

IBM WebSphere Studio Asset Analyzer for Multiplatforms  
Version 4 Release 2



# Configuration and Migration Guide



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Version 4 Release 2



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**Note!**

Before using this information and the product it supports, be sure to read the general information under "Notices" on page 55.

**Sixth Edition (January 2006)**

This edition applies to Version 4 of IBM WebSphere Studio Asset Analyzer for Multiplatforms Version 4 Release 2 (Program Number 5655-M22).

This edition also applies to all subsequent releases and modifications until otherwise indicated in new editions or technical newsletters.

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You can find out more about WebSphere Studio Asset Analyzer for Multiplatforms by visiting the IBM Web site for the product at: [www.ibm.com/software/awdtools/wsaa/](http://www.ibm.com/software/awdtools/wsaa/).

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## Chapter 1. Introduction

This guide is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the procedures associated with the configuration of WebSphere Studio Asset Analyzer for Multiplatforms and migration from earlier releases. This publication provides detailed instructions on how to create, configure, and load the DB2 database. It also gives instructions for specifically configuring your HTTP Server and WebSphere Application Server for use with WebSphere Studio Asset Analyzer.

It contains a sample installation verification procedure to ensure that the database loads correctly and instructions on how to set up the sample applications.

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### Product interfaces

You use two interfaces to configure WebSphere Studio Asset Analyzer: ISPF on the host and Internet Explorer on the workstation. Therefore you need Microsoft Internet Explorer 5.5 or later installed on your workstation.

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### User permissions

Each user of WebSphere Studio Asset Analyzer must have a TSO userid on the MVS system, and that userid must have the authority to connect to the product database to INSERT, UPDATE, DELETE, and SELECT rows from the database tables. If WebSphere Studio Asset Analyzer is being accessed from Windows, any userid connecting to the database must have the authority to create remote connections.

Because some administrative WebSphere Studio Asset Analyzer requests create jobs that access the database, any userid that has administrative authority must also have the authority to access DB2 from a batch job, even if such a job is not submitted directly.

---

### Installation configurations

You can install WebSphere Studio Asset Analyzer with one of the following configurations:

- Using WebSphere Application Server for MVS
- Using WebSphere Application Server for Windows
- Using WebSphere Application Server for AIX

The following tables show where the related software and the components of WebSphere Studio Asset Analyzer are installed for each of these configurations.

*Table 1. Using WebSphere Application Server for MVS*

MVS	Windows or AIX
DB2	* DB2 Connect (connecting to remote database)
HTTP Server	* WebSphere Application Server
WebSphere Application Server	* Distributed asset scanners and analyzers <sup>+</sup>
MVS asset scanners <sup>+</sup>	* Distributed source viewer <sup>+</sup>
MVS asset servlets <sup>+</sup>	
* Distributed asset servlets <sup>+</sup>	

Table 1. Using WebSphere Application Server for MVS (continued)

MVS	Windows or AIX
<b>Notes:</b> 1. + denotes a component of WebSphere Studio Asset Analyzer 2. * denotes an optional component	

Table 2. Using WebSphere Application Server for Windows or WebSphere Application Server for AIX

MVS	Windows or AIX
DB2 HTTP Server MVS asset scanners+	DB2 Connect (connecting to remote database) WebSphere Application Server MVS asset servlets+ * Distributed asset scanners and analyzers+ * Distributed source viewer+ * Distributed asset servlets+
<b>Notes:</b> 1. + denotes a component of WebSphere Studio Asset Analyzer 2. * denotes an optional component	

See the WebSphere Studio Asset Analyzer Program Directory for the versions and releases for the above related software that is required for this release of WebSphere Studio Asset Analyzer. You can find the Program Directory on the product Library Web page.

## Using this guide

The tasks that you perform to configure WebSphere Studio Asset Analyzer and the supporting products depends on both of the following situations:

- Which of the above configurations that you have installed.
- Whether your users are going to use the distributed assets support of WebSphere Studio Asset Analyzer.

**Order:** Some of the sections and steps in these configuration instructions apply to only one of the two configurations or apply only if your users are going to use the distributed asset support of WebSphere Studio Asset Analyzer. Perform the configuration tasks in the order given in this guide, skipping the sections and steps that do not apply to your situation.

**Terminology:** This publication uses the following terms for the terms shown:

Refers to...	as...
WebSphere Studio Asset Analyzer for Multiplatforms	WebSphere Studio Asset Analyzer
z/OS	MVS
Product installation directory	/usr/lpp/dmh



---

## Chapter 2. Configuring companion products

If your order contains the Japanese feature FMID J2A1421, ensure that you complete the installation for that feature before configuring WebSphere Studio Asset Analyzer. Member DMHVERSN in data set *yourHLQ.SDMHDATA* should show 'Version 4.2.0 JPN' instead of 'Version 4.2.0 ENU'.

The following material provides information that you need to configure WebSphere Studio Asset Analyzer and to verify a successful installation. Before you start these tasks, ensure that each companion product is working properly and that it works properly with the other products. For example, ensure that the verification and IVP process for the HTTP Server was successful, that JDBC is properly configured to access DB2, and that WebSphere Application Server is configured to support DB2 access using JDBC. Otherwise you might encounter problems with DB2 interacting with WebSphere Studio Asset Analyzer and not be certain of the cause of the problem.

Before configuring WebSphere Studio Asset Analyzer, you need to update IBM HTTP Server and WebSphere Application Server to work with WebSphere Studio Asset Analyzer. After updating these companion products, you use both the WebSphere Studio Asset Analyzer ISPF panels and the browser-based user interface to complete the installation verification program (IVP) for WebSphere Studio Asset Analyzer.

### **Before proceeding:**

- Ensure that you define the required system permissions as specified in the "Special Considerations" section of the product Program Directory.
- Stop the WebSphere Application Server Admin Server and the HTTP Server.

To configure WebSphere Studio Asset Analyzer, complete these tasks in the order shown:

1. "Configuring IBM HTTP Server"
2. "Configuring WebSphere Application Server" on page 5
3. Chapter 3, "Configuring WebSphere Studio Asset Analyzer," on page 9
4. "Configuring the default job card for clients" on page 25
5. "Installing the Server Component on Windows or AIX" on page 26
6. Chapter 4, "Verifying that the product was successfully installed and configured," on page 35

---

## Configuring IBM HTTP Server

IBM HTTP Server is a prerequisite product and must be installed and configured on your system. Before proceeding, ensure that HTTP Server is working properly and that it works properly with the other required products. Before you can use WebSphere Studio Asset Analyzer, you need to make additional configuration changes to IBM HTTP Server so that it can run WebSphere Studio Asset Analyzer's CGI.

**Tip:** When configuring the HTTP Server, you can use the file `/usr/lpp/dmh/bin/dmh_httpd.conf` as a guide. It contains samples of most of the statements that you need. You can copy portions of this file to your own `httpd.conf` file.

