

For details of silent configuration options, see Appendix C, “Guidelines for specifying silent values on Windows, UNIX, and Linux,” on page 141.

For example:

```
./config_DC.sh -options -V DC_ASL_PORT="8885" -options ./responsefile_templates/DC_Config_Template.opt
```

4. When you have completed the configuration of ITCAM for WebSphere Application Server, restart the WebSphere Application Server instance.
5. To start using ITCAM for WebSphere Application Server, see Chapter 2, “Getting Started with ITCAM for WebSphere Application Server,” on page 3.
6. You know the ITCAM for WebSphere Application Server configuration has failed if any of the following events occur:
  - After the configuration, the application server fails to restart.
  - During a silent configuration, the command-prompt indicates a message that the configuration has failed.
  - After the configuration, there are messages in the log file that indicate configuration has failed.

If the ITCAM for WebSphere Application Server configuration fails, see Appendix D, “What to do if ITCAM for WebSphere Application Server configuration fails,” on page 171 or “Known issues and solutions” on page 119.

---

## Chapter 5. Installing and configuring ITCAM for WebSphere Application Server on IBM i

ITCAM for WebSphere Application Server is an optional component that can be installed and configured during the installation of WebSphere Application Server. It can also be installed on an existing WebSphere Application Server.

---

### Checklist for installation and configuration on IBM i

#### About this task

Use the following high-level checklist to install and configure ITCAM for WebSphere Application Server:

#### Procedure

1. Obtain the installation images. See Appendix A, “Obtaining installation images for Windows, Linux, and UNIX systems,” on page 137.
2. Verify that your computer meets the system and software prerequisites, and complete any tasks that are needed before installation. See “Prerequisites and preinstallation tasks for ITCAM for WebSphere Application Server on IBM i.”
3. Complete the following steps to install and configure ITCAM for WebSphere Application Server.
  - “Installation and configuration of ITCAM for WebSphere Application Server on IBM i” on page 64

---

### Prerequisites and preinstallation tasks for ITCAM for WebSphere Application Server on IBM i

There are some prerequisites and preinstallation tasks for ITCAM for WebSphere Application Server on IBM i.

#### System and software prerequisites

The following prerequisites are the hardware and software requirements for being able to install and use the ITCAM for WebSphere Application Server on IBM i.

#### Hardware prerequisites for the ITCAM for WebSphere Application Server

The installation image requires 170 MB. The installation requires 330 MB.

#### Supported operating system and application server combinations

ITCAM for WebSphere Application Server supports IBM WebSphere Application Server Version 8.0 on IBM i 6.1 (i5/OS® V6R1) or higher.



## Supported JDKs for the ITCAM for WebSphere Application Server

The supported JDKs for the ITCAM for WebSphere Application Server on IBM i is JDK16.

### Additional requirements for the operating system

The ITCAM for WebSphere Application Server must be installed on the same computer as the application server you are monitoring. The set of supported operating systems is further limited by the supported operating systems for the application server you are monitoring.

For the operating system requirements for the IBM WebSphere Application Server 8.0, see:

<http://www-01.ibm.com/software/webservers/appserv/doc/latest/prereq.html>.

### IBM Installation Manager

IBM Installation Manager version 1.4.3 or later is required.

### Previous Data Collectors

ITCAM for WebSphere Application Server cannot be installed if there is already a Data Collector configured as a result of previous installations of any of the following ITCAM systems:

- ITCAM for WebSphere Application Server
- ITCAM for WebSphere Resources
- ITCAM for WebSphere
- ITCAM for Application Diagnostics

If a Data Collector is present, it must be unconfigured. However, these products can be installed on the same host and configured for different application server instances.

## Permissions

The user who installs ITCAM for WebSphere Application Server must have at least \*SYSADMIN privileges.

If you are performing a remote installation, the IBM i user running the installation should have the \*ALLOBJ authority.

Use the command-prompt to add the following privileges for the application server user:

```
GRTOBJAUT OBJ(QSYS/STRDBG) OBJTYPE(*CMD) USER(QEJBSVR) AUT(*USE)
GRTOBJAUT OBJ(QSYS/ENDSRVJOB) OBJTYPE(*CMD) USER(QEJBSVR) AUT(*USE)
GRTOBJAUT OBJ(QSYS/STRSRVJOB) OBJTYPE(*CMD) USER(QEJBSVR) AUT(*USE)
GRTOBJAUT OBJ(QSYS/DMPJVM) OBJTYPE(*CMD) USER(QEJBSVR) AUT(*USE)
GRTOBJAUT OBJ(QSYS/ANZJVM) OBJTYPE(*CMD) USER(QEJBSVR) AUT(*USE)
```

Make sure that the umask is set to 022. To verify the umask setting, issue the following command:

```
umask
```



To set the umask setting to 022, issue the following command in QShell:

```
umask 022
```

## Restrictions on the installation path

Make sure the installation path for ITCAM for WebSphere Application Server on the IBM i system does not exist in the IFS before the installation. The default installation path is *appserver\_install\_root/itcam/DC*. Make sure that this path does not exist before the installation.

## Checking the heap size

### About this task

Ensure that the JVM heap size is sufficient. The default value is enough, but if the heap size was configured in WebSphere Application Server, make sure that it is not less than 384 MB. Complete the following steps for each server that you want to configure for ITCAM for WebSphere Application Server:

### Procedure

1. Log on to the WebSphere Application Server administrative console.
2. Go to the area for specifying the heap size in the administrative console by completing the following steps:
  - a. Click **Servers >Server Types>WebSphere Application Servers** and select the *server\_name*.
  - b. In the **Configuration** tab, go to **Server Infrastructure > Java and Process Management > Process Definition > Additional Properties: Java Virtual Machine**.
3. If the value in the **Maximum Heap Size** field is less than 384, set it to 384.

## Adjusting ports for firewalls or for use with other applications

### About this task

During the configuration, specify port numbers or accept the defaults for port numbers that are used by ITCAM for WebSphere Application Server to communicate with the application server using SOAP or RMI. Make sure that you record the correct port, and that the firewall does not prevent communication on this port from ITCAM for WebSphere Application Server to the application server.

For a Network Deployment environment, ITCAM for WebSphere Application Server uses the SOAP or RMI port to communicate with the Deployment Manager, which is usually located on a different host. In this case, take special care that the firewall does not block communication on this port.

## Information to know before the installation

The following notes provide information about installation and configuration:

1. You can prepare for the installation by gathering information that you need to provide during the installation, see "Installation Response File Template for Windows, Linux and UNIX systems, and IBM i" on page 147.
2. An ITCAM for WebSphere Application Server installation cannot span over multiple hosts. Install ITCAM for WebSphere Application Server separately on each host, and configure it for each application server instance. This applies to both Network Deployment and non-Network Deployment environments.

3. For a Network Deployment environment, you need to supply the host name of the Deployment Manager to configure ITCAM for WebSphere Application Server for a node. It is not necessary to install or configure ITCAM for WebSphere Application Server on the Deployment Manager itself.
4. By default, the Installation Manager creates log files in the following directory: /QIBM/UserData/InstallationManager/logs. By default the ITCAM for WebSphere Application Server log location is the /qibm/userdata/tivoli/common/CYN/logs directory. The QEJBSVR user must have write permission to the /qibm/userdata/tivoli directory.
5. To install on a cluster, run the installer on each node that you want to install upon. Create a response file and use the silent installer mode if you must install across multiple nodes in a cluster.
6. The installation and configuration programs do not accept values for directory paths if the following special characters are included:  
`\u `!@#$( )+=[]{}|:;'"<>,?`
7. The installation and configuration programs do not accept values for user names or passwords if the following special characters are included:  
`\u `!@#$( )+[]{}|\:;'"<>,?/`

---

## Installation and configuration of ITCAM for WebSphere Application Server on IBM i

Install ITCAM for WebSphere Application Server on IBM i using a silent install.

### Silent installation

#### About this task

Complete the following procedure if you are performing the silent installation on a local IBM i machine:

#### Procedure

1. Log on to the computer on which you want to install ITCAM for WebSphere Application Server as a user with the appropriate permissions. See “Permissions” on page 62.
2. Use the Start TCP/IP (STRTCP) command to start TCP/IP.
3. Use the Start Host Servers (STRHOSTSVR) command to start Host Servers.
4. Enter the QSH environment by running the STRQSH command in the IBM i main menu.
5. To verify that the instance of the application server that will be monitored by ITCAM for WebSphere Application Server is running, complete the following steps:
  - a. Change to the following directory: *AppServer\_home/profiles/profile\_name/bin*
  - b. Run the following command:  
`serverStatus server_name`

**Important:** In a Network Deployment environment make sure that the Deployment Manager and the Node Agent are running, and network communication with the Deployment Manager is available.

6. If the instance of the application server is not started, start the application server.

7. Open the response file template, this file is called `responsefile.xml` and is available in the ITCAM for WebSphere Application Server repository root directory. Enter the details in the response file and save. For response file template examples, see, "Installation Response File Template for Windows, Linux and UNIX systems, and IBM i" on page 147.
8. To create a keyring to enable the Installation Manager to extract the installation image, complete the following steps:
  - a. The default installation location for Installation Manager files on IBM i systems is the `/QIBM/ProdData/InstallationManager` directory. Change to the following directory: `/QIBM/ProdData/InstallationManager/eclipse/tools`.
  - b. Run the following command:

```
imutilsc saveCredential -keyring {yourKeyRingName} -userName {userName}
-userPassword {password} -url {urlForYourSelectedRepository}
```

where

`-keyring` is the name you want to assign to the keyring.

`-userName` and `-userPassword` are the user name and password you use to access the host or url where the installation image is located.

`-url` is the url or host name for the location of the installation image

9. Run the following command to install ITCAM for WebSphere Application Server:
 

```
./imcl -input {yourResponseFile} -keyring {yourKeyRingName} -acceptLicense
```

where `{yourKeyRingName}` is the absolute path to the KeyRing file.

## Results

The Installation Manager creates the following log files in the `/QIBM/UserData/InstallationManager/logs/` directory:

```
YYYYMMDD_hhmm.xml
YYYYMMDD_hhmm_itcam.trace
```

where `YYYYMMDD_hhmm` is the time stamp for the installation process.

## Silent configuration

### About this task

Following a successful installation of ITCAM for WebSphere Application Server, complete configuration to enable data collection. Complete the following procedure to configure ITCAM for WebSphere Application Server on an IBM i host where it is already installed.

### Procedure

1. Log on to the computer on which you want to configure ITCAM for WebSphere Application Server as a user with the appropriate permissions. See "Permissions" on page 62.
2. Enter the QSH environment by running the `STRQSH` command in the IBM i main menu.

3. To verify that the instance of the application server that will be monitored by ITCAM for WebSphere Application Server is running, complete the following steps:
  - a. Change to the following directory: *AppServer\_home/profiles/profile\_name/bin*
  - b. Run the following command:
 

```
serverStatus server_name
```

**Important:** In a Network Deployment environment make sure that the Deployment Manager and the Node Agent are running, and network communication with the Deployment Manager is available.

4. If the instance of the application server is not started, start the application server.
5. Set the JAVA\_HOME environment variable, making sure that the Java program is accessible at \$JAVA\_HOME/bin. You can run the installation using JDK16. To specify the path to one of them, you can use the following command:
 

```
export JAVA_HOME=/qibm/proddata/java400/jdk6
```
6. Specify configuration options in the response file located here: *DC\_home/config\_dc/Samples/dcInputs\_Sample\_os400.txt*. For response file template examples, see, "Configuration Response File Template for IBM i" on page 164.
7. Change to the *DC\_home/config\_dc* directory and run the following command to perform the configuration.
 

```
config-DC-os400.sh ${response_file}
```

## Results

The configuration writes log files to the following directory: */tmp/config\_YYYYMMDD\_hhmmss* where YYYYMMDD\_hhmmss is the time stamp for the configuration process.

## Reconfigure ITCAM for WebSphere Application Server on IBM i

### About this task

To reconfigure ITCAM for WebSphere Application Server, perform the following steps:

### Procedure

1. Open the reconfiguration response file: *ITCAM\_home/config\_dc/Samples/dcInputs\_Sample\_os400.txt* and change the **CONFIGURE\_TYPE** parameter to reconfigure.
2. Change to the *DC\_home/config\_dc* directory and run the following command :
 

```
config-DC-os400.sh ${response_file}
```

## Manually unconfigure ITCAM for WebSphere Application Server on IBM i

### About this task

To manually unconfigure ITCAM for WebSphere Application Server on IBM i, perform the following steps:

## Procedure

1. Delete the `DC_home/runtime/was80.node_name.server_name` and `DC_home/config/was80.node_name.server_name` directory directories.
2. Open the `DC_home/config/configuredServers.xml` file and remove the following entry:

```
<instance id="was_profile_location/profiles/profile_name|cells/cell_name/nodes/node_name/servers/server_name">
<node>WAS_BASEDIR=was_install_location</node>
<node>CONFIG_FILE_STORE_DIR=was_install_location/itcam/DC/config/configured/was80.node_name.server_name</node>
<node>DC_HOME=was_install_location/ND/itcam/DC</node>
</instance>
```

3. Verify the WebSphere Application Server configuration by completing the following steps:
  - a. Go to `Appserver_home/profiles/profile_name/config/cells/cell_name/nodes/node_name/servers/server_name` and open `server.xml`.
  - b. Remove the following entries:

```
<extensionMBeanProviders xmi:id="ExtensionMBeanProvider_XXX" name="ecam">
  <classpath>WebSphere_home/itcamdc/lib/ext/was/ecammeta.jar</classpath>
</extensionMBeanProviders>
```

where XXX is a random number which will be placed in the `server.xml` file.

- c. Remove the following entry or if the `server.xml` file contains more entries than are displayed here, leave these entries, but remove any values that points to `#{ITCAMDCHOME}`:

```
<environment xmi:id="Property_XXX" name="LIBPATH"
  value="#{ITCAMDCHOME}/toolkit/lib/os400:#{ITCAMDCHOME}/toolkit/lib/os400-pase"/>
  <environment xmi:id="Property_XXX" name="PASE_LIBPATH"
  value="#{ITCAMDCHOME}/toolkit/lib/os400:#{ITCAMDCHOME}/toolkit/lib/os400-pase"/>
```

where XXX is a random number which will be placed in the `server.xml` file

- d. In the `<jvmEntries>` element,
  - 1) From the generic `JvmArguments` attribute remove the following entry (all elements that reference `#{ITCAMDCHOME}`):

```
Xbootclasspath/p:#{ITCAMDCHOME}/toolkit/lib/jiti.jar:#{ITCAMDCHOME}/toolkit/lib/bcm-bootstrap.jar:
#{ITCAMDCHOME}/itcamdc/lib/ppe.probe-bootstrap.jar -agentlib:
am_ibm_16=/home/qsecofr/IBM/Server/itcam/DC/runtime/was80.node_name.server_name
```

- 2) If the WebSphere Application Server JVM was not previously set to use verbose garbage collection and there is an entry `-verbosegc` or `-Xverbosegclog`: (for IBM JVM) or `-Xloggc`: (for non-IBM JVM), remove them.

- 3) Remove `<systemProperties>` entries with the following names:

- `am.home`
- `java.security.policy`
- `ITCAM_DC_ENABLED`

For example:

```
<systemProperties xmi:id="Property_XXX" name="am.home" value="/home/qsecofr/IBM/Server/itcam/DC/itcamdc"/>
  - java.security.policy
<systemProperties xmi:id="Property_XXX" name="java.security.policy" value="/home/qsecofr/IBM/Server/itcam/DC/
runtime/was80.node_name.server_name/datacollector.policy"/>
  - ITCAM_DC_ENABLED
```

- 4) Open `variables.xml` in a text editor and remove any entries with the symbolicName `ITCAMDCHOME`.

4. If this was the only WebSphere Application Server profile configured to ITCAM for WebSphere Application Server, delete the `Appserver_home_/plugins/gpex.bundle_manager_was.jar` file.
5. When you install ITCAM for WebSphere Application Server, the PMI level in WebSphere Application Server is set to custom, you can now change it to the value it was previously or disable the PMI module.

---

## Chapter 6. Installing and Configuring ITCAM for WebSphere Application Server on IBM z/OS

ITCAM for WebSphere Application Server is an optional component that can be installed during the installation of WebSphere Application Server.

---

### Installing ITCAM for WebSphere Application Server

Installing ITCAM for WebSphere Application Server involves two phases - initial installation is performed using SMP/E, and the installation is completed using Installation Manager. For installation details, see the *Program Directory for IBM Tivoli Composite Application Manager (ITCAM) for WebSphere Application Server V7.2 (GI11-8919-01)* in the IBM Publications Center.

---

### Configuring ITCAM for WebSphere Application Server on IBM z/OS

To configure ITCAM for WebSphere Application Server to monitor application server instances, use the runtime setup script. When you configure ITCAM for WebSphere Application Server to monitor application server instances, you are configuring a Data Collector on the WebSphere Application Server instance. The runtime setup script is `setupdc.sh`. The default location for runtime setup script is: `WebSphere_home/itcamdc/WebSphere/DC/bin`. The runtime setup script provides two functions:

- The runtime script configures an ITCAM for WebSphere Application Server runtime environment for a specified application server. The script creates the runtime directories and files.
- The runtime script configures an application server instance to be monitored by starting the `wsadmin.sh` administration tool for WebSphere Application Server.

During configuration, you use advanced options to configure communication with the ITCAM for Application Diagnostics Managing Server and with ITCAM for Transactions.

#### ITCAM for Application Diagnostics Managing Server

If you have ITCAM for Application Diagnostics installed in your environment, you can configure communication between the Data Collector and the ITCAM for Application Diagnostics Managing Server. This enables you to perform deep-dive diagnostics on applications. For more information, see “Communication with the ITCAM for Application Diagnostics Managing Server” on page 1.

#### ITCAM for Transactions

If you have configured communication between the Data Collector and the Managing Server, you can also configure communication with ITCAM for Transactions if it is installed in your environment. You can then go to the transaction tracking server and browse and analyze the transactions information. For more information, see “Communication with ITCAM for Transactions” on page 2.



## Overview of the runtime environment

After the ITCAM for WebSphere Application Server target files are installed with SMP/E and Installation Manager, you can remount the HFS or zFS file system containing your installation files as read-only. The default location for the target files is: *WebSphere\_home/itcamdc/WebSphere/DC*. This directory can be shared by several ITCAM for WebSphere Application Server configurations in different LPARs and environments.

The runtime environment is configured in the ITCAM for WebSphere Application Server configuration root directory. It must be in a read/write file system. The default location is */u/ecam (config\_home)*. You create a unique configuration root directory on each LPAR. You can create a unique configuration root directory for different environments within an LPAR, such as, a production or test environment.

The configuration root directory contains subdirectories that contain configuration files for the server and, symbolic links for the executable files to the target files in *install\_home*. When you apply maintenance through APAR SYSMODs or PTFs and then update ITCAM for WebSphere Application Server using Installation Manager, it is not necessary to take any further action to distribute the updated code. All of the executable files are symbolically linked. If instrumentation and configuration files are updated, further action might be required. The SYSMOD hold data informs you of any required actions.

When you run the ITCAM for WebSphere Application Server runtime setup script (*setupdc.sh*) in prompt mode, you are prompted for the WebSphere Application Server configuration root directory. The runtime setup script discovers the application server instances in the configuration root directory and prompts you to select one of those instances.

For example, if you are using the default configuration root directory and configuring an instance of WebSphere Application Server 8.0 on a node called *node1* and a server called *server1*, the runtime setup script creates a directory called *config\_home/runtime/was80.node1.server1/*.

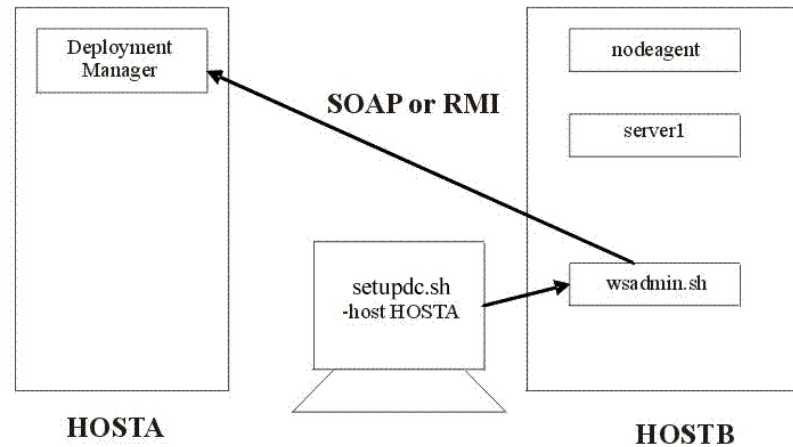
To monitor several application server instances, configure ITCAM for WebSphere Application Server for each instance using the *setupdc.sh* script. As long as the instances are on the same LPAR, you can use the same configuration directory for all instances. However, you can choose to use different configuration directories to separate test and production environments.

## Configuration in a Network Deployment environment

If you are installing and configuring ITCAM for WebSphere Application Server in a Network Deployment environment, perform ITCAM for WebSphere Application Server setup for a server on the server host. The runtime setup script starts the *wsadmin.sh* script for the necessary application server configuration changes. Supply the port and host name of the Deployment Manager in the *setupdc.sh* file. The default value for the host name is the local host. If the Deployment Manager runs on the same host as the server you are configuring, you might not need to explicitly specify the host, depending upon what is specified in the *wsadmin.properties* file.

Any local *wsadmin.sh* script in the server node can be used to configure the application server. For network deployment, communication must be established with the Deployment Manager. In contrast, for stand-alone mode when there is no Deployment Manager, communication is established with the application server. If

the `wsadmin.properties` file specifies a default host name which is the Deployment Manager host name, you do not need to specify the host name.



In the diagram, the user configures `server1` on host `HOSTB`, which is in a node in the cell that is controlled by the deployment manager on `HOSTA`. The ITCAM `setupdc.sh` task is performed on `HOSTB`, but the `-host` parameter specifies the host name (or IP address) of the deployment manager host. The cell configuration repository is on `HOSTA`. The `setupdc.sh` script issues an application server node synchronization when it is completed and the deployment manager pushes the configuration out to the managed node using the node agent.

## Preconfiguration Steps

### Purpose

Before you run the runtime setup script, perform preconfiguration tasks. Some of the pre-configuration tasks are optional, depending on your environment. The following table provides details of the pre-configuration tasks and the roles required to complete those tasks:

Table 25. Pre-configuration tasks

Task	Role Required
"Verifying the installation was successful" on page 72	NA
"Installing the ITCAM plugin" on page 72	NA
"Creating a configuration directory" on page 72	IBM z/OS SMP/E system programmer
"Verifying the pre-configuration files" on page 74	IBM z/OS SMP/E system programmer
"Verifying the connection to <code>wsadmin.sh</code> " on page 74	IBM WebSphere Application Server administrator
"Enabling user ID and password input from <code>sas.client.props</code> for RMI connector types:" on page 75	IBM WebSphere Application Server administrator, Security administrator

Table 25. Pre-configuration tasks (continued)

Task	Role Required
“Enabling user ID and password input from soap.client.props for SOAP connector types:” on page 75 (optional)	IBM WebSphere Application Server administrator, Security administrator
“Setting up the user ID and password for ITCAM for WebSphere Application Server with global security enabled” on page 76 (optional)	IBM WebSphere Application Server administrator, Security administrator

## Verifying the installation was successful

### About this task

To verify that the installation was successful, complete the following steps:

### Procedure

1. In the *WebSphere\_home/itcamdc/WebSphere/DC* directory, observe that the folder structure is as follows:

```
bin
itcamdc
license
plugins
toolkit
```

2. Run the following command from the *IM\_home/eclipse/tools* directory:

```
imcl listInstalledPackages -long
```

A message similar to the following is displayed:

```
/usr/lpp/zWebSphere/V8R0 : com.ibm.tivoli.itcam.install.was.im.offering.zos.
WAS80_7.2.0.20110114_1441 : IBM Tivoli Composite Application Manager for
WebSphere Application Server : 7.2.0.0
```

## Installing the ITCAM plugin

Install the ITCAM plugin when you have completed the installation using Installation Manager, before the WebSphere Application Server file system is remounted as read-only.

### Creating a configuration directory

After installing ITCAM for WebSphere Application Server, create a configuration directory. The default path for this directory is */u/ecam (config\_home)*.

This configuration directory is required for configuring the ITCAM for WebSphere Application Server to monitor application server instances.

You can also create an additional configuration directory for a different environment or LPAR.

To create a configuration directory on a read/write HFS or zFS file system, change to the *WebSphere\_home/itcamdc/WebSphere/DC/bin* directory and run the *createcfg.sh* script. Alternatively, you can run the *CYEZISRT* job in the *hlq.SCYEINST* library, this executes the *createcfg.sh* script. The parameters are described in the following table:

Table 26. List of options for the *createcfg.sh* script

Command-prompt option	Description	Equivalent environment variable and value
-batch	Turns off prompting so that the script runs to completion with no user interaction. This parameter is required when running the background, as in the CYEZISRT job.  The default is to prompt for all optional values.	ITCAM_BATCH=y
-debug	Adds diagnostic trace information to the standard output. Use this parameter if you encounter problems and need IBM technical support.  By default, no extra diagnostic information is provided.	ITCAM_DEBUG=y
-cleanup	Removes any existing <i>config_home</i> directory. The directory is created again when you run the <i>createcfg.sh</i> script.  By default, the existing <i>config_home</i> directory structure is reused.	ITCAM_CLEANUP=y
-config <i>config_home</i>	Specifies the full path of the configuration home directory that is created by the <i>createcfg.sh</i> script.  The default is /u/ecam.	ITCAM_CONFIG= <i>config_home</i>
-install <i>install_home</i>	Specifies the full path of the <i>install_home</i> directory. The directory is created by the SMP/E installation process. You can specify a path containing a symbolic link for flexibility.  The default is derived from the full path to the <i>createcfg.sh</i> script.	ITCAM_INSTALL= <i>install_home</i>
-owner <i>user[:group]</i>	Sets the owner of the files and directories in <i>config_home</i> as <i>createcfg.sh</i> . A user or group can also be specified using the <i>chown</i> command. If the current user does not have superuser privilege, this parameter is ignored.  The default is to leave the ownership of the files and directories in <i>config_home</i> unchanged.	ITCAM_OWNER= <i>user[:group]</i>
-access <i>permissions</i>	Sets the access permissions for the files and directories in the <i>config_home</i> directory. The permissions are specified in the same format as for <i>chmod</i> , and can be either numeric format, such as, 664 or symbolic format, such as, a+Xr,u+w,g+w,o-w.  The default is to leave the access permissions of the files and directories in <i>config_home</i> unchanged.	ITCAM_ACCESS= <i>permissions</i>

## Verifying the pre-configuration files

### About this task

Verify that the pre-configuration files are in place by completing the following steps:

#### Procedure

1. Change to the *config\_home* directory. The default location for the *config\_home* directory is: */u/ecam*.
2. Enter the following command:

```
ls -lsapF
```

A list of files, directories, and symbolic links is displayed. Verify that the following files, directories, and symbolic links appear in the list:

- *bin* - this is a directory containing symbolic links to script files
- *itcam.properties* - this is a file containing property values
- *itcamdc* - this is a symbolic link pointing to *install\_home/itcamdc*
- *toolkit* - this is a symbolic link pointing to *install\_home/toolkit*
- *runtime* - this is an empty directory, which will contain the configuration files

## Verifying the connection to wsadmin.sh

### About this task

The runtime setup script must be able to connect to the WebSphere Application Server *wsadmin.sh* tool. Complete the following procedure to verify the connection to *wsadmin.sh*:

#### Procedure

1. Ensure that the region size is sufficient, particularly if you are running under TSO using OMVS. The *wsadmin.sh* utility starts a JVM and uses a lot of memory.
2. If you are in a stand-alone environment, ensure that the instance of the application server that is being monitored by ITCAM for WebSphere Application Server is running. If you are in a Network Deployment environment, ensure that the Deployment Manager is running.
3. Run *wsadmin.sh* from the directory in which it is located:

```
./wsadmin.sh -conntype SOAP|RMI -port port -host hostname -user  
user_ID -password password
```

(The options for running *wsadmin.sh* are equivalent to the options for running the runtime setup script.)

#### Results

If you connect successfully to *wsadmin.sh*, a message similar to the following is displayed:

```
WASX7209I: Connected to process "dmgr" on node node1 using SOAP connector;  
The type of process is: DeploymentManager  
WASX7029I: For help, enter: "$Help help"
```

## What to do next

If you cannot connect successfully to `wsadmin.sh`, a message similar to the following is displayed:

```
WASX7246E: Cannot establish "SOAP" connection to host "SOMEHOST"...
```

If you cannot connect successfully to `wsadmin.sh`, there might be a problem with your installation or configuration of IBM WebSphere Application Server. Contact IBM Software Support.

## Enabling user ID and password input from `sas.client.props` for RMI connector types:

### About this task

When you use an RMI connection to WebSphere Application Server and global security is enabled, you can use the runtime setup script to retrieve the user ID and password from the `sas.client.props` file. When you retrieve the user ID and password from the `sas.client.props` file, you do not have to specify the `-user` option (or the `ITCAM_USER` environment variable) and the `-password` option (or the `ITCAM_PASSWORD` environment variable). Complete the following procedure:

### Procedure

1. Set the following properties in the `sas.client.props` file:

```
com.ibm.CORBA.loginSource=properties
com.ibm.CORBA.securityEnabled=true
com.ibm.CORBA.loginUserid=user_ID
com.ibm.CORBA.loginPassword=password
```

2. To encrypt the password, run the following command from the directory that contains the `wsadmin.sh` script:

```
./PropFilePasswordEncoder.sh path_to_props_file/sas.client.props com.ibm.CORBA.loginPassword
```

## Enabling user ID and password input from `soap.client.props` for SOAP connector types:

### About this task

When you use a SOAP connection to WebSphere Application Server and global security is enabled, you can use the runtime setup script to retrieve the user ID and password from the `soap.client.props` file. When you retrieve the user ID and password from the `soap.client.props` file, you do not have to specify the `-user` option (or the `ITCAM_USER` environment variable) and the `-password` option (or the `ITCAM_PASSWORD` environment variable). Complete the following procedure:

### Procedure

1. Set the following properties in the `soap.client.props` file:

```
com.ibm.SOAP.securityEnabled=true
com.ibm.SOAP.loginUserid=user_ID
com.ibm.SOAP.loginPassword=password
```

2. To encrypt the password, run the following command from the directory that contains the `wsadmin.sh` script:

```
./PropFilePasswordEncoder.sh path_to_props_file/soap.client.props com.ibm.SOAP.loginPassword
```

## Setting up the user ID and password for ITCAM for WebSphere Application Server with global security enabled

Installing, configuring, and running ITCAM for WebSphere Application Server on z/OS with Global Security enabled might require additional steps, depending on your security configuration. See “Setting up the user ID and password for ITCAM for WebSphere Application Server on z/OS with global security enabled” on page 173.

### Verify prerequisite information before running the runtime setup script

Some prerequisite information must be verified before you run the runtime setup script.

#### 512 MB of virtual storage

You need at least 512 MB on the ASSIZEMAX parameter in the RACF® OMVS segment for the user to run the runtime setup script. It is recommended that you run the runtime setup script using a z/OS UNIX System Services telnet session, but if you use OMVS under TSO, make sure that the TSO procedure you use has a large enough REGION size to support running the configuration script.

#### Performance Monitoring Infrastructure enabled by the script

The Performance Monitoring Infrastructure (PMI) is enabled to default settings when you run the runtime setup script.

#### Removal of JInsight entries from the Generic JVM arguments of the IBM WebSphere Application Server administrative console

When you run the runtime setup script, any JInsight entries that exist in the Generic JVM arguments of the WebSphere Application Server administrative console, such as `-Xjinsight`, are removed. The reason for this is that JInsight entries conflict with the ITCAM for WebSphere Application Server configuration.

#### Adjusting ports for firewalls or for use with other applications About this task

During the configuration, specify port numbers or accept the defaults for port numbers that are used by ITCAM for WebSphere Application Server to communicate with the application server using SOAP or RMI. Make sure that you record the correct port, and that the firewall does not prevent communication on this port from ITCAM for WebSphere Application Server to the application server.

For a Network Deployment environment, ITCAM for WebSphere Application Server uses the SOAP or RMI port to communicate with the Deployment Manager, which is usually located on a different host. In this case, take special care that the firewall does not block communication on this port.

### Execute the runtime setup script

The runtime setup script includes default configuration options. You can run the runtime setup script in prompt mode or in script mode. The first time the runtime setup script is executed in a node, the `gpex.bundle_manager_was.jar` plug-in is copied to the WebSphere Application Server installation plug-ins directory (for example `/usr/lpp/zWebSphere/V8R0/plugins`). To enable the plug-in to copy successfully, ensure the WebSphere Application Server installation directory file



system is mounted R/W and the user executing the runtime setup script has the correct permissions to the plug-ins directory. The runtime setup script can be run solely for copying the plug-in.

If you run the runtime setup script in prompt mode, you can change the default configuration values using either of the following methods:

- Specify options in the command-prompt when initiating the script.
- Export the equivalent environment variables before running the script. By exporting these variables, the runtime setup script uses them as the default values. When you are prompted for a value, press **Enter** and the exported equivalent environment variable is used. Command-prompt arguments override exported environmental variables. For details on running the runtime setup script in prompt mode, see “Executing the runtime setup script in prompt mode.”

If you run the setup script in batch mode, you are not prompted for values. Before running the setup script, set the values using one of the following methods:

- Specify the equivalent environment variables in the hlq.CYEZINST(CYEZSETU) job
- Specify options at a command-prompt that runs `setupdc.sh` in batch mode
- Export the equivalent environment variable before running `setupdc.sh` in batch mode. For details on running the runtime setup script in batch mode, see “Executing the runtime setup script in batch (auto-run) mode” on page 81.

## Executing the runtime setup script in prompt mode

### About this task

When you run the runtime setup script in prompt mode, when you are prompted for values, the applicable default value is displayed in brackets at the end of the prompt. If you enter no value, the script uses the default value. The default value also provides an example of the format of the value that is required.