To configure IBM HTTP Server, edit the server configuration file as follows:

1. WebSphere Studio Asset Analyzer requires each user to be uniquely identified. The HTTP Server **UserId** and Protection directives can force the user to provide a valid userid and password. Check that the settings for the **UserId** directive are in accordance with the access guidelines for your site. The **UserId** directive controls access to the WebSphere Studio Asset Analyzer CGI on your MVS system. Follow one of the following two examples, depending on your site security guidelines for HTTP server access.

If your site guidelines require each user to log on with his or her own userid, then use the directive `'UserId %%CLIENT%%'`, which tells the server to require that the requester has a local MVS userid and password.

```

EDIT      /etc/httpd.conf
#
#      Default:  %%CLIENT%%
#      Syntax:   UserId (user name)
# Example:
# UserId      PUBLIC
# UserId      %%CLIENT%%
# UserId      %%CERTIF%%
# UserId      %%SERVER%%
# UserId      %%CLIENT%%

```

If your site guidelines specify that all users share access with a single userid, such as **UserId PUBLIC**, then you must establish additional protection scheme directives for the WebSphere Studio Asset Analyzer application. Add these additional protection scheme directives to the configuration file preceding any Exec directives that reference WebSphere Studio Asset Analyzer Web addresses.

```

EDIT      /etc/httpd.conf
# =====
# Protection scheme for access to WebSphere Studio Asset Analyzer
# =====
Protection DMH_Prot {
    UserId      %%CLIENT%%
    ServerId    "WebSphere Studio Asset Analyzer"
    AuthType    Basic
    PasswdFile  %%SAF%%
    Mask        All
    Protect     /dmh-cgi*                DMH_Prot
}

```

2. Check that the Web addresses used by WebSphere Studio Asset Analyzer are associated with the directory that contains the WebSphere Studio Asset Analyzer CGI scripts. For example, if WebSphere Studio Asset Analyzer is installed in `/usr/lpp/dmh`, the `httpd.conf` file would contain the following line:

```

#
Exec /dmh-cgi/* /usr/lpp/dmh/bin/*
#

```

The path, such as `dmh-cgi`, that you specify must be protected by the protection scheme directives that are shown in step 1.

3. Determine if your system requires Secure Sockets Layer (SSL). If so, use the IBM Key Management Utility (IKEYMAN) to create, process, and manage the files that are needed for secure connections.

#### RELATED TASKS

Using IKEYMAN to configure SSL secure connections at  
[www.ibm.com/software/webservers/httpservers/ikeyman.htm](http://www.ibm.com/software/webservers/httpservers/ikeyman.htm)

#### RELATED REFERENCES

*IBM HTTP Server: Planning, Installing, and Using*, SC31-8690

*IBM HTTP Server Publications*

*Domino Go Release 5.0 Webmaster's Guide*, SC31-8691

---

## Configuring WebSphere Application Server

Use this section only if your installation configuration includes WebSphere Application Server for MVS. WebSphere Application Server for Windows and WebSphere Application Server for AIX are configured by the WebSphere Studio Asset Analyzer installation program.

One of the following versions is required:

- WebSphere Application Server 5.1 or later
- WebSphere Application Server 6.0.2 or later

WebSphere Application Server is a prerequisite product and must be installed and configured on your system. Before proceeding, ensure that WebSphere Application Server is working properly and that it works properly with the other required products. Before you can use WebSphere Studio Asset Analyzer, you need to make additional configuration changes to WebSphere Application Server, so that it can access the data in your database. You need to have the proper authority to edit the WebSphere Application Server configuration file.

**Restriction:** The application server must have Java 2 security disabled.

To configure WebSphere Application Server, do the following steps from the WebSphere Application Server Admin Console:

1. Ensure that you have set up the JDBC driver correctly. Use the instructions at The Technical Sales Library.
2. Ensure that you have defined the `DB2390_JDBC_DRIVER_PATH`:

- a.

#### **WebSphere Application Server V5**

Click **Environment** -> **Manage WebSphere Variables**.

#### **WebSphere Application Server V6**

Click **Environment** -> **WebSphere Variables**.

- b. Ensure that `DB2390_JDBC_DRIVER_PATH` is set to the install location of DB2, such as `/usr/1pp/db2/db2710`.
  - c. Ensure that `DB2SQLJPROPERTIES` is set to the location of your DB2 JDBC SQLJ properties file, such as `/etc/db2sqljjdbc.properties`.
  - d. Click **Apply**, then **Save**.
3. Update the `wsaaHome` system property that the web apps uses to find the WebSphere Studio Asset Analyzer product installation directory on the file system:

- a. Set custom JVM arguments for WebSphere Studio Asset Analyzer:

- 1)

#### **WebSphere Application Server V5**

Click **Servers** -> **Application Servers** -> **server1** -> **Process Definition** -> **Servant** -> **Java Virtual Machine** -> **Custom Properties**.

#### **WebSphere Application Server V6**

- a) Click **Servers** -> **Application Servers** -> **server1**.

- b) Click **Server Infrastructure** -> **Java and Process Management** -> **Process Definition**.

- c) Click **Servant** -> **Java Virtual Machine** -> **Custom Properties**.

- 2) Add the following custom property: `wsaaHome = /usr/lpp/dmh .`

- 3) Click **Apply**, and then **Save**.

- b. Restart WebSphere Application Server to pick up the JVM argument changes.

- 4.

Create a Data Source for the WebSphere Studio Asset Analyzer database:

- a. Create a DB2 z/OS JDBC provider. **Tip:** you can skip this step if you already have a z/OS JDBC provider defined.

- 1) Click **Resources** -> **JDBC Providers**.

- 2) Click **New**.

- 3) Click **JDBC Providers** = "DB2 for z/OS Local JDBC Provider (RRS)".

- 4) Accept the defaults for all fields.

- 5) Click **OK**.

- 6) Click **Apply**, then **Save**.

- b. Click the JDBC Provider that you created in step 4a above.

- c. Click **Data Sources (Version 4)** under **Additional Properties**.

- d. Create a new Data Source with the following properties:

**Name** DMHDB

**JNDI Name**

`jdbc/DMHDB`

The JNDI name is formed by adding the prefix `jdbc` to the JDBC DATASOURCE Name value that you specify in the DMHINSTL setup option. (See "JDBC DATASOURCE Name" on page 11.)

**Database Name**

The DB2 location of your database.

This is the DB2 location name value that you specify in the DMHINSTL setup option (See "DB2 location name" on page 14). (This might or might not be the same as the database name.)

- e. Click **Apply**, then **Save**.

5. Install the WebSphere Studio Asset Analyzer web apps:

- a. Import `wsaa.ear` into WebSphere Application Server:

- 1) Click **Applications** -> **Enterprise Applications**.

- 2) Click **Install**.

- 3) For **Server path** (WebSphere Application Server V5) or **Remote file system path** (WebSphere Application Server V6), type `/usr/lpp/dmh/install/wsaa.ear`.

- 4) Click **Next**.
  - 5) Click **Generate Default Bindings**. Keep the default settings, such as `virtual host = default_host`.
  - 6) Click **Next**.
  - 7) On the Application Security Warnings page, click **Continue**.
  - 8) On Step 1, click **Next** to accept the default settings.
  - 9) On Step 2, click **wsaa web module**, and then click **Next**.
  - 10) On Step 3, click **wsaa web module**, and then click **Next**.
  - 11) On Step 4, click **Finish**.
  - 12) Click **Save to Master Configuration**, and do the steps for saving to the master configuration.
- b. Import `wsaa.help.ear` into WebSphere Application Server: repeat the steps above for `wsaa.ear`, but use the ear file `/usr/lpp/dmh/install/wsaa.help.ear`.
  - c. Start `wsaa.ear` and `wsaa.help.ear`:
    - 1) Click **Applications** -> **Enterprise Applications**.
    - 2) Start both `wsaa.ear` and `wsaa.help.ear`.
6. Optional: Get the WebSphere Studio Asset Analyzer Web app to work on port 80, that is, through the HTTP server:

#### **WebSphere Application Server V5:**

Update the WebSphere Application Server plugin:

- a. Click **Environment** -> **Virtual Hosts** -> **default\_host** -> **Host aliases**.
- b. Ensure that one of the aliases is the current host name with port 80. If there is such an alias, skip the remaining steps. If there is not, add it now by completing the remaining steps.
- c. Click **New**.
- d. Type the current host name, and enter 80 for the port number.
- e. Click **Apply**.
- f. Click **Environment** -> **Update Web Server Plugin**, and then click **OK**.
- g. Rename the old plugin config file by using a command such as `mv /etc/plugin-cfg.xml /etc/plugin-cfg.xml.old`.
- h. Copy the new plugin config file to the old name by using a command such as `cp /WebSphere/V5R0M0/AppServer/config/cells/plugin-cfg.xml /etc/plugin-cfg.xml`.
- i. Restart the HTTP server by using commands such as `/stop imweb500, /start imweb500`.

#### **WebSphere Application Server V6:**

(Optional) Follow the instructions in the Admin console topic **Guided Activities** -> **Routing requests from a Web server to an application server**.



---

## Chapter 3. Configuring WebSphere Studio Asset Analyzer

After you have completed the required configuration updates for IBM HTTP Server and WebSphere Application Server, as described in Chapter 2, “Configuring companion products,” on page 3, you need to perform the following tasks:

- Ensure that the WebSphere Application Server Admin Server and the HTTP Server are stopped.
- Configure the links to the WebSphere Studio Asset Analyzer components
- Create and configure the DB2 database into which you will load information about your assets.

You configure WebSphere Studio Asset Analyzer and set up the database by using the WebSphere Studio Asset Analyzer installation configuration utility. Comprehensive F1 help is available for all product ISPF panels. You must run the Setup Option 0 step regardless of whether your install configuration includes WebSphere Application Server for MVS or WebSphere Application Server for Windows or AIX. Fill in the appropriate values for your configuration on MVS and during the Windows or AIX product install.

Start the utility by doing the following steps:

1. Select ISPF Option 6 to get to the TSO command prompt.
2. Enter the following command, substituting your DSN high-level qualifier for *yourHLQ*.

```
EX 'yourHLQ.SDMHREXX(DMHINSTL)'
```

Here is an example; assuming DMH.STUDIO is *yourHLQ*:

```
EX 'DMH.STUDIO.SDMHREXX(DMHINSTL)'
```

To set up WebSphere Studio Asset Analyzer and to create and configure the DB2 database, complete the following tasks in the order shown:

1. “Defining product defaults” on page 10
2. “Defining environment variables” on page 17
3. “Creating the database” on page 18
4. “Binding DB2 packages and plans” on page 19
5. “Granting DB2 privileges” on page 19
6. “Configuring source code management systems” on page 20
7. “Configuring inventory analyzers” on page 25
8. “Configuring the default job card for clients” on page 25
9. “Restarting the HTTP Server” on page 26
10. “Removing old macros” on page 26
11. “Installing the Server Component on Windows or AIX” on page 26
12. “Installing the Distributed Scanner Component on Windows or AIX” on page 29
13. “Setting up for WebSphere Studio Asset Analyzer Web Services” on page 33

Ensure that DB2 is started before proceeding.

## Defining product defaults

To define the defaults for your site, use the Set up panel on the WebSphere Studio Asset Analyzer ISPF interface. Select Option 0 (Set up) on the Install panel. On the Set up panel, enter values for each field as appropriate for your site.

**Help:** To view help that is specific to each panel, press F1.

The following help panels show the fields filled in:

```
----- WebSphere Studio Asset Analyzer -----
                Set up:  HELP
                                     More:  +
High-level qualifier of user DSN . . : USERTMP
  This is a qualifier to which all users of WebSphere Studio Asset
  Analyzer need CREATE access. Temporary files are created under
  this qualifier.

High-level qualifier of ISPF. . . . : ISP

HFS base directory . . . . . : /usr/lpp/dmh
  This is the directory on Unix System Services where the WebSphere
  Studio Asset Analyzer files are stored. All users should have READ
  access to this directory and its sub-directories. The access
  permissions are created by SMPE during installation.

HFS temporary directory . . . . . : /usr/lpp/dmh
  This is the directory on Unix System Services where the WebSphere
  Studio Asset Analyzer logs and temporary files are stored. All users
  should have READ/WRITE access to this directory and its sub-directories.
  If the directory does not exist, it will be created.
  If you do not specify a value, the HFS base directory is used.

DB2 runtime library . . . . . : DSN710.SDSNLOAD

LE runtime library . . . . . : CEE.SCEERUN

HLASM library . . . . . :
  Required only if assembler source is to be scanned.
```



```

-----Server settings-----
WebSphere Server Host Name. . . . . : ipname
  Name or IP address of the HTTP Server under which
  WebSphere Studio Asset Analyzer runs.

WebSphere Server Port . . . . . : 9080
  Port number used to access web apps in WebSphere Application Server.
  If HTTP requests are routed through HTTP server, this is typically port 80.
  Otherwise, it is typically port 9080.

Is the WebSphere Server a secure server ? N
  Whether or not the HTTP Server under which WebSphere Studio Asset Analyzer
  runs is using SSL (Secure Socket Layer).

JDBC DATASOURCE Name. . . . . : DMHDB
  Name under which data is accessed through JDBC. This value
  is used to determine the JNDI name for the Data Source in the
  WebSphere Application Server. The prefix "jdbc/" is added
  to this name to create the JNDI name. Thus, if the
  Data Source name is DMHDB, the JNDI name is jdbc/DMHDB.

  For WebSphere Application Server V5 and later, the Data Source is defined
  with the Administrative Console using a JNDI name of jdbc/DMHDB

Administrator userids . . . . . :
  TSO userids given the authority to perform administrative
  functions, such as deleting definitions. Specify * to
  allow all users to access these functions.
-----CGI settings-----

CGI Host Name . . . . . : ipname
  Name or IP address of the Server under which the CGI runs

CGI Port. . . : 80
  Port number of the server under which the CGI runs

Is the CGI Server a secure server ? N
  Whether or not the CGI Server is using SSL (Secure Socket Layer).

Server CGI alias Name . . . . . : dmh-cgi
  Alias name associated with the CGI files (normally "dmh-cgi"), as defined
  in the HTTP server configuration file. For example, if the httpd.conf
  has this entry:
  Exec /dmh-cgi/* /usr/lpp/dmh/bin/*
  you must set the value to this string:
  dmh-cgi
-----Distributed data settings-----

Scanning Distributed Assets . . . . : Y
  Whether or not you are planning to scann "distributed assets" that are
  located on machines other than this machine.