The default location for the runtime setup script is: `/u/ecam/bin`. For a list of the options for running the script command, see `List of options for the setupdc.sh` script. Complete the following procedure to run the runtime setup script in prompt mode:

### Procedure

1. If WebSphere Global Security is enabled, log in as a WebSphere administrator with permission to administer the application server configuration.
2. Complete one of the following procedures:
  - If you are running the application server in a Network Deployment environment, make sure that the Deployment Manager and the node agent are running.
  - If you are running the application server in a stand-alone environment, ensure that the instance of the application server that is being monitored by ITCAM for WebSphere Application Server is running.
3. To set any of the configuration options as environment variables before running the runtime setup script, export the environment variables. By setting options in the command-prompt, the `setupdc.sh` script uses them as the new default values. Defaults on the command-prompt override defaults that are set by exported environment variables. See `List of options for the setupdc.sh` script for a list of the environment variables. Here are examples of how to export an environment variable from a command-prompt:

```
export ITCAM_CONNTYPE=RMI
export ITCAM_USER=wsadmin
```

When you export these variables, the `setupdc.sh` script uses them as the default values. When prompted, you do not need to enter a value, instead just press **Enter**.

4. To run the runtime setup script, run the following command:

```
./setupdc.sh [options]
```

If there are multiple IP addresses for the computer where ITCAM for WebSphere Application Server is being configured, you are prompted to select an IP address:

Select host IP address:

- 1) 9.11.22.111
- 2) 199.999.44.99
- 3) 192.111.22.44

Enter selection: 1

Enter the corresponding number for the IP address.

5. You are prompted for the path of *AppServer\_home*:

Enter the path of the WAS user install root [/u/WAS80]:

Enter the HFS path name of *AppServer\_home*, for example, /u/was8000 and press **Enter**. The runtime setup script uses this path to search for the `wsadmin.sh` script. The `wsadmin.sh` script is used to configure the target application server for ITCAM for WebSphere Application Server monitoring.

6. If multiple occurrences of the `wsadmin.sh` are detected. You are prompted to select one of the discovered occurrences, a message similar to the following is displayed:

Found `wsadmin.sh` in the following locations:

- 1) /u/was8000/DeployMgr/AppServer/bin/wsadmin.sh
- 2) /u/was8000/DeployMgr/AppServer/profiles/default/bin/wsadmin.sh
- 3) /u/was8000/DeployMgr/DeploymentManager/bin/wsadmin.sh

Enter the number of the `wsadmin` to use for configuration:

**Note:** The list should not include Deployment Manager or Node Manager servers.

Any application server `wsadmin.sh` script will work, but the `wsadmin.sh` script in the *AppServer\_home/profiles/default/bin* directory for the application server instance you are configuring is recommended because the `wsadmin.sh` script uses the `wsadmin.properties` file associated with it. Enter the number that corresponds to the path for the appropriate `wsadmin.sh` script and press **Enter**.

7. You are prompted to select one of the discovered instances of the application server:

- 1) server1
- 2) server2
- 3) server3
- 4) server4

Enter the number of the server to select:

Enter the number that corresponds to the name of the server for the instance of the application server that you want to monitor and press **Enter**.

8. If the instance of the application server has already been configured for ITCAM for WebSphere Application Server and you are now updating the configuration, indicate whether you want to overwrite the runtime directory for the application server instance that is being configured:

```
The ITCAM configuration already exists:
/u/ecam/runtime/was80.node1.server1
You may retain this directory and replace the
configuration and connection files within, or
you may remove it and start over fresh.
Do you wish to retain this directory? (y|n) [y]:
```

Entering n indicates that you want to remove the directories and files associated with an existing runtime directory. A new runtime directory is created with a configuration for the application server instance instead of the existing runtime directory being retained and overwritten. Whether you enter y or enter n, the customized property files created by setupdc.sh are recreated.

9. You are prompted whether you want to apply the required PMI settings and enable ITCAM for WebSphere Application Server to prepare the application server instance for performance monitoring. The following prompt is displayed:

```
Do you wish to apply the required PMI settings and enable ITCAM?(y|n) [n]: y
```

Enter n to configure PMI custom settings and activate manually later (this will require a restart of the WebSphere Application Server). Enter y to configure PMI custom settings and activate now.

10. You are prompted whether you want to configure communication with ITCAM for WebSphere Application Server Managing Server. For more information about the Managing Server, see “Communication with the ITCAM for Application Diagnostics Managing Server” on page 1. The following prompt is displayed:

```
Do you wish to configure the Data Collector
to use the ITCAM Managing Server? (y|n) [n]: y
```

11. If you choose to configure communication with the Managing Server, you are prompted for the IP address or host name. The following prompt is displayed:

```
Enter the IP address or host name of the
ITCAM Managing Server [127.0.0.1]: ibm-bladevm2.usca.ibm.com
```

Enter the fully qualified host name or IP address of the ITCAM for Application Diagnostics Managing Server.

12. You are prompted for the Codebase Port. The following prompt is displayed:

```
Enter the MS Codebase Port [9122]:
```

The Codebase Port is the port number that the code base server in the Managing Server kernel listens to when accepting incoming requests.

13. A message that indicates the status of communication with the Managing Server is displayed:

```
URL being tested: http://ibm-bladevm2.usca.ibm.com:9122/../../ITCAM61_MS_CONTEXT.p
roperties
Successfully acquired MSHOME value of /opt/IBM/itcam/WebSphere/MS72
```

14. You are prompted whether you want to configure communication with ITCAM for Transactions. The following message is displayed:

```
Do you wish to configure TTAPI Integration?(y|n) [n]: y
```

15. You are prompted for the subsystem name. The following message is displayed:

Enter the subsystem name for  
ITCAM for Transactions [CYNT]:

Enter the subsystem name of the ITCAM for Transactions server that you  
want to communicate with.

16. You are prompted for the directory path name of the libraries. The following  
message is displayed:

Enter the directory path name of the libraries for  
ITCAM for Transactions z/OS [/usr/lpp/cyt/jar/IBM]:

17. You are prompted whether you want to eliminate the output of the garbage  
collector log from SYSOUT. This conserves SPOOL space. The following  
message is displayed:

Do you wish GC log data included in output? (y|n): y

18. A summary of all the parameters you selected is displayed. A message similar  
to the following is displayed, followed by a prompt asking if you want to  
proceed with the configuration:

Setup will create an ITCAM runtime with the following parameters:

1) wsadmin script :

/u/WAS8000/cell1/node1/AppServer/profiles/default/bin/wsadmin.sh

2) WAS server name : server1

Cell Name : cell1  
Node Name : node1  
WAS Version : 8.0.0.0 ND  
WAS Platform : was80

Deployment : Network Deployment  
64-bit mode : 64bit

3) Product : ITCAM 7.2 for WebSphere Application Server

Product Home : /u/ecam

Existing config : Reuse  
ApplyPMI/  
Enable ITCAM : Yes

Managing Server : Yes  
ITCAM MS host : ibm-bladevm2.usca.ibm.com  
Codebase port : 9122  
ITCAM MS home : /opt/IBM/itcam/WebSphere/MS72

TTAPI integration : Yes  
Subsystem name : CYTZ  
Lib directory : /u/itt72/smpe/usr/lpp/cyt/jar/IBM

Enter 'y' to continue, item number to respecify, or 'q' to quit: y

Enter y to accept the configuration or enter n to exit the runtime setup script.  
The setupdc.sh script can be safely rerun on an already configured  
application server.

Up to this point, no configuration changes have been made, which means, it is  
safe to exit without affecting the WebSphere Application Server configuration.  
If the parameters for one of the numbered items are not correct, you can  
modify the configuration information by entering the item number and  
pressing **Enter**. The script prompts you for that information again.

19. If you have a Network Deployment environment, run the script for each server you want to monitor. The script should be run on the host associated with the node that owns the server.

## Results

The runtime setup script creates a log of all the configuration operations that it performs. You can review the log for any error conditions, and you might be requested to provide the log contents to IBM software support. The log file is called `setupdc.log`. The default location for the log file is: `/u/ecam/runtime/`

For successful configuration look for messages similar to the following message:  
Successfully configured data collector for server server1

## Executing the runtime setup script in batch (auto-run) mode

Executing the runtime setup script in batch (auto-run) mode eliminates the need for command-prompt-execution prompting. You can either enter values for environmental variables in the `hlq.SCYEINST(CYEZSETU)` batch job and submit it as a z/OS JCL job that uses `BPXBATC`H, or you can execute export command and the `setupdc.sh` script through a command-prompt. Complete one of the following procedures to run the runtime setup script in batch (auto-run) mode:

- “Editing the `hlq.SCYEINST(CYEZSETU)` batch job and submitting it as a z/OS JCL job that uses `BPXBATC`H”
- “Executing the `setupdc.sh` script through a command-prompt” on page 82

## Editing the `hlq.SCYEINST(CYEZSETU)` batch job and submitting it as a z/OS JCL job that uses `BPXBATC`H

### About this task

Complete the following procedure to run the runtime setup script in batch (auto-run) mode by editing the `hlq.SCYEINST(CYEZSETU)` batch job and submitting it as a z/OS JCL job that uses `BPXBATC`H:

### Procedure

1. If WebSphere Global Security is enabled, log in as a WebSphere administrator who has permission to administer the application server configuration.
2. Complete one of the following procedures:
  - If you are running the application server in a Network Deployment environment, make sure that the Deployment Manager and the node agent are running.
  - If you are running the application server in a stand alone environment, ensure that the instance of the application server that is being monitored by ITCAM for WebSphere Application Server is running.
3. In TSO, copy the sample batch job, `hlq.SCYEINST(CYEZSETU)` to a location of your choice (`hlq` is the customer-specified high-level qualifier).
4. In the sample batch job, modify the environment variables. See List of options for the `setupdc.sh` script for the list of environment variables.
5. Save the batch job file you modified in step 4.
6. In TSO, submit a z/OS JCL job using the contents of the file you modified in step 4. Using a z/OS JCL-submitted job with `BPXBATC`H is advantageous if you want to produce a record or do not want to tie up your terminal.  
Resolve any security issues you encounter when running the job.

## Results

The runtime setup script creates a log of all the configuration operations that it performs. You can review the log for any error conditions, and you might be requested to provide the log contents to IBM software support for problem diagnosis. The log file is called `setupdc.log` and is located under `config_home/runtime` directory. For example, `/u/ecam/runtime/setupdc.log`

When configuration is complete, a message similar to the following is displayed:  
Successfully configured data collector for server server1

## Executing the `setupdc.sh` script through a command-prompt

### About this task

Complete the following procedure to run the runtime setup script in batch (auto-run) mode by running the `setupdc.sh` script through a command-prompt:

### Procedure

1. If WebSphere Global Security is enabled, log in as a WebSphere administrator who has permission to perform the application server configuration.
2. Complete one of the following procedures:
  - If you are running the application server in a Network Deployment environment, ensure that the Deployment Manager and the node agent are running.
  - If you are running the application server in a non-Network Deployment environment, ensure that the instance of the application server that is being monitored by ITCAM for WebSphere Application Server is running.
3. Run `setupdc.sh` from a command-prompt. Complete the same procedure you use to run `setupdc.sh` in prompt mode, but indicate all the options you want to specify at the command-prompt (or by exporting the corresponding environment variable before running `setupdc.sh`). Be sure to indicate options that are required for running in batch mode. See “Executing the runtime setup script in prompt mode” on page 77, and List of options for the `setupdc.sh` script.

## Results

The runtime setup script creates a log of all the configuration operations that it performs. You can review the log for any error conditions, and you might be requested to provide the log contents to IBM software support for problem diagnosis. The log file is called `setupdc.log` and is located in the runtime directory under `config_home`, for example, `/u/ecam/runtime/setupdc.log`.

For successful configuration, look for messages similar to the following message:  
Successfully configured data collector for server server1

## Standard Configuration Options

The following table describes the options in the runtime setup script. These are the standard options required to configure a WebSphere Application Server instance for data collection.

Table 27. List of options for the `setupdc.sh` script

Command-prompt option	Description	Equivalent environment variable and value	Default
<code>-log logfile_name   -nolog</code>	Indicates whether you want to create a log of the configuration operations. If you indicate <code>-log</code> , you can specify a location. The default location is: <code>config_home/runtime/setupdc.log</code> . For example: <code>/u/ecam/runtime/setupdc.log</code> .	N/A. Available as an option on the command-prompt only.	<code>config_home/runtime</code>
<code>-?</code>	Provides help on the options.	N/A. Available as an option on the command-prompt only.	
<code>-batch</code>	Indicates that you want to run the runtime setup script in batch mode. For details about batch mode, see “Configuring ITCAM for WebSphere Application Server on IBM z/OS” on page 69.	<code>ITCAM_BATCH=y</code>	The default is to run in prompt mode.
<code>-debug</code>	Specifies whether to produce messages in the log file for debugging. Use this option if you have experienced problems configuring ITCAM for WebSphere Application Server and need to provide details to IBM Software Support.	<code>ITCAM_DEBUG=y</code>	The default is to run without debug messages.
<code>-config config_home</code>	Indicates the ITCAM for WebSphere Application Server configuration directory, for example: <code>/u/ecam</code>  The value for this option is generated automatically. To override the automatically generated value, specify a path to be used in the configuration process. This path must resolve to the actual ITCAM for WebSphere Application Server configuration home path.  For example, if the <code>config_home</code> you want is <code>/u/ecam</code> , but due to symbolic links, the physical path for this logical path is <code>/V1R8M0/u/ecam</code> . enter <code>-config /u/ecam</code> . This means that you can change the physical path without reconfiguring ITCAM for WebSphere Application Server. If you change the <code>config_home</code> value, the <code>itcam.properties</code> file must also be changed. To change the <code>config_home</code> value, rerun <code>creatcfg.sh</code> before you rerun <code>setupdc.sh</code> .	<code>ITCAM_CONFIG=config_home</code>	The default is the parent directory of the directory where the <code>setupdc.sh</code> is run from.
<code>-cleanup</code>	Indicates that you want to remove the existing runtime directory. A new runtime directory is created with a configuration for the application server instance instead of the existing runtime directory being retained and overwritten.  Whether you specify this option or not, the customized property files in the runtime directory are recreated.	<code>ITCAM_CLEANUP=y</code>	The default is that no cleanup is done.
<code>-conntype SOAP   RMI</code>	Specifies the connection type for communications with <code>wsadmin.sh</code> .	<code>ITCAM_CONNTYPE=connect_type</code>	The default is to use the connection type specified in the <code>wsadmin.properties</code> file associated with the <code>wsadmin.sh</code> script you have chosen. If <code>wsadmin.properties</code> file does not have a connection type specified then SOAP is the default.



Table 27. List of options for the `setupdc.sh` script (continued)

Command-prompt option	Description	Equivalent environment variable and value	Default
<code>-port port</code>	<p>Specifies the port number that is used by <code>wsadmin.sh</code>.</p> <p>In a Network Deployment environment, the specified port is the Deployment Manager SOAP or RMI port (not the application server instance SOAP or RMI port).</p> <p>To find the SOAP port number in the control region job log, look for:  BB000222I: ADMC0013I: The SOAP connector is available at  port <i>port</i></p> <p>To find the RMI port number in the control region job log, look for:  BB000222I: ADMC0026I: The RMI connector is available at  port <i>port</i></p> <p>The SOAP and RMI ports can also be found in the administration console.</p>	<code>ITCAM_PORT=port</code>	The default is to use the port specified in the <code>wsadmin.properties</code> file associated with the <code>wsadmin.sh</code> script you have chosen.
<code>-host host</code>	<p>Specifies the fully qualified host name or IP address used by <code>wsadmin.sh</code>. Do not specify this option if the Deployment Manager is on the same host as the application server, if your application server is in stand-alone mode, or if the correct host name is configured in the <code>wsadmin.properties</code> file.</p> <p>In a Network Deployment environment, enter the value for the host for the Deployment Manager.</p>	<code>ITCAM_HOST=host_name</code>	The default is to use the host name specified in the <code>wsadmin.properties</code> file associated with the <code>wsadmin.sh</code> script you have chosen.
<code>-profile profile_script</code>	<p>Specifies a profile script for running <code>wsadmin.sh</code>. The website for IBM WebSphere Application Server provides the following description of a profile script:</p> <p>"The profile script runs before other commands, or scripts. If you specify <code>-c</code>, the profile script runs before it invokes this command. If you specify <code>-f</code>, the profile script runs before it runs the script. In interactive mode, you can use the profile script to perform any standard initialization that you want. You can specify multiple <code>-profile</code> options on the command-prompt, and they invoke in the order that you supply them."</p>	<code>ITCAM_PROFILE=script</code>	If you do not specify a profile script, then none used.
<code>-user user_id</code>	<p>Specifies the user ID to use for connection to <code>wsadmin.sh</code>. This ID is required if Global Security is enabled unless it set in the <code>sas.client.props</code> (RMI) or <code>soap.client.props</code> (SOAP) files. Log in as this user when you run the script. See, "Enabling user ID and password input from <code>sas.client.props</code> for RMI connector types:" on page 75, and "Enabling user ID and password input from <code>soap.client.props</code> for SOAP connector types:" on page 75</p>	<code>ITCAM_USER=user_id</code>	N/A
<code>-password password</code>	<p>Specifies the password to use for connection to <code>wsadmin.sh</code>. This password is required if Global Security is enabled, unless it is set in the <code>sas.client.props</code> (RMI) or <code>soap.client.props</code> (SOAP) files.</p>	<code>ITCAM_PASSWORD=password</code>	N/A
<code>-server servername</code>	<p>Specifies the name of the application server. This name is the name displayed in the IBM WebSphere Application Server administrative console, not the short name used to construct the z/OS started task names, for example, <code>server1</code>. This option is required if running in batch mode.</p>	<code>ITCAM_SERVER=N/A servername</code>	N/A

Table 27. List of options for the setupdc.sh script (continued)

Command-prompt option	Description	Equivalent environment variable and value	Default
-wasroot <i>path</i>	Specifies the installation directory for IBM WebSphere Application Server ( <i>AppServer_home</i> ). It is the partial path to the wsadmin.sh file. For example:  /u/WAS8000/Servers/AppServer  If you specify a value for -wsadmin, this option is ignored. If you specify more of the path to the wsadmin.sh script, it is located quickly. If you specify less of the path, more alternative wsadmin.sh scripts are displayed for selection.	ITCAM_WASROOT= <i>AppServer_home</i>	/u/WAS80
-wsadmin <i>path_and_file</i>	Specifies the full path to the wsadmin.sh file. For example:  /u/WAS8000/Servers/AppServer/profiles/default/bin/wsadmin.sh  This option is required if running in batch mode and the default wsadmin.sh script that setupdc.sh selects is not acceptable.  You can use any local wsadmin.sh script. You might want to use a wsadmin.sh with a particular profile. Any application server wsadmin.sh script works, but the one under <i>AppServer_home/profiles/default/bin</i> for the application server instance you are configuring is recommended. The wsadmin.sh script has its own associated wsadmin.properties file, which specifies the default options for the wsadmin.sh script.	ITCAM_WSADMIN= <i>path_and_file</i>	N/A
-defaulthostname <i>IP_or_host</i>	Specifies the fully qualified host name or IP address that replaces the value of the local host name for all purposes during configuration of ITCAM for WebSphere Application Server, such as for the bind IP or export IP processes. The value returned by running the hostname command is usually as the host name is usually acceptable, but in some environments this value will not work. If running the hostname command returns a value that cannot be used, you can use the -defaulthostname option.	ITCAM_DEFAULTHOSTNAME = <i>IP_or_host</i>	The default is the system default host name.
-default hostip <i>host_IP</i>	Specifies the default local host IP address. Using the default, which is the value returned by running the host IP command, as the host IP address is acceptable, but in some environments, this value does not work. If running the host IP command returns a value that is not usable for configuring ITCAM for WebSphere Application Server, you can use this -default hostip option.  For multi-homed addresses, the IP address to use will be prompted for. In the batch mode, the first IP address will be used.	ITCAM_DEFAULTHOSTIP= <i>host_IP</i>	The default is the system default host IP.  In prompt mode, for multi-homed addresses, you are prompted for the IP address. In batch mode, the first IP address is used.
-localhost <i>hostname</i>	Specifies the local host name and IP address. This option is used by findServers.jacl to make a node match if there is a problem identifying nodes. This option is used to determine the local node. This option is only required if the WAS_NODE associated with wsadmin.sh file is not usable. If the -server option is specified, then do not specify a value for this option.	ITCAM_LOCALHOST= <i>hostname</i>	The default is the value entered or the default value for the -defaulthostname option.

Table 27. List of options for the setupdc.sh script (continued)

Command-prompt option	Description	Equivalent environment variable and value	Default
-localip IP_address	Specifies the local IP address. This option is used by findServers.jacl to make a node match if there is a problem identifying nodes. This option is used to determine the local node. This option is only required if the WAS_NODE associated with wsadmin.sh file is not usable. If the -server option is specified, then do not specify a value for this option.	ITCAM_LOCALIP= IP_address	
-applyPMIsettings	Specifies whether you want to apply the PMI settings and enable ITCAM for WebSphere Application Server. ITCAM for WebSphere Application Server can be enabled at a later time using the Tivoli Performance Viewer. Enabling at a later time will require a server restart.	ITCAM_APPLYPMISETTINGS=n	The default is not to update PMI and not to enable ITCAM for WebSphere Application Server but instead to defer activation.

### Sample Batch Mode Script

The following batch mode script is an example for ITCAM for WebSphere Application Server to monitor application server instances:

```
#!/bin/sh

export ITCAM_BATCH=y
export ITCAM_DEBUG=y

export ITCAM_CONFIG="/u/ecam"

# WebSphere attributes
export ITCAM_WSADMIN="/u/WAS8000/cell1/node1/AppServer/profiles/default/bin/wsadmin.sh"
export ITCAM_HOST=node1.raleigh.ibm.com
export ITCAM_CONNTYPE=SOAP
export ITCAM_PORT=8879
export ITCAM_USER=wasadmin
export ITCAM_PASSWORD=password

# Ownership of configured files (ignored if not super-user)
export ITCAM_OWNER=wasadmin
export ITCAM_PERMISSIONS="a+Xr,u+w,g+w"

# Server to configure
export ITCAM_SERVER=server1

###
# Invoke script run in super-user mode
# (Super-user is not usually required)
##
echo "*** ITCAM for WAS setup: $ITCAM_CONFIG $ITCAM_SERVER ***"
cd $ITCAM_CONFIG/bin
echo "./setupdc.sh " | su
# ./setupdc.sh
echo "*** ITCAM for WAS setup completed ***"

exit 0
```

### Data Collector communication with ITCAM for Application Diagnostics Managing Server configuration options

The following table describes the options in the runtime setup script required to configure communication with the ITCAM for Application Diagnostics Managing Server.

Table 28. Managing Server configuration

Command-prompt option	Description	Equivalent environment variable and value	Default
-itcamms	Indicates you want to enable communication with the ITCAM for Application Diagnostics Managing Server	ITCAM_ITCAMMS=y	n
-kernelip <i>kernel IP addr</i>	Specifies the host name or IP address of the ITCAM for Application Diagnostics Managing Server	ITCAM_KERNELIP=IP_or_host	N/A
-mshome <i>MS home path</i>	Specifies the path to the ITCAM for Application Diagnostics Managing Server home directory.	ITCAM_MSHOME=MS_home	/opt/IBM/itcam/WebSphere/MS
-rfSPORT01 <i>RFS port 1</i>	Specifies the first RFS port	ITCAM_RFSPORT01=port	9120
-kernelport01 <i>Kernel port 1</i>	Specifies the first kernel port.	ITCAM_KERNELPORT01=port	9122
-probermiport <i>port range</i>	Specifies a range of RMI ports for communication between the Data Collector and the ITCAM for Application Diagnostics Managing Server.	ITCAM_PROBERMIPORT=range	8200-8299
-probecontrolerrmiport	Specifies a range of controller RMI ports for communication between the Data Collector and the ITCAM for Application Diagnostics Managing Server.	ITCAM_PROBECONTROLLERRMIPORT=range	8300-8399
-nomshomeconnect	Indicates that you do not want to contact the running ITCAM for Application Diagnostics Managing Server to get the home path.	ITCAM_MSHOMECONNECT=n	y
-mshomeconnect	Indicates that you want to contact the running ITCAM for Application Diagnostics Managing Server to get the home path.	ITCAM_MSHOMECONNECT=y	y
-dmgrhost <i>DeployMgr RMI hostname</i>	Specifies the host name or IP address used to connect to the Deployment Manager RMI.	ITCAM_DMGRHOST=IP_or_host	The default is to use the local host name.
-bindip <i>bind ip</i>	Specifies the bind IP host name or IP address.	ITCAM_BINDIP=IP_or_host	The default is to use the local host name.
-exportip <i>export ip</i>	Specifies the export IP host name or IP address.	ITCAM_EXPORTIP=IP_or_host	The default is to use the local host name.
-gcoutput	Indicates whether you want garbage collection logs enabled. y results in logs being recorded to the SYSOUT log.	ITCAM_GCOUTPUT=y	n

## Sample Batch Mode Script for configuring communication with Managing Server

```
#!/bin/sh

export ITCAM_BATCH=y
export ITCAM_DEBUG=y

export ITCAM_CONFIG="/u/ecam"

# WebSphere attributes
export ITCAM_WSADMIN="/u/WAS8000/cell1/node1/AppServer/profiles/default/bin/wsadmin.sh"
export ITCAM_HOST=node1.raleigh.ibm.com
export ITCAM_CONNTYPE=SOAP
export ITCAM_PORT=8879
export ITCAM_USER=root
export ITCAM_PASSWORD=password

# Ownership of configured files (ignored if not super-user)
export ITCAM_OWNER=root
export ITCAM_PERMISSIONS="a+Xr,u+w,g+w"

# Server to configure
export ITCAM_SERVER=server1

## enable ITCAM with MS
export ITCAM_ITCAMMS=y
export KERNEL_IP=devapp-lnx-s06.usca.ibm.com
export KERNEL_PORT=9122
export ITCAM_GCOUPUT=y
export IITCAM_APPLYPMISETTINGS=y

###
# Invoke script run in super-user mode
# (Super-user is not usually required)
##
echo "*** ITCAM for WAS setup: $ITCAM_CONFIG $ITCAM_SERVER ***"
cd $ITCAM_CONFIG/bin
echo "./setupdc.sh" | su
# ./setupdc.sh
echo "*** ITCAM for WAS setup completed ***"

exit 0
```

## Configuration of communication with ITCAM for Transactions

You can configure communication between the Data Collector and ITCAM for Transactions, for more detail, see “Communication with ITCAM for Transactions” on page 2.

**Note:** Some features of ITCAM for Transaction Tracking are limited without GPS tokens. GPS tokens are supplied by the Common Services component, SMP/E FMID HAAD71C. The Common Services component is available in ITCAM for Applications Diagnostics 7.2, see “Configuration of communication with ITCAM for Transactions” on page 125.

### Pre-Configuration:

#### About this task

Before you configure communication with ITCAM for Transactions, verify that ITCAM for Transactions contains a directory with the `cytapi4j.jar` file, and the `libcytapi64.so` and `libcytapi.so` external links.

### Procedure

1. Run the following command from the Transactions Tracking directory by running the following UNIX System Services command: `ls -la`.
2. The results should be displayed as follows:  
41200 Aug 11 15:00 cytapi4j.jar  
8 Aug 25 23:06 libcytapi64.so -> CYTATJ64  
8 Aug 25 23:06 libcytapi.so -> CYTATJAV
3. Add `hlq.SCYTLOAD` to `LINKLIST` or specify `hlq.SCYTLOAD` in the `STEPLIB` of the WebSphere Application Server servant region started task (STC) procedure.

**Configuring communication with ITCAM for Transactions Configuration:** The following table describes the options in the runtime setup script that are required to configure communication with ITCAM for Transactions.

**Note:** ITCAM for Transactions is not currently supported on Itanium platforms.

Table 29. ITCAM for Transactions Configuration

Command-prompt option	Description	Equivalent environment variable and value	Default
<code>-ttapi</code>	Indicates you want to enable communication with ITCAM for Transactions.	<code>ITCAM_TTAPI=y</code>	n
<code>-ttapisn</code> <i>Subsystem name</i>	Specifies the subsystem name of the ITCAM for Transactions z/OS .	<code>ITCAM_TTAPISSN=CYTZ</code>	CYTZ
<code>-ttapidir</code> <i>dir path</i>	Specifies the path of the ITCAM for Transactions z/OS HFS library.	<code>ITCAM_TTAPIDIR=/usr/lpp/cyt/jar/IBM</code>	<code>/usr/lpp/cyt/jar/IBM</code>

### Run the setup script in batch mode to configure communication with ITCAM for Transactions:

#### About this task

You can configure communication with ITCAM for Transactions by rerunning the batch mode script. When you use this method, you do not affect the rest of the ITCAM for WebSphere Application Server configuration. To configure communication with ITCAM for Transactions, rerun the setup script in batch mode by performing the following steps:

### Procedure

1. Add parameters to the batch mode script used to configure communication with the Managing Server as shown in the following example:  
`export ITCAM_TTAPI=y`  
`export ITCAM_TTAPISSN=CYTZ`  
`export ITCAM_TTAPIDIR=/u/itt72/smpe/usr/lpp/cyt/jar/IBM`
2. Rerun the setup script in batch mode. For details on running the setup script in batch mode, see “Executing the runtime setup script in batch (auto-run) mode” on page 81.

3. Add hlq.SCYTLOAD to LINKLST or add hlq.SCYTLOAD to a STEPLIB in the WebSphere Application Server servant region started task (STC) procedure.

**Note:** The common services component from ITCAM for Application Diagnostics for z/OS needs to be installed to use all ITCAM for Transactions features. There are four types of WebSphere Application Server requests that may not work properly with ITCAM for Transactions if the common services component is not installed:

- RMI/IIOP
- Web Services
- CTG token-based
- IMS™ connect

### **Run the setup script in batch mode to unconfigure communication with ITCAM for Transactions:**

#### **About this task**

You can unconfigure communication with ITCAM for Transactions by rerunning the batch mode script. When you use this method, you do not affect the rest of the ITCAM for WebSphere Application Server configuration. To unconfigure communication with ITCAM for Transactions, rerun the setup script in batch mode by performing the following steps:

#### **Procedure**

1. To unconfigure communication with ITCAM for Transactions, remove the following parameters from the setup script:

```
export ITCAM_TTAPI=y
export ITCAM_TTAPISSN=CYTZ
export ITCAM_TTAPIDIR=/u/itt72/smpe/usr/lpp/cyt/jar/IBM
```
2. Rerun the setup script in batch mode. For details on running the setup script in batch mode, see “Executing the runtime setup script in batch (auto-run) mode” on page 81.
3. Remove hlq.SCYTLOAD from LINKLST or remove hlq.SCYTLOAD from a STEPLIB in the WebSphere Application Server servant region started task (STC) procedure.

**Note:** You do not have to run the unconfi.g.sh script to remove ITCAM for Transactions communication.

## **Additional configuration tasks**

### **About this task**

Complete the tasks described in each of the following sections, if applicable.

### **Increasing the heap size**

#### **About this task**

Increase the heap-size configuration to 128 MB above the current configuration.

#### **Procedure**

1. Log on to the IBM WebSphere Application Server administrative console.
2. Navigate to specifying heap size in the WebSphere Application Server administrative console:



- a. Click **Server > Application Servers** and select the *server\_name*.
  - b. In the **Configuration** tab, navigate to **Server Infrastructure > Java and Process Management > Process Definition > Servant > Additional Properties: Java Virtual Machine**.
3. Edit the field **Maximum Heap Size**. If the default is not specified, then it assumes 256. Enter a value of 384.

## Configuring ITCAM for WebSphere Application Server in a SYSPLEX environment

### About this task

#### Procedure

1. On one LPAR in the SYSPLEX environment, create the zone and complete the SMP/E installation.
2. On each LPAR in the SYSPLEX environment, perform the following steps:
  - a. Configure system environment settings.
  - b. Configure ITCAM for WebSphere Application Server for each application server instance individually.

**Important:** Make sure that the configuration settings are identical for every LPAR in the SYSPLEX.

#### Restart the Application Server

When you have completed the additional configuration tasks, restart the instance of the application server that ITCAM for WebSphere Application Server will monitor. For details on restarting IBM WebSphere Application Server in your environment, see the WebSphere documentation <http://publib.boulder.ibm.com/infocenter/wasinfo/beta/index.jsp>.

---

## Upgrading or applying maintenance for ITCAM for WebSphere Application Server on IBM z/OS

#### Procedure

1. Use ShopzSeries to check for the latest program temporary fixes (PTFs). Install the new PTFs if they are available.
2. Use the Installation Manager to complete the installation on the z/OS UNIX System Services. A JCL sample for Installation Manager installation is located here: hlq.SCYEINST(CYEZIIMR). For details on using Installation Manager, see <http://publib.boulder.ibm.com/infocenter/install/v1r4/index.jsp>.
3. After installing maintenance using the Installation Manager, for every configuration directory (*config\_home*), run the `amupdate.sh` script from *config\_home/bin*:

```
./amupdate.sh [-config config_home] [-debug] [-batch] [-?]
```

Where:

#### **-config**

Set a different *config\_home* directory. Not needed when the script is started from *config\_home/bin*.

#### **-debug**

Output debug information.

**-batch**

Run the script without any prompts.

**-?** Display help on the script syntax.

For details on using Installation Manager, see <http://publib.boulder.ibm.com/infocenter/install/v1r4/index.jsp>.

---

## Chapter 7. Unconfiguring and uninstalling ITCAM for WebSphere Application Server

### About this task

Use this information to unconfigure and uninstall ITCAM for WebSphere Application Server on all supported platforms.

**Attention:** Before deleting an application server profile, unconfigure ITCAM for WebSphere Application Server for all monitored instances in this profile. Otherwise, running the WebSphere Application Server update command might fail (typically with a JACL failed error message).