```

```

-----Settings required for COBOL and PLI scanning-----

Use compiler for scanning COBOL source? : Y
  Whether or not the Enterprise COBOL compiler should be used for scanning
  your COBOL source code. An 'N' indicates that the WebSphere Studio Asset
  Analyzer proprietary scanner will be used.

COBOL compiler load library . . . . . :  CBLDLIB
  If compiler-based scanning is indicated, the name of the
  COBOL compiler load library.

COBOL compiler options . . . . . : LIB,NOC,NOOBJ,ADATA,[SQL]
  If compiler-based scanning is indicated, the set of options to
  use during scanning. This a comma-delimited list.
  The following options are allowable and configurable:
  ADV
  ARITH
  AWO
  BUFSIZE
  CODEPAGE
  CURRENCY
  DATEPROC
  DBCS
  DIAGTRUNC
  NSYMBOL
  PGMNAME
  QUOTE/APOST
  SIZE
  WORD

Please consult the Enterprise COBOL Compiler manuals for
information on each of these options.

```

**Insufficient room for options:** If there is not enough space for you to specify all the compiler options that you need, you can manually update the Common.cfg file and enter the options there instead. Use the following lines in the ScanningInfo section of /usr/lpp/dmh/config/Common.cfg to specify options:

```

cobolOptions =
pliOptions =
pliMacroDef =
sqlOptions =

```

Type the options after the "=" sign, separated by commas. For example:  
cobolOptions = DTR,PGMN(LU),NOADV,ARITH(EXTEND)

If you manually update the Common.cfg fields to provide options, you must repeat that same update to the Common.cfg file and save your changes after every use of DMHINSTL option 0; option 0 overwrites your updates.

Use compiler for scanning PL/I source? : Y  
Whether or not the Enterprise PL/I compiler should be used for scanning your PL/I source code. An 'N' indicates that the WebSphere Studio Asset Analyzer proprietary scanner will be used.

PL/I compiler load library . . . . . : PLILDLIB  
If compiler-based scanning is indicated, the name of the PL/I compiler load library.

PL/I compiler options . . . . . : XINFO(SYN),NOOBJ,[PP(MACRO),PP(SQL)  
If compiler-based scanning is indicated, the set of options to use during scanning. This is a comma-delimited list.  
The following options are allowable and configurable:  
BLANK  
CODEPAGE  
CURRENCY  
DBCS  
DEFAULT  
GRAPHIC  
INCAFTER  
LANGLVL  
LIMITS  
MARGINS  
MAXMSG  
NAMES  
NATLANG  
NOT  
OR  
PREFIX  
RULES  
SYSPARM  
USAGE

Please consult the Enterprise PL/I Compiler manuals for information on each of these options.

PL/I macro definition file name . . . . : DMH.SDMHDATA(DMHSMACR)  
The name of the file containing the set of PL/I macro definitions. This field is optional.

SQL options . . . . . : QUOTESQL  
A comma-delimited list of SQL options used and understood by the compiler when SQL statements are present in the source code that is being scanned. This field is optional.  
-----Settings required for DB2-----

Approximate number of host programs to be analyzed : 3000  
Approximate number of total programs and include files that will be scanned.

Amount of distributed source code to be analyzed (in MB) : 10  
Approximate size of distributed source code that will be scanned.

New storage group? . . . . . : Y  
Whether or not the database associated with WebSphere Studio Asset Analyzer will require a new storage group to be created.

Storage group name . . . . . : DMHSTOGR  
Name of the storage group associated with the WebSphere Studio Asset Analyzer database

VSAM catalog Name if new storage group. . . . : catname  
High-level qualifier of the VSAM files that are associated with the tables created for the WebSphere Studio Asset Analyzer database.

Volumes for allocation if new storage group . : \*  
Volume names that are associated with the new storage group.

Database name . . . . . : DMHDB  
 Name of the database that is associated with WebSphere Studio Asset Analyzer.

Specify a userid for accessing the database? : Y  
 This indicates which userid accesses the DB2 catalog tables when WebSphere Studio Asset Analyzer's servlets are initialized under WebSphere Application Server. If you choose not to specify a userid, it defaults to the values specified on the WebSphere Studio Asset Analyzer Data Source. If that also is not specified, it defaults to the value for the WebSphere Application Server process. The userid to be used must have authority to access the DB2 catalog tables specified in the WebSphere Studio Asset Analyzer Configuration and Migration Guide.

Database userid . . . . . : userid  
 The userid of a database administrator who has the proper authority as specified in the WebSphere Studio Asset Analyzer Configuration and Migration Guide.

Database password . . . . . : password  
 The database password for the userid specified above. This value is encrypted when the WebSphere Studio Asset Analyzer enterprise application is started and the values read from the configuration file.

Database password (confirm) . . . . . : password  
 The database password must be entered a second time for confirmation. This value must match the password entered above. If it does not, the user is prompted to reenter the passwords until they match.

Buffer pools:  
 Buffer pools that are used for the database indexes, table spaces, and temporary database.  
 Indexes . . . . . : BP1  
 Table spaces . . . . . : BP2  
 Database and Temporary Database . . . . . : BP7  
 LOB Table spaces . . . . . : BP8

DB2 table space prefix . . . . . : DMHTS  
 The prefix for the table spaces that are created by WebSphere Studio Asset Analyzer. A three-character suffix is appended to this prefix value.

High-level qualifier for the tables . . . . . : DMH  
 The qualifier for tables.

DB2 subsystem name . . . . . : DSN1  
 Location name of the DB2 database on the host machine.

DB2 location name . . . . . : STLEC1  
 Location of the DB2 database subsystem on the host machine

**Hint:** For the **Database userid** field, use a userid that has SELECT, UPDATE, DELETE, and INSERT authority for the WebSphere Studio Asset Analyzer tables and has SELECT authority to the following catalog tables:

- SYSIBM.SYSCOLUMNS
- SYSIBM.SYSINDEXES
- SYSIBM.SYSKEYCOLUSE
- SYSIBM.SYSSYNONYMS
- SYSIBM.SYSTABLES

- SYSIBM.SYSTRIGGERS

The DB2 password is encoded when it is saved to the file.

**Tip:** When you provide the DB2 userid and password on the ISPF setup panel, they are saved in the Common.cfg file. When the web server is started, the WebSphere Studio Asset Analyzer servlet encrypts any password stored in the Common.cfg file. Therefore, the userid for the web server must have the proper authority to update Common.cfg. To allow the web server to write to the file, change the permissions for the file by using the chmod command or some other method. For example:

```
chown WebSphere-Application-Server-userid /usr/lpp/dmh/config/Common.cfg
```

```
DB2 plan prefix . . . . . : DMH
  The prefix for DB2 plans

Create global temporary database? . . . . . : Y
  Specify whether a global temporary database needs to be created ("Y")
  or whether one already exists ("N"). Only one temporary database can
  be created on a DB2 subsystem, but one must exist for WebSphere Studio
  Asset Analyzer to be configured correctly. You must set this value to
  "Y" if no global temporary database exists.

Global temporary database name . . . . . : DMHTMPDB
  The name of the temporary database to create if it is
  necessary to create one, or the name of the database
  if one already exists. This value is mandatory if
  you set the flag above to "Y", or if it is necessary
  to create a new temporary table space.

Create global temporary table space? . . . . . : Y
  Specify whether a global temporary table space needs to be
  created ("Y") or whether one already exists ("N"). If you
  have an existing temporary table space in an existing
  temporary database, you can set this value to "N";
  if you do not, you must enter "Y", so that WebSphere Studio Asset
  Analyzer can create a new temporary table space.

Global temporary table space name . . . . . : DMHTMPTS
  The name of the temporary table space to create, if it is
  necessary to create one. This field is mandatory if
  you set the flag above to "Y".
```

Press F3 to process and save the settings.

## Customizing data set names

WebSphere Studio Asset Analyzer supports limited customization of the ISPF data set names that it uses. When you use the Set up panel, you can specify the high-level qualifier of these ISPF data sets. By default, the data sets have the following names:

- &hlqispf.SISPMENU
- &hlqispf.SISPSENU
- &hlqispf.SISPPENU
- &hlqispf.SISPTENU

where &hlqispf is the high-level qualifier for your ISPF data sets.

You must update source files for any other customization of the ISPF data set names.

### ISPF data sets

To use some other set of ISPF data sets, edit the following file:

*yourHLQ.SDMHCNTL* (DMHPRCQU)

In this file, locate the statements that contain DD definitions for ISPMLIB, ISPSLIB, ISPLLIB, and ISPTLIB, and then make the appropriate changes to data set names.

### JOBLIB, STEPLIB, load libraries

The skeletons for the WebSphere Studio Asset Analyzer JCL assume that you will enter the high level qualifier on the ISPF setup panel (option 0) and that the low-level qualifier is SDMHLOAD. Thus when you submit batch jobs from WebSphere Studio Asset Analyzer's ISPF panels, the following variables define any JOBLIB and STEPLIB statements:

Table 3. Variables for data sets

Data set name with variables	Definition
<i>yourHLQ.SDMHLOAD</i>	WebSphere Studio Asset Analyzer load library. <i>yourHLQ</i> is defined in DMHINSTL, option 0.
&DMHLE	Language Environment load library as defined in DMHINSTL, option 0
&DMHDB2L	DB2 load library as defined in DMHINSTL, option 0
&DMHCMLIB	ChangeMan ZMF load library (optional) as defined in DMHINSTL, option 4
&DMHCMSLB	ChangeMan SERNET load library (optional) as defined in DMHINSTL, option 4

If your site requires a different naming convention for libraries (such as *yourHLQ.SDMHLOAD.APF* for an APF-authorized load library), or you want to do other customization, you need to change the JOBLIB or STEPLIB statements in the following ISPF skeletons:

- *yourHLQ.SDMHSLIB*(DMHJBCRD)
- *yourHLQ.SDMHSLIB*(DMHI500S)
- *yourHLQ.SDMHSLIB*(DMH3000S)

If your installation requires a different naming convention for the SDMHLOAD library (such as *yourHLQ.SDMHLOAD.APF* for an APF-authorized load library), you must change the references to SDMHLOAD in the following members:

*yourHLQ.SDMHCLST*  
DMH5260C  
DMH5307C  
DMH70731  
DMH76000

*yourHLQ.SDMHCNTL*  
DMHCLDB  
DMHCTDB  
DMHJCLBU  
DMHJCLQU  
DMHR5260  
DMHR565A

DMHR565B  
DMHR565C  
DMHR570

*yourHLQ*.SDMHREXX

DMH0733  
DMH5202  
DMH610Z  
DMH620Z  
DMH630Z  
DMH650Z  
DMH690Z  
DMHCMINF  
DMHGTSTE

For postprocessing jobs that are submitted from the UI, you must also update the defaultJOBLIB property by doing the following steps:

1. Edit the Common.cfg file (/usr/lpp/dmh/config/Common.cfg for MVS or AIX; c:\dmh\config\Common.cfg for Windows). Locate the defaultJOBLIB property in the [MVS] section. If the statement is commented out with a pound sign (#), remove the pound sign. For example:

```
[MVS]
...
defaultJOBLIB=$L{defaultJOBLIB}
```

2. Update the defaultJOBLIB property in the Common.properties file (Common\_ja\_JP.properties for the Japanese product) in the config/i18n subdirectory (/usr/lpp/dmh/config/i18n for MVS or AIX; c:\dmh\config\i18n for Windows). If the statement is commented out with a pound sign (#), remove the pound sign. For example:

```
defaultJOBLIB =
//JOBLIB DD DSN=yourHLQ.SDMHLOAD.suffix,DISP=SHR\u000a
//      DD DSN=&DMHDB2L.,DISP=SHR\u000a//      DD DSN=&DMHLE.,DISP=SHR
```

(Keep this property on one line. It is split here due to the limitation of the width of this page.)

3. Restart the enterprise application.

---

## Defining environment variables

Before you create the database, you must have the JDBC environment variables set properly. If the default setup for the userid that you are using is not already set up to access JDBC from the command line, do the following steps to set the environment variables:

1. Edit the shell script file /usr/lpp/dmh/bin/SetupJdbc.sh.
2. Remove the comment character from the **export** commands for the variables that are not already set up in the environment.
3. Type the appropriate value for the file, including the full path.
4. Save the script. It will be run when you create the product database.

This is an example of completed **export** commands in the file:

```
export STEPLIB=DSN710.SDSNLOD2:DSN710.SDSNLOAD:WAS401.SBBOLOAD
export LIBPATH=/usr/lpp/db2/db2710/lib
export CLASSPATH=/usr/lpp/db2/db2710/classes/db2j2classes.zip
export DB2SQLJPROPERTIES=/etc/db2sqljjdbc.properties
```

---

## Creating the database

Follow the instructions in this section only if you do not have an existing WebSphere Studio Asset Analyzer database. If you have an existing database, you need to upgrade it, as described in the following chapters:

1. Chapter 6, “Migrating from WebSphere Studio Asset Analyzer Version 2,” on page 47.
2. Chapter 7, “Migrating from Version 3 or later releases of WebSphere Studio Asset Analyzer,” on page 49.