Complete the steps in the following order:

Table 30. Order of unconfiguring and uninstalling ITCAM for WebSphere Application Server by operating system

Operating system	Order
Windows, UNIX, or Linux	<ol style="list-style-type: none"><li>1. Unconfigure ITCAM for WebSphere Application Server. Complete one of the following procedures:<ul style="list-style-type: none"><li>• “Unconfiguring ITCAM for WebSphere Application Server using the Configuration Tool on Windows, UNIX, and Linux”</li><li>• “Silent unconfiguration of ITCAM for WebSphere Application Server on Windows, UNIX, and Linux” on page 100</li></ul></li><li>2. Uninstall ITCAM for WebSphere Application Server. See “Uninstalling ITCAM for WebSphere Application Server on Windows, UNIX, and Linux” on page 101.</li></ol>
IBM i	“Uninstalling ITCAM for WebSphere Application Server on IBM i” on page 105
z/OS	“Unconfiguring ITCAM for WebSphere Application Server on IBM z/OS” on page 106

---

## Unconfiguring ITCAM for WebSphere Application Server using the Configuration Tool on Windows, UNIX, and Linux

### About this task

Complete the following steps to unconfigure ITCAM for WebSphere Application Server using the Data Collector Configuration Tool on Windows, UNIX, and Linux:

### Procedure

1. On UNIX or Linux systems, if you are performing the uninstallation from a remote computer, enter `xhost + hostname`. Where *hostname* is the fully qualified host name of the computer on which ITCAM for WebSphere Application Server is being uninstalled.
2. Log on to the computer with the same user name that was used to perform the installation of ITCAM for WebSphere Application Server.
3. On UNIX or Linux, export the `DISPLAY` variable using one of the following options:
  - If you are running the unconfiguration from a remote computer, enter

```
export DISPLAY=local_machine:0.0
```

where

*local\_machine* is the fully qualified host name of the computer where you are sitting.

- If running the unconfiguration from the computer where ITCAM for WebSphere Application Server was installed

Enter

```
export DISPLAY=localhost:0.0
```

4. Verify that the instance of the application server that is being monitored by ITCAM for WebSphere Application Server is running. At a command prompt, enter one of the following commands from the bin directory under *AppServer\_home*. For example, application servers, from *AppServer\_home/profiles/profile\_name/bin*:

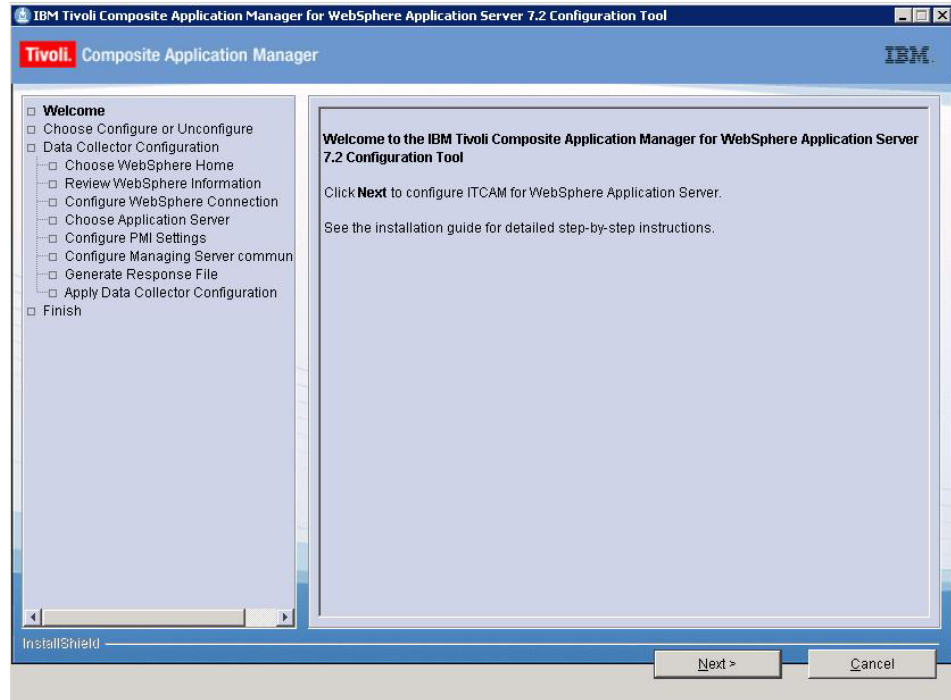
Table 31. Running the `serverStatus` command

Windows	UNIX or Linux
<code>serverStatus.bat server_name</code>	<code>./serverStatus.sh server_name</code>

**Note:** In a Network Deployment environment, before the Data Collector Configuration Tool applies the unconfiguration, it performs an autosynchronization between the Node Agent and Deployment Manager. Start the Node Agent and Deployment Manager. Starting the instance of the application server is not necessary.

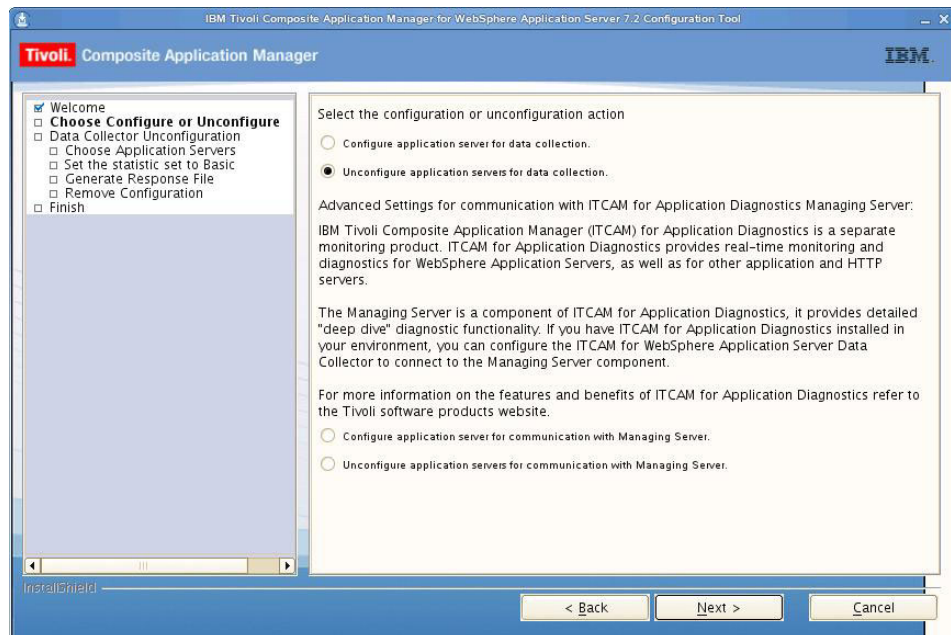
5. Open the Data Collector Configuration Tool to unconfigure ITCAM for WebSphere Application Server using one of the following methods:
  - Open the Data Collector Configuration Tool from the WebSphere Application Server menu
  - Open the Data Collector Configuration Tool with the following file:  
*WebSphere\_home*\AppServer\itcam\DC\config\_dc\config\_DC.bat (Windows)  
or *WebSphere\_home*/AppServer/itcam/DC/config\_dc/config\_DC.sh (UNIX and Linux systems)

The **Welcome** window opens. Click **Next**.



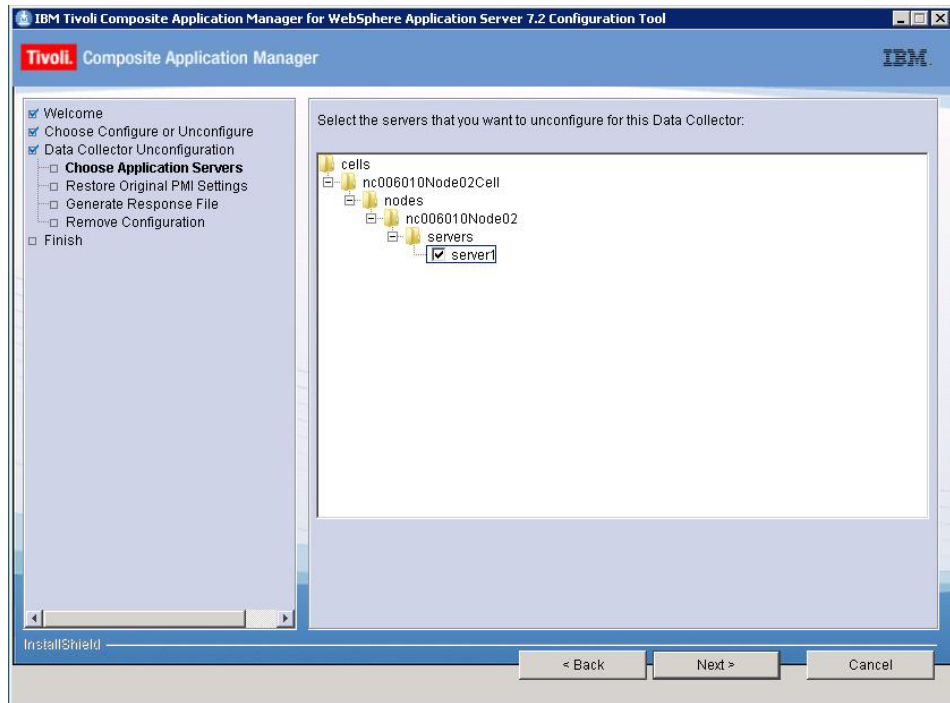
The Choose Configure or Unconfigure window opens.

6. Select Unconfigure application servers for data collection. Click Next.



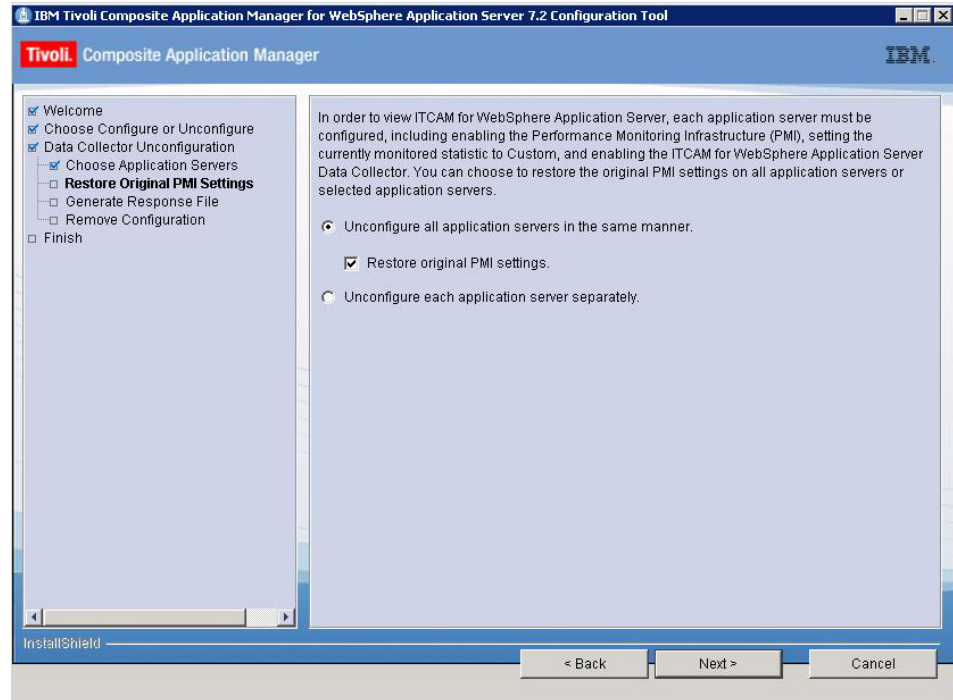
The Choose Application Servers window opens.

7. Select the application server that you want to unconfigure. If a profile that was configured to ITCAM for WebSphere Application Server is deleted before it is unconfigured, the profile is displayed in red, but you cannot select it. Click Next.



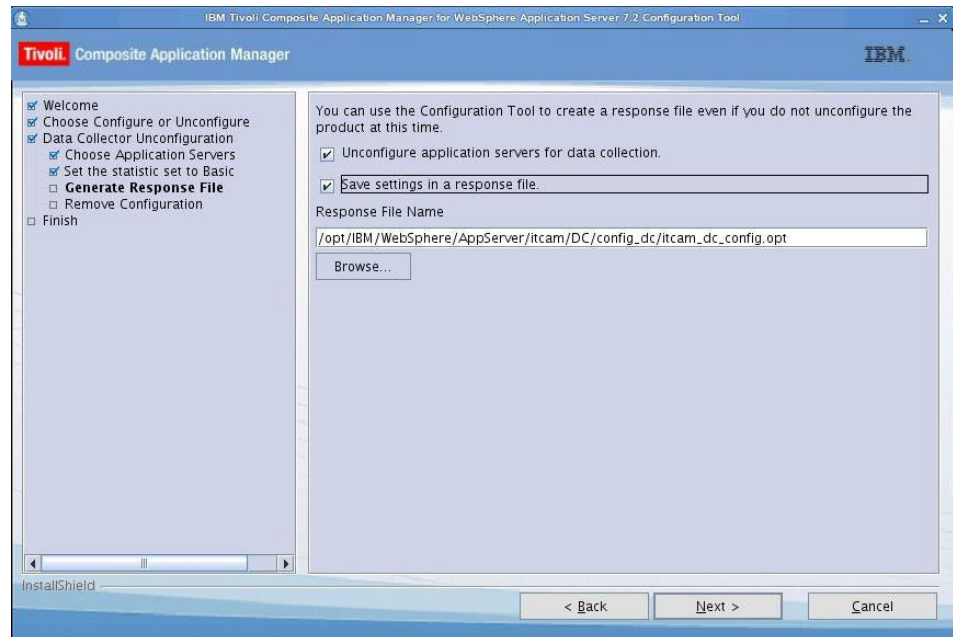
The **Restore Original PMI Settings** window opens.

8. Select one of the following options:
  - To restore the basic PMI settings that existed before the ITCAM for WebSphere Application Server configuration for all application server instances, select **Unconfigure all application servers in the same manner and Restore original PMI settings**. Then click **Next**.
  - To restore the basic PMI settings that existed before the ITCAM for WebSphere Application Server configuration only for particular application server instances, select **Unconfigure each application server separately**. Click **Next** to start the unconfiguration process.



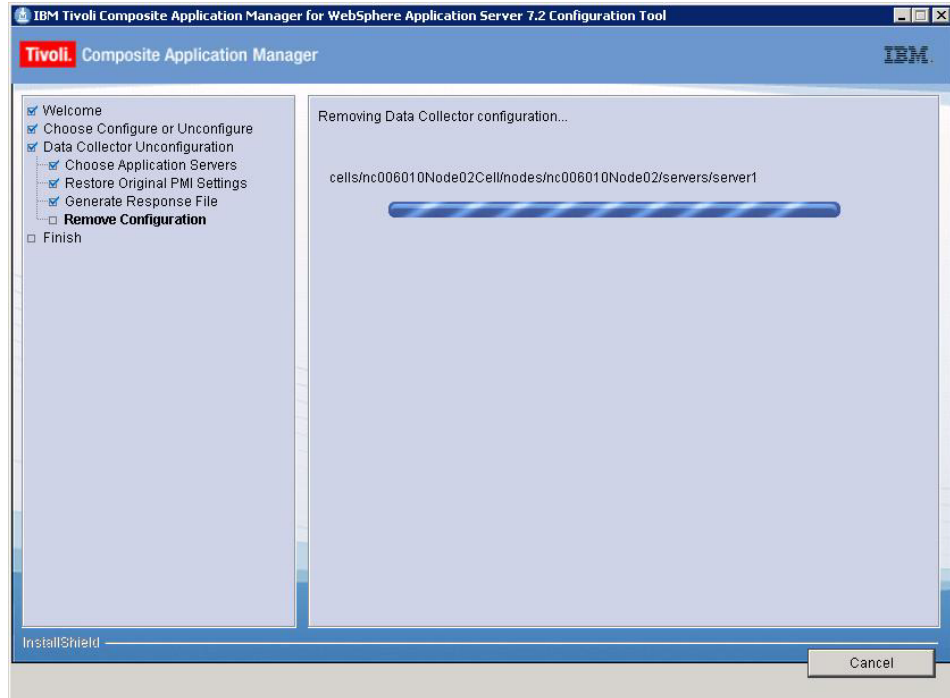
The **Generate Response File** window opens.

9. Click **Next**.

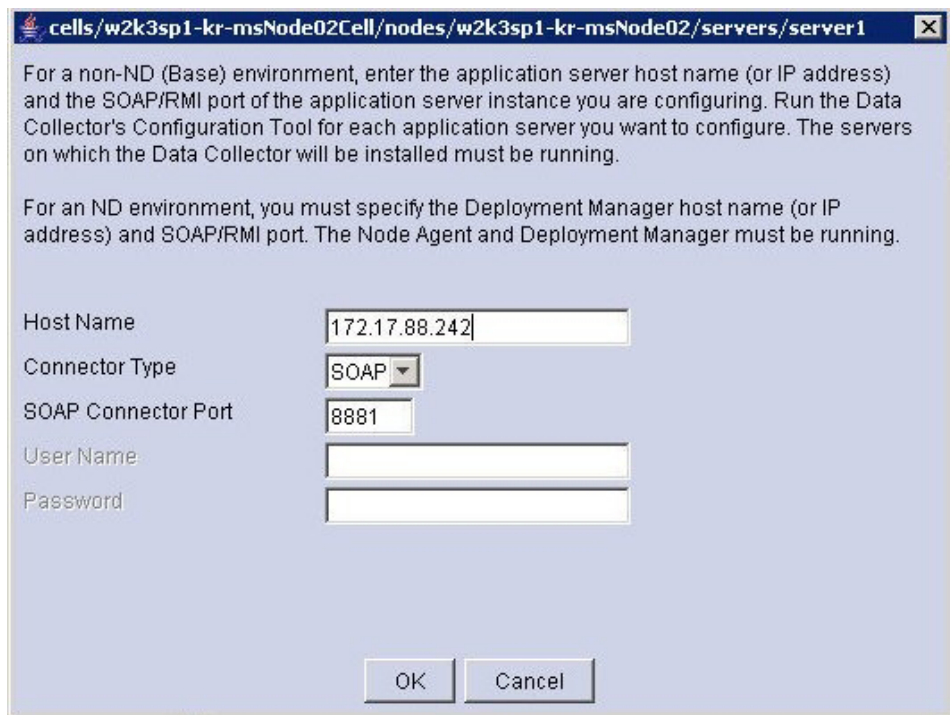


10. The unconfiguration program validates the connection between ITCAM for WebSphere Application Server and the application server using the information entered when you configured ITCAM for WebSphere Application Server. If the user name, password, or cell name have changed since configuration, the validation fails.





11. If validation fails, the following window opens:



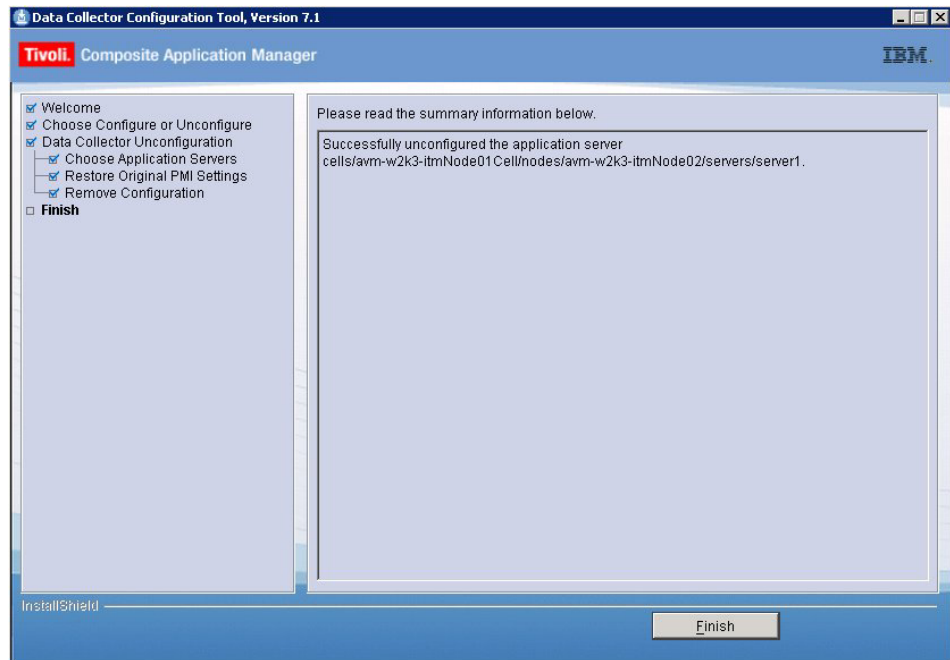
If the cell name has changed (which can occur when the application server joins a Network Deployment, Deployment Manager), you are required to enter values for all the fields in the window. If only the user name or password has changed, you are only required to enter the user name and password. Complete the fields based on the information in the following table and click **Next**:

Table 32. Fields for establishing ITCAM for WebSphere Application Server and application server communication

Field	What to do
Host Name	<p>For a stand-alone environment, enter the fully qualified host name or IP address of the application server instance that ITCAM for WebSphere Application Server will monitor. If you are using a host name, do not include a protocol in the host name. For example, enter <code>myserver.ibm.tivoli.com</code>, not <code>https://myserver.ibm.tivoli.com</code>.</p> <p>For a Network Deployment environment, enter the Deployment Manager host name or IP address.</p>
Connector Type	Select the type of connection that ITCAM for WebSphere Application Server and the application server will use for communication.
SOAP Connector Port	<p>For a stand-alone environment, enter the connector port used by the application server instance to send commands with the SOAP. The SOAP port is identified in the following file for the instance of the application server that ITCAM for WebSphere Application Server will monitor: <code>AppServer_home/profiles/profile_name/config/cells/cell_name/nodes/node_name/serverindex.xml</code></p> <p>For a Network Deployment environment, enter the SOAP port used by the Deployment Manager.</p>
RMI Connector Port	<p>For a stand-alone environment, enter the connector port used by the application server instance to send commands with RMI.</p> <p>For a Network Deployment environment, enter the RMI port used by the Deployment Manager.</p>
User Name and Password (only if Global Security is enabled)	<p>Enter the user name and password of a user who is authorized to log on to the WebSphere Application Server administrative console. This user must have the agent role on the application server.</p> <p>Instead of typing the user name and password, you can configure the Data Collector Configuration Tool to retrieve them from a properties file. Complete the following steps to configure the Data Collector Configuration Tool to retrieve the user name and password from a properties file:</p> <ol style="list-style-type: none"> <li>1. Select <b>Use the username and password stored in the soap.clients.props file</b>.</li> <li>2. If the Connector Type is SOAP, the option <b>Use the username and password stored in "soap.client.props"</b> is displayed. Select this option.</li> <li>3. If the Connector Type is RMI, the option <b>Use username and password stored in "sas.client.props"</b> is displayed. Select this option.</li> </ol> <p>For more information, see "Preinstallation Tasks" on page 11.</p>

A window with summary information indicating the results of the unconfiguration procedure opens.

12. Read the information in the window and select **Finish**.



## Silent unconfiguration of ITCAM for WebSphere Application Server on Windows, UNIX, and Linux

### About this task

Complete the following procedure:

### Procedure

1. Verify that the instance of the application server that was being monitored by ITCAM for WebSphere Application Server is running. At a command prompt, enter one of the following commands from the bin directory under *AppServer\_home*:

Table 33. Running the *serverStatus* command

Windows	UNIX or Linux
<code>serverStatus.bat server_name</code>	<code>./serverStatus.sh server_name</code>

**Note:** If you are in a Network Deployment environment, before the configuration program applies the unconfiguration, it performs an autosynchronization between the Node Agent and Deployment Manager. Start the Node Agent and Deployment Manager. Starting the instance of the application server is not necessary.

2. Specify configuration options in the `DC_Unconfig_Template.opt` response file template and save the file. The response file is located here: `DC_home/config_dc/responsefile_template`. See “Options for unconfiguring ITCAM for WebSphere Application Server on Windows, UNIX, and Linux” on page 144 for the list of options.
3. Go to the `DC_home/config_dc` directory. The `config_DC.bat` (Windows) or `config_DC.sh` (UNIX and Linux systems) file is located in this directory.

**Note:** Variables in the response file take precedence over values provided at the command-prompt.

- Run one of the following commands:

Table 34. Running the silent unconfiguration command

Windows	UNIX or Linux
<code>config_dc.bat -silent [configuration_option...] -options response_file</code>	<code>./config_dc.sh -silent [configuration_option...] -options response_file</code>

where,

**configuration\_option**

Specifies one or more configuration options not included in the response file. See Options for installing and configuring ITCAM for WebSphere Application Server on Windows, UNIX, and Linux.

**response\_file**

specifies the response file you configured in step 2 on page 100. Indicate the path and name of the file. Wrap the path in double quotation marks (") if it contains spaces.

The following are examples:

Table 35. Examples of running the silent unconfiguration command

Windows	UNIX or Linux
<code>config_dc.bat -silent -V DC_CCUC_UNCONFIG=true -V DC_AS_L_SOAPPOR T="8885" -options C:\itcam\images \silent\DC6.opt</code>	<code>./config_dc.sh -silent -V DC_CCUC_UNCONFIG=true -V DC_AS_L_SOAPPOR T="8885" -options /opt/silent \DC6.opt</code>

**Note:** Configuration options specified in the response file take precedence over options entered at the command-prompt. For a command-prompt configuration option to take effect, nullify that option in the response file by commenting it out with a pound sign (#).

## Uninstalling ITCAM for WebSphere Application Server on Windows, UNIX, and Linux

### Before you begin

Ensure ITCAM for WebSphere Application Server is unconfigured. See "Unconfiguring ITCAM for WebSphere Application Server using the Configuration Tool on Windows, UNIX, and Linux" on page 93.

### About this task

Use this information to uninstall ITCAM for WebSphere Application Server on Windows, UNIX, and Linux.

### Procedure

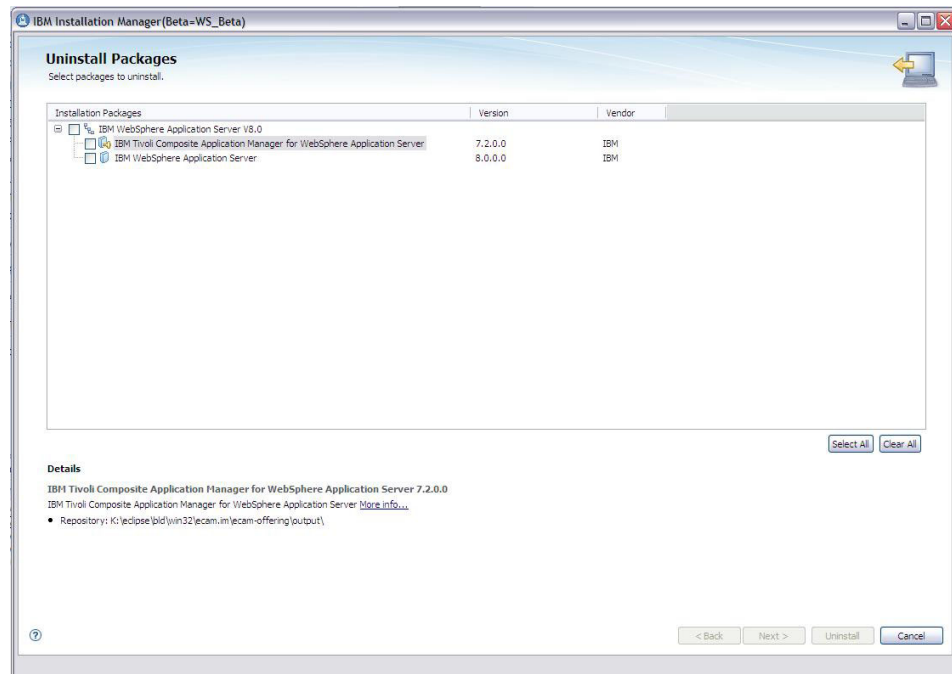
- On UNIX or Linux, if you are running the uninstallation from a remote computer, enter `xhost + hostname`, where `hostname` is the fully qualified host name of the computer on which ITCAM for WebSphere Application Server is being uninstalled.

2. Log on to the computer on which you want to uninstall ITCAM for WebSphere Application Server using the same user name that performed the installation.
3. On UNIX or Linux, export the DISPLAY variable. Complete one of the following steps:
  - If running the uninstallation from a remote computer, enter:
 

```
export DISPLAY=local_machine:0.0
```

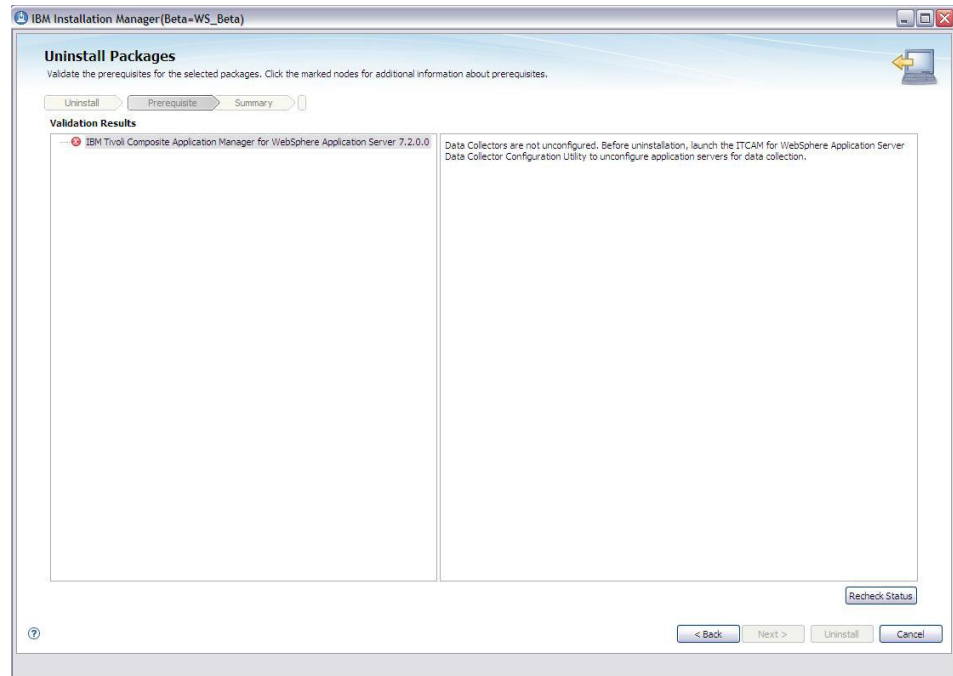
 where *local\_machine* is the fully qualified host name of the computer where you are sitting.
  - If you are running the uninstallation from the computer where ITCAM for WebSphere Application Server was installed, enter
 

```
export DISPLAY=localhost:0.0
```
4. Stop the instance of the application server that was being monitored by ITCAM for WebSphere Application Server.
5. Back up files from the ITCAM for WebSphere Application Server installation that you still need.
6. Open Installation Manager and select **IBM Tivoli Composite Application Manager for WebSphere Application Server**. Click **Next**. select **IBM Tivoli Composite Application Manager for WebSphere Application Server**. Click **Next**.

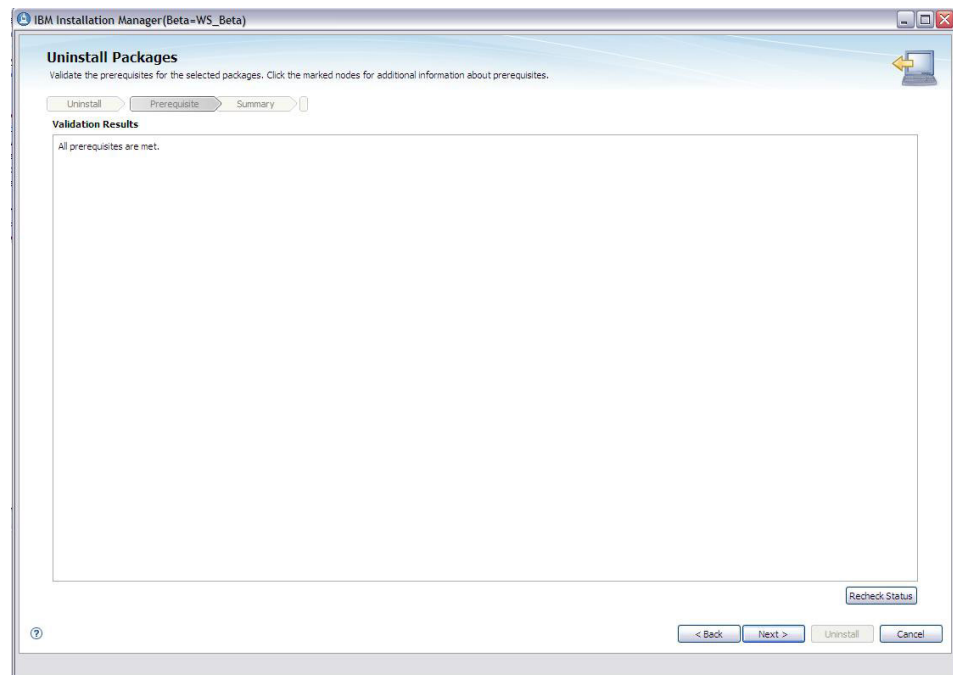


The **Prerequisites** window opens.

7. ITCAM for WebSphere Application Server must be unconfigured before you perform an uninstallation. This window checks if all Data Collectors have been unconfigured. If any unconfigured Data Collectors are detected, they are listed. Before the uninstallation continues, all Data Collectors must be unconfigured.

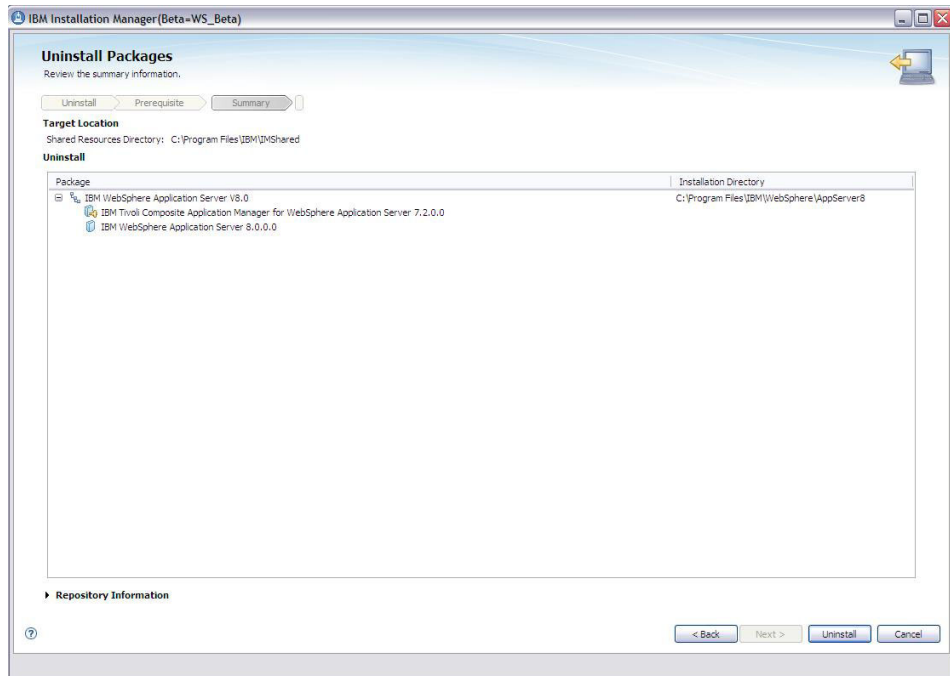


8. If you unconfigure any Data Collectors, select **Recheck Status** to recheck the prerequisite status for uninstallation before you proceed.

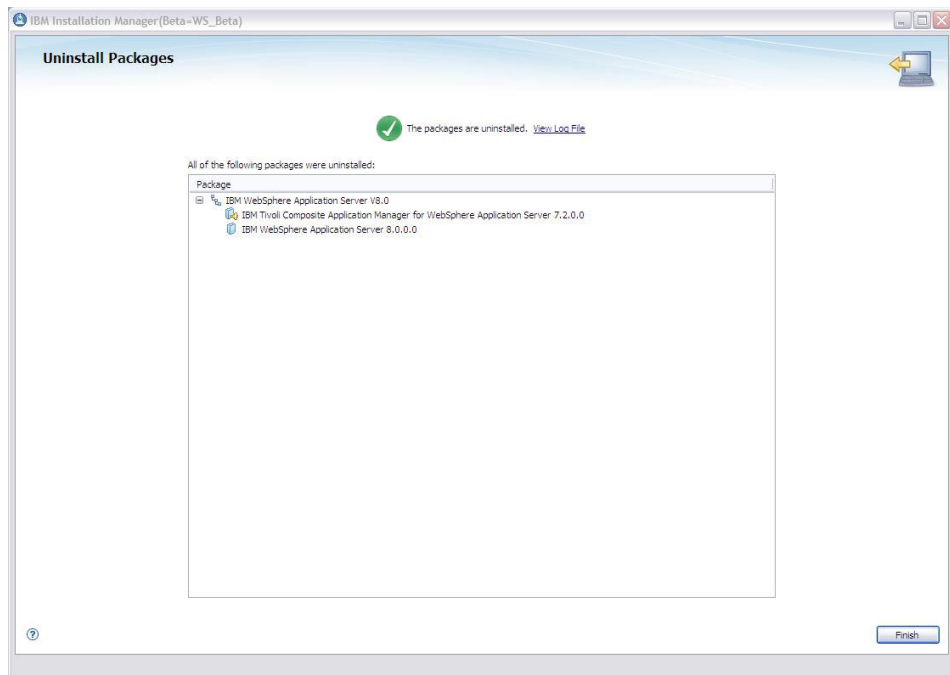


The **Summary** window opens.

9. Review the Summary information and select **Uninstall**.



10. Read the information in the window and click **Finish** to complete the uninstallation.



## Unconfiguring ITCAM for WebSphere Application Server on IBM i

### About this task

Complete the following procedure to unconfigure ITCAM for WebSphere Application Server from an application server instance on an IBM i host.



## Procedure

1. Log on to the computer on which you want to unconfigure ITCAM for WebSphere Application Server as a user with the appropriate permissions. See “Permissions” on page 62.
2. Use the Start TCP/IP (STRTCP) command to start TCP/IP.
3. Use the Start Host Servers (STRHOSTSVR) command to start Host Servers.
4. Enter the QSH environment by running the STRQSH command in the IBM i main menu.
5. Verify that the instance of the application server that you want to unconfigure for ITCAM for WebSphere Application Server is running. At a command prompt, enter the following command from the bin directory under *AppServer\_home* (*AppServer\_home/profiles/profile\_name/bin*):  

```
serverStatus server_name
```

**Important:** In a Network Deployment environment, do not verify that the application server instance is running. Instead, make sure that the Deployment Manager and Node Agent are running, and network communication with both is available.

6. If the instance of the application server is not started, start the application server.
7. Set the JAVA\_HOME environment variable, making sure that the Java program is accessible at \$JAVA\_HOME/bin. You can run the installation with JDK16. Use the following commands to specify the path:  

```
export JAVA_HOME=/qibm/proddata/java400/jdk6
```
8. Make a copy of the dcInputs\_Unconfig\_Sample\_os400.txt response file template, set the necessary options, and save the file in the current directory. The default path to the template is: *WebSphere\_home/itcam/DC/config\_dc/Samples/dcInputs\_Unconfig\_Sample\_os400.txt*.
9. Run the following command to perform the unconfiguration:  

```
config-DC-os400.sh ${response_file}
```

---

## Uninstalling ITCAM for WebSphere Application Server on IBM i

### About this task

Complete the following procedure to uninstall ITCAM for WebSphere Application Server on IBM i:

### Procedure

1. Ensure that you have unconfigured ITCAM for WebSphere Application Server for all application server instances.
2. Log on to the computer on which you want to uninstall ITCAM for WebSphere Application Server as a user with the appropriate permissions. See “Permissions” on page 62.
3. Open the response file template, this file is called `responsefile_uninstall.xml` and is available in the ITCAM for WebSphere Application Server repository root directory. For response file template examples, see, “Installation Response File Template for Windows, Linux and UNIX systems, and IBM i” on page 147.
4. To uninstall, change to the `/QIBM/ProdData/InstallationManager/eclipse/tools` directory and run the following command:  

```
./imcl -input {yourResponseFile} -keyring {yourKeyRingName} -acceptLicense
```

- After a successful uninstallation, you can remove the itcam libraries from the system. To remove the libraries, run the following commands:

```
DLTOBJ OBJ(QGPL/AMSAVF) OBJTYPE(*FILE)
DLTOBJ OBJ(QGPL/AM720S16) OBJTYPE(*SRVPGM)
```

## Unconfiguring ITCAM for WebSphere Application Server on IBM z/OS

To unconfigure ITCAM for WebSphere Application Server, use the unconfiguration script. The unconfiguration script is `unconfig.sh`. The default location for unconfiguration script is: `/u/ecam/bin`. You can run the unconfiguration script in prompt mode or in script mode.

If you run the unconfiguration script in prompt mode, you can change the default unconfiguration values using either of the following methods:

- Specify options in the command-prompt when initiating the script.
- Export the equivalent environment variables before running the script. By exporting these variables, the unconfiguration script uses them as the default values. When you are prompted for a value, press **Enter** and the exported equivalent environment variable is used. Command-prompt arguments override exported environmental variables.

If you run the unconfiguration script in batch mode, you are not prompted for values. Before running the unconfiguration script, set the values using one of the following methods:

- Specify the equivalent environment variables in the `hlq.SCYEINST(CYEZUCFG)` batch job file
- Specify options at a command-prompt that runs `unconfig.sh` in batch mode
- Export the equivalent environment variable before running `unconfig.sh` in batch mode

For details of unconfiguration options, see “Unconfiguration options for IBM z/OS.”

## Unconfiguration options for IBM z/OS

The following table describes the unconfiguration options for IBM z/OS:

Table 36. List of options for the `unconfig.sh` script

Command-prompt option	Description	Equivalent environment variable and value
<code>-log logfile_name</code>   <code>-nolog</code>	Specifies whether you want the unconfiguration script to create a log file. By default the log file is called <code>unconfig.log</code> and is located in <code>config_home</code> . For example: <code>/u/ecam/runtime/setupdc.log</code> . The default is to create this log file.	N/A. Available as an option on the command-prompt only.
<code>-?</code>	Usage help	N/A. Available as an option on the command-prompt only.
<code>-batch</code>	Specifies that you want to run the unconfiguration script in batch mode.	<code>ITCAM_BATCH=y</code>
<code>-debug</code>	Specifies whether to produce messages in the log file for debugging. Use this option if you have encountered problems unconfiguring ITCAM for WebSphere Application Server and must provide details to IBM Software Support.	<code>ITCAM_DEBUG=y</code>

Table 36. List of options for the *unconfig.sh* script (continued)

Command-prompt option	Description	Equivalent environment variable and value
-config <i>config_home</i>	Specifies the ITCAM for WebSphere Application Server configuration directory. For example: <i>/u/ecam</i>	ITCAM_CONFIG= <i>config_home</i>
-cleanup	Specifies that you want to remove the existing runtime directory for the application server instance.  Whether you specify this option or not, the IBM WebSphere Application Server customization done for ITCAM for WebSphere Application Server is removed.	ITCAM_CLEANUP=y
-cleanuppolicy	Specifies that you want to undo ITCAM for WebSphere Application Server changes to the server Java 2 security policy file. Because the security policy file is shared by all servers on the node, only use this option if you have unconfigured ITCAM for WebSphere Application Server for all application server instances on this node.	ITCAM_CLEANUPPOLICY=n
-conntype SOAP   RMI	Specifies the connection type for communications used by <i>wsadmin.sh</i> . The default is to use the connection type specified in the <i>wsadmin.properties</i> file associated with the <i>wsadmin.sh</i> script you have chosen. (The IBM WebSphere Application Server default for this parameter is SOAP.)	ITCAM_CONNTYPE= <i>connect_type</i>
-port <i>port</i>	Specifies the port number used by <i>wsadmin.sh</i> .  In a Network Deployment environment, the specified port should be the Deployment Manager's SOAP or RMI port (not the application server instance SOAP or RMI port).  To find the SOAP port number in the control region job log, look for the following message: BB000222I: ADMC0013I: The SOAP connector is available at <i>port port</i>  To find the RMI port number in the control region job log, look for the following message: BB000222I: ADMC0026I: The RMI connector is available at <i>port port</i>  The default is to use the port specified in the <i>wsadmin.properties</i> file associated with the <i>wsadmin.sh</i> script you have chosen.	ITCAM_PORT= <i>port</i>
-host <i>host</i>	Specifies the fully qualified host name or IP address used by <i>wsadmin.sh</i> . Do not specify this option if the Deployment Manager is on the same host as the application server, your application server is in stand-alone mode, or the correct host name is configured in the <i>wsadmin.properties</i> file.  In a Network Deployment environment, enter the value for the host for the Deployment Manager.	ITCAM_HOST= <i>host_name</i>

Table 36. List of options for the `unconfig.sh` script (continued)

Command-prompt option	Description	Equivalent environment variable and value
<code>-profile profile_script</code>	Specifies a profile script for running <code>wsadmin.sh</code> . The website for IBM WebSphere Application Server provides the following description of a profile script:  "The profile script runs before other commands, or scripts. If you specify <code>-c</code> , the profile script runs before it starts this command. If you specify <code>-f</code> , the profile script runs before it runs the script. In interactive mode, you can use the profile script to perform any standard initialization that you want. You can specify multiple <code>-profile</code> options on the command-prompt, and they invoke in the order that you supply them."	<code>ITCAM_PROFILE=script</code>
<code>-user user_id</code>	Specifies the user ID to use for connection to <code>wsadmin.sh</code> . This ID is required if Global Security is enabled unless it set in the <code>sas.client.props</code> (RMI) or <code>soap.client.props</code> (SOAP) files. See, "Enabling user ID and password input from <code>sas.client.props</code> for RMI connector types:" on page 75, and "Enabling user ID and password input from <code>soap.client.props</code> for SOAP connector types:" on page 75.	<code>ITCAM_USER=user_id</code>
<code>-password password</code>	Specifies the user ID to use for connection to <code>wsadmin.sh</code> . This ID is required if Global Security is enabled unless it set in the <code>sas.client.props</code> (RMI) or <code>soap.client.props</code> (SOAP) files.	<code>ITCAM_PASSWORD=password</code>
<code>-server servername</code>	Specifies the name of the application server. This name is the name displayed in the IBM WebSphere Application Server administrative console, not the short name used to construct the z/OS started task names. For example, <code>server1</code> . This option is required if running in batch mode.	<code>ITCAM_SERVER=servername</code>
<code>-wasroot path</code>	Specifies the installation directory for IBM WebSphere Application Server ( <code>AppServer_home</code> ). It is the partial path to the <code>wsadmin.sh</code> file. For example:  <code>/u/WAS8000/Servers/AppServer</code>  If you specify a value for <code>-wsadmin</code> , this option is ignored. If you specify more of the path to the <code>wsadmin.sh</code> script, it is located quickly, If you specify less of the path, more alternative <code>wsadmin.sh</code> scripts are displayed for selection.	<code>ITCAM_WASROOT=AppServer_home</code>
<code>-wsadmin path_and_file</code>	Specifies the full path to the <code>wsadmin.sh</code> file. For example:  <code>/u/WAS7000/Servers/AppServer/profiles/default/bin/wsadmin.sh</code>  This option is required if running in batch mode and the default <code>wsadmin.sh</code> script that <code>unconfig.sh</code> selects is not acceptable.	<code>ITCAM_WSADMIN=path_and_file</code>

Table 36. List of options for the `unconfig.sh` script (continued)

Command-prompt option	Description	Equivalent environment variable and value
<code>-defaulthostname</code> <i>IP_or_host</i>	Specifies the fully qualified host name or IP address that replaces the value of the local host name for all purposes during configuration of ITCAM for WebSphere Application Server, such as for the bind IP or export IP processes. Using the value returned by running the host name command, as the host name is usually acceptable, but in some environments this value does not work. If running the host name command returns a value that is not usable for configuring ITCAM for WebSphere Application Server, you can use the <code>-defaulthostname</code> option. The <code>--defaulthostname</code> option specifies the fully qualified host name or IP address that replaces the value of the local host name for all purposes in configuring ITCAM for WebSphere Application Server.	<code>ITCAM_DEFAULTHOSTNAME=IP_or_host</code>
<code>-defaulthostip</code> <i>host_IP</i>	Specifies the default local host IP address. Using the default, which is the value returned by running the host IP command, as the host IP address is acceptable, but in some environments, this value does not work. If running the host IP command returns a value that is not usable for configuring ITCAM for WebSphere Application Server, you can use this <code>-defaulthostip</code> option.  For multi-homed addresses, the IP address to use is prompted for. In the batch mode, the first IP address is used.	<code>ITCAM_DEFAULTHOSTIP=host_IP</code>
<code>-localhost</code> <i>hostname</i>	Specifies the local host name and IP address. This option is used by <code>findServers.jacl</code> to make a node match if there is a problem identifying nodes. This option is used to determine the local node. This option is only required if the <code>WAS_NODE</code> associated with <code>wsadmin.sh</code> file is not usable. If the <code>-server</code> option is specified, then do not specify a value for this option.	<code>ITCAM_LOCALHOST=hostname</code>
<code>-localip</code> <i>IP_address</i>	Specifies the local IP address. This option is used by <code>findServers.jacl</code> to make a node match if there is a problem identifying nodes. This option is used to determine the local node. This option is only required if the <code>WAS_NODE</code> associated with <code>wsadmin.sh</code> file is not usable. If the <code>-server</code> option is specified, then do not specify a value for this option.	<code>ITCAM_LOCALIP=IP_address</code>
<code>-cleanupplugins</code>	ITCAM for WebSphere Application Server configuration script <code>setupdc.sh</code> installs the ITCAM Bundle Manager plug-in jar file, <code>gpex.bundle_manager_was.jar</code> , into the WebSphere Application Server <code>plugins</code> directory. The <code>-cleanupplugins</code> option removes the jar file. Do not use this option if the Data Collector is configured in any application server in this node. For the plugin to be removed, the file system for WebSphere Application Server installation must be mounted R/W.	<code>ITCAM_CLEANUPPLUGINS=y</code>
<code>-resetPMI</code>	Specifies that you want to resets PMI monitored statistics to basic. The default is not to reset PMI.	<code>ITCAM_RESETPMI=y</code>

## Unconfiguring ITCAM for WebSphere Application Server in prompt mode on IBM z/OS

### About this task

When you run the unconfiguration script in prompt mode, default values are displayed in brackets at the end of the prompt. If no value is entered, the default

value is used. The default value also serves as an example of the format of the value that is required. Complete the following procedure to run the unconfiguration script in prompt mode:

## Procedure

1. If WebSphere Global Security is enabled, log in as a WebSphere administrator who has permissions to administer the application server configuration.
2. Complete one of the following procedures:
  - If you are running the application server in a Network Deployment environment, ensure that the Deployment Manager and the node agent are running.
  - If you are running the application server in a stand-alone environment, ensure that the instance of the application server that is being monitored by ITCAM for WebSphere Application Server is running.
3. To set any of the configuration options as environment variables before running the unconfiguration script, export the environment variables. See the right column of Table 36 on page 106 for a list of the environment variables. Here are examples of how to export an environment variable from a command-prompt:

```
export ITCAM_CONNTYPE=RMI
export ITCAM_CLEANUP=y
```

By exporting these variables, the `unconfig.sh` script uses them as the new default values. You do not need to enter a value. Press **Enter** when you are prompted for a value.

4. Run the following command from the `config_home/bin` directory:

```
./unconfig.sh [options]
```

For a list of the options for running the script command, see Table 36 on page 106. You are prompted for the path of `AppServer_home`:

Enter the path of the WAS user install root [/u/WAS8000]:

Enter the HFS path name for `AppServer_home`, for example, /u/WAS8000 and press **Enter**.

The unconfiguration script uses this path to search for the `wsadmin.sh` script that was used during the configuration.

5. You are prompted to select one of the discovered occurrences of the `wsadmin.sh` script:

Found `wsadmin.sh` in the following locations:

- 1) /u/was8000/DeployMgr/AppServer/bin/wsadmin.sh
- 2) /u/was8000/DeployMgr/AppServer/profiles/default/bin/wsadmin.sh
- 3) /u/was8000/DeployMgr/DeploymentManager/bin/wsadmin.sh

Enter the number of the `wsadmin` to use for unconfiguration:

Enter the corresponding number for the `wsadmin.sh` script you want to use and press **Enter**. The script uses the `wsadmin.sh` to find all server instances that are running on this node.

6. You are prompted to select one of the discovered instances of the application servers :

- 1) server1
- 2) server1
- 3) server1
- 4) server1

Enter the number of the server to select:

Enter the corresponding number for the server you want to use and press **Enter**.

7. You are prompted whether you want to remove the runtime directory for the application server instance that is being unconfigured:

Server "server1" has been selected  
The runtime directory for server1 is:

```
/u/ecam/runtime/was80.node10.server1
```

Do you wish to remove this directory? (y|n) [n]:

Enter y or n and press **Enter**. Entering y indicates that you want to remove the existing runtime directory for the application server instance. Whether you enter y or enter n, the WebSphere Application Server customization done for ITCAM for WebSphere Application Server is removed.

8. You are prompted whether you want to remove ITCAM statements from the server.policy file.

ITCAM configuration adds statements to the Java 2 security file server.policy. Since this policy file is shared by all servers on this node, you should only remove these statements when the last server configured for ITCAM is unconfigured.

Do you wish to remove ITCAM changes to the server.policy file? (y|n) [n]:

Enter y if you have unconfigured ITCAM for WebSphere Application Server for all server instances on this node, otherwise, enter n.

9. You are prompted if you want to reset the PMI monitored statistic set to basic:

Do you wish to reset the PMI statistic set to "basic"? (y|n):

Enter y or n and press **Enter**.

10. You are prompted whether you want to remove the ITCAM for WebSphere Application Server BundleManager plug-in. This plug-in should not be removed if any ITCAM for WebSphere Application Server Data Collector is configured in any application server in this node. The following message is displayed:

Do you wish to remove the ITCAM plugin from WAS? (y|n):

Enter y or n and press **Enter**.

## Results

A messages similar to the following is displayed:

```
Successfully unconfigured data collector for server server1
```

The runtime unconfiguration script creates a log of all the unconfiguration operations that it performed. You can review the log for any error conditions, and you might be requested to provide the log contents to IBM Software Support. The log file is called unconfig.log and is located in the runtime directory under *config\_home*. For example, /u/ecam/runtime/unconfig.log.

## Unconfiguring ITCAM for WebSphere Application Server in batch (auto-run) mode on IBM z/OS

Run the unconfiguration script in batch mode using either of the following methods:



- enter values for environmental variables in the hlq.SCYEINST(CYEZUCFG) batch job and submit it as a z/OS JCL job that uses BPXBATCH
- run the unconfig.sh script through a command-prompt

## Editing the cyezucfg.cntl batch job and submitting it as a z/OS JCL job that uses BPXBATCH

### About this task

Complete the following procedure to edit the hlq.SCYEINST(CYEZUCFG) batch job and submit it as a z/OS JCL job that uses BPXBATCH:

### Procedure

1. If WebSphere Global Security is enabled, log in as a WebSphere administrator who has permission to administer the application server configuration.
2. Complete one of the following procedures:
  - If you are running the application server in a Network Deployment environment, ensure that the Deployment Manager and the node agent are running.
  - If you are running the application server in a stand-alone environment, ensure that the instance of the application server that is being monitored by ITCAM for WebSphere Application Server is running.
3. Copy the sample batch job CYEZUCFG from the hlq.SCYEINST library to a location of your choice.
4. Modify the environment variables in the CYEZUCFG job and save. For the list of environment variables, see Table 36 on page 106.
5. In TSO, submit a z/OS JCL job using the contents of the file you modified in step 4, which uses BPXBATCH. Using a z/OS JCL submitted job with BPXBATCH is advantageous if you want to produce a record or do not want to tie up your terminal.

Resolve any security issues you encounter when running the job.

### Results

A message similar to the following is displayed:

```
Successfully unconfigured data collector for server server1
```

The runtime unconfiguration script creates a log of the unconfiguration operations that it performs. You can review the log for any error conditions, and you might be requested to provide the log contents to IBM Software Support. The log file is called unconfig.log and is located in the runtime directory under *config\_home*. For example, /u/ecam/runtime/unconfig.log.

## Running the unconfig.sh script through a command-prompt on IBM z/OS

### About this task

Complete the following procedure to run the unconfig.sh script through a command-prompt:

### Procedure

1. If WebSphere Global Security is enabled, log in as a WebSphere administrator who has permission to administer the application server configuration.
2. Complete one of the following procedures:

- If you are running the application server in a Network Deployment environment, ensure that the Deployment Manager and the node agent are running.
  - If you are running the application server in a stand-alone environment, ensure that the WebSphere Application Server instance that is being monitored by ITCAM for WebSphere Application Server is running.
3. Run `unconfig.sh` from a command-prompt. Complete the same procedure as you would for running `unconfig.sh` in prompt mode but ensure that you indicate options that are required for running in batch mode. See Table 36 on page 106, and “Unconfiguring ITCAM for WebSphere Application Server in prompt mode on IBM z/OS” on page 109.

## Results

A message similar to the following is displayed:

```
Successfully unconfigured data collector for server server1
```

The runtime unconfiguration script creates a log of all the unconfiguration operations that it performs. You can review the log for any error conditions, and you might be requested to provide the log contents to IBM Software Support. The log file is called `unconfig.log` and is located in the runtime directory under `config_home`. For example: `/u/ecam/runtime/unconfig.log`.

## Unconfiguring ITCAM for WebSphere Application Server manually

### About this task

If you tried to run the `unconfig.sh` script and it failed, unconfigure ITCAM for WebSphere Application Server manually.

Complete the following procedure to unconfigure ITCAM for WebSphere Application Server manually on z/OS:

### Procedure

1. Go to the Generic JVM arguments in the IBM WebSphere Application Server administrative console:
  - a. Click **Server > Application Servers** and select the `server_name`.
  - b. In the **Configuration** tab, select **Server Infrastructure > Java and Process Management > Process Definition > Servant > Additional Properties: Java Virtual Machine**.
2. In the **Generic JVM arguments** field, remove the values that were added as a result of the ITCAM for WebSphere Application Server configuration. Make sure that you do not remove the values that are not related to the ITCAM for WebSphere Application Server configuration.
3. For JVM custom properties, remove the values that were added as a result of the ITCAM for WebSphere Application Server configuration. Make sure that you do not remove the values that are not related to the ITCAM for WebSphere Application Server configuration.
4. Go to the custom properties page:
  - a. Select **Server > Application Servers** and select the `server_name`.
  - b. In the **Configuration** tab, select **Process Definition > Servant > Custom Properties**.

5. For custom properties, remove the values that were added as a result of the ITCAM for WebSphere Application Server configuration. Make sure that you do not remove the values that are not related to the ITCAM for WebSphere Application Server configuration.
6. Go to the custom services page:
  - a. Select **Server > Application Servers** and select the *server\_name*.
  - b. Go to **Server Infrastructure: Administration > Custom Services**.
7. For custom services, select and remove the **am** custom service.
8. Go to the Performance Monitoring Infrastructure page:
  - a. Select **Server > Application Servers** and select the *server\_name*.
  - b. Go to **Performance: Performance Monitoring Infrastructure (PMI)**.
9. Modify the Performance Monitoring Service to the **none** level and set the startup to false.
10. Go to the page for environment variables at the server level: In the Navigation Pane, select **Environment > WebSphere Variables**, and go to the server level variables.
11. Select and remove the ITCAMDCHOME and CCLOG\_COMMON\_DIR variables.
12. Edit the NLSPATH and LIBPATH environment variables to remove the ITCAM for WebSphere Application Server paths.
13. Click **Apply**.
14. In the Messages dialog box, click **Save**.
15. In the Save to Master Configuration dialog box, complete one of the following steps:
  - For a Network Deployment environment, ensure that the check box **Synchronize changes with Nodes** is selected and then click **Save**.
  - For a stand-alone environment, click **Save**.
16. Run the IBM WebSphere Application Server `wsc2n.sh` script to process the options and verify that processing is successful. You can find this script in the `bin` subdirectory of the application server profile home directory.

---

## Uninstalling ITCAM for WebSphere Application Server on IBM z/OS

### About this task

When you are uninstalling ITCAM for WebSphere Application Server, there are two methods you can use to specify the installation options:

- Command-prompt option: When you use this method, you enter the uninstallation options at the command-prompt.
- Response file: When you use this method, you enter the uninstallation option in the response file. You use the same response file that you used for the installation but you change the `install` parameter to `uninstall`.

Complete the following procedure to uninstall ITCAM for WebSphere Application Server:

### Procedure

1. To uninstall using the command-prompt method, run the following command from the `IM_home/eclipse/tools` directory:
 

```
imcl uninstall com.ibm.tivoli.itcam.install.was.im.offering.zos.WAS80
```

2. To uninstall using the response file, perform the following steps:
  - a. Open the response file that you used for the installation. The default location for the response file is: /usr/lpp/InstallationManagerRepository/HCYE720. Change the install parameter to uninstall as follows:

```
<uninstall modify='false'>  
  <offering id='com.ibm.tivoli.itcam.install.was.im.offering.zos.WAS80'  
    profile='IBM WebSphere Application Server V8.0'  
    features='com.ibm.tivoli.itcam.websphere.dc' />  
</uninstall>
```

- b. Run the following command from the *IM\_home/eclipse/tools* directory:

```
imcl -input responsefile_zos.xml -silent
```

**Note:** Before you begin uninstalling ITCAM for WebSphere Application Server, it is important that you unconfigure all application server instances that were configured in the *WebSphere\_home/itcamdc* directory. If you do not, WebSphere Application Server will not start because the configuration directory will still contain links that point to non-existing files and scripts. After uninstalling, the *WebSphere\_home/itcamdc* directory and all its contents is removed from the file system.

**Note:** For more instructions on uninstalling on z/OS, see the *Program Directory for IBM Tivoli Composite Application Manager (ITCAM) for WebSphere Application Server V7.2* (GI11-8919-01) in the IBM Publications Center.



---

## Chapter 8. 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 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 technical-support representative know where to start to find the cause of the problem. This step includes asking yourself basic 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?

The answers to these questions typically lead to a good description of the problem, which can then lead you a problem resolution.

### **What are the symptoms of the problem?**

When starting to describe a problem, the most obvious question is “What is the problem?” This question might seem straightforward; however, you can break it down into several more-focused questions that create a more descriptive picture of the problem. These questions can include:

- 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?

### **Where does the problem occur?**

Determining where the problem originates is not always easy, but it 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?

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 leading up to a failure, especially for those cases that are one-time occurrences. You can most easily develop a timeline by working backward: Start at the time an error was reported (as precisely as possible, even down to the millisecond), and work backward through the available logs and information. Typically, you need to look only as far as the first suspicious event that you find in a diagnostic log.

To develop a detailed timeline of events, answer these questions:

- 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?

Responding to these types of questions can give you a frame of reference in which to investigate the problem.

### **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. These questions about your environment can help you to identify the root cause of the problem:

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

Answering these types of questions can help you explain the environment in which the problem occurs and correlate 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?**

From a troubleshooting standpoint, the ideal problem is one that can be reproduced. Typically, when a problem can be reproduced you have a larger set of tools or procedures at your disposal to help you investigate. Consequently, problems that you can reproduce are often easier to debug and solve. However, problems that you can reproduce can have a disadvantage: If the problem is of significant business impact, you do not want it to recur. 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 re-created 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, or a particular application?



---

## Known issues and solutions

The following are troubleshooting tips and techniques for problems that occur during installation and configuration of ITCAM for WebSphere Application Server.

### Deleted profiles are listed in the Data Collector Configuration Tool

**The problem:** A WebSphere Application Server profile has been removed either manually or using the Profile Management Tool. The profile no longer exist but is still listed as configured for ITCAM for WebSphere Application Server. Removed profiles are listed in the Data Collector Configuration Tool but you are not able to select them for reconfiguration or unconfiguration.

**Important:** This issue only applies to distributed configurations.

**The solution:** In order to remove such profiles from the listed profiles in the Data Collector Configuration Tool, complete the following steps:

1. Remove the following directory: `DC_home/runtime/was80.node_name.server_name`.
2. Remove directory `DC_HOME/_uninst/configured/cells/cell_name/nodes/node_name/servers/server_name`.

**Note:** If `node_name` and `server_name` contain any non-ascii characters, they will be replaced with a lowercase letter 'u' and a four digit decimal code, for example: "u0010".

### Cannot run the Data Collector Configuration Tool

**The problem:** Cannot run the Data Collector Configuration Tool in graphical mode when xlibs libraries are missing. The start script ends with message: *The installer is unable to run in graphical mode. Try running the installer with the -console or -silent flag; Configuration Tool runs in graphical environment or X forwarding was enabled.* This error is cause by missing libraries that are required for InstallShield, on which Configuration Tool is based.

**Important:** This issue only applies to distributed configurations.

**The solution:** Install the following libraries on the OS:

- `compat-libstdc++-33` – both 32 and 64 bit
- `libXp-1.0.0-8.1.el5` – both 32 and 64 bit

### Warnings or errors during uninstallation because of lock files

**The problem:** Warning or error messages were returned during uninstallation of ITCAM for WebSphere Application Server regarding files not being removed. For example:

```
CRIMC9CB8AE9AE ERROR: Error uninstalling.
CRIMC9CB8AE9AE ERROR: Deleting files from /opt/IBM/WebSphere/AppServer/itcam/DC
CRIMC9CB8AE9AE ERROR: Failed to delete /opt/IBM/WebSphere/AppServer/itcam/DC/toolkit/lib/hpux-ia64/libam_hp_16.so
CRIMC9CB8AE9AE ERROR: Failed to delete /opt/IBM/WebSphere/AppServer/itcam/DC/toolkit/lib/hpux-ia64/libcclog_64.sl
CRIMC9CB8AE9AE ERROR: Failed to delete /opt/IBM/WebSphere/AppServer/itcam/DC/toolkit/lib/hpux-ia64/libcfdc_64.sl
CRIMC9CB8AE9AE ERROR: Failed to delete /opt/IBM/WebSphere/AppServer/itcam/DC/toolkit/lib/hpux-ia64/libmsg23_64.sl
```

This type of messages might occur if you uninstall ITCAM for WebSphere Application Server without stopping WebSphere Application Server. These are caused by locks being held on some of the files under `DC_home` directory.

*The solution:* After uninstalling, stop WebSphere Application Server and remove the `WebSphere_home/itcam` directory. If there are no profiles configured under `WebSphere_home`, check to see if the `gplex.bundle_manager_was.jar` file exists in `WebSphere_home/plugins`. If it exists delete this file.

## Installation fails if the repository is on a different network segment

*The problem:* ITCAM for WebSphere Application Server fails to install using Installation Manager if the repository is on a different network segment. During installation of ITCAM for WebSphere Application Server, a message similar to the following is displayed:

```
Failed to locate 'plug-in com.ibm.tivoli.itcam.install.was.im.plugins_7.2.0.201101212045'.
Failed to read artifact table of contents at
'/mnt/tivx09/eCAM_Offering/ecam-offering-201101210900/builds'/.
No locks available
```

*The cause:* The problem can occur when the application artifacts are loaded for the first time on older NFS versions. The Installation Manager is looking for the artifacts based on Artifact Table Of Contents (ATOC). The ATOC is stored in files contained in the `/atoc/` folder and its subdirectories. Manipulation of the `toc.xml` files and ATOC files is locked using Java file system locks. But older versions of NFS do not support such locks. Newer versions must be configured correctly.

*The solution:* In order to use a repository without the ATOC, you can rename the ATOC folder temporarily. It is placed in the ITCAM for WebSphere Application Server repository directory.

## Manual ITCAM for WebSphere Application Server removal

*The problem:* You might want to manually remove ITCAM for WebSphere Application Server if failures occur during configuration, unconfiguration, or reconfiguration. Here are some examples of when you might need to manually remove ITCAM for WebSphere Application Server:

- Errors occurred during the configuration process. Some of the configuration files have been created, but the Data Collector Configuration Tool reports an error.
- The profile that ITCAM for WebSphere Application Server is configured for was removed; either manually or through the Profile Management Tool.
- ITCAM for WebSphere Application Server was manually removed but at least one WebSphere Application Server profile is still configured to the ITCAM for WebSphere Application Server Data Collector.
- There was a failure during unconfiguration, some of the files were not removed.
- ITCAM for WebSphere Application Server cannot be uninstalled because you are receiving a message that some profiles are configured but in fact the profiles are not configured.

In these cases, some of the ITCAM for WebSphere Application Server Data Collector configuration files might remain on the system, which can cause data displayed in the Data Collector Configuration Tool to be misleading (for example, a server is presented as being configured when it is not). If ITCAM for WebSphere Application Server was manually removed or a portion of the configuration data was damaged, it might cause WebSphere Application Servers that were configured to ITCAM for WebSphere Application Server to be unable to start.

*The solution:* Complete the following steps to perform manual unconfiguration:

1. If the installation directory for ITCAM for WebSphere Application Server exists, complete the following steps:
  - a. Remove the following directory: *DC\_home/runtime/was80.node\_name.server\_name*.
  - b. (this step does not apply to z/OS) Remove the following directory: *DC\_HOME/\_uninst/configured/cells/cell\_name/nodes/node\_name/servers/server\_name*

**Note:** If *node\_name* and *server\_name* contain any non-ascii characters, they will be replaced with a lowercase letter 'u' and four digit decimal code, for example "u0010".