Ensure that you stop the HTTP Server before proceeding. To create the database, follow these steps:

1. On the ISPF Install menu, select Option 1, Create database.

A JCL stream is presented in an editor. The JCL uses program DMHTEP2 to submit the DDL to create the database with all associated tablespaces, tables, and indexes. There are database COMMIT statements at regular intervals in the input stream. You might need to change some of the following entries on the input stream:

- The CREATE INDEX . . . FREEPAGE option is set to **10** for most of the indexes. This setting adds a free page to the index space for every ten full index pages that are created by using DB2 utilities, or if CREATE INDEX is invoked after the table already contains data rows. However, in WebSphere Studio Asset Analyzer, DB2 is loaded by using only SQL INSERT statements (never the DB2 LOAD utility), and indexes are never created dynamically.

Thus the only time that DB2 will use the FREEPAGE setting is if the database is REORGed. As a result, the CREATE INDEX . . . FREEPAGE value might never get used. If, however, there is a policy to REORG all DB2 tables at regular intervals and you have very limited DASD space, the DBA might want to change this value to **0** or **20**. In addition, in an environment of constrained memory, the DBA might want to set the SECQTY to **20 percent** of the primary quantity.

- If you run the job to create the database a second time after a *successful* creation, before resubmitting the job, you need to remove the ‘--’ symbols preceding the DROP statements for the DATABASE and STOGROUP, if present, and their corresponding COMMIT statements.
2. This job must be submitted by a user with the proper DB2 authority for creating a database, tables, indexes, and views. If you do not have the authority to create these objects, save this file and have the appropriate user submit this job. If you do have the proper authority, submit the job by entering the **SUB** command.
  3. Check each step in the JESYSMSG JES2 for a condition code of 0000.
  4. If there is an error, use the following process to find the error, correct it, and resubmit the job to create the database:
    - a. Determine the statement that caused the error by looking in the following outputs to find detailed processing information:

**SYSPRINT DMHTEP2**  
Find occurrences of "SQLCODE =-".

**SYSPRINT UTIL**  
Verify that the last line in the file reads:  
DSNUGBAC - UTILITY EXECUTION COMPLETE, HIGHEST RETURN CODE=0
    - b. Correct the error.



- c. Identify what components, if any, were created, and then delete them before you try to create the database again. Edit SYSPRINT DMHTEP2, and scan each **CREATE** statement for **SQLCODE = 000**. Below is an example of a successful creation of database DMHDB:

```

***INPUT STATEMENT: CREATE DATABASE DMHDB DMHSTOGR SYSDEFLT
BUFFER POOL BP0;
RESULT OF SQL STATEMENT:
DSNT400I  SQLCODE = 000, SUCCESSFUL EXECUTION
CREATE SUCCESSFUL

```

- d. If the database was created successfully, uncomment the **DROP DATABASE** and **COMMIT** statements. If during installation you specified “Y” to “New storage group?” and the **STOGROUP** was created successfully, uncomment the **DROP STOGROUP** and **COMMIT** statements.
- e. Resubmit the job.

## Binding DB2 packages and plans

To customize and submit a job to bind the DB2 packages and plans, do the following steps:

1. On the Install menu, select Option 2, Bind DB2 packages and plans. A bind job JCL stream is presented in an editor.
2. If your DB2 subsystem is not configured for distributed DB2, edit the BIND PLAN control statements. The **PKLIST** parameter specifies each package name beginning with an asterisk. Edit all package specifications to remove the asterisk and period, as shown in the following example:

Unedited Version	Edited Version
BIND PLAN(DMHP0700)	BIND PLAN(DMHP0700) -
QUALIFIER(DMH) -	QUALIFIER(DMH) -
PKLIST(*.DMH.DMHD233 -	PKLIST(DMH.DMHD233 -
*.DMH.DMHDROL -	DMH.DMHDROL -
*.DMH.DMHD233 -	DMH.DMHD233 -
. . .	. . .

3. Submit the job by entering the **SUB** command.
4. Check each step in the JESYSMSG JES2 for a condition code of 0000.

## Granting DB2 privileges

When you create a DB2 database, only you have access to it. To make it accessible to other users, you need to grant them the privilege to access its tables, packages, and plans. The job that you submit in this task grants public access to the database to all users, unless you choose to modify the job to restrict access to certain users. The permissions that you grant persist even if you later drop and recreate the database, because DB2 keeps its own record of access rights. Therefore, you need to resubmit this job only if you need to modify privileges.

To customize and submit a job to grant DB2 privileges, do the following steps:

1. On the Install menu, select Option 3, Grant DB2 privileges.
2. You are presented with a JCL stream. Edit the SQL statements if you need to modify access to the database.
3. Submit the job by entering the **SUB** command.
4. Check the steps in the JESYSMSG JES2 output for a condition code of 0000. If this is not the first run of the JCL to grant DB2 privileges, step name

DMHTEP2 might result in a condition code of 0004. To verify the condition code for your job, review the **SYSPRINT DMHTEP2** output, scanning for SQLCODE = 562 on any of the **GRANT** statements. Below is an example of the output messages for this condition for package DMH.DMHDCOM:

```
***INPUT STATEMENT: GRANT ALL ON PACKAGE DMH.DMHDCOM TO PUBLIC;
SQLWARNING ON GRANT COMMAND, EXECUTE FUNCTION
RESULT OF SQL STATEMENT:
DSNT404I SQLCODE = 562, WARNING: A GRANT OF A PRIVILEGE
WAS IGNORED BECAUSE THE GRANTEE ALREADY HAS THE PRIVILEGE FROM
THE GRANTOR
DSNT418I SQLSTATE = 01560 SQLSTATE RETURN CODE
```

You can ignore this condition.

5. If there are any errors (except SQLCODE = 562), correct them, and then resubmit the job.

---

## Configuring source code management systems

*Source Configuration Management (SCM)* products manage the complete lifecycle of components used to create a software application. WebSphere Studio Asset Analyzer supports the following SCMs:

- CA-Panvalet
- IBM SCLM
- Serena ChangeMan (if the source is stored in partitioned data sets)

If you want your users to be able to take an inventory of source that is under an SCM, you must first configure the SCM by using the WebSphere Studio Asset Analyzer ISPF interface. Each SCM that you configure will appear on the inventory wizard (from the browser interface) as a scan type. The SCMs that you choose not to configure will not appear as a choice for a scan type, and your users will not be able to scan source from those SCMs. To configure the SCMs appropriate for your system, do the following steps:

1. On the Install menu, select Option 4, Configure SCMs.
2. Type Y for each SCM from which you want to allow inventory.
3. Supply the following information if you are configuring ChangeMan. You must specify the load libraries to allow scanning from ChangeMan. They were created when ChangeMan ZMF was installed on your machine.

### **ZMF Load Library**

Specify a valid Serena ChangeMan ZMF runtime load library. For example:

```
SERENA.CMNZMF.V5R3M3.LOAD
```

### **SERNET Load Library**

Specify a valid Serena SERNET runtime load library. For example:

```
SERENA.SERCOMC.V5R4M7.LOAD
```

### **Interface**

There are two interfaces formats for Serena SERNET: RPC (Remote Procedure Call) and XML. Versions of Serena ChangeMan after V5.3 support only the XML interface.