2. Verify the WebSphere Application Server configuration by completing the following steps:

- a. (this step applies to z/OS) Go to the following directory: *WebSphere\_home/profiles/profile\_name/config/cells/cell\_name/nodes/node\_name/servers/server\_name* and open *server.xml*

- b. Remove the following entry:

```
<extensionMBeanProviders xmi:id="ExtensionMBeanProvider_XXX" name="ecam">
  <classpath>${DC_HOME}/itcamdc/lib/ext/was/ecammeta.jar</classpath>
</extensionMBeanProviders>
```

where XXX is a random number that will be placed in the *server.xml* file.

- c. Remove the following entry, or if this entry contains more entries than are shown here, leave the entry but remove any values that point to *\$DC\_HOME* or *\${ITCAMDCHOME}*:

```
<environment xmi:id="Property_XXX" name="PATH"
  value="${DC_HOME}\toolkit\lib\<architecture>;
  ${DC_HOME}\toolkit\lib\<architecture>//ttapi;" />
```

where *<architecture>* is your operating system, for example, *w32-ix86* or *aix-64*. where XXX is a random number which will be placed in the *server.xml* file.

For z/OS the entry is under *<jvmEntries>* and it looks like this:

```
<classpath>${ITCAMDCHOME}/runtime/was80.node_name.server_name/lib/ttapi/cytapi4j.jar</classpath>
```

- d. In the *<jvmEntries>* element:

- 1) From the *genericJvmArguments* attribute remove the following entry:

```
-Xbootclasspath/p:${ITCAMDCHOME}/toolkit/lib/bcm-bootstrap.jar;${
ITCAMDCHOME}/itcamdc/lib/ppe.probe-bootstrap.jar -agentlib:am_ibm_16=${
ITCAMDCHOME}/runtime/was80.IBMNode01.server1/ -javaagent:${
ITCAMDCHOME}/toolkit/lib/tk_dyninst.jar
```

For z/OS, the entry looks like this:

```
-Xbootclasspath/p:${ITCAMDCHOME}/toolkit/lib/bcm-bootstrap.jar:
${ITCAMDCHOME}/itcamdc/lib/ppe.probe-bootstrap.jar -Djava.security.policy=${
ITCAMDCHOME}/itcamdc/etc/datacollector.policy
```

- 2) If the WebSphere Application Server JVM was not previously set to use verbose garbage collection and there is an entry like: *-verbosegc* or *-Xverbosegclog:* (for IBM JVM) or *-Xloggc:* (for non-IBM JVM), remove it.

- 3) Remove *<systemProperties>* entries with following names:

- a) *am.home*
- b) *java.security.policy*
- c) *ITCAM\_DC\_ENABLED*

- 4) Open the file `variables.xml` in a text editor and verify if there are entries with `symbolicName ITCAMDCHOME`. If they exist, remove them.
- e. If this was the only profile configured to ITCAM for WebSphere Application Server:
  - 1) Verify if there is a `gpex.bundle_manager_was.jar` file in the `WebSphere_home/plugins` directory. If it exists, delete this file. In a Windows environment, stop WebSphere Application Server before you delete this file.
  - 2) When you install ITCAM for WebSphere Application Server, the PMI level in WebSphere Application Server is set to custom, you can now change it to the value it was previously or disable the PMI module.

For details on unconfiguring on IBM i, see “Unconfiguring ITCAM for WebSphere Application Server on IBM i” on page 104.

For details on unconfiguring on z/OS, see “Unconfiguring ITCAM for WebSphere Application Server on IBM z/OS” on page 106.

## Missing runtime tab

*The problem:* After installing and configuring ITCAM for WebSphere Application Server in a Network Deployment environment and stopping/starting the application server, there is no **Runtime** tab available in the WebSphere Application Server administration console (**Monitoring and Tuning > Performance Monitoring Infrastructure > ITCAM for WebSphere Application Server**). Ensure that the **Configuration tab** check box is selected and that there is no `CYNEC0001I IBM Tivoli Composite Application Manager for WebSphere Application Server` started message in the `msg-dc-bcm.log` file.

**Important:** This issue only applies to zOS configurations.

*The cause:* If there is no `CYNEC0001I IBM Tivoli Composite Application Manager for WebSphere Application Server` started message in the `msg-dc-bcm.log` file, this means that ITCAM for WebSphere Application Server Data Collector cannot be initialized. One of the reasons for this is that ITCAM for WebSphere Application Server is unable to establish a connection to Admin Service.

*The solution:* Userids associated with the started task names of DMGR and servant must use the same keyring file.

## Missing runtime tab after configuration

*The problem:* There is no **Runtime** tab for ITCAM for WebSphere Application Server even though configuration ended successfully.

*The cause:* After configuration, reconfiguration, or unconfiguration of ITCAM for WebSphere Application Server, the server has to be stopped and started for changes to take effect. Be aware that on high-load machines, the initial startup of WebSphere Application Server services required by monitoring features can be more time consuming.

*The solution:* To restart WebSphere Application Server, go to the `WebSphere_home/profiles/profile_name/bin` directory. Depending on platform use the following scripts:

- `startServer.bat <server_name>/stopServer.bat <server_name>` for Windows

- `startServer.sh <server_name>/stopServer.sh <server_name>` for Linux and Unix systems

where `<profile_name>` is the name of the profile.

`<server_name>` is the name of the server on which ITCAM for WebSphere Application Server was configured, unconfigured, or reconfigured. Wait two minutes and verify if the **Runtime** tab is available on the **ITCAM for WebSphere Application Server** link.

## No login details requested during configuration/unconfiguration

*The problem:* When you run the Data Collector Configuration Tool to perform any of the following actions, the Configure WebSphere Connection window is not displayed, as a result no login details are requested:

- Configure communication to ITCAM for Application Diagnostics Managing Server.
- Unconfigure communication to ITCAM for Application Diagnostics Managing Server.
- Unconfigure the ITCAM for WebSphere Application Server Data Collector.

**Important:** This issue only applies to distributed configurations.

*The cause:* This problem has one of the following causes:

- When you run the Data Collector Configuration Tool, instead of typing the user name and password, you can choose to retrieve them from a property file. If you choose to retrieve the username and password from the `soap.client.props` or `rmi.client.props` property files, this setting will be used as the default for the selected server; for all actions except configuration. If you run the Data Collector Configuration Tool to generate a response file, it will use the property file to retrieve login details instead of prompting for user name and password values. If you run the Data Collector Configuration Tool to **only** generate a response file, this will **not** affect subsequent configurations. When you run the Data Collector Configuration Tool subsequently, you are prompted for login details.
- The server was previously configured to a Managing Server and is being reconfigured. If the server was previously configured to a Managing Server and is being reconfigured, you do not need to update the server side information as no connection to server is being performed.

*The solution:* In order to force the Data Collector Configuration Tool to display the Configure WebSphere Connection window, complete the following steps:

1. Go to the `DC_home/_uninst/configured/cells/cell_name/nodes/node_name/servers/server_name` directory.
2. In the `dcInputs.txt` file, change the value for `WS_USE_CLIENTPROPS` from `true` to `false`.
3. Run the Data Collector Configuration Tool.

## When WebSphere Application Server Global Security is enabled, `setupdc.sh` fails

*The problem:* While configuring the Data Collector using `setupdc.sh` in a z/OS environment for a WebSphere Application Server with Global Security enabled, the connection to the Application Server fails with the following error:

```
WASX7023E: Error creating "SOAP" connection to host "localhost";
exception information: com.ibm.websphere.management.exception.ConnectorNotAvailableException:
SOAPException: faultCode=SOAP-ENV:Client;
msg=Error opening socket: javax.net.ssl.SSLException: java.lang.RuntimeException:
Unexpected error: java.security.InvalidAlgorithmParameterException: the trustAnchors parameter must be non-empty;
```

**Important:** This issue only applies to zOS configurations.

*The cause:* If WebSphere Global Security is enabled, a WebSphere administrator user ID (default is W8ADMIN) needs to be used to run setupdc.sh (and the underlying wsadmin.sh). If a different ID is used to run setupdc.sh, then this user ID needs to be connected to a WebSphere Application Server keyring and certificates in the same way as a WebSphere Application Server administrator ID.

*The solution:* Three examples of script execution are provided for different user ID situations:

1. When the user ID the script runs under @USER@ and the WebSphere Application Server administrative user ID @WASUSER@ are identical, run setupdc.sh.
2. When the user ID the script runs under @USER@ and the WebSphere Application Server administrative user ID @WASUSER@ are different but the WebSphere Application Server administrator user ID is not root. In this case the commands are piped into an instance of the su command with a user ID specified:  
echo "./setupdc.sh ..." | su -s @WASUSER@
3. When the configuration user ID is the root user, use the following command:  
echo "./setupdc.sh ..." | su

This is not usually recommended because all directories and files created by the script will be owned by the root user. It is also unlikely that the root user will be in the keyring if WebSphere Application Server security is enabled. When the user ID @USER@ is different to the WebSphere Application Server admin user ID @WASUSER@, then the former must be permitted to issue the su to the latter. This is provided by giving @USER@ read access to the resource BPX.SRV.@WASUSER@ in the SURROGAT class. This can be done using TSO commands:

```
rdefine surrogat bpx.srv.@WASUSER@ uacc(none)
setr raclist(surrogat) refresh
pe bpx.srv.@WASUSER@ cl(surrogat) acc(read) id(@USER@)
```

For permission to execute the su command with no operands, issue the following TSO commands:

```
rdef facility bpx.superuser
setr raclist(facility) refresh
pe bpx.superuser cl(facility) acc(read) id(@USER@)
```

## WebSphere Application Server entry appearing in the MSVE

*The problem:* After unconfiguring communication between the ITCAM for WebSphere Application Server Data Collector and the ITCAM for Application Diagnostics Managing Server, there is still an entry for the server in Managing Server Visualization Engine.

**Important:** This issue only applies to distributed environments.



*The solution:* This behavior is correct. The MSVE server entry is only removed in MSVE when the ITCAM for WebSphere Application Server Data Collector is *fully* unconfigured. In order to remove the entry from MSVE, see the ITCAM for Application Diagnostics Managing Server *User Guide*.

## Warnings or errors during uninstallation because of lock files

*The problem:* When the ITCAM for WebSphere Application Server artifacts are loaded for the first time on some older Network File System (NFS) versions. The following error message is displayed:

```
Failed to locate 'plug-in com.ibm.tivoli.itcam.install.was.im.plugins' No locks available
```

The Installation Manager is looking for the artifacts based on Artifact table of contents (atoc). The atoc is stored in a few files contained in the /atoc/ folder and subfolders. Manipulation of the toc.xml files and atoc files is locked using Java file system locks. Older versions of NFS do not support locks. Newer versions must be configured correctly.

*The solution:* Use a repository without the atoc. Rename the atoc folder temporarily. The atoc is placed in the ITCAM for WebSphere Application Server repository directory.

## Configuration of communication with ITCAM for Transactions

**The Problem:** Global Publishing Service (GPS) tokens are not available in ITCAM for WebSphere Application Server. Some features of ITCAM for Transaction Tracking are limited without GPS tokens. The following features are not available without GPS tokens:

- RMI/IIOP
- WebServices
- CICS<sup>®</sup> Transactions Gateway(CTG) token based interface
- IMS Connect

**The Solution:** GPS tokens are supplied by the Common Services component, SMP/E FMID HAAD71C. The Common Services component is available in ITCAM for Applications Diagnostics 7.1 or later.

To disable the unavailable features, in the toolkit\_custom.properties file, set the following properties to false.

```
com.ibm.tivoli.itcam.dc.ttapi.rmiiop.enabled=false  
com.ibm.tivoli.itcam.dc.ttapi.webservice.enabled=false  
com.ibm.tivoli.itcam.dc.ttapi.cics.enabled=false  
com.ibm.tivoli.itcam.dc.ttapi.ims.enabled=false
```

## Slow Configuration on HPUX

**The Problem:** You experience slow performance using the Data Collector Configuration Tool on HP-UX.

**The Solution:** Make sure that all required patches are installed on the server. To get a list of available patches and for tuning recommendations, see [http://h18012.www1.hp.com/java/support/troubleshooting\\_guide.html](http://h18012.www1.hp.com/java/support/troubleshooting_guide.html).



## Installation Manager cannot find WebSphere Application Server packages

*The problem:* During ITCAM for WebSphere Application Server silent installation, the Installation Manager displays an error indicating that it cannot find the WebSphere Application Server packages in the offering specified in the responsefile.xml file.

*The solution:* Add the WebSphere Application Server repository location to the responsefile.xml file, for example, `<repository location='\WAS8ND_repository_path' />`

## Installation Manager cannot find the ITCAM for WebSphere Application Server offering package.

*The problem:* When the user who is installing ITCAM for WebSphere Application Server doesn't have the read/directory search access to the repository directory, the following error message is displayed:

```
CRIMA61CD5972E ERROR: The com.ibm.tivoli.itcam.install.was.im.offering.zos.WAS80 package cannot be found.
```

The following error messages appear in the Installation Manger log file:

```
<entry num='17' time='1302115646059' elapsed='00:10.09' level='ERROR' uid='CRIMA80387C4EE' thread='main'>
  <logger>com.ibm.cic.agent.core.Agent</logger>
  <class>com.ibm.cic.agent.internal.application.HeadlessApplication</class>
  <method>run</method>
  <message>The following repositories are not connected:
  -/u/itcam72/offerings/smpe-0405
  .
  The com.ibm.tivoli.itcam.install.was.im.offering.zos.WAS80 package cannot be found.</message>
```

*The solution:* Change the group level permissions of the repository directory to r-x. And make sure the user running the install is in the same group that owns the repository directory.

## Connection timeout errors to server in the trace-install.logs file

*The problem:* ITCAM for WebSphere Application Server cannot be configured. Errors appear regarding connection timeout to server in the install logs. In some situations, it can happen that more time is necessary to connect to server or deployment manager. It is usually caused either by slow network connection or insufficient memory.

*The solution:* Change timeout values for the wsadmin.sh script. Default timeout values for the are:

- For the connection from the wsadmin environment to the deployment manager, the default is 180 seconds
- For the connection from the deployment manager to the node agent, the default is 600 seconds.
- For the connection from the node agent to the runtime deployment target, the default is 600 seconds.

To change these values, modify the properties in the soap.client.props file, or sas.client.prop file, and the custom properties for the deployment manager and the node agents where members of your runtime deployment target are running (in case of an ND environment). Complete the following steps:

1. Modify the `com.ibm.SOAP.requestTimeout` property by editing the `soap.client.propsfile`, located in the `properties` subdirectory of the `profile_root` directory.
2. Change the `requestTimeout` custom property using the administrative console:
  - a. 1. For servers or cluster members, click **Servers > Server Types > WebSphere Application servers > server\_name > Server Infrastructure > Administration > Administration Services > Additional properties > JMX Connectors > SOAPConnector > Additional Properties > Custom properties**. Locate the `requestTimeout` custom property, and modify its value.
  - b. For the deployment manager, click **System administration > Deployment manager > Additional Properties > Administration Services > Additional properties > JMX Connectors > SOAPConnector > Additional Properties > Custom properties**. Locate the `requestTimeout` custom property, and modify its value.
  - c. For the node agents, click **System administration > Node agents > node\_agent\_name > Additional Properties > Administration Services > Additional properties > JMX Connectors > SOAPConnector > Additional Properties > Custom properties**. Locate the `requestTimeout` custom property, and modify its value.

## Unconfiguration of ITCAM for WebSphere Application Server generates error

*The problem:* When you unconfigure ITCAM for WebSphere Application Server, a window is displayed prompting you to enter a username and password and the following error is written to the `trace-install.log` file:

```
<Trace Level="ERROR"> <Time Millis="1301645627143"> 2011-04-01 16:13:47.143+08:00</Time> <Server Format="IP">tivp5elp5.cn.ibm.com</Server> <ProductId>CYN</ProductId> <Component>CYN.trc.install</Component> <ProductInstance>7.1</ProductInstance> <LogText><![CDATA[DATA: Validate wsadmin connection error.]]>&gt;</LogText> <Source FileName="com.ibm.tivoli.itcam.install.was.dc.appserverconfig.DeleteConfig" Method="tryConnection()"/> <Thread>Runnable bean context: Remove Config Wiz Action (unconfigAction)</Thread> <Principal>tivp5elp5.cn.ibm.com/9.123.101.173</Principal> </Trace>
```

This occurs when you do not enable username and password input from the `soap.client.props` or `sas.client.props` file when configuring ITCAM for WebSphere Application Server.

*The solution:* The product functions as designed. This error will always be written to `trace-install.log` during unconfiguration if you choose to not enable username and password input from the `soap.client.props` or `sas.client.props` file during configuration.

## The Data Collector cannot be unconfigured and removed from the Managing Server

*The problem:* After running `unconfig.sh`, the Data Collector has not been unconfigured and removed from the Managing Server. The following messages are generated by the unconfiguration script:

```
grep: FSUM6003 input file "/u/itcam72/install/CONFIG_IM144/runtime/was80.tvt7006.b8sr00e/id": EDC5111I Permission denied
msunconfig: could not find CONTROLLER in /u/itcam72/install/CONFIG_IM144/runtime/was80.tvt7006.b8sr00e/id
msunconfig: MS unconfig bypassed
```

This occurs because, the user running the `unconfig.sh` script does not have read access to the `id` file in the Data Collector runtime directory. This `id` file contains information used to unconfigure the Data Collector in the Managing Server.

*The solution:* Run the `unconfig.sh` script using a user ID that has read access to the `id` file, such as, the WebSphere Application Server administrative user ID, or change the permissions of the `id` file so that it can be read by the current user ID. For details how to set up the user ID for configuration, see “Setting up the user ID and password for ITCAM for WebSphere Application Server on z/OS with global security enabled” on page 173.

Alternatively, manually unconfigure the Data Collector in the MSVE. For details on using MSVE, see the *User Guide* in the ITCAM for Application Diagnostics information center.

## Advanced Configuration/Unconfiguration of ITCAM for WebSphere Application Server generates error

*The problem:* When you configure or unconfigure ITCAM for WebSphere Application Server to communicate with Managing Server or unconfigure the Data Collector in GUI mode, if you choose to not enable username and password input from the `soap.client.props` or `sas.client.props` file, a window is displayed requesting username and password. The following error is written to the `trace-install.logs` file:

```
<Trace Level="ERROR"> <Time Millis="1301645627143"> 2011-04-01 16:13:47.143+08:00</Time> <Server Format="IP">tivp5elp5.cn.ibm.com</Server> <ProductId>CYN</ProductId> <Component>CYN.trc.install</Component> <ProductInstance>7.1</ProductInstance> <LogText><![CDATA[DATA: Validate wsadmin connection error.]]>&gt;</LogText> <Source FileName="com.ibm.tivoli.itcam.install.was.dc.appserverconfig.DeleteConfig" Method="tryConnection()"/> <Thread>Runnable bean context: Remove Config Wiz Action (unconfigAction)</Thread> <Principal>tivp5elp5.cn.ibm.com/9.123.101.173</Principal> </Trace>
```

*The solution:* The product functions as designed. This error will always be written to `trace-install.log` during advanced configuration/unconfiguration if you choose to not enable username and password input from the `soap.client.props` or `sas.client.props` file during configuration. The Data Collector Configuration Tool uses the `dcInputs.txt` file to store information about connection to the WebSphere Application Server. but username and password are not stored in the `dcInputs.txt` file for security reasons. This results in the error in the `trace-install.log` file.

## Tivoli Performance Viewer reports requests as servlets not web services

*The problem:* If web service caching is enabled in WebSphere Application Server, Tivoli Performance Viewer reports requests as servlets not web services.

*The solution:* To view web service requests in Tivoli Performance Viewer, disable web service caching in WebSphere Application Server by completing the following steps:

1. In the WebSphere Application Server administrative console, click **Servers > WebSphere Application Servers > server\_name > Web Container Settings > Web Container**. The configuration page opens.
2. Clear the **Enable Servlet Caching** option.
3. Click **OK**. Save the changes and restart WebSphere Application Server.

## Configuration Permissions

The following permission errors can occur when you run the Data Collector Configuration Tool:

- “Data Collector Configuration Tool generates no log files” on page 129
- “Data Collector Configuration Tool Fails to start when run by a non-root/non-Administrator user” on page 129

- “Data Collector Configuration Tool shows a Pop-message with log directory selection (in GUI) or writes a message stating that log path is not writeable” on page 130

### **Data Collector Configuration Tool generates no log files**

**The Problem:** The Data Collector Configuration Tool generates no log files. This is a permissions problem that occurs when the Data Collector is configured to write logs to a directory that is not writable for the application instance owner. The default log directory is C:\PROGRA~1\ibm\tivoli\common (Windows) or /var/ibm/tivoli/common (Linux/Unix). Additional CYN\logs directory is appended in run time.

**The Solution:** There are two possible solutions for this problem:

- Give the application instance owner write access to the default directories that contain the log files.
- Change the default log directory by performing the following steps:
  1. Open the dc.java.properties file from the *DC\_home/runtime/wasversion.node\_name.server\_name* directory.
  2. Change the following properties to a location that is writable for the application instance owner: jlog.common.dir, CCLOG\_COMMON\_DIR, ibm.common.log.dir
  3. Stop and restart WebSphere Application Server.

### **Data Collector Configuration Tool Fails to start when run by a non-root/non-Administrator user**

**The Problem:** When you start the Data Collector Configuration Tool in GUI or silent mode in Windows or Linux/Unix, an error message displays stating that the log directory cannot be created.

The error message displays if you open the Data Collector Configuration Tool using any of the following methods:

1. From a command prompt (Unix/Linux and Windows)
2. From WebSphere menu (Windows), see “Configuring ITCAM for WebSphere Application Server on Windows” on page 17.
3. From final window of Installation Manager (Unix/Linux and Windows)

The problem occurs because the user who is running the Data Collector Configuration Tool does not have permission to create the trace\_config.log file in the default directory. The Data Collector Configuration Tool uses three files to store logs: trace-install.log, msg-install.log, and trace\_config.log. By default these log files are located in either C:\PROGRA~1\ibm\tivoli\common (Windows) or /var/ibm/tivoli/common (Linux/Unix). The user who runs the Data Collector Configuration Tool must have permission to create and write to these log files and directories. Additional CYN\logs directory is appended in run time.

**The Solution:** There are two possible solutions for this problem:

- Give the non-root user who is running the Data Collector Configuration Tool full permission to the default directory: C:\PROGRA~1\ibm\tivoli\common (Windows) or /var/ibm/tivoli/common (Linux/Unix)
- Change the default location of the Data Collector Configuration Tool log trace\_config.log by performing the following steps:
  1. Go to the *DC\_home/config\_dc* directory.

2. Open either config\_DC.bat (Windows) or config\_DC.sh (Linux/Unix).
3. Change the value for the LOG\_CYN\_DIR property to a directory to which the non-root user has full permission.

**Note:** The Data Collector Configuration Tool can be started now. However depending on the mode in which it is being run - GUI or silent - another error message might appear. For details of this error, see “Data Collector Configuration Tool shows a Pop-message with log directory selection (in GUI) or writes a message stating that log path is not writeable.”

### **Data Collector Configuration Tool shows a Pop-message with log directory selection (in GUI) or writes a message stating that log path is not writeable**

**The Problem:** In Windows and Unix/Linux, when you start the Data Collector Configuration Tool in GUI mode, a window displays with the following message: 'Select a writable path to store log files'. If you are configuring in silent mode, the following message is added to the LOG\_CYN\_DIR/trace\_config.log file: [ERROR] LOG\_DIR can not be created. The location of the LOG\_CYN\_DIR can be determined by reading the config\_DC.sh or config\_DC.bat.

The problem occurs because the user who is running the Data Collector Configuration Tool does not have permission to create the trace\_install.log or msg-install.log file in the default directory. The default directory is: C:\PROGRA~1\ibm\tivoli\common (Windows) or /var/ibm/tivoli/common (Linux/Unix).

The Data Collector Configuration Tool uses three files to store logs: trace-install.log, msg-install.log, and trace\_config.log. By default these log files are located in either C:\PROGRA~1\ibm\tivoli\common (Windows) or /var/ibm/tivoli/common (Linux/Unix). The user who runs the Data Collector Configuration Tool must have permission to create and write to these log files and directories. Additional CYN\logs directory is appended in runtime.

**The Solution:** There are two possible solutions for this problem:

- Run the Data Collector Configuration Tool as a user who already has permission to the log directories or make the log directories writable for the user who runs the Data Collector Configuration Tool by completing the following steps:

1. Give the non-root user who will run the Data Collector Configuration Tool read/write/execute permission to the default directory (either C:\PROGRA~1\ibm\tivoli\common (Windows) or /var/ibm/tivoli/common (Linux/Unix)).

2. On Linux/Unix you can do this by using the following command:

```
chown -R <your_user> /var/ibm/tivoli/common
```

for group mode use:

```
chgrp -R <your_group> /var/ibm/tivoli/common
chmod -R g+w <your_group> /var/ibm/tivoli/common
```

**Note:** If the directory/var/ibm/tivoli/common doesn't exist use the mkdir command to create it.

3. For Windows, follow Windows documentation to grant the non-root user full access to the C:\Program Files\ibm\tivoli\common directory.
- Change the log directory location for trace-install.log and msg-install.log by performing the following steps:

1. In GUI mode, run the Data Collector Configuration Tool with the following additional argument:

```
-V LOG_DIR=<path>
```

**Note:** In Windows, use quotation marks if a path has a space or spaces, for example:

```
DC_home/config_dc/config_DC.bat -V LOG_DIR="C:\Program Files\custom_log_directory"
```

For Unix and Linux systems

```
DC_home/config_dc/config_DC.sh -V LOG_DIR=/opt/customlogs
```

**Note:** For a path with a space or spaces use backslash.

2. For silent, change the log directory location for `trace-install.log` and `msg-install.log` by adding the following line at the start of the silent configuration file:

```
-V LOG_DIR=<path>
```

**Note:** Make sure that you have full access to the `<path>` directory.

**Note:** In Windows, use backslash if the path has a space or spaces.

---

## Searching knowledge bases

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

### About this task

You can find useful information by searching the information center for ITCAM for WebSphere Application Server, but sometimes you need to look beyond the information center to answer your questions or resolve problems.

### Procedure

To search knowledge bases for information that you need, use one or more of the following approaches:

- Search for content by using the IBM Support Assistant (ISA).  
ISA is a no-charge software serviceability workbench that helps you answer questions and resolve problems with IBM software products. You can find instructions for downloading and installing ISA on the ISA website.
- Find the content that you need by using the IBM Support Portal.  
The IBM Support Portal is a unified, centralized view of all technical support tools and information for all IBM systems, software, and services. The IBM Support Portal lets you access the IBM electronic support portfolio from one place. You can tailor the pages to focus on the information and resources that you need for problem prevention and faster problem resolution. Familiarize yourself with the IBM Support Portal by viewing the demo videos ([https://www.ibm.com/blogs/SPNA/entry/the\\_ibm\\_support\\_portal\\_videos](https://www.ibm.com/blogs/SPNA/entry/the_ibm_support_portal_videos)) about this tool. These videos introduce you to the IBM Support Portal, explore troubleshooting and other resources, and demonstrate how you can tailor the page by moving, adding, and deleting portlets.
- Search for content about ITCAM for WebSphere Application Server by using one of the following additional technical resources:



- Tivoli Identity Manager Version 4.3 technotes and APARs (problem reports)
- Tivoli Identity Manager Support website
- Tivoli support communities (forums and newsgroups)
- Search for content by using the IBM masthead search. You can use the IBM masthead search by typing your search string into the Search field at the top of any [ibm.com](http://ibm.com)® page.
- Search for content by using any external search engine, such as Google, Yahoo, or Bing. If you use an external search engine, your results are more likely to include information that is outside the [ibm.com](http://ibm.com) domain. However, sometimes you can find useful problem-solving information about IBM products in newsgroups, forums, and blogs that are not on [ibm.com](http://ibm.com).

**Tip:** Include “IBM” and the name of the product in your search if you are looking for information about an IBM product.

---

## Getting fixes

A product fix might be available to resolve your problem.

### About this task

#### Procedure

To find and install fixes:

1. Obtain the tools required to get the fix.
2. Determine which fix you need.
3. Download the fix. Open the download document and follow the link in the “Download package” section.
4. Apply the fix. Follow the instructions in the “Installation Instructions” section of the download document.
5. Subscribe to receive weekly email notifications about fixes and other IBM Support information.

## Getting fixes from Fix Central

You can use Fix Central to find the fixes that are recommended by IBM Support for a variety of products, including ITCAM for WebSphere Application Server. With Fix Central, you can search, select, order, and download fixes for your system with a choice of delivery options. An ITCAM for WebSphere Application Server product fix might be available to resolve your problem.

### About this task

#### Procedure

To find and install fixes:

1. Obtain the tools that are required to get the fix. If not installed, obtain your product update installer. The installer can be downloaded from Fix Central. This site provides download, installation, and configuration instructions for the update installer.
2. Select ITCAM for WebSphere Application Server as the product, and select one or more check boxes that are relevant to the problem that you want to resolve.
3. Identify and select the fix that is required.



4. Download the fix.
  - a. Open the download document and follow the link in the “Download Package” section.
  - b. When downloading the file, ensure that the name of the maintenance file is not changed. This change might be intentional, or it might be an inadvertent change that is caused by certain web browsers or download utilities.
5. Apply the fix.
  - a. Follow the instructions in the “Installation Instructions” section of the download document.
  - b. For more information, see the “Installing fixes with the Update Installer” topic in the product documentation.
6. Optional: Subscribe to receive weekly email notifications about fixes and other IBM Support updates.

---

## Contacting IBM Support

IBM Support provides assistance with product defects, answering FAQs, and performing rediscovery.

### Before you begin

After trying to find your answer or solution by using other self-help options such as technotes, you can contact IBM Support. Before contacting IBM Support, your company must have an active IBM *maintenance contract name*, and you must be authorized to submit problems to IBM. For information about the types of available support, see the Support portfolio topic in the *Software Support Handbook*.

### Procedure

Complete the following steps to contact IBM Support with a problem:

1. Define the problem, gather background information, and determine the severity of the problem. For more information, see the Getting IBM support topic in the *Software Support Handbook*.
2. Gather diagnostic information.
3. Submit the problem to IBM Support in one of the following ways:
  - Using IBM Support Assistant (ISA):
  - Online through the IBM Support Portal: You can open, update, and view all your Service Requests from the Service Request portlet on the Service Request page.
  - By phone: For the phone number to call in your region, see the Directory of worldwide contacts web page.

### Results

If the problem that 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 website daily, so that other users who experience the same problem can benefit from the same resolution.

---

## Exchanging information with IBM

To diagnose or identify a problem, you might need to provide IBM Support with data and information from your system. In other cases, IBM Support might provide you with tools or utilities to use for problem determination.

### Sending information to IBM Support

To reduce the time that it takes to resolve your problem, you can send trace and diagnostic information to IBM Support.

#### Procedure

To submit diagnostic information to IBM Support:

1. Open a problem management record (PMR).
2. Collect the diagnostic data that you need. Diagnostic data helps reduce the time that it takes to resolve your PMR. You can collect the diagnostic data manually or automatically:
  - Collect the data manually.
  - Collect the data automatically.
3. Compress the files by using the ZIP or TAR format.
4. Transfer the files to IBM. You can use one of the following methods to transfer the files to IBM:
  - IBM Support Assistant
  - The Service Request tool
  - Standard data upload methods: FTP, HTTP
  - Secure data upload methods: FTPS, SFTP, HTTPS
  - Email

All of these data exchange methods are explained on the IBM Support site.

### Receiving information from IBM Support

Occasionally an IBM technical-support representative might ask you to download diagnostic tools or other files. You can use FTP to download these files.

#### Before you begin

Ensure that your IBM technical-support representative provided you with the preferred server to use for downloading the files and the exact directory and file names to access.

#### Procedure

To download files from IBM Support:

1. Use FTP to connect to the site that your IBM technical-support representative provided and log in as anonymous. Use your email address as the password.
2. Change to the appropriate directory:
  - a. Change to the `/fromibm` directory.  
`cd fromibm`
  - b. Change to the directory that your IBM technical-support representative provided.  
`cd nameofdirectory`

3. Enable binary mode for your session.  
binary
4. Use the get command to download the file that your IBM technical-support representative specified.  
get *filename.extension*
5. End your FTP session.  
quit



---

## Appendix A. Obtaining installation images for Windows, Linux, and UNIX systems

Install ITCAM for WebSphere Application Server using Installation Manager 1.4.3 or later. In Installation Manager, specify a repository location. The repository is the location that contains the installation files. There are two ways in which you can start Installation Manager and specify the repository:

- If you are installing from the WebSphere Application Server media, for example a CD or DVD, start the installation from the WebSphere Launchpad program. The Launchpad program opens Installation Manager. The location of the repository is automatically defined in Installation Manager.
- If you are accessing installation files from a repository located on a web server, ensure that Installation Manager 1.4.3 or later is installed. In Installation Manager, specify the repository location in the preference window. For details on installing Installation Manager, see <http://publib.boulder.ibm.com/infocenter/install/v1r4/index.jsp>.

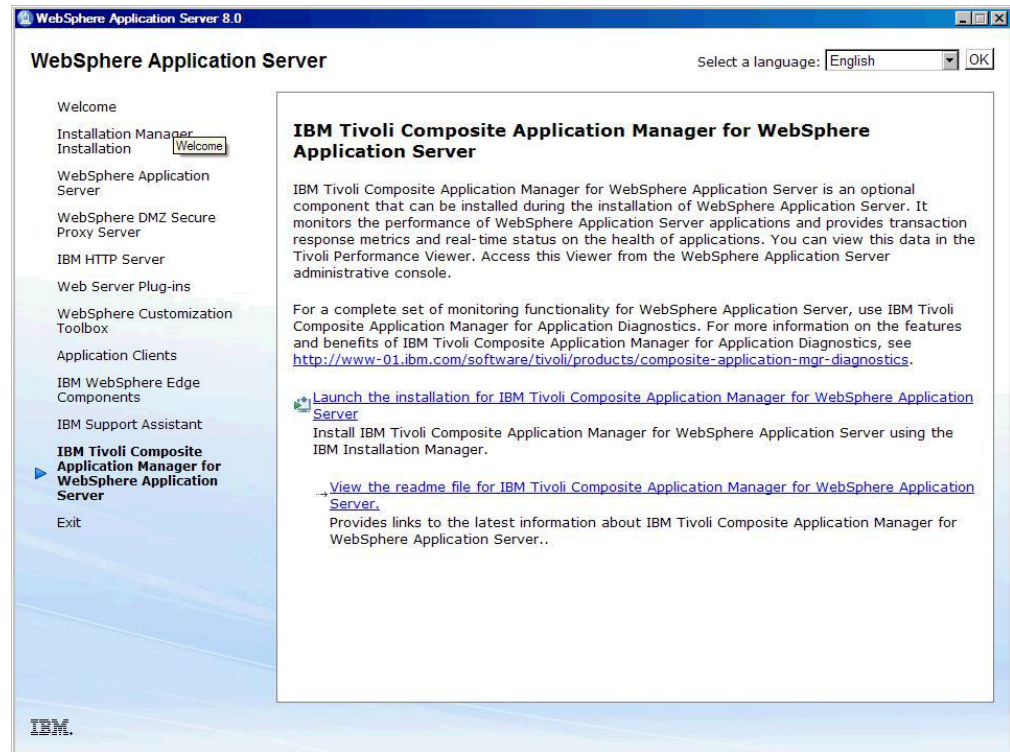
For full details about accessing installation files from Installation Manager, see [http://publib.boulder.ibm.com/infocenter/install/v1r4/index.jsp?topic=/com.ibm.cic.agent.ui.doc/topics/c\\_installation\\_files.html](http://publib.boulder.ibm.com/infocenter/install/v1r4/index.jsp?topic=/com.ibm.cic.agent.ui.doc/topics/c_installation_files.html).



---

## Appendix B. Starting an installation for Windows, UNIX, or Linux from the WebSphere Application Server LaunchPad

Start the WebSphere Application Server LaunchPad. The following window opens:



To begin an installation of ITCAM for WebSphere Application Server, click **Launch the installation for IBM Tivoli Composite Application Manager for WebSphere Application Server**.





---

## Appendix C. Guidelines for specifying silent values on Windows, UNIX, and Linux

### Characteristics for a response file

The following list describes the general characteristics of a response file for IBM Tivoli Composite Application Manager for WebSphere Application Server:

- The names of the configuration options must follow the uppercase and lowercase conventions shown in “Options for configuring ITCAM for WebSphere Application Server on Windows, UNIX, and Linux” on page 142 as they are case-sensitive.
- Each configuration option must exist on a separate line.
- The configuration options can be sorted in any order.
- Configuration options should not contain empty values. If you do not specify a value for a configuration option, ensure that line is commented out with a number sign (#) or that the value to the right of the equal sign (=) is NULL.
- Does not contain the `-silent` flag, the `-options` flag, or `-is`
- If there are any spaces in the value to the right of the equal sign (=), the value must be enclosed in double quotation marks ("). It is best to enter the value between the double quotation marks that are already there in the response file template.

### Syntax of configuration options

You can use configuration options in the command-prompt or in a response file.

There are three flags for configurations options, `-P`, `-V`, and `-W`.

The configuration options accept the following parameters:

```
-P entity_ID.dataItem="value"  
-V entity_ID.dataItem="value"  
-W entity_ID.dataItem="value"
```

where,

#### **entity\_ID**

identifies an entity involved in an installation, configuration, or unconfiguration, such as the log settings for the configuration, or unconfiguration.

#### **dataItem**

is the name of an attribute, such as the installation path or the communications port.

**value** specifies the value for an attribute of an entity involved in an configuration, or unconfiguration, such as a port number like 8100.

## Options for configuring ITCAM for WebSphere Application Server on Windows, UNIX, and Linux

The following table lists the options for configuring ITCAM for WebSphere Application Server:

Table 37. Configuration options for ITCAM for WebSphere Application Server

Option String	Description	Optional or Required
-V DC_BACKUP_WAS=true   false	Specifies whether to back up the application server configuration before applying the ITCAM for WebSphere Application Server configuration. If you enter true, the backupConfig script create a backup file for the application server. The file is saved in the <i>DC_home/config_dc/backup</i> directory. If the ITCAM for WebSphere Application Server configuration fails, you can use the WebSphere restoreConfig command to restore the application server. See Appendix D, "What to do if ITCAM for WebSphere Application Server configuration fails," on page 171 for details.	Optional
-V DC_CCUC_CONFIG=true   false	Specifies whether to run the Data Collector Configuration Tool to configure ITCAM for WebSphere Application Server.	Required
-V DC_CCUC_UNCONFIG=true   false	Specifies whether to run the Data Collector Configuration Tool to unconfigure ITCAM for WebSphere Application Server. The default is true.	Required
-V DC_RECONFIG_ALLOW=true   false	Indicates whether reconfiguring ITCAM for WebSphere Application Server is allowed. Specifying true indicates that reconfiguration of ITCAM for WebSphere Application Server is allowed. Specifying false indicates that the configuration tool exits if the specified application server has already been configured. The default is true.	Required
-V DC_CAS_WAS=true   false	Specifies whether to configure the WebSphere Application Server. Specifying true indicates that WebSphere Application Server will be configured. Specifying false indicates that WebSphere Application Server will not be configured. The default is true.	Required
-V APP_SERVER_NAMES= <i>value</i>	Specifies the path to the application server. For example: cells/ibmuserNode06Cell/nodes /ibmuserNode06/servers /server1	Required
-V WS_NODE_NAME= <i>value</i>	Specifies the path to the application server. The default is cells/hostNode01Cell/nodes /hostNode01  <b>Note:</b> Use a forward slash (/) as a separator in the navigation.	Required

Table 37. Configuration options for ITCAM for WebSphere Application Server (continued)

Option String	Description	Optional or Required
-V DC_WD_PROFILEHOME= <i>value</i>	Specifies the path of the profile for the application server. For example: D:\IBM\AppServer\profiles\ \profile7  or /opt/IBM/AppServer /profiles/profile6	Required
-V DC_WD_PROFILENAME= <i>value</i>	Specifies the name of the profile for the application server. For example, profile6	Required
-V DC_WD_WASBASEDIR= <i>value</i>	Specifies the path for the location of the application server base directory. For example, C:\Program Files\IBM\WebSphere\AppServer (Windows), or /opt/IBM/WebSphere/AppServer (Linux and UNIX ), /QIBM/ProdData/WebSphere/AppServer/V7/nd (on IBM i).	Required
-V DC_WD_WASVER= <i>value</i>	Specifies the version of the application server. Specify 80.	Required
-V DC_ASL_HOSTNAME= <i>value</i>	Specifies the fully qualified host name or IP address of the server where ITCAM for WebSphere Application Server will be installed. For example, ibmmachine.usca.ibm.com <b>Note:</b> In a Network Deployment environment, provide the fully qualified host name or IP address of the Deployment Manager instead.	Required
-V DC_ASL_CONNTYPE=SOAP   RMI	The type of connection the application server and ITCAM for WebSphere Application Server will use for communication. The default is SOAP.	Required
-V DC_ASL_PORT= <i>value</i>	If you selected SOAP as the connector type, enter the connector port used by the application server instance to send commands using the SOAP. The default is 8880.  The SOAP port is identified in the following file for the instance of the application server that ITCAM for WebSphere Application Server will monitor: <i>AppServer_home/profiles/profile_name/config/cells/cell_name/nodes/node_name/serverindex.xml</i>  If you selected RMI as the connector type, enter the connector port used by the application server instance to send commands using RMI. <b>Note:</b> In a Network Deployment environment, provide the port of the Deployment Manager instead.	Optional
-V DC_ASL_USERNAME= <i>value</i>	The user ID of a user who is authorized to log on to the IBM WebSphere Application Server administrative console. This user must have the agent role on the application server.	Required if Global Security is enabled
-V DC_ASL_PASSWD= <i>value</i>	The password for the user who is authorized to log on to the IBM WebSphere Application Server administrative console.	Required if Global Security is enabled

Table 37. Configuration options for ITCAM for WebSphere Application Server (continued)

Option String	Description	Optional or Required
-V ITCAM_DC_ENABLED= <i>value</i>	Specifies if the PMI level will be set custom and if the ITCAM for WebSphere Application Server Data Collector will be enabled.	Required
-V DC_ASL_USECLIENTPROP=true   false	Specifies if the username and password should be retrieved from the soap.client/props or sas.client.props property file.	Optional
-V DC_CCUC_MS_CONFIG=true   false	Specifies whether you want to configure communication between the Data Collector and ITCAM for Application Diagnostics Managing Server. The default is false.	Required
_V DC_GCLOG_PATH	Specifies the path to where the garbage collector log files will be stored. This parameter is only used when REDIRECT_GC_LOG is true.	Optional
-V REDIRECT_GC_LOG=	Specifies whether you want to customize the location of the garbage collector log files.	Required

## Options for unconfiguring ITCAM for WebSphere Application Server on Windows, UNIX, and Linux

The following table lists the options for the unconfiguration of ITCAM for WebSphere Application Server on Windows, UNIX, and Linux.

Table 38. Unconfiguration options for ITCAM for WebSphere Application Server

Option string	Description	Optional or required?
-V DC_CCUC_CONFIG=true   false	Specifies whether to run the Data Collector Configuration Tool for the purpose of configuring ITCAM for WebSphere Application Server. Specify false.	Required
-V DC_CCUC_UNCONFIG=true   false	Specifies whether to run the Data Collector Configuration Tool for the purpose of unconfiguring ITCAM for WebSphere Application Server. Specify true.	Required

Table 38. Unconfiguration options for ITCAM for WebSphere Application Server (continued)

Option string	Description	Optional or required?
-V APP_SERVER_NAMES= <i>value</i>	<p>Specifies the path to the application servers you want to unconfigure.</p> <p>You can unconfigure several application server instances at one time using a single response file. List all of the paths for the application server instances that you are unconfiguring, separated by a comma and a space. This is required even if the application server instances are located in the same node and cell and have the same associated user name and password. After specifying -V APP_SERVER_NAMES, specify one complete set of required options for each application server instance that is being unconfigured. If you are unconfiguring more than one application server instance, prefix the option with the string "SERVER1_" for the first application server instance that is listed in -V APP_SERVER_NAMES. Prefix the option with the string "SERVER2_" for the second application server instance that is listed in -V APP_SERVER_NAMES. Follow this pattern for the rest of the application server instances to be unconfigured.</p>	Required
-V APPLY_PMI_TO_ALLSERVERS=true   false	To restore the original WebSphere Application Server PMI settings that existed prior to the ITCAM for WebSphere Application Server configuration for all application server instances that are being unconfigured, specify true.	Required
-V RESTORE_ORIGIN_PMI_SETTING=true   false	To restore the original WebSphere Application Server PMI settings that existed prior to the ITCAM for WebSphere Application Server configuration for all application server instances that are being unconfigured, specify true.	Required if you indicated -V APPLY_PMI_TO_ALLSERVERS=true
-V RESTORE_ORIGIN_PMI_SETTING_LIST=true   false	To restore the original WebSphere Application Server PMI settings that existed prior to the ITCAM for WebSphere Application Server configuration only for particular application server instances, specify true or false for each application server. Separate the value with a comma. For example, true,true,false.	Required if you indicated -V APPLY_PMI_TO_ALLSERVERS=false

Table 38. Unconfiguration options for ITCAM for WebSphere Application Server (continued)

Option string	Description	Optional or required?
-V <i>SERVERindex_DC_ASL_HOSTNAME=value</i>	Specifies the fully qualified host name or IP address of the server where ITCAM for WebSphere Application Server will be unconfigured. For example, <code>ibmmachine.usca.ibm.com</code> <b>Note:</b> In a Network Deployment environment, provide the fully qualified host name or IP address of the Deployment Manager instead.	
-V <i>SERVERindex_DC_ASL_CONNTYPE=SOAP   RMI</i>	The type of connection the application server and ITCAM for WebSphere Application Server will use for communication. The default is SOAP.	Required
-V <i>SERVERindex_DC_ASL_PORT=value</i>	If you selected SOAP as the connector type, enter the connector port used by the application server instance to send commands using the Simple Object Access Protocol (SOAP). The default is 8880.  The SOAP port is identified in the following file for the instance of the application server that ITCAM for WebSphere Application Server is monitoring: <code>AppServer_home/profiles/profile_name/config/cells/cell_name/nodes/node_name/serverindex.xml</code>  If you selected RMI as the connector type, enter the connector port used by the application server instance to send commands using RMI. <b>Note:</b> In a Network Deployment environment, provide the port of the Deployment Manager instead.	Optional
-V <i>SERVERindex_DC_ASL_USERNAME=value</i>	The user ID of a user who is authorized to log on to the WebSphere Application Server administrative console. This user must have the agent role on the application server.	Required if Global Security is enabled
-V <i>SERVERindex_DC_ASL_PASSWD=value</i>	The password for the user who is authorized to log on to the WebSphere Application Server administrative console.	Required if Global Security is enabled
-V <i>SERVERindex_DC_ASL_USECLIENTPROP=true   false</i>	Specifies whether the Global Security of WebSphere Application Server is enabled.  Specifying true indicates that the Global Security of WebSphere Application Server is enabled. The configurator will use the user ID and password in the <code>soap.client.props/sas.client.props</code> file of WebSphere Application Server.	Optional



Table 38. Unconfiguration options for ITCAM for WebSphere Application Server (continued)

Option string	Description	Optional or required?
-V DC_CCUC_MS_UNCONFIG=true   false	Specifies whether you want to unconfigure communication between the Data Collector and ITCAM for Application Diagnostics Managing Server. The default is false.	Required

## Installation Response File Template for Windows, Linux and UNIX systems, and IBM i

The response file is available under the ITCAM for WebSphere Application Server repository directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
WARNING!!!
Following variables must be replaced prior silent installation based on this response file:
* ${itcam_repository_path}
* ${was_profile}
* ${was_home_path}
* ${im_eclipse_home_path}
* ${shared_location_path}
Please find detailed description of specific variables below.
-->
<!--
To accept the license agreement, use the "-acceptLicense" command line option.
By doing so, you agree to accept the license agreements for the package specified in the response file.
-->
<agent-input clean='true' temporary='false'>
  <server>
    <!--
    Specify the repository that is used during a silent installation.
    Use a URL or UNC path to specify remote repositories; or use directory paths to specify local repositories.
    Example: If the package is placed in path like c:\ibm\itcam\repository.xml,
    the c:\ibm\itcam should be used as the repository location.
    -->
    <repository location='${itcam_repository_path}' />
  </server>

  <!--
  Specify the WebSphere Application Server installation directory and profile.
  The default value for the ${was_home_path} directory is:
  * Windows®: C:\Program Files\IBM\WebSphere\AppServer
  * Linux® and UNIX® systems: /opt/ibm/WebSphere/AppServer
  * IBM i: /QIBM/ProdData/WebSphere/AppServer/V8/Base
  * or: /QIBM/ProdData/WebSphere/AppServer/V8/ND
  Possible values for the ${was_profile} are:
  * IBM WebSphere Application Server V8.0
  * IBM WebSphere Application Server Network Deployment V8.0
  The WebSphere profile ids available for your installation can be found
  in repository.xml in the WebSphere repository directory,
  or in installed.xml in the IM application data directory.
  -->
  <profile id='${was_profile}'
  installLocation='${was_home_path}'>

    <!--
    Specify the Installation Manager eclipse directory.
    The default value for the ${im_eclipse_home_path} directory is:
    * Windows®: C:\Program Files\IBM\Installation Manager\eclipse
    * Linux® and UNIX® systems: /opt/ibm/InstallationManager/eclipse
    * IBM i: /QIBM/ProdData/InstallationManager/eclipse
    -->
    <data key='eclipseLocation'
    value='${im_eclipse_home_path}' />

    <data key='user.import.profile' value='false' />

    <!--
    Specify the Natural Language (NL) locale selections, such as zh, ja, and en. Separate multiple NL values with commas.
    -->
    <data key='cic.selector.nl' value='en' />
  </profile>

  <install modify='false'>
  </offering
```

```

    id='com.ibm.tivoli.itcam.install.was.im.offering.WAS80'
    profile='${was_profile}' features='com.ibm.tivoli.itcam.websphere.dc' />
</install>

<!--
Specify the Shared Resources directory. It is the directory where installation files are located so that one or
more product package groups can use them.
The default value for the ${shared_location_path} directory is:
* Windows®: C:\Program Files\IBM\WebSphere\IMShared
* Linux® and UNIX® systems: /opt/ibm/WebSphere/IMShared
* IBM i: /QIBM/UserData/InstallationManager/IMShared
The shared resources directory can only be specified during installation, it cannot be subsequently changed unless
you uninstalls all packages and reinstall again.
-->
<preference
name='com.ibm.cic.common.core.preferences.eclipseCache'
value='${shared_location_path}' />
<preference
name='com.ibm.cic.common.core.preferences.connectTimeout'
value='30' />
<preference
name='com.ibm.cic.common.core.preferences.readTimeout'
value='45' />
<preference
name='com.ibm.cic.common.core.preferences.downloadAutoRetryCount'
value='0' />
<preference
name='offering.service.repositories.areUsed'
value='true' />
<preference
name='com.ibm.cic.common.core.preferences.ssl.nonsecureMode'
value='false' />
<preference
name='com.ibm.cic.common.core.preferences.http.disablePreemptiveAuthentication'
value='false' />
<preference
name='http.ntlm.auth.kind'
value='NTLM' />
<preference
name='http.ntlm.auth.enableIntegrated.win32'
value='true' />
<preference
name='com.ibm.cic.common.core.preferences.preserveDownloadedArtifacts'
value='true' />
<preference
name='com.ibm.cic.common.core.preferences.keepFetchedFiles'
value='false' />
<preference
name='PassportAdvantageIsEnabled'
value='false' />
<preference
name='com.ibm.cic.common.core.preferences.searchForUpdates'
value='false' />
</agent-input>

```

---

## Uninstallation Response File template for Windows, UNIX, and Linux and IBM i

The response file is available under the ITCAM for WebSphere Application Server repository directory..

```

<?xml version="1.0" encoding="UTF-8"?>
<!--
WARNING!!!
Following variables must be replaced prior silent uninstallation based on this response file:
* ${was_profile}
* ${was_home_path}
* ${im_eclipse_home_path}
* ${shared_location_path}
Please find detailed description of specific variables below.
-->
<agent-input>
<!--
Specify the WebSphere Application Server installation directory and profile.
The default value for the ${was_home_path} directory is:
* Windows®: C:\Program Files\IBM\WebSphere\AppServer
* Linux® and UNIX® systems: /opt/ibm/WebSphere/AppServer
* IBM i: /QIBM/ProdData/WebSphere/AppServer/V8/Base
* or: /QIBM/ProdData/WebSphere/AppServer/V8/ND
Possible values for the ${was_profile} are:
* IBM WebSphere Application Server V8.0
* IBM WebSphere Application Server Network Deployment V8.0
The WebSphere profile ids available for your installation can be found
in repository.xml in the WebSphere repository directory,
or in installed.xml in the IM application data directory.

```

```

-->
<profile id='${was_profile}'
  installLocation='${was_home_path}'>

  <!--
  Specify the Installation Manager eclipse directory.
  The default value for the ${im_eclipse_home_path} directory is:
  * Windows®: C:\Program Files\IBM\Installation Manager\eclipse
  * Linux® and UNIX® systems: /opt/ibm/InstallationManager/eclipse
  * IBM i: /QIBM/ProdData/InstallationManager/eclipse
  -->
  <data key='eclipseLocation'
    value='${im_eclipse_home_path}'/>

  <data key='user.import.profile'
    value='false'/>

  <!--
  Specify the Natural Language (NL) locale selections, such as zh, ja, and en. Separate multiple NL values with commas.
  -->
  <data key='cic.selector.nl' value='en'/>
</profile>

<uninstall modify='false'>
  <offering
    id='com.ibm.tivoli.itcam.install.was.im.offering.WAS80'
    profile='${was_profile}' features='com.ibm.tivoli.itcam.websphere.dc' />
</uninstall>

<!--
Specify the Shared Resources directory. It is the directory where installation
files are located so that one or more product package groups can use them.
The default value for the ${shared_location_path} directory is:
* Windows®: C:\Program Files\IBM\WebSphere\IMShared
* Linux® and UNIX® systems: /opt/ibm/WebSphere/IMShared
* IBM i: /QIBM/UserData/InstallationManager/IMShared
The shared resources directory can only be specified during installation, it cannot be subsequently
changed unless you uninstalls all packages and reinstall again.
-->
<preference
  name='com.ibm.cic.common.core.preferences.eclipseCache'
  value='${shared_location_path}'/>
<preference
  name='com.ibm.cic.common.core.preferences.connectTimeout'
  value='30'/>
<preference
  name='com.ibm.cic.common.core.preferences.readTimeout'
  value='45'/>
<preference
  name='com.ibm.cic.common.core.preferences.downloadAutoRetryCount'
  value='0'/>
<preference
  name='offering.service.repositories.areUsed'
  value='true'/>
<preference
  name='com.ibm.cic.common.core.preferences.ssl.nonsecureMode'
  value='false'/>
<preference
  name='com.ibm.cic.common.core.preferences.http.disablePreemptiveAuthentication'
  value='false'/>
<preference
  name='http.ntlm.auth.kind'
  value='NTLM'/>
<preference
  name='http.ntlm.auth.enableIntegrated.win32'
  value='true'/>
<preference
  name='com.ibm.cic.common.core.preferences.preserveDownloadedArtifacts'
  value='true'/>
<preference
  name='com.ibm.cic.common.core.preferences.keepFetchedFiles'
  value='false'/>
<preference
  name='PassportAdvantageIsEnabled'
  value='false'/>
<preference
  name='com.ibm.cic.common.core.preferences.searchForUpdates'
  value='false'/>
</agent-input>

```

---

## Configuration Response File Template for Windows, UNIX, and Linux

The configuration response file template is available here: *WebSphere\_HOME/AppServer/itcam/DC/config\_dc/responsefile\_templates/DC\_Config\_Template.opt*. Use this template to configure an application server instance for data collection, communication with ITCAM for Application Diagnostics Managing Server and ITCAM for Transactions.

```
#####
#
# ITCAM for WebSphere Application Server Configuration Template
# This file may be automatically generated by using ITCAM for WebSphere Application
# Server Data Collector Configuration Tool. In that case, all the parameters will be
# automatically pre-populated and one need not go through this template document.
#
# This file can be used to create an options file (i.e., response file) for the
# wizard "config_dc". Options files are used with "-options" on the command line to
# modify wizard settings. See Point 4 below for details.
#
# This file can be used to configure a Data Collector as well as reconfigure the
# data collector and its connection to the Managing Server#
#
# To use this template, follow these steps:
#
# 1. All the mandatory parameters are uncommented. Parameters that have fixed
# value for this scenario are already set. Parameters whose value will depend
# on the installation are marked as <value>. They need to be substituted by reading
# descriptions provided here. All optional parameters are marked by
# by leading '###' characters. If they need to be used, the leading '###' characters
# are to be removed and the <values> be set.
#
# 2. Specify a value for a setting by replacing the characters '<value>'.
# Read each setting's documentation for information on how to specify its
# value.
#
# Notice: a null value is not acceptable, such as -V KEY=""
#
# 3. Save the changes to the file.
#
# 4. To use the options file with the wizard, specify -options "<file-name>"
# as a command line argument to the wizard, where <file-name> is the name
# of this options file.
#   Windows: config_DC.bat -silent -options "filename"
#   Unix: ./config_DC.sh -silent -options "filename"
#
#####
#
# Config Data Collector to WebSphere
#
# The option that the Data Collector will be configured or Un-configured. Stored as a
# Variable and must be set with -V.
#
# Legal values are: True or False
#
# DC_CCUC_CONFIG: Indicates that the WebSphere will be configured
# if set to true and ignored if set to false..
#
# DC_CCUC_UNCONFIG: Indicates that the WebSphere will be unconfigured
# if set to true and ignored if set to false..
#
# Typical values during Configuration are set below.
#
-V DC_CCUC_CONFIG="true"
-V DC_CCUC_UNCONFIG="false"
#####
#
# Config Data Collector to Managing Server
#
# The option that the Data Collector will be configured or Un-configured. Stored as a
# Variable and must be set with -V.
#
# Legal values are: True or False
#
# DC_CCUC_MS_CONFIG: Indicates that the Managing Server connection will
# be configured if set to true and ignored if set to false..
#
# DC_CCUC_MS_UNCONFIG: Indicates that the Managing Server connection will
# be unconfigured if set to true and ignored if set to false..
#
# Typical values during Configuration are set below.
#
-V DC_CCUC_MS_CONFIG=<value>
```

```

-V DC_CCUC_MS_UNCONFIG="false"

#####
#
# Allow to re-configure the Data Collector
#
# Legal values are:
#
# true - Indicates that the Data Collector will be reconfigured.
#
# false - If Data Collector for the specified Application server had been previously
#         configured, the installer will not attempt to reconfigure and will quit.
#
-V DC_RECONFIG_ALLOW=<value>

#####
#
# Some Internal flag settings
#
# Keep set to true
# DC_CC_ITCAMFWAS="true"
# Set to true for WebSphere Base and WebSphere ND installs.
# DC_CAS_WAS="true"
# Set to true for WebSphere BPM installs and false otherwise. BPM is not supported
# in this release, so this should be set to "false"
# DC_CAS_PS="false"

-V DC_CC_ITCAMFWAS="true"
-V DC_CAS_WAS="true"
-V DC_CAS_PS="false"

#####
#
# Configure WebSphere Application Server's server full name
#
# For example,
# -V APP_SERVER_NAMES="cells/emilyNode06Cell/nodes/emilyNode06/servers/server1"
#
-V APP_SERVER_NAMES=<value>

#####
#
# Configure WebSphere Application Server's node full name
#
# For example,
# -V WS_NODE_NAME="cells/emilyNode01Cell/nodes/emilyNode06"
#
-V WS_NODE_NAME=<value>

#####
#
# Configure WebSphere Application Server's profile home directory
#
# For example,
# -V DC_WD_PROFILEHOME="C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01"
#
-V DC_WD_PROFILEHOME=<value>

#####
#
# Configure WebSphere Application Server's profile short name
#
# For example,
# -V DC_WD_PROFILENAME="profile6"
#
-V DC_WD_PROFILENAME=<value>

#####
#
# Configure WebSphere Application Server's base directory
#
# For example, -V DC_WD_WASBASEDIR="C:\Program Files\IBM\WebSphere\AppServer"
#
-V DC_WD_WASBASEDIR=<value>

#####
#
# WebSphere Application Server's version if Configure a WebSpere Application Server
#
# WebSphere Portal Server's version if Configure a WebSpere Portal Server
#
# WebSphere Process Server's version if Configure a WebSpere Process Server
#
# For example, -V DC_WD_WASVER="80"
#
-V DC_WD_WASVER="80"

```

```

#####
#
# Data Collector host name
#
# Type a host name that the Domain Name System service can resolve before
# you proceed. You must provide the fully qualified host name or the IP address
# of the host.
#
# For example, -V DC_ASL_HOSTNAME=dc1.cn.ibm.com
#
-V DC_ASL_HOSTNAME=<value>
#####
#
# Configure WebSphere Application Server's Connector type SOAP or RMI
# If this value not input, DC Configurator will use SOAP by Default
#
# For example, -V DC_ASL_CONNTYPE="SOAP" or -V DC_ASL_CONNTYPE="RMI"
#
-V DC_ASL_CONNTYPE=<value>
#####
#
# Configure WebSphere Application Server's SOAP/RMI port
#
# For example, -V DC_ASL_PORT="8880"
#
-V DC_ASL_PORT=<value>
#####
#
# Use the username and password stored in soap.client.props or sas.client.props
#
# Normally soap.client.props and sas.client.props are in the
# <WebSphere Profile Home>/properties (7.0)
# If -V DC_ASL_CONNTYPE="SOAP" then the soap.client.props will be used.
# If -V DC_ASL_CONNTYPE="RMI" then the sas.client.props will be used.
#
# Legal values are:
#
# true - Indicates to use the username and password stored in soap.client.props,
#       and values of -V DC_ASL_USERNAME and -V DC_ASL_PASSWD will be skipped.
#
# false - Indicates not to use the username and password stored in soap.client.props,
#        and the values of -V DC_ASL_USERNAME and -V DC_ASL_PASSWD should be inputed.
#
-V DC_ASL_USECLIENTPROP=<value>
#####
#
# WebSphere Application Server global security user name
#
###-V DC_ASL_USERNAME=<value>
#####
#
# WebSphere Application Server global security password
#
###-V DC_ASL_PASSWD=<value>
#####
#
# Configure PMI
# Specifies if after the configuration:
# - the PMI level will be set to Custom
# - and if the ITCAM for WebSphere Application Server Data Collector will be enabled
#
# Legal values are: "true" or "false"
#
-V ITCAM_DC_ENABLED=<value>
#####
#
# Back up the WebSphere Application Server configuration before applying the configuration
#
# Legal values are:
#
# "true" - back up enabled
# "false" - back up disabled
#
-V DC_BACKUP_WAS=<value>
#####
#
# If Data Collector needs to be connected to the Managing Server,
# the following needs to be configured.
#
# DC_OFFLINE_ALLOW=<value>. This is to be set to "true" if configuration is to proceed
# even if the Managing Server is offline. Else, if you need
# verify connection during configuration, set it to "false"

```

```

#
# DC_MS_KS_SERVERNAME="abc.ibm.com" Typically set the Fully qualified domain name or
# IP Adress of the Managing Server Machine.
#
# DC_MS_KS_CODEBASEPORT="9122". This is the codebase port of the Managing Server.
# 9122 is the default value unless changed during Managing
# Server Installation.
#
# DC_MS_KS_RFSPOORT="9120". This is the RFS Port of the Managing Server.
# 9120 is the default value unless changed during Managing
# Server Installation
#
# DC_MS_AMHOME="C:\Program Files\IBM\itcam\WebSphere\MS". This is default Managing Server Home for Windows
# DC_MS_AMHOME="/opt/IBM/itcam/WebSphere/MS". This is default Managing Server Home for Linux/unix
#
###-V DC_OFFLINE_ALLOW="false"
###-V DC_MS_KS_SERVERNAME="abc.ibm.com"
###-V DC_MS_KS_CODEBASEPORT="9122"
###-V DC_MS_KS_RFSPOORT="9120"
###-V DC_MS_AMHOME="C:\Program Files\IBM\itcam\WebSphere\MS"

#####
#
# DC Host Parameters
#
# AM_SOCKET_BINDIP="xyz.ibm.com". This is the Fully Qualified Domain name or
# IP Address of the Data Collector/WebSphere Machine
#
# FIREWALL_ENABLED="false". This value can be "true" or "false" depending on if the
# Data Collector is behind a firewall. If FIREWALL_ENABLED="true"
# the following parameters need to be filled in.
#
# PROBE_CONTROLLER_RMI_PORT="8300-8399". Applies only if the Data Collector computer
# is behind a firewall. Indicates the port on
# the Data Collector computer that will be used
# for RMI. Make sure this port is not blocked by
# the firewall for the Data Collector computer.
# Specify a value between 8200 and 8299.
# The default is 8200.
#
# PROBE_RMI_PORT="8200-8299". Applies only if the Data Collector computer is behind a firewall.
# Indicates the port on the Data Collector computer that will be
# used for RMI. Make sure this port is not blocked by the firewall
# for the Data Collector computer. Specify a value between
# 8300 and 8399. The default is 8300.
#
#
-V AM_SOCKET_BINDIP=<value>
-V FIREWALL_ENABLED=<value>
###-V PROBE_CONTROLLER_RMI_PORT=<value>
###-V PROBE_RMI_PORT=<value>

#####
#
# TTAPI Parameters:
#
# DC_TTAPI_ENABLED="true" Set this to true ONLY if TTAPI is enabled. Else set it to "false"
#
# If DC_TTAPI_ENABLED="false", then the following settings in this category can be skipped
# If not, proceed:
#
# DC_TTAPI_HOST="alpha.ibm.com" TTAPI Host Machine Name.
# DC_TTAPI_PORT="5455" TTAPI Host Machine Port
# DC_TTAPI_OFFLINE_ALLOW="true" Set this to true if configuration is allowed to proceed
# while the TTAPI host machine is offline. Else set it to "false"
#
-V DC_TTAPI_ENABLED=<value>
###-V DC_TTAPI_HOST=<value>
###-V DC_TTAPI_PORT=<value>
###-V DC_TTAPI_OFFLINE_ALLOW=<value>

#####
#
# GC Parameters
#
# REDIRECT_GC_LOG="true". Set this to true only if Verbose GC log needs to be redirected
# from its standard location.
#
# If REDIRECT_GC_LOG="false", ignore the following entry. Proceed only if "true"
#
# DC_GCLOG_PATH="C:/gc.log" Indicate the new verbose GC Log Path.
#
-V REDIRECT_GC_LOG=<value>
###-V DC_GCLOG_PATH=<value>

```



---

## Advanced Configuration Response File Template for Windows, UNIX, and Linux

The advanced configuration response file template is available here:  
*WebSphere\_HOME/AppServer/itcam/DC/config\_dc/responsefile\_templates/MSDC\_Config\_Template.opt*. Use this template when you have already configured an application server instance for data collection and want to configure advanced options. Use this template to configure communication with ITCAM for Application Diagnostics Managing Server and ITCAM for Transactions.