**Restriction:** WebSphere Studio Asset Analyzer currently supports only the RPC ChangeMan interface, not the XML interface.

4. Press **Enter**.
5. Submit the job by entering the **SUB** command.

6. Check the return code from the job:

Return code	Meaning
0	The job ran without errors.
8	Check the SQL code. If the SQL code is -803, the SCM was already configured

## Making Panvalet available

Computer Associates International Inc. (CA) provides AllFusion CA-Panvalet for z/OS (Panvalet<sup>®</sup>). Panvalet is a software change and configuration management solution. If you use Panvalet to manage your source assets, you can configure WebSphere Studio Asset Analyzer to interface with your Panvalet libraries through a combination of installation parameters and user-supplied access routines.

The access routines that you need to supply to have WebSphere Studio Asset Analyzer interface smoothly with Panvalet libraries provide the following functions:

- Retrieve a file list
- Retrieve the source of a file for viewing
- Retrieve the source of a file and source of included files for analysis

You must construct these routines to meet the specifications described in the following sections. Any deviation from these specifications can cause problems with the interface.

### Retrieve a file list

The access routine that retrieves a file list, referred to as EXIT-1, is used to retrieve a list of files that reside in a given Panvalet library. It must adhere to the following specifications:

- Be implemented in REXX
- Be named DMHPANX1<sup>1</sup>
- Reside in the WebSphere Studio Asset Analyzer *yourHLQ.SDMHREXX* product library
- Accept the following two parameters, separated by a comma, with no intervening space characters:
  1. The Panvalet library name from which the list of files is to be retrieved
  2. The name of a sequential data set, supplied by WebSphere Studio Asset Analyzer, into which the file list results are to be placed<sup>2</sup>
- Produce a file list with one file name per an eighty-character record, space terminated
- Return a count of the file names that are retrieved

The following example shows the REXX invocation that WebSphere Studio Asset Analyzer uses to invoke EXIT-1:

---

1. You can modify the specified EXIT name before you configure WebSphere Studio Asset Analyzer to interface with Panvalet, by editing the supplied ISPF skeleton file *yourHLQ.SDMHSLIB(DMHI500S)*. This file has the specification of the EXIT names DMHPANX1 and DMHPANX2. You can change these names to any valid MVS PDS member name.

2. WebSphere Studio Asset Analyzer is responsible for creating and deleting the data set into which the results are returned. The data set is allocated as LRECL(80) RECFM(F,B) DSORG(PS). If your access routine allocates the data set, it must free it before completing.

```
memberCount = DMHPANX1('USER.PANLIB, DMH.USER.T074720.M092256.D0125')
```

### Retrieve source for viewing

The access routine that retrieves the source in file for viewing, referred to as EXIT-2, is used to retrieve the source records from a single file in a given Panvalet library. It must adhere to the following specifications:

- Be implemented in REXX
- Be named DMHPANX2<sup>1</sup>
- Reside in the WebSphere Studio Asset Analyzer *yourHLQ.SDMHREXX* product library
- Accept the following three parameters, separated by commas, with no intervening space characters:
  1. The Panvalet library name from which the source of the file is to be retrieved
  2. The file name of the source to be retrieved
  3. The name of a sequential data set, supplied by WebSphere Studio Asset Analyzer, into which the source is to be placed<sup>2</sup>
- Return the source in eighty-character records
- Return a count of the source records that are retrieved

The following example shows the REXX invocation that WebSphere Studio Asset Analyzer uses to invoke EXIT-2:

```
recordCount = DMHPANX2('USER.PANLIB, MEMB01, DMH.USER.T085310.M150403.D0125')
```

### Retrieve source for analysis

The access routine that retrieves the source of a file and the source of included files for analysis, referred to as native library access, is used to directly read the contents of one or more files in one or more Panvalet libraries. It is invoked by the WebSphere Studio Asset Analyzer analyzers to efficiently access the source of a file and the source of any included files. It is invoked as metadata about the first file is gathered.

While the WebSphere Studio Asset Analyzer analyzers are collecting metadata about source assets, they periodically need to perform the following functions against Panvalet libraries. This access routine implements the logic to perform these functions.

1. Open a file
2. Read a file
3. Close a file
4. Search for the existence of a file

This access routine must adhere to the following specifications:

- Be named DMHPAN
- Be compiled with options AMODE(24) and RMODE(24)
- Be called dynamically
- Reside in the WebSphere Studio Asset Analyzer *yourHLQ.SDMHLOAD* product library
- Support the following four functions with the indicated parameter:
  - C** to close a particular file in a particular Panvalet library
  - O** to open a particular file in a particular Panvalet library
  - R** to read the next 80 byte record of the open file

- **S** search to see if a particular file in a particular Panvalet library exists
- Support being invoked with the following three input parameters:
  - PARM\_IN\_FUNCTION**  
A one-character field
  - PARM\_IN\_DDNAME**  
An eight-character field
  - PARM\_IN\_FILE**  
A ten-character field
- Return the following output parameter:
  - PARM\_OUT\_RECORD**  
An eighty-character field
- Expected to return one of the following valid return codes:
  - 0** Successful execution
  - +1** End Of File (EOF) for READ, or File Not Found (FNF) for SEARCH
  - +16** Failure
- Support at least 256 nested invocations for the open, read, and close functions. For these function, the following must hold true:
  - An invocation is unique based on the combination of PARM\_IN\_DDNAME and PARM\_IN\_FILE.
  - If these two input parameters are the same as those of a previous invocation, the function is performed against the same Panvalet library and file. The following values should be returned for the indicated function:
    - OPEN** +16
    - READ**
      - +1 EOF
      - PARM\_OUT\_RECORD and zero** otherwise
    - CLOSE**
      - 0** after closing an open file
      - +16** otherwise
    - SEARCH**
      - 0, +1 or +16 as appropriate from OPEN, check for existence, and CLOSE
  - If either of these two input parameters are different than an existing prior combination, the function must be OPEN or SEARCH. If it is READ or CLOSE a +16 should be returned.

The following COBOL example shows a typical dynamic CALL invocation that WebSphere Studio Asset Analyzer would use to invoke this access routine:

```

01 DMHPAN PIC X(06) VALUE "DMHPAN".
01 PARM-DATA.
   05 PARM-LENGTH PIC S9(04) COMP.
   05 PARM-IN-FUNCTION PIC X(01).
   05 PARM-IN-DDNAME PIC X(08).
   05 PARM-IN-FILE PIC X(10).
   05 PARM-OUT-RECORD PIC X(80).

MOVE SPACE TO PARM-DATA

```

```
MOVE "O" TO PARM-IN-FUNCTION
MOVE "PANDD1" TO PARM-IN-DDNAME
MOVE"MEMB01" TO PARM-IN-FILE
```

```
CALL DMHPAN USING PARM-DATA
```

## Constructing concatenation sets

Panvalet ++INCLUDE statements are automatically handled during inventory scans, if the concatenation sets are generated automatically or if you construct them by using the WebSphere Studio Asset Analyzer user interface. However, if you construct the concatenation sets manually by editing members in the &UHLQ.INCL2 library on MVS, then you must add two, otherwise optional, space-delimited, parameters to the concatenation set records. The two parameters are **RM=** and **RMDD=**, which specify the resource manager and the resource DD name, respectively. The following parameter values are valid for an MVS installation of WebSphere Studio Asset Analyzer:

**RM=** PDS and PAN; PDS is the default.

**RMDD=**

Any valid DD NAME value. It must be unique within a given concatenation set. This parameter is required only when you specify **RM=**PAN.