```
#####  
#  
# ITCAM for WebSphere Application Server Configuration Template  
# This file may be automatically generated by using ITCAM for WebSphere Application  
# Server Data Collector Configuration Tool. In that case, all the parameters will be  
# automatically pre-populated and one need not go through this template document.  
#  
# This file can be used to create an options file (i.e., response file) for the  
# wizard "config_dc". Options files are used with "-options" on the command line to  
# modify wizard settings. See Point 4 below for details.  
#  
# This file can be used to configure the Managing Server connection for an already  
# configured Data Collector.  
#  
# To use this template, follow these steps:  
#  
# 1. All the mandatory parameters are uncommented. Parameters that have fixed  
# value for this scenario are already set. Parameters whose value will depend  
# on the installation are marked as <value>. They need to be substituted by reading  
# descriptions provided here. All optional parameters are marked by  
# by leading '###' characters. If they need to be used, the leading '###' characters  
# are to be removed and the <values> be set.  
#  
# 2. Specify a value for a setting by replacing the characters '<value>'.  
# Read each setting's documentation for information on how to specify its  
# value.  
#  
# Notice: a null value is not acceptable, such as -V KEY=""  
#  
# 3. Save the changes to the file.  
#  
# 4. To use the options file with the wizard, specify -options "<file-name>"  
# as a command line argument to the wizard, where <file-name> is the name  
# of this options file.  
# Windows: config_DC.bat -silent -options "filename"  
# Unix: ./config_DC.sh -silent -options "filename"  
#  
#####  
#  
# Config Data Collector to WebSphere  
#  
# The option that the Data Collector will be configured or Un-configured. Stored as a  
# Variable and must be set with -V.  
#  
# Legal values are: True or False  
#  
# DC_CCUC_CONFIG: Indicates that the WebSphere will be configured  
# if set to true and ignored if set to false..  
#  
# DC_CCUC_UNCONFIG: Indicates that the WebSphere will be unconfigured  
# if set to true and ignored if set to false..  
#  
# Typical values during Configuration are set below.  
#  
-V DC_CCUC_CONFIG="false"  
-V DC_CCUC_UNCONFIG="false"  
#  
#####  
#  
# Config Data Collector to Managing Server  
#  
# The option that the Data Collector will be configured or Un-configured. Stored as a  
# Variable and must be set with -V.  
#  
# Legal values are: True or False  
#  
# DC_CCUC_MS_CONFIG: Indicates that the Managing Server connection will  
# be configured if set to true and ignored if set to false..  
#  
# DC_CCUC_MS_UNCONFIG: Indicates that the Managing Server connection will  
# be unconfigured if set to true and ignored if set to false..
```

```

#
# Typical values during Configuration are set below.
#
-V DC_CCUC_MS_CONFIG="true"
-V DC_CCUC_MS_UNCONFIG="false"

#####
#
# Allow to re-configure the Data Collector
#
# Legal values are:
#
# true - Indicates that the Data Collector will be reconfigured.
#
# false - If Data Collector for the specified Application server had been previously
#         configured, the installer will not attempt to reconfigure and will quit.
#
-V DC_RECONFIG_ALLOW="true"

#####
#
# Some Internal flag settings
#
# Keep set to true
# DC_CC_ITCAMFWAS="true"
# Set to true for WebSphere Base and WebSphere ND installs.
# DC_CAS_WAS="true"
# Set to true for WebSphere BPM installs and false otherwise. BPM is not supported
# in this release, so this should be set to "false"
# DC_CAS_PS="false"

-V DC_CC_ITCAMFWAS="true"
-V DC_CAS_WAS="true"
-V DC_CAS_PS="false"

#####
#
# Configure WebSphere Application Server's server full name
#
# For example,
# -V APP_SERVER_NAMES="cells/emilyNode06Cell/nodes/emilyNode06/servers/server1"
#
-V APP_SERVER_NAMES=<value>

#####
#
# Configure WebSphere Application Server's node full name
#
# For example,
# -V WS_NODE_NAME="cells/emilyNode01Cell/nodes/emilyNode06"
#
-V WS_NODE_NAME=<value>

#####
#
# Data Collector host name
#
# Type a host name that the Domain Name System service can resolve before
# you proceed. You must provide the fully qualified host name or the IP address
# of the host.
#
# For example, -V DC_AS_L_HOSTNAME=dc1.cn.ibm.com
#
-V DC_AS_L_HOSTNAME=<value>

#####
#
# Configure WebSphere Application Server's Connector type SOAP or RMI
# If this value not input, DC Configurator will use SOAP by Default
#
# For example, -V DC_AS_L_CONNTYPE="SOAP" or -V DC_AS_L_CONNTYPE="RMI"
#
-V DC_AS_L_CONNTYPE=<value>

#####
#
# Configure WebSphere Application Server's SOAP/RMI port
#
# For example, -V DC_AS_L_PORT="8880"
#
-V DC_AS_L_PORT=<value>

#####
#
# Use the username and password stored in soap.client.props or sas.client.props
#
# Normally soap.client.props and sas.client.props are in the
# <WebSphere Profile Home>/properties (7.0)

```

```

# If -V DC_ASL_CONNTYPE="SOAP" then the soap.client.props will be used.
# If -V DC_ASL_CONNTYPE="RMI" then the sas.client.props will be used.
#
# Legal values are:
#
#   true - Indicates to use the username and password stored in soap.client.props or sas.client.props,
#         and values of -V DC_ASL_USERNAME and -V DC_ASL_PASSWD will be skipped.
#
#   false - Indicates not to use the username and password stored in soap.client.props or sas.client.props,
#         and the values of -V DC_ASL_USERNAME and -V DC_ASL_PASSWD should be inputed.
#
-V DC_ASL_USECLIENTPROP=<value>

#####
#
# WebSphere Application Server global security user name
#
###-V DC_ASL_USERNAME=<value>

#####
#
# WebSphere Application Server global security password
#
###-V DC_ASL_PASSWD=<value>

#####
#
# Configure PMI
# Specifies if after the configuration:
# - the PMI level will be set to Custom
# - and if the ITCAM for WebSphere Application Server Data Collector will be enabled
#
# Legal values are: "true" or "false"
#
-V ITCAM_DC_ENABLED=<value>

#####
#
# Back up the WebSphere Application Server configuration before applying the configuration
#
# Legal values are:
#
# "true" - back up enabled
# "false" - back up disabled
#
-V DC_BACKUP_WAS=<value>

#####
#
# If Data Collector needs to be connected to the Managing Server,
# the following needs to be configured.
#
# DC_OFFLINE_ALLOW=<value>. This is to be set to "true" if configuration is to proceed
# even if the Managing Server is offline. Else, if you need
# verify connection during configuration, set it to "false"
#
# DC_MSKS_SERVERNAME="abc.ibm.com" Typically set the Fully qualified domain name or
# IP Adress of the Managing Server Machine.
#
# DC_MSKS_CODEBASEPORT="9122". This is the codebase port of the Managing Server.
# 9122 is the default value unless changed during Managing
# Server Installation.
#
# DC_MSKS_RFSPORT="9120". This is the RFS Port of the Managing Server.
# 9120 is the default value unless changed during Managing
# Server Installation
#
# DC_MS_AMHOME="C:\Program Files\IBM\itcam\WebSphere\MS". This is default Managing Server Home for Windows
# DC_MS_AMHOME="/opt/IBM/itcam/WebSphere/MS". This is default Managing Server Home for Linux/unix
#
-V DC_OFFLINE_ALLOW="false"
-V DC_MSKS_SERVERNAME=<value>
-V DC_MSKS_CODEBASEPORT=<value>
-V DC_MSKS_RFSPORT=<value>
-V DC_MS_AMHOME=<value>

#####
#
# DC Host Parameters
#
# AM_SOCKET_BINDIP="xyz.ibm.com". This is the Fully Qualified Domain name or
# IP Address of the Data Collector/WebSphere Machine
#
# FIREWALL_ENABLED="false". This value can be "true" or "false" depending on if the
# Data Collector is behind a firewall. If FIREWALL_ENABLED="true"
# the following parameters need to be filled in.
#
# PROBE_CONTROLLER_RMI_PORT="8300-8399". Applies only if the Data Collector computer
# is behind a firewall. Indicates the port on

```

```

#
#           the Data Collector computer that will be used
#           for RMI. Make sure this port is not blocked by
#           the firewall for the Data Collector computer.
#           Specify a value between 8200 and 8299.
#           The default is 8200.
#
# PROBE_RMI_PORT="8200-8299". Applies only if the Data Collector computer is behind a firewall.
# Indicates the port on the Data Collector computer that will be
# used for RMI. Make sure this port is not blocked by the firewall
# for the Data Collector computer. Specify a value between
# 8300 and 8399. The default is 8300.
#
#
-V AM_SOCKET_BINDIP=<value>
-V FIREWALL_ENABLED=<value>
###-V PROBE_CONTROLLER_RMI_PORT=<value>
###-V PROBE_RMI_PORT=<value>

#####
#
# TTAPI Parameters:
#
# DC_TTAPI_ENABLED="true" Set this to true ONLY if TTAPI is enabled. Else set it to "false"
#
# If DC_TTAPI_ENABLED="false", then the following settings in this category can be skipped
# If not, proceed:
#
# DC_TTAPI_HOST="alpha.ibm.com" TTAPI Host Machine Name.
# DC_TTAPI_PORT="5455" TTAPI Host Machine Port
# DC_TTAPI_OFFLINE_ALLOW="true" Set this to true if configuration is allowed to proceed
# while the TTAPI host machine is offline. Else set it to "false"
#
-V DC_TTAPI_ENABLED=<value>
###-V DC_TTAPI_HOST=<value>
###-V DC_TTAPI_PORT=<value>
###-V DC_TTAPI_OFFLINE_ALLOW=<value>

#####
#
# GC Parameters
#
# REDIRECT_GC_LOG="true". Set this to true only if Verbose GC log needs to be redirected
# from its standard location.
#
# If REDIRECT_GC_LOG="false", ignore the following entry. Proceed only if "true"
#
# DC_GCLOG_PATH="C:/gc.log" Indicate the new verbose GC Log Path.
#
-V REDIRECT_GC_LOG=<value>
###-V DC_GCLOG_PATH=<value>

```

---

## Unconfiguration Response File Template for Windows, UNIX, and Linux

The unconfiguration response file template is available here: *WebSphere\_HOME/AppServer/itcam/DC/config\_dc/responsefile\_templates/DC\_Unconfig\_Template.opt*. Use this template to unconfigure the application server instance for data collection, communication with ITCAM for Application Diagnostics Managing Server and ITCAM for Transactions.

```

#####
#
# ITCAM for WebSphere Application Server Configuration Template
# This file may be automatically generated by using ITCAM for WebSphere Application
# Server Data Collector Configuration Tool. In that case, all the parameters will be
# automatically pre-populated and one need not go through this template document.
#
# This file can be used to create an options file (i.e., response file) for the
# wizard "config_dc". Options files are used with "-options" on the command line to
# modify wizard settings. See Point 4 below for details.
#
# This file can be used to unconfigure WebSphere from the Data Collector and its
# connection to the Managing Server.
#
# To use this template, follow these steps:
#
# 1. All the mandatory parameters are uncommented. Parameters that have fixed
# value for this scenario are already set. Parameters whose value will depend
# on the installation are marked as <value>. They need to be substituted by reading
# descriptions provided here. All optional parameters are marked by
# by leading '###' characters. If they need to be used, the leading '###' characters
# are to be removed and the <values> be set.

```

```

#
# 2. Specify a value for a setting by replacing the characters '<value>'.
# Read each setting's documentation for information on how to specify its
# value.
#
# Notice: a null value is not acceptable, such as -V KEY=""
#
# 3. Save the changes to the file.
#
# 4. To use the options file with the wizard, specify -options "<file-name>"
# as a command line argument to the wizard, where <file-name> is the name
# of this options file.
#   Windows: config_DC.bat -silent -options "filename"
#   Unix: ./config_DC.sh -silent -options "filename"
#
#####
#####
#
# UnConfigure Data Collector to WebSphere
#
# The option that the Data Collector will be Un-configured. Stored as a
# Variable and must be set with -V.
#
# Legal values are:
#
#   DC_CCUC_UNCONFIG="true" and DC_CCUC_CONFIG="false"
#   - Indicates that the Data Collector will be Un-configured.
#   DC_CCUC_MS_CONFIG="false" and DC_CCUC_MS_UNCONFIG="false"
#   - Indicates that the Managing Server to which the the Data Collector
#     may have been configured will also be Un-configured.
#
#
-V DC_CCUC_CONFIG="false"
-V DC_CCUC_UNCONFIG="true"
-V DC_CCUC_MS_CONFIG="false"
-V DC_CCUC_MS_UNCONFIG="false"
#####
#
# Some Internal flag settings
#
# Keep set to true
# DC_CC_ITCAMFAS="true"
# Set to true for WebSphere Base and WebSphere ND installs.
# DC_CAS_WAS="true"
# Set to true for WebSphere BPM installs and false otherwise. BPM is not supported
# in this release, so this should be set to "false"
# DC_CAS_PS="false"
#
-V DC_CC_ITCAMFAS="true"
-V DC_CAS_WAS="true"
-V DC_CAS_PS="false"
#####
#
# Un-Configure WebSphere Application Server's server full name
#
# For example,
# -V APP_SERVER_NAMES="cells/emilyNode06Cell/nodes/emilyNode06/servers/server1 , cells/emilyNode06Cell/nodes/emilyNode06/servers/server2"
#
-V APP_SERVER_NAMES=<value>
#####
#
# WebSphere Application Server's host name
#
# Type a host name that the Domain Name System service can resolve before
# you proceed. You must provide the fully qualified host name or the IP address
# of the host.
# For ND environment, the host name is Deployment Manager's host name.
#
# The "SERVER(index)" indicates the sequence number of server names that specified in APP_SERVER_NAMES
#
# For example if:
# -V APP_SERVER_NAMES="cells/emilyNode06Cell/nodes/emilyNode06/servers/server1, cells/emilyNode06Cell/nodes/emilyNode06/servers/server2"
# -V SERVER1_DC_AS_HOSTNAME=dc1.cn.ibm.com (this hostname is for "cells/emilyNode06Cell/nodes/emilyNode06/servers/server1")
# -V SERVER2_DC_AS_HOSTNAME=dc1.cn.ibm.com (this hostname is for "cells/emilyNode06Cell/nodes/emilyNode06/servers/server2")
#
-V SERVER(index)_DC_AS_HOSTNAME=<value>
#####
#
# WebSphere Application Server's Connector type SOAP or RMI
# If this value not input, DC Configurator will use SOAP by Default
#
# The "SERVER(index)" indicates the sequence number of server name that specified in APP_SERVER_NAMES
# Please reference the explanation of "SERVER(index)_DC_AS_HOSTNAME"

```

```

#
# For example, -V SERVER1_DC_AS_L_CONNTYPE="SOAP" or -V SERVER2_DC_AS_L_CONNTYPE="RMI"
#
-V SERVER(index)_DC_AS_L_CONNTYPE=<value>
#####
#
# WebSphere Application Server's SOAP/RMI port
# If -V SERVER(index)_DC_AS_L_CONNTYPE="SOAP" then this value should be the SOAP port number of WebSphere Application Server.
# If -V SERVER(index)_DC_AS_L_CONNTYPE="RMI" then this value should be the RMI port number of WebSphere Application Server.
#
# The "SERVER(index)" indicates the sequence number of server name that specified in APP_SERVER_NAMES
# Please reference the explanation of "SERVER(index)_DC_AS_L_HOSTNAME"
#
# For example, -V SERVER1_DC_AS_L_PORT="8880", -V SERVER2_DC_AS_L_PORT="2809"
#
-V SERVER(index)_DC_AS_L_PORT=<value>
#####
#
# Use the username and password stored in soap.client.props or sas.client.props
#
# Normally soap.client.props and sas.client.props are in the
# <WebSphere Profile Home>/properties
# If -V SERVER(index)_DC_AS_L_CONNTYPE="SOAP" then the soap.client.props will be used.
# If -V SERVER(index)_DC_AS_L_CONNTYPE="RMI" then the sas.client.props will be used.
#
# The "SERVER(index)" indicates the sequence number of server name that specified in APP_SERVER_NAMES
# Please reference the explanation of "SERVER(index)_DC_AS_L_HOSTNAME"
#
# Legal values are:
#
# true - Indicates to use the username and password stored in soap.client.props or sas.client.props,
#       and values of -V SERVER(index)_DC_AS_L_USERNAME and -V SERVER(index)_DC_AS_L_PASSWD will be skipped.
#
# false - Indicates not to use the username and password stored in soap.client.props or sas.client.props,
#        and the values of -V SERVER(index)_DC_AS_L_USERNAME and -V SERVER(index)_DC_AS_L_PASSWD should be inputted.
#
-V SERVER(index)_DC_AS_L_USECLIENTPROP=<value>
#####
#
# WebSphere Application Server global security user name
# The "SERVER(index)" indicates the sequence number of server name that specified in APP_SERVER_NAMES
# Please reference the explanation of "SERVER(index)_DC_AS_L_HOSTNAME"
#
###-V SERVER(index)_DC_AS_L_USERNAME=<value>
#####
#
# WebSphere Application Server global security password
# The "SERVER(index)" indicates the sequence number of server name that specified in APP_SERVER_NAMES
# Please reference the explanation of "SERVER(index)_DC_AS_L_HOSTNAME"
#
###-V SERVER(index)_DC_AS_L_PASSWD=<value>
#####
#
# UnConfigure WebSphere Application Server's PMI
#
# if "APPLY_PMI_TO_ALLSERVERS=true"
#   "RESTORE_ORIGIN_PMI_SETTING" option should be used and this option is used for all
#   server instances
# else if "APPLY_PMI_TO_ALLSERVERS=false"
#   "RESTORE_ORIGIN_PMI_SETTING_LIST" option should be used
#   and the value in the list shows whether the corresponding
#   server in the APP_SERVER_NAMES list will restore the PMI
#   Setting before configuration or not.
#   Example:-V RESTORE_ORIGIN_PMI_SETTING_LIST="false,true"
# All of these settings restore PMI to Basic only and not to the level before Data Collector
# was configured.
#
-V APPLY_PMI_TO_ALLSERVERS=<value>
###-V RESTORE_ORIGIN_PMI_SETTING=<value>
###-V RESTORE_ORIGIN_PMI_SETTING_LIST=<value>

```

## Sample templates

This is an example of a completed itcam\_dc\_config.opt template:

```

##
# Configuration Parameters
##
-V DC_CCUC_CONFIG="true"
-V DC_CCUC_UNCONFIG="false"
-V DC_CCUC_MS_CONFIG="true"
-V DC_CCUC_MS_UNCONFIG="false"
-V DC_RECONFIG_ALLOW="true"
-V DC_CC_ITCAMFAS="true"

```

```

-V DC_CAS_WAS="true"
-V DC_CAS_PS="false"

-V APP_SERVER_NAMES="cells/ibm-bladevm4Node01Cell/nodes/ibm-bladevm4Node01/servers/server1"

-V WS_NODE_NAME="cells/ibm-bladevm4Node01Cell/nodes/ibm-bladevm4Node01"
-V DC_WD_PROFILEHOME="C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01"
-V DC_WD_PROFILENAME="AppSrv01"
-V DC_WD_WASBASEDIR="C:\Program Files\IBM\WebSphere\AppServer"
-V DC_WD_WASVER="80"
-V DC_ASL_HOSTNAME="ibm-bladevm4.usca.ibm.com"
-V DC_ASL_CONNTYPE="SOAP"
-V DC_ASL_PORT="8880"
-V DC_ASL_USECLIENTPROP="false"
-V DC_ASL_USERNAME="wasadmin"
-V DC_ASL_PASSWD="69-72-55-224-239-39-228-91-99-115-214-52-131-232-215-168"

-V APPLY_PMI_TO_ALLSERVERS="true"
-V ITCAM_DC_ENABLED="true"
-V DC_BACKUP_WAS="false"
##
# DC - MS Communication Parameters
##
-V DC_OFFLINE_ALLOW="false"
-V DC_MS_KS_SERVERNAME="ibm-bladevm8.usca.ibm.com"
-V DC_MS_KS_CODEBASEPORT="9122"
-V DC_MS_KS_RFSPOrt="9120"
-V DC_MS_AMHOME="/opt/IBM/itcam/WebSphere/MS"
##
# DC Host Parameters
##
-V AM_SOCKET_BINDIP="9.52.131.223"
-V FIREWALL_ENABLED="false"
##
# TTAPl Parameters
##
-V DC_TTAPl_ENABLED="false"
##
# GC Parameters
##
-V REDIRECT_GC_LOG="false"

```

This is an example of a completed itcam\_dc\_msconfig.opt template:

```

##
# Configuration Parameters
##
-V DC_CCUC_CONFIG="false"
-V DC_CCUC_UNCONFIG="false"
-V DC_CCUC_MS_CONFIG="true"
-V DC_CCUC_MS_UNCONFIG="false"
-V DC_RECONFIG_ALLOW="true"
-V DC_CC_ITCAMFWAS="true"
-V DC_CAS_WAS="true"
-V DC_CAS_PS="false"

-V APP_SERVER_NAMES="cells/ibm-bladevm4Node01Cell/nodes/ibm-bladevm4Node01/servers/server1"

-V WS_NODE_NAME="cells/ibm-bladevm4Node01Cell/nodes/ibm-bladevm4Node01"
-V DC_ASL_HOSTNAME="ibm-bladevm4.usca.ibm.com"
-V DC_ASL_CONNTYPE="SOAP"
-V DC_ASL_PORT="8880"
-V DC_ASL_USECLIENTPROP="false"
-V DC_ASL_USERNAME="wasadmin"
-V DC_ASL_PASSWD="69-72-55-224-239-39-228-91-99-115-214-52-131-232-215-168"

-V APPLY_PMI_TO_ALLSERVERS="true"
-V ITCAM_DC_ENABLED="true"
-V DC_BACKUP_WAS="false"
##
# DC - MS Communication Parameters
##
-V DC_OFFLINE_ALLOW="false"
-V DC_MS_KS_SERVERNAME="ibm-bladevm8.usca.ibm.com"
-V DC_MS_KS_CODEBASEPORT="9122"
-V DC_MS_KS_RFSPOrt="9120"
-V DC_MS_AMHOME="/opt/IBM/itcam/WebSphere/MS"
##
# DC Host Parameters

```



```

##
-V AM_SOCKET_BINDIP="9.52.131.223"
-V FIREWALL_ENABLED="false"
##
# TTAPl Parameters
##
-V DC_TTAPl_ENABLED="false"
##
# GC Parameters
##
-V REDIRECT_GC_LOG="false"

```

This is an example of a completed `itcam_dc_msunconfig.opt` template:

```

##
# Configuration Parameters
##
-V DC_CCUC_CONFIG="false"
-V DC_CCUC_UNCONFIG="false"
-V DC_CCUC_MS_CONFIG="false"
-V DC_CCUC_MS_UNCONFIG="true"
-V DC_RECONFIG_ALLOW="true"
-V DC_CC_ITCAMFWAS="true"
-V DC_CAS_WAS="true"
-V DC_CAS_PS="false"

-V APP_SERVER_NAMES="cells/ibm-bladevm4Node01Cell/nodes/ibm-bladevm4Node01/servers/server1"

-V SERVER1_DC_ASL_HOSTNAME="ibm-bladevm4.usca.ibm.com"
-V SERVER1_DC_ASL_CONNTYPE="SOAP"
-V SERVER1_DC_ASL_PORT="8880"
-V SERVER1_DC_ASL_USECLIENTPROP="false"
-V SERVER1_DC_ASL_USERNAME="wasadmin"
-V SERVER1_DC_ASL_PASSWD="69-72-55-224-239-39-228-91-99-115-214-52-131-232-215-168"

-V DC_BACKUP_WAS="false"

```

This is an example of a completed `itcam_dc_unconfig.opt` template:

```

##
# Configuration Parameters
##
-V DC_CCUC_CONFIG="false"
-V DC_CCUC_UNCONFIG="true"
-V DC_CCUC_MS_CONFIG="false"
-V DC_CCUC_MS_UNCONFIG="false"
-V DC_RECONFIG_ALLOW="true"
-V DC_CC_ITCAMFWAS="true"
-V DC_CAS_WAS="true"
-V DC_CAS_PS="false"

-V APP_SERVER_NAMES="cells/ibm-bladevm4Node01Cell/nodes/ibm-bladevm4Node01/servers/server1"

-V SERVER1_DC_ASL_HOSTNAME="ibm-bladevm4.usca.ibm.com"
-V SERVER1_DC_ASL_CONNTYPE="SOAP"
-V SERVER1_DC_ASL_PORT="8880"
-V SERVER1_DC_ASL_USECLIENTPROP="false"
-V SERVER1_DC_ASL_USERNAME="wasadmin"
-V SERVER1_DC_ASL_PASSWD="69-72-55-224-239-39-228-91-99-115-214-52-131-232-215-168"

-V APPLY_PMI_TO_ALLSERVERS="true"
-V RESTORE_ORIGIN_PMI_SETTING="true"
-V DC_BACKUP_WAS="false"

```

This is an example of a completed `itcam_dc_unconfig_variation.opt` template:

```

##
# Configuration Parameters
##

```

```

-V DC_CCUC_CONFIG="false"
-V DC_CCUC_UNCONFIG="true"
-V DC_CCUC_MS_CONFIG="false"
-V DC_CCUC_MS_UNCONFIG="false"
-V DC_RECONFIG_ALLOW="true"
-V DC_CC_ITCAMFAS="true"
-V DC_CAS_WAS="true"
-V DC_CAS_PS="false"

-V APP_SERVER_NAMES="cells/ibm-bladevm4Node01Cell/nodes/ibm-bladevm4Node01/servers/server1
, cells/ibm-bladevm4Node02Cell/nodes/ibm-bladevm4Node02/servers/server1"

-V SERVER1_DC_ASL_HOSTNAME="ibm-bladevm4.usca.ibm.com"
-V SERVER1_DC_ASL_CONNTYPE="SOAP"
-V SERVER1_DC_ASL_PORT="8880"
-V SERVER1_DC_ASL_USECLIENTPROP="false"
-V SERVER1_DC_ASL_USERNAME="wasadmin"
-V SERVER1_DC_ASL_PASSWD="69-72-55-224-239-39-228-91-99-115-214-52-131-232-215-168"

-V SERVER2_DC_ASL_HOSTNAME="ibm-bladevm4.usca.ibm.com"
-V SERVER2_DC_ASL_CONNTYPE="SOAP"
-V SERVER2_DC_ASL_PORT="8881"
-V SERVER2_DC_ASL_USECLIENTPROP="false"
-V SERVER2_DC_ASL_USERNAME="wasadmin"
-V SERVER2_DC_ASL_PASSWD="69-72-55-224-239-39-228-91-99-115-214-52-131-232-215-168"

-V APPLY_PMI_TO_ALLSERVERS="false"
-V RESTORE_ORIGIN_PMI_SETTING_LIST="true,true"
-V DC_BACKUP_WAS="false"

```

---

## Advanced unconfiguration Response File Template for Windows, UNIX, and Linux

The advanced unconfiguration response file template is available here: *WebSphere\_HOME/AppServer/itcam/DC/config\_dc/responsefile\_templates/MSDC\_Unconfig\_Template.opt*. Use this template when you have already unconfigured an application server instance for data collection and want to unconfigure advanced options. Use this template to unconfigure communication with ITCAM for Application Diagnostics Managing Server and ITCAM for Transactions.

```

#####
#
# ITCAM for WebSphere Application Server Configuration Template
# This file may be automatically generated by using ITCAM for WebSphere Application
# Server Data Collector Configuration Tool. In that case, all the parameters will be
# automatically pre-populated and one need not go through this template document.
#
# This file can be used to create an options file (i.e., response file) for the
# wizard "config_dc". Options files are used with "-options" on the command line to
# modify wizard settings. See Point 4 below for details.
#
# This file can be used to unconfigure the Managing Server connection for an
# already configured Data Collector.
#
# To use this template, follow these steps:
#
# 1. All the mandatory parameters are uncommented. Parameters that have fixed
# value for this scenario are already set. Parameters whose value will depend
# on the installation are marked as <value>. They need to be substituted by reading
# descriptions provided here. All optional parameters are marked by
# by leading '###' characters. If they need to be used, the leading '###' characters
# are to be removed and the <values> be set.
#
# 2. Specify a value for a setting by replacing the characters '<value>'.
# Read each setting's documentation for information on how to specify its
# value.
#
# Notice: a null value is not acceptable, such as -V KEY=""
#
# 3. Save the changes to the file.
#

```

```

# 4. To use the options file with the wizard, specify -options "<file-name>"
# as a command line argument to the wizard, where <file-name> is the name
# of this options file.
# Windows: config_DC.bat -silent -options "filename"
# Unix:./config_DC.sh -silent -options "filename"
#
#####
#####
#
# Config Data Collector to WebSphere
#
# The option that the Data Collector will be configured or Un-configured.Stored as a
# Variable and must be set with -V.
#
# Legal values are: True or False
#
# DC_CCUC_CONFIG: Indicates that the WebSphere will be configured
# if set to true and ignored if set to false..
#
# DC_CCUC_UNCONFIG: Indicates that the WebSphere will be unconfigured
# if set to true and ignored if set to false..
#
# Typical values during Configuration are set below.
#
-V DC_CCUC_CONFIG="false"
-V DC_CCUC_UNCONFIG="false"

#####
#
# Config Data Collector to Managing Server
#
# The option that the Data Collector will be configured or Un-configured.Stored as a
# Variable and must be set with -V.
#
# Legal values are: True or False
#
# DC_CCUC_MS_CONFIG: Indicates that the Managing Server connection will
# be configured if set to true and ignored if set to false..
#
# DC_CCUC_MS_UNCONFIG: Indicates that the Managing Server connection will
# be unconfigured if set to true and ignored if set to false..
#
# Typical values during Configuration are set below.
#
-V DC_CCUC_MS_CONFIG="false"
-V DC_CCUC_MS_UNCONFIG="true"

#####
#
# Some Internal flag settings
#
# Keep set to true
# DC_CC_ITCAMFWAS="true"
# Set to true for WebSphere Base and WebSphere ND installs.
# DC_CAS_WAS="true"
# Set to true for WebSphere BPM installs and false otherwise. BPM is not supported
# in this release, so this should be set to "false"
# DC_CAS_PS="false"

-V DC_CC_ITCAMFWAS="true"
-V DC_CAS_WAS="true"
-V DC_CAS_PS="false"

#####
#
# Configure WebSphere Application Server's server full name
#
# For example,
# -V APP_SERVER_NAMES="cells/emilyNode06Cell/nodes/emilyNode06/servers/server1"
#
-V APP_SERVER_NAMES=<value>

#####
#
# Data Collector host name
#
# Type a host name that the Domain Name System service can resolve before
# you proceed. You must provide the fully qualified host name or the IP address
# of the host.
#
# The "SERVER(index)" indicates the sequence number of server names that specified in APP_SERVER_NAMES
#
# For example if:
# -V APP_SERVER_NAMES="cells/emilyNode06Cell/nodes/emilyNode06/servers/server1, cells/emilyNode06Cell/nodes/emilyNode06/servers/server2"
# -V SERVER1_DC_AS_HOSTNAME=dc1.cn.ibm.com (this hostname is for "cells/emilyNode06Cell/nodes/emilyNode06/servers/server1")
# -V SERVER2_DC_AS_HOSTNAME=dc1.cn.ibm.com (this hostname is for "cells/emilyNode06Cell/nodes/emilyNode06/servers/server2")
#
#
-V SERVER(index)_DC_AS_HOSTNAME=<value>

```

```

#####
#
# Configure WebSphere Application Server's Connector type SOAP or RMI
# If this value not input, DC Configurator will use SOAP by Default
#
# The "SERVER(index)" indicates the sequence number of server name that specified in APP_SERVER_NAMES
# Please reference the explanation of "SERVER(index)_DC_AS_HOSTNAME"
#
# For example, -V SERVER1_DC_AS_CONNTYPE="SOAP" or -V SERVER2_DC_AS_CONNTYPE="RMI"
#
#
-V SERVER(index)_DC_AS_CONNTYPE=<value>

#####
#
# WebSphere Application Server's SOAP/RMI port
# If -V SERVER(index)_DC_AS_CONNTYPE="SOAP" then this value should be the SOAP port number of WebSphere Application Server.
# If -V SERVER(index)_DC_AS_CONNTYPE="RMI" then this value should be the RMI port number of WebSphere Application Server.
#
# The "SERVER(index)" indicates the sequence number of server name that specified in APP_SERVER_NAMES
# Please reference the explanation of "SERVER(index)_DC_AS_HOSTNAME"
#
# For example, -V SERVER1_DC_AS_PORT="8880", -V SERVER2_DC_AS_PORT="2809"
#
#
-V SERVER(index)_DC_AS_PORT=<value>

#####
#
# Use the username and password stored in soap.client.props or sas.client.props
#
# Normally soap.client.props and sas.client.props are in the
# <WebSphere Profile Home>/properties
# If -V SERVER(index)_DC_AS_CONNTYPE="SOAP" then the soap.client.props will be used.
# If -V SERVER(index)_DC_AS_CONNTYPE="RMI" then the sas.client.props will be used.
#
# The "SERVER(index)" indicates the sequence number of server name that specified in APP_SERVER_NAMES
# Please reference the explanation of "SERVER(index)_DC_AS_HOSTNAME"
#
# Legal values are:
#
# true - Indicates to use the username and password stored in soap.client.props or sas.client.props,
# and values of -V SERVER(index)_DC_AS_USERNAME and -V SERVER(index)_DC_AS_PASSWD will be skipped.
#
# false - Indicates not to use the username and password stored in soap.client.props or sas.client.props,
# and the values of -V SERVER(index)_DC_AS_USERNAME and -V SERVER(index)_DC_AS_PASSWD should be inputed.
#
-V SERVER(index)_DC_AS_USECLIENTPROP=<value>

#####
#
# WebSphere Application Server global security user name
# The "SERVER(index)" indicates the sequence number of server name that specified in APP_SERVER_NAMES
# Please reference the explanation of "SERVER(index)_DC_AS_HOSTNAME"
#
###-V SERVER(index)_DC_AS_USERNAME=<value>

#####
#
# WebSphere Application Server global security password
# The "SERVER(index)" indicates the sequence number of server name that specified in APP_SERVER_NAMES
# Please reference the explanation of "SERVER(index)_DC_AS_HOSTNAME"
#
###-V SERVER(index)_DC_AS_PASSWD=<value>

```

---

## Configuration Response File Template for IBM i

```

# This is a sample silent configuration response file to configure
# Data Collector instances.

# Syntax rules:
# - Comment lines begin with "#"
# - Blank lines are ignored
# - Parameter lines are PARAMETER=value (do not put space before the PARAMETER)
# - Some parameters are commented out. Uncomment these if you need to activate
# them

##### Section CONFIGURATION_TYPE #####
# Choose the type of configuration that will be performed.
# Valid values are: configure, reconfigure, upgrade, unconfigure, none
# Note: If you choose none, only the files will be installed,
# configuration will not be applied.
# Note: Select configure if you want to apply configuration, none otherwise.
CONFIGURE_TYPE=configure

```

```

##### Section Managing Server #####
# Would you like to configure the Data Collector to communicate with the Managing Server?
# This parameter is not required (default is false).
# Valid values are: true, false
# True: Collect Managing Server related information to configure
# the Data Collector to communicate with the Managing Server.
# False: Do not configure the Data Collector to communicate with the Managing Server.
# The Data Collector will only communicate with the Monitoring Agent.
# Note: If J2EEMS_SELECT=false, you do not need to provide the rest of the
# parameters in this section
# J2EEMS_SELECT=true

# Primary kernel host
# The complete server name or IP address of the machine where the primary kernel is installed.
# Use the fully qualified host name with the domain name or the complete IP Address.
# Do not specify localhost.
# Example: KERNEL_HOST01=dev-lnx-w22.usca.ibm.com
KERNEL_HOST01=

# Managing Server home directory
# The directory where the Managing Server is installed.
# If the Managing Server is on a Linux or UNIX system, the path needs to start with a forward slash (/)
# For example: If the Managing Server is installed on /opt/IBM/itcam/WebSphere/MS, specify /opt/IBM/itcam/WebSphere/MS
# For Windows, specify a valid full path, using short file and directory names and duplicating every backslash.
# For example: If the Managing Server is installed on C:\Program Files\IBM\itcam, specify C:\\Program Files\\IBM\\itcam
MS_AM_HOME=

# Primary kernel codebase port
# The port number of the Primary Kernel Codebase Server.
# Example: PORT_KERNEL_CODEBASE01=9122
PORT_KERNEL_CODEBASE01=9122

# Primary kernel RFS port
# The port number of the Primary Kernel RFS Server.
# Example: PORT_KERNEL_RFS01=9120
PORT_KERNEL_RFS01=9120

##### Section CONFIGURE_Application_Server #####
# Repeatable section
# All properties in this section have the following structure: <PROPERTY_NAME>.<was_alias>
# <was_alias> is the short name of the server. It is used in the parameters for this section.
# If only one server needs to be reconfigured, "<was_alias>" can be omitted
# If all servers have common parameters with the same value, for example WS_USER/WS_PASSWORD, they
# can be specified only once without "<was_alias>".
#
# WS_FULLNAME
#
# Key property: WebSphere Application Server full instance name
# (cells/CellName/nodes/NodeName/servers/ServerName)
# Input the full WebSphere Application Server instance name that you
# want to configure.
# Note: CellName, nodeName and ServerName are case-sensitive
# WS_FULLNAME.<was_alias>=cells/CellName/nodes/NodeName/servers/ServerName

# WS_TYPE
#
# WebSphere Server Type
# Valid values are: was
# Set was for WebSphere Application Server
# WS_TYPE.<was_alias>=<value>

# WS_HOME
#
# WebSphere home directory
# Example: For WebSphere 6.0: /QIBM/UserData/WebSphere/AppServer/V6/Base/profiles/<profile_Name>
# Example: For WebSphere 6.1 ND: /QIBM/UserData/WebSphere/AppServer/V61/ND/profiles/<profile_Name>
# Example: For WebSphere 7: /QIBM/UserData/WebSphere/AppServer/V7/Base/profiles/<profile_Name>
# WS_HOME.<was_alias>=/QIBM/UserData/WebSphere/AppServer/V61/ND/profiles/default

# WS_CONNECT_TYPE
#
# This parameter is NOT required (default is SOAP).
# Valid values are: SOAP, RMI
# WebSphere Administrative Server connection type
# Input the WebSphere administrative server connection type.
# WS_CONNECT_TYPE.<was_alias>=SOAP

# WS_HOST
#

```

```

# This parameter is NOT required (default is localhost).
# WebSphere administrative server host name
# Input the WebSphere administrative server host name or IP address.
# For a ND environment input the Deployment Manager host name,
# and for a stand-alone environment input the WebSphere application server host name.
# WS_HOST.<was_alias>=itcamfwsl.ibm.com

# WS_PORT
#
# WebSphere administrative server SOAP/RMI port number
# Input the WebSphere administrative server SOAP/RMI port number.
# Whether this is the SOAP or RMI port number depends on the value of the WS_CONNECT_TYPE parameter
# WS_PORT.<was_alias>=8880

# WS_USE_CLIENT_PROPS
#
# This parameter is NOT required. (default is false)
# Valid values are: true and false
# If the Global Security of WebSphere Application Server is enabled and this parameter is True,
# the user name and password stored in the soap.client.props or sas.client.props WebSphere files will be
# used for communication with WebSphere Administrative Server
# WS_USE_CLIENT_PROPS.<was_alias>=false

# WS_USER
#
# This parameter is NOT required if WebSphere Application Server Global Security is not enabled or
# WS_USE_CLIENT_PROPS=true
# This parameter is required if WebSphere Application Server Global Security is enabled and WS_USE_CLIENT_PROPS=false
# Server Connection User Name
# Input the WebSphere administrative user name.
# WS_USER.<was_alias>=wasuser

# WS_PASSWORD
#
# This parameter is NOT required if WebSphere Application Server Global Security is not enabled or
# WS_USE_CLIENT_PROPS=true
# This parameter is required if WebSphere Application Server Global Security is enabled and WS_USE_CLIENT_PROPS=false
# Server Connection User Password
# Input the WebSphere administrative user password.
# WS_PASSWORD.<was_alias>=wasuserpassword

# FIREWALL_ENABLE
#
# Indicates whether the Data Collector machine is behind a firewall.
# FIREWALL_ENABLE.<was_alias>=false

# PROBE_RMI_PORT
#
# Indicates the ports on the Data Collector machine that will be used for RMI.
# Make sure these ports are not blocked by the firewall for the Data Collector host.
# Specify a value or range of values between 8200 and 8299.
# Example: PROBE_RMI_PORT=8201
#
# PROBE_RMI_PORT.<was_alias>=8200-8299

# PROBE_CONTROLLER_RMI_PORT
#
# Indicates the ports on the Data Collector machine that will be used for RMI.
# Make sure these ports are not blocked by the firewall for the Data Collector host.
# Specify a value or range of values between 8300 and 8399.
# Example: PROBE_CONTROLLER_RMI_PORT=8301
#
# PROBE_CONTROLLER_RMI_PORT.<was_alias>=8300-8399

##### End of CONFIGURE_Application_Server Section #####

# AM_SOCKET_BINDIP
#
# Properties for Multiple NIC, Virtual IP, DHCP, NAT
#
# Indicates the IP address or fully qualified host name (with domain name) that will be used by the Data Collector
# to communicate with the Managing Server. If there is more than one NIC or multiple IP addresses
# configured on the Data Collector machine, choose one of them.
#

```

```
# Example: AM_SOCKET_BINDIP=9.181.93.75
# Example: AM_SOCKET_BINDIP=dc.cn.ibm.com
```

```
AM_SOCKET_BINDIP=
```

---

## Reconfiguration Response File Template for IBM i

```
# This is a sample silent configuration response file to reconfigure DC instances.

# Syntax rules:
# - Comment lines begin with "#"
# - Blank lines are ignored
# - Parameter lines are PARAMETER=value (do not put a space before the PARAMETER)
# - Some parameters are commented out. Uncomment these if you need to activate them.

##### Section CONFIGURATION_TYPE #####
# This is the configuration type. In this options file, the value is reconfigure, you cannot change it.
CONFIGURE_TYPE=reconfigure

##### Section Managing Server #####

# Would you like configure the Data Collector to communicate with the Managing Server?
# This parameter is not required (default is false).
# Valid values are: true, false.
# True: Collect Managing Server related information to configure the Data Collector to communicate with the Managing Server.
# False: Do not configure the Data Collector to communicate with the Managing Server.
# The Data Collector will only communicate with the Monitoring Agent.
# If J2EEMS_SELECT=false, you do not need to provide the rest of the parameters in this section.
# J2EEMS_SELECT=true

# Primary kernel host
# The complete server name or IP address of the machine where the primary kernel is installed.
# Use the fully qualified host name with the domain name or the complete IP Address.
# Do not specify localhost.
# Example: KERNEL_HOST01=dev-1nx-w22.usca.ibm.com
KERNEL_HOST01=

# Managing Server home directory
# The directory where the Managing Server is installed.
# If the Managing Server is on a Linux or UNIX system, the path needs to start with a forward slash (/)
# For example: If the Managing Server is installed on /opt/IBM/itcam/WebSphere/MS, specify /opt/IBM/itcam/WebSphere/MS
# For Windows, specify a valid full path, using short file and directory names and duplicating every backslash.
# For example: If the Managing Server is installed on C:\Program Files\IBM\itcam, specify C:\\Progra~1\\IBM\\itcam
MS_AM_HOME=

# Primary kernel codebase port
# The port number of the Primary Kernel Codebase Server.
# Example: PORT_KERNEL_CODEBASE01=9122
PORT_KERNEL_CODEBASE01=9122

# Primary kernel RFS port
# The port number of the Primary Kernel RFS Server.
# Example: PORT_KERNEL_RFS01=9120
PORT_KERNEL_RFS01=9120

##### Section RECONFIGURE_Application_Server #####
# Repeatable section
# All properties in this section have the following structure: <PROPERTY_NAME>.<was_alias>
# <was_alias> is the short name of the server. It is used in the parameters for this section.
# If only one server needs to be reconfigured, "<was_alias>" can be omitted
# If all servers have common parameters with the same value, for example WS_USER/WS_PASSWORD, they
# can be specified only once without "<was_alias>".

# JVM_TYPE
# This parameter is NOT required. (By default, the Configuration Tool determines WebSphere JVM type automatically).
# WebSphere Application Server JVM type.
# Input the type of JVM used for the WebSphere Application Server.
# Valid values are: classic, std32, std64.
# JVM_TYPE.<was_alias>=classic

# WS_FULLNAME
# Key property: WebSphere Application Server full instance name (cells/CellName/nodes/NodeName/servers/ServerName)
# Input the full WebSphere Application Server instance name that you want to reconfigure.
# Note: CellName, NodeName, and ServerName are case-sensitive
# WS_FULLNAME.<was_alias>=cells/CellName/nodes/NodeName/servers/ServerName

# WS_CONNECT_TYPE
# This parameter is NOT required (default is SOAP).
# Valid values are: SOAP, RMI, NONE
# WebSphere Administrative Server Connection Type (if there is no change since initial configuration you can omit this parameter)
# Use NONE if you need to reconfigure a stand alone (not ND) application server instance which is currently not running
# Input the WebSphere administrative server connection type.
# WS_CONNECT_TYPE.<was_alias>=SOAP

# WS_HOST
# This parameter is NOT required (default is localhost).
# WebSphere administrative server host name.
# Input the WebSphere Administrative Server host name or IP address (if there is no change since configuration you can omit this parameter).
```



```

# For a ND environment input the Deployment Manager host name, and for a stand-alone environment input the
# WebSphere application server host name.
# WS_HOST.<was_alias>=itcamfwas1.ibm.com

# WS_PORT
# This parameter is NOT required.
# WebSphere Administrative Server SOAP/RMI port number.
# Input the WebSphere Administrative Server SOAP/RMI port number (if there is no change since configuration you can omit this parameter).
# Whether this is the SOAP or RMI port number depends on the value of the WS_CONNECT_TYPE parameter
# WS_PORT.<was_alias>=8880

# WS_USE_CLIENT_PROPS
# This parameter is NOT required (default is false).
# Valid values are: true and false
# If the Global Security of WebSphere Application Server is enabled and this parameter is True,
# the user name and password stored in the soap.client.props or sas.client.props
WebSphere files will be used for communication with WebSphere Administrative Server
# WS_USE_CLIENT_PROPS.<was_alias>=false

# WS_USER
# This parameter is NOT required if WebSphere Application Server Global Security is not enabled or WS_USE_CLIENT_PROPS=true
# This parameter is required if WebSphere Application Server Global Security is enabled and WS_USE_CLIENT_PROPS=false
# Server Connection User Name
# Input the WebSphere administrative user name.
# WS_USER.<was_alias>=wasuser

# WS_PASSWORD
# This parameter is NOT required if WebSphere Application Server Global Security is not enabled or WS_USE_CLIENT_PROPS=true
# This parameter is required if WebSphere Application Server Global Security is enabled and WS_USE_CLIENT_PROPS=false
# Server Connection User Password
# Input the WebSphere administrative user password.
# WS_PASSWORD.<was_alias>=wasuserpassword

# FIREWALL_ENABLE
# Indicates whether the Data Collector machine is behind a firewall.
FIREWALL_ENABLE.<was_alias>=false

# PROBE_RMI_PORT
# Indicates the ports on the Data Collector machine that will be used for RMI.
# Make sure these ports are not blocked by the firewall for the Data Collector host.
# Specify a value or range of values between 8200 and 8299.
# Example: PROBE_RMI_PORT=8201
# PROBE_RMI_PORT.<was_alias>=8200-8299

# PROBE_CONTROLLER_RMI_PORT
# Indicates the ports on the Data Collector machine that will be used for RMI.
# Make sure these ports are not blocked by the firewall for the Data Collector host.
# Specify a value or range of values between 8300 and 8399.
# Example: PROBE_CONTROLLER_RMI_PORT=8301
# PROBE_CONTROLLER_RMI_PORT.<was_alias>=8300-8399

##### End of RECONFIGURE_Application_Server Section #####

# AM_SOCKET_BINDIP
#
# Properties for Multiple NIC, Virtual IP, DHCP, NAT
#
# Indicates the IP address or fully qualified host name (with domain name) that will be used by the Data Collector
# to communicate with the Managing Server. If there is more than one NIC or multiple IP addresses
# configured on the Data Collector host, choose one of them.
# Example: AM_SOCKET_BINDIP=9.181.93.75
# Example: AM_SOCKET_BINDIP=dc.company.com

AM_SOCKET_BINDIP=

```

---

## Unconfiguration Response File Template for IBM i

```

# This is a sample silent configuration response file to unconfigure DC instances.

# Syntax rules:
# - Comment lines begin with "#"
# - Blank lines are ignored
# - Parameter lines are PARAMETER=value (do not put space before the PARAMETER)
# - Some parameters are commented out. Uncomment these if you need to activate them.

##### Section CONFIGURATION_TYPE #####
# This is the configuration type. In this options file, the value is unconfigure, you cannot change it.
CONFIGURE_TYPE=unconfigure

##### Section UNCONFIGURE_Application_Server #####
# Repeatable section
# All properties in this section have the name structure: <PROPERTY_NAME>.<was_alias>
# <was_alias> is the short name of the server. It is used in the parameters below
# If only one server needs to be unconfigured, "<was_alias>" can be omitted
#
# If all of servers have common parameters with same value, for example WS_USER/WS_PASSWORD, they

```

```

# can be specified only once without "<was_alias>".
#
# WS_FULLNAME
# Key property: WebSphere Application Server full instance name (cells/CellName/nodes/NodeName/servers/ServerName)
# Input the WebSphere Application Server full instance name that you want to unconfigure.
# Note: CellName, nodeName, and ServerName are case-sensitive
# WS_FULLNAME.<was_alias>=cells/CellName/nodes/NodeName/servers/ServerName

# WS_CONNECT_TYPE
#
# This parameter is NOT required (default is SOAP).
# Valid values are: SOAP, RMI
# WebSphere administrative server connection type (if there is no change since configuration you can omit this parameter)
# Input the WebSphere administrative server connection type.
# WS_CONNECT_TYPE.<was_alias>=SOAP

# WS_HOST
#
# This parameter is NOT required (default is localhost).
# WebSphere administrative server host name
# Input the WebSphere administrative server host name or IP address (if there is no change since configuration you can omit this parameter).
# For a ND environment, input the Deployment Manager host name
# For a stand alone environment, input the WebSphere application server host name
# WS_HOST.<was_alias>=itcamfwsl.ibm.com

# WS_PORT
#
# This parameter is NOT required.
# WebSphere administrative server SOAP/RMI port number
# Input the WebSphere administrative server SOAP/RMI port number (if there is no change since configuration you can omit this parameter).
# Whether this is the SOAP or RMI port number depends on the value of the WS_CONNECT_TYPE parameter
# WS_PORT.<was_alias>=8880

# WS_USE_CLIENT_PROPS
#
# This parameter is NOT required (default is false).
# Valid values are: true and false
# If the Global Security of WebSphere Application Server is enabled and this parameter is True,
# the user name and password stored in the soap.client.props or sas.client.props WebSphere files
# will be used for communication with WebSphere Administrative Server
# WS_USE_CLIENT_PROPS.<was_alias>=false

# WS_USER
#
# This parameter is NOT required if WebSphere Application Server Global Security is not enabled or WS_USE_CLIENT_PROPS=true
# This parameter is required if WebSphere Application Server Global Security is enabled and WS_USE_CLIENT_PROPS=false
# Server Connection User Name
# Input the WebSphere administrative user name.
# WS_USER.<was_alias>=wasuser

# WS_PASSWORD
#
# This parameter is NOT required if WebSphere Application Server Global Security is not enabled or WS_USE_CLIENT_PROPS=true
# This parameter is required if WebSphere Application Server Global Security is enabled and WS_USE_CLIENT_PROPS=false
# Server Connection User Password
# Input the WebSphere administrative user password.
# WS_PASSWORD.<was_alias>=wasuserpassword

##### End of UNCONFIGURE_Application_Server Section #####

```



---

## Appendix D. What to do if ITCAM for WebSphere Application Server configuration fails

You know the IBM Tivoli Composite Application Manager for WebSphere Application Server (ITCAM for WebSphere Application Server) configuration has failed if any of the following situations has occurred:

- After the configuration, the application server fails to restart.
- During a GUI configuration, the summary window for the Configuration Tool indicates the configuration has failed.
- During a silent configuration, the command-prompt indicates a message that the configuration has failed.
- After the configuration, there are messages in the Tivoli common log file that indicate configuration has failed.

If ITCAM for WebSphere Application Server configuration has failed, you can do the following to try to complete the configuration successfully:

1. Restore the application server configuration that you had before attempting the failed configuration. See “Restoring the application server configuration after a failed ITCAM for WebSphere Application Server configuration.”
2. Run the GUI or silent configuration again.

---

### Restoring the application server configuration after a failed ITCAM for WebSphere Application Server configuration

#### About this task

These instructions apply only to the **Windows**, **UNIX**, and **Linux** platforms.

If the application server fails to start, you can use the `restoreConfig` command to restore the application server configuration. Complete one of the following procedures:

#### Procedure

- In a non-Network Deployment environment:
  1. Locate the backup configuration file that was created in the `DC_home/config_dc/backup` directory.
  2. Stop all instances of application servers.
  3. Run the `restoreConfig` command from the following directory: `Appserver_home/profiles/profile_name/bin`. The syntax is as follows:

Table 39. Syntax of `restoreConfig` command, non-ND environment

Operating system	Syntax	Example
Windows	<code>restoreConfig.bat DC_home/config_dc/backup/backup_file</code>	<code>restoreConfig.bat "C:\Program Files\IBM\itcam\WebSphere\DC\config_dc\backup\WebSphereConfig_2008-04-22.zip"</code>
UNIX or Linux	<code>./restoreConfig.sh DC_home/config_dc/backup/backup_file</code>	<code>./restoreConfig.sh /opt/IBM/itcam/WebSphere/DC/config_dc/backup/WebSphereConfig_2008-04-22.zip</code>

4. Restart the instance of application server that is being monitored by the Data Collector.
- In a Network Deployment environment:
    1. Locate the backup configuration file that was created in the `DC_home/config_dc/backup` directory.
    2. Stop all instances of application servers.
    3. Run the `restoreConfig` command from the following directory: `Appserver_home/profiles/profile_name/bin`. The syntax is as follows:

Table 40. Syntax of `restoreConfig` command, Network Deployment environment

Operating system	Syntax	Example
Windows	<code>restoreConfig.bat DC_home/config_dc/backup/backup_file -location temp_directory</code>	<code>restoreConfig.bat "C:\Program Files\IBM\itcam\WebSphere\DC\config_dc\backup\WebSphereConfig_2008-04-22.zip" -location /tmp/restore</code>
UNIX or Linux	<code>./restoreConfig.sh DC_home/config_dc/backup/backup_file -location temp_directory</code>	<code>./restoreConfig.sh /opt/IBM/itcam/WebSphere/DC/config_dc/backup/WebSphereConfig_2008-04-22.zip -location /tmp/restore</code>

Running the `restoreConfig` command restores the original application server configuration to the temporary directory.

4. Copy the `server.xml`, `variables.xml`, and `pmi-config.xml` files from under the temporary directory (`temp_dir/restored_configuration_home/cells/cell_name/nodes/node_name/servers/server_name`) to the following directory: Deployment Manager's `Appserver_home/profiles/profile_name/config/cells/cell_name/nodes/node_name/servers/server_name`. For example:  
`/opt/IBM/WebSphere/AppServer/profiles/default/config/cells/tivCell01/nodes/tivNode01/servers/server1`

Here is an example of the path for the three files that you are copying from under the temporary directory:

`tmp/restore/cells/Ce1101/nodes/Node01/servers/server1`

5. Complete a node sync from the Deployment Manager administrative console for the node.
6. In the Deployment Manager administrative console, save changes to the master configuration.
7. Restart the application server that is being monitored by ITCAM for WebSphere Application Server.

---

## Appendix E. Setting up security

Setting up optional security for IBM Tivoli Composite Application Manager for WebSphere Application Server (ITCAM for WebSphere Application Server) is described in this appendix.

---

### Setting up the user ID and password for ITCAM for WebSphere Application Server on z/OS with global security enabled

#### About this task

Installing, configuring, and running ITCAM for WebSphere Application Server on z/OS with Global Security turned on might require additional steps, depending on your security configuration.

If WebSphere Global Security has been turned on, perform the following steps before running the `setupdc.sh` script:

#### Procedure

1. Make sure the user ID you use to log on to UNIX System Services (z/OS UNIX System Services) and to run the `setupdc.sh` script has read and write access to the IBM WebSphere Application Server configuration files. This user ID must also have permission to run the WebSphere Scripting Client script (`wsadmin.sh`).
2. Make sure the user ID you use to run `setupdc.sh` is a member of the same UNIX group as the servant user ID. Since this user ID creates the ITCAM for WebSphere Application Server runtime directories for the server, the servant user ID must also have read and write access to these directories.
3. Make sure the user ID you use to run `setupdc.sh` fulfills the requirements for Secure Sockets Layer (SSL) security.

#### Background information:

When Global Security is enabled, SSL security is always used by the administrative subsystem to secure administrative commands, the IBM WebSphere Application Server administrative console, and communications between IBM WebSphere Application Server processes (which includes the `wsadmin.sh` scripting facility). SSL support always provides a mechanism by which the server proves its identity.

In addition, SSL support on IBM WebSphere Application Server for z/OS allows the following ways for a client to prove its identity:

- Basic authentication (also known as SSL Type 1 authentication), in which a client proves its identity to the server by passing a user identity and password known by the target server
- Client certificate support, in which both the server and client supply digital certificates to prove their identities to each other

For the client to authenticate the server, the server (actually, the controller user ID) must possess a signed certificate created by a certificate authority. The server passes the signed certificate to prove its identity to the client. The client must possess the CA certificate from the same certificate authority that issued the server certificate. The IBM WebSphere Application Server customization dialogs generate jobs that, among other things, define the user IDs for the various IBM WebSphere Application Server regions (Deployment Manager,

Node Agent, Server Controller, and Servant tasks). These jobs also specify user IDs that can be used to log on to the IBM WebSphere Application Server administrative console. The RACF customization jobs create key rings for each of these user IDs and connect certificates to them. You can use one of these user IDs to perform the ITCAM for WebSphere Application Server setup if it also has the necessary permissions to access the IBM WebSphere Application Server configuration root files mentioned in step 1 on page 173.

If you do not already have a user ID with the necessary permissions and certificates for SSL security, you can define one. Complete the following procedure:

a. Find the following information:

- 1) The user ID and group of the IBM WebSphere Application Server servant started task.
- 2) The name of the CA certificate that was used to sign the controller user ID server certificate. (If configuring a server in a Network Deployment, find the name of the CA certificate that was used to sign the Deployment Manager server certificate).

If you do not know the group ID of the servant ID, issue the TSO RACF command LISTUSER (LU) for servant task owner. For example:

```
LU WSSR1
```

```
USER=ASCR1  NAME=WAS APPSVR CR          OWNER=IBMUSER  CREATED=05.043
DEFAULT-GROUP=WSCFG1  PASSDATE=N/A      PASS-INTERVAL=N/A
ATTRIBUTES=PROTECTED
REVOKE DATE=NONE  RESUME DATE=NONE
```

This shows that the group default group name for the ID is WSCFG1.

b. Define a user ID you use exclusively for running the ITCAM for WebSphere Application Server setup configuration using the TSO RACF command ADDUSER (AU). For example:

```
AU ITCAMWS NAME('ITCAM for WAS USER') PASSWORD(password) -
    OWNER(IBMUSER) DFLTGRP(WSCFG1) UACC(READ) -
    TSO(ACCTNUM(ACCT#) PROC(GENERAL) -
    SIZE(200000) MAXSIZE(200000)) -
    OMVS(HOME(/u/itcamws) PROGRAM(/bin/sh) UID(00001234))
```

The TSO segment for this user profile is required if you intend to run the ITCAM for WebSphere Application Server setup from TSO OMVS. This same user ID is used for the ITCAM for WebSphere Application Server JMX client (see step 8 on page 175 for information about how to manually define the user ID and password for the ITCAM for WebSphere Application Server JMX client).

c. Create a keyring for this user ID, and have the cell signing CA certificate placed on it, as follows:

```
RACDCERT ID(ITCAMWS) CONNECT -
(RING(WASKeyring) LABEL('WebSphereCA') CERTAUTH)
```

Access to keyrings and certificates is protected by RACF by a set of profiles in the FACILITY class. Although the keyring is associated with the user ID, the user must have read authority to the IRR.DIGTCERT.LISTRING profile in order to access its keyring. The user must also have read access to the IRR.DIGTCERT.LIST profile to be able to access its certificate.

4. If you selected Use SAF EJBROLE profiles to enforce J2EE roles during security domain setup in the IBM WebSphere Application Server Customization Dialogs,



make sure the user ID you use to run `setupdc.sh` has read access to the EJBROLE administrator profile. The following administrative roles were defined by the customization jobs:

```
RDEFINE EJBROLE (optionalSecurityDomainName.) administrator UACC(NONE)
RDEFINE EJBROLE (optionalSecurityDomainName.) monitor UACC(NONE)
RDEFINE EJBROLE (optionalSecurityDomainName.) configurator UACC(NONE)
RDEFINE EJBROLE (optionalSecurityDomainName.) operator UACC(NONE)
```

Ideally, your user ID will be a member of the servant ID group, which is already granted permission to these profiles.

5. For any RACF classes whose profiles have been added or modified, refresh the RACF cache. To do this, an authorized RACF administrator must issue the following command:

```
SETROPTS RACLIST(classname) GENERIC(classname) REFRESH
```

6. Use the WebSphere Scripting Client directly to see if the user ID is set up correctly. From a z/OS UNIX System Services session, change to the bin directory of IBM WebSphere Application Server and issue the following command:

```
./wsadmin.sh -user itcamws -password itcamws
```

If the user ID is set up correctly, a messages similar to the following is displayed:

```
WASX7209I: Connected to process "dmgr" on node PLEX1Manager using SOAP
connector; The type of process is: DeploymentManager WASX7029I: For
help, enter: "$Help help"
```

7. Enter `quit` to terminate the WebSphere Scripting Client.
8. If needed, change the user ID and password used by the ITCAM for WebSphere Application Server JMX client. The `setupdc.sh` script configures the ITCAM for WebSphere Application Server JMX client security using the user ID and password that you supply in the `setupdc.sh` script.

---

## Enabling privacy filtering

### About this task

When the `secure.filter.on` property is set to `true`, SQL, cookie, and HTTP Request query strings are filtered out. These strings are not collected by ITCAM for WebSphere Application Server.

### Procedure

1. Stop the application server instance that is being monitored by ITCAM for WebSphere Application Server.
2. Set the following property definition in the `install_home/runtime/appserver_version.node_name.server_name/appserver_version.node_name.server_name.datacollector.properties`:

```
file
secure.filter.on=true
```
3. Start the application server instance that is being monitored by ITCAM for WebSphere Application Server.

### Results

The following statement is printed out to the ITCAM for WebSphere Application Server log when privacy filtering is properly configured:

Privacy Filter is On. Http Request Query String, SQL String and Http Cookie data is not trasmitted.

---

## Appendix F. Using regular expressions

*Regular expressions* are sets of symbols and characters that are used to match patterns of text. You can use regular expressions to search specific IP addresses across your web environment. Regular expressions also enable you to search a simple, fixed URI or a complex URI pattern that matches one or more groups of transactions.

This appendix contains the following sections:

- “Regular expressions library”
- “Frequently used regular expressions”
- “Specifying exclusions with the bang (!) operator (Quality of Service listening policies only)” on page 178

### Regular expressions library

An extensive library of regular expression characters and operators is available for your URI filters and IP address specifications. The International Components for Unicode (ICU) open-source development project provides this library for your use. For a full description of the ICU regular expression library and an explanation of how to use the characters and operators for complex expressions, see: <http://oss.software.ibm.com/icu/userguide/regexp.html>.

### Frequently used regular expressions

The following list highlights characters and operators most frequently used in regular expressions:

`\` Quotes the character that follows it, which treats that character as a literal character or operator (not a regular expression). When you want the following characters to be treated as literal, precede them with a backslash:  
`* ? + [ ( ) { } ^ $ | \ . /`

In other words, use a backslash followed by a forward slash (`\`/`/`) to include a forward slash in a URI filter. Use a backslash followed by a period (`\`.) to include a period in a URI filter.

**Example:** to specify the URI pattern `http://www.ibm.com/`, use the following regular expression:

`http:\\www\.ibm\.com\`

To specify all URIs that begin with `http://www.ibm.com/`, use the following regular expression:

`http:\\www\.ibm\.com\.*`

`.` Matches any one character.

**Example:** to match both `ibm2` and `ibm3` within a string, use `ibm.` such as in the following example: `http:\\www\.ibm\.com\`

`(?: ... )`

Non-capturing parentheses. Groups the included pattern, but does not provide capturing of matching text. Somewhat more efficient than capturing parentheses.

**Example:** you can use the non-capturing parenthesis to group expressions to form more complicated regular expressions. To match a URI that starts with one of the following: `http://www.ibm.com/marketing/` or `http://www.ibm.com/sales/`, do a grouping with a pipe sign (`|`) (represents *or*):

```
http://www.ibm.com/(?marketing)|(?sales)/
```

\* Matches the preceding element zero or more times. Quote this character:

**Example:** the expression, `ca*t`, matches `cat`, `caat`, `ct`, and `caaaaat`. The term `cabt`, would not return as a match.

## Specifying exclusions with the bang (!) operator (Quality of Service listening policies only)

You can use an exclamation point (!), also called the *bang* operator, to filter out transactions that might match the regular expressions already entered, but that should not be considered valid transactions for this listening policy. These exclusions are considered negative filters. You can enter these exclusions as additional URI or client IP filters. The formatting of these additional filters is as follows:

### URI Filter Exclusions

Use only fixed strings. For example, you can use the following strings:

```
!http://www.ibm.com/  
!http://www.ibm.com/hr/index.html  
!http://www.ibm.com/it/errorpage.html
```

### Client IP Exclusions

The following options are valid:

```
!*24.45.46  
!12.*.45.56  
!12.24.*.56  
!12.24.45.*  
!12.24.45.56
```

You can replace any "octet" (there are four in an IP address: `octet . octet . octet . octet`) with a wildcard (\*). Note that this is not the regular expression wildcard (.) from the positive filters.

---

## Appendix G. Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. These are the major accessibility features you can use with ITCAM for WebSphere Application Server when accessing it through the *IBM Personal Communications* terminal emulator:

- You can operate all features using the keyboard instead of the mouse.
- You can read text through interaction with assistive technology.
- You can use system settings for font, size, and color for all user interface controls.
- You can magnify what is displayed on your screen.

For more information about viewing PDFs from Adobe, go to the following website: <http://www.adobe.com/accessibility/index.html>.



---

## Trademarks

IBM, the IBM logo, and [ibm.com](http://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 [www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml).

Adobe is either a registered trademark or a trademark of Adobe Systems Incorporated in the United States, other countries, or both.

Intel and Itanium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Windows is a trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Java and all Java-based trademarks are trademarks or registered trademarks of Oracle and/or its affiliates.

Other company, product, and service names may be trademarks or service marks of others.





---

## Notices

This information was developed for products and services offered in the U.S.A. IBM might 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 might 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:

IBM World Trade Asia Corporation  
Licensing  
2-31 Roppongi 3-chome, Minato-ku  
Tokyo 106, 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 IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY 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 or changes in the product(s) or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those websites. The materials at those websites are not part of the materials for this IBM product and use of those websites 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 want 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 might 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 might vary significantly. Some measurements might 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 might have been estimated through extrapolation. Actual results might 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.

#### COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. You may copy, modify, and distribute these sample programs in any form without payment to IBM for the purposes of developing, using, marketing, or distributing application programs conforming to IBM's application programming interfaces.

---

## Readers' Comments — We'd Like to Hear from You

IBM Tivoli Composite Application Manager for WebSphere Application Server  
Installation and User Guide  
Version 7.2

Publication No. GC23-9701-01

We appreciate your comments about this publication. Please comment on specific errors or omissions, accuracy, organization, subject matter, or completeness of this book. The comments you send should pertain to only the information in this manual or product and the way in which the information is presented.

For technical questions and information about products and prices, please contact your IBM branch office, your IBM business partner, or your authorized remarketer.

When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate without incurring any obligation to you. IBM or any other organizations will only use the personal information that you supply to contact you about the issues that you state on this form.

Comments:

Thank you for your support.

Submit your comments using one of these channels:

- Send your comments to the address on the reverse side of this form.
- Send a fax to the following number: 800-555-1213
- Send your comments via email to: [phred@us.ibm.com](mailto:phred@us.ibm.com)
- Send a note from the web page: <http://w3-03.ibm.com/ids/page/636>

If you would like a response from IBM, please fill in the following information:

\_\_\_\_\_

Name

\_\_\_\_\_

Address

\_\_\_\_\_

Company or Organization

\_\_\_\_\_

Phone No.

\_\_\_\_\_

Email address



Fold and Tape

Please do not staple

Fold and Tape



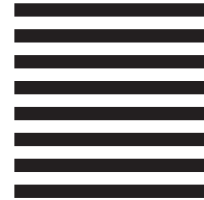
NO POSTAGE  
NECESSARY  
IF MAILED IN THE  
UNITED STATES

# BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 40 ARMONK, NEW YORK

POSTAGE WILL BE PAID BY ADDRESSEE

IBM  
ATTN: Dept 542  
3905 37th Street NW  
Rochester, MN  
USA  
55901-6666



Fold and Tape

Please do not staple

Fold and Tape





Product Number:

Printed in USA

GC23-9701-01