The following example shows a valid concatenation set content. It indicates that the first and third libraries to be searched are PDS libraries, while the second and fourth are PAN libraries.

```
DMH.APPL.COPYLIB1
DMH.APPL.PANLIB1 RM=PAN RMDD=PANINCL1
DMH.APPL.COPYLIB2 RM=PDS
DMH.APPL.PANLIB2 RM=PAN RMDD=PANINCL2
```

Once you have satisfied these requirement and selected Panvalet for inventory scans, your users will process Panvalet libraries the same as they do PDS libraries.

## Making ChangeMan and SCLM available

To complete configuration of ChangeMan or SCLM, you need to edit the member *yourHLQ.SDMHCNTL(DMHPRCQU)*, shown below, and remove the comment character from the appropriate DD statements. Use the comments in the JCL as your guide. TEMPLC is used for both ChangeMan and SCLM. The other DD statement apply only to one of the SCMs, as noted in the JCL comments.

```
/*-----*
/* Uncomment the following DD for ChangeMan and/or SCLM support
/*-----*
/*TEMPLC DD DSN=&&TEMPLC,DISP=(MOD,PASS),
/*          SPACE=(133,(5000,10000)),UNIT=SYSDA,
/*          DCB=(DSORG=PS,RECFM=FB,LRECL=133)
/*-----*
/* Uncomment the following DD for ChangeMan support
/*-----*
/*RPCTRACE DD DUMMY
/*-----*
/* Uncomment the following DDs for SCLM support
/*-----*
/*ISPCTL1 DD DISP=NEW,
/*          SPACE=(CYL,(1,1)),UNIT=SYSDA,
/*          DCB=(LRECL=80,BLKSIZE=800,RECFM=FB)
/*ISPLOG DD SYSOUT=*,
/*          DCB=(LRECL=120,BLKSIZE=2400,DSORG=PS,RECFM=FB)
/*ISPMLIB DD DSN=&DMHISHLQ..SISPMENU,DISP=SHR
/*ISPPLIB DD DSN=&DMHISHLQ..SISPSENU,DISP=SHR
```

```

/*ISPLIB DD DSN=&DMHISHLQ..SISPPENU,DISP=SHR
/*ISPPROF DD DSN=&&TEMPLIB3,DISP=(NEW,PASS),
/*          SPACE=(CYL,(1,1,5)),UNIT=SYSDA,
/*          DCB=(LRECL=80,BLKSIZE=19040,DSORG=PO,RECFM=FB)
/*ISPTLIB DD DSN=&&TEMPLIB1,DISP=(NEW,PASS),
/*          SPACE=(CYL,(1,1,5)),UNIT=SYSDA,
/*          DCB=(LRECL=80,BLKSIZE=19040,DSORG=PO,RECFM=FB)
/*          DD DSN=&DMHISHLQ..SISPTENU,DISP=SHR
/*-----*

```

---

## Configuring inventory analyzers

There might be situations and conditions in your shop that necessitate your making changes to the default configuration of the analyzers that WebSphere Studio Asset Analyzer uses to scan and analyze your assets. You can use the instructions in this section to update the settings for the indicated analyzers.

### Configuring the JCL analyzer

By default JCL analysis uses the libraries in an associated concatenation set to resolve **INCLUDE** and **PROC** statement references. The analyzer handles **JCLLIB ORDER=(library1 [ [ ,library2 ] ... ] )** statements in the same manner as JES. To wit, the libraries listed are prepended to the concatenation set list, and the resulting list is used to resolve references.

However, if you have security requirements that deny users access to the JCLLIB members, the JCL analyzer fails. To address this situation, you need to configure the JCL analyzer to allow your users to analyze a JCLLIB ORDER statement but ignore the library list, thus using only what is specified in the associated concatenation set to resolve included statements.

To configure the JCL analyzer (DMH4000) to ignore the libraries found, set the ignore JCLLIB parameter (-i) by following these steps:

1. Edit the WebSphere Studio Asset Analyzer file *yourHLQ.SDMHREXX(DMH630Z)*.
2. Find the first occurrence of the variable `dmh4000Parm`.
3. Change the assignment from `dmh4000Parm = 'RM='containerType` to `dmh4000Parm = '-I RM='containerType`.
4. Save the file.

This change affects all JCL scans.

---

## Configuring the default job card for clients

All source scanning performed by WebSphere Studio Asset Analyzer is processed as batch jobs created through the browser and submitted by the HTTP server. The default job card that is provided to the browser clients resides in the file *yourHLQ.SDMHREXX(DMHPARMS)*. You should edit this file and update the **DMHJBDF1** through **DMHJBDF4** lines with appropriate parameters and settings. The following job card is the initial default:

```

/***** Job Cards for building JCL ***/
DMHJBDF1 = "00000000,'WEBSHERE STUDIO AA',"
DMHJBDF2 = "//          CLASS=A,MSGCLASS=H,MSGLEVEL=(1,0),"
DMHJBDF3 = "//          REGION=4M"
DMHJBDF4 = "/**          DEFAULT JOB CARD"

```

To edit the job card and have your changes preserved, do the following steps:

1. Exit from the DMHINSTL install program.
2. Edit DMHPARMS to change the values. Notice that **DMHJBDF1** does not have the full syntax of a job card, just the text that follows the **JOB** keyword. Thus, for example, for the following full syntax:

```
//F001 JOB ,MSGLEVEL=(1,1),CLASS=K,
```

use the following for **DMHJBDF1**:

```
DMHJBDF1 = ",MSGLEVEL=(1,1),CLASS=K,"
```

The job name and **JOB** keyword are implied.

3. Save your changes.
4. Run the Setup Option 0 step of DMHINSTL again. Press F3 to save and exit. This causes your job card changes to be written to the proper configuration files.

If you find that DMHPARMS does not exist, you have done the configuration steps out of order. Setup option 0 must be the first step in configuring WebSphere Studio Asset Analyzer.

#### RELATED TASKS

“Defining product defaults” on page 10

---

## Restarting the HTTP Server

Restart the HTTP Server before performing the next task. Verify that WebSphere Application Server starts correctly and that there are no WebSphere Studio Asset Analyzer exceptions in the WebSphere Application Server and HTTP logs.

---

## Removing old macros

Use this section only if you are installing WebSphere Studio Asset Analyzer on a machine on which you had previously installed an earlier version of WebSphere Studio Asset Analyzer.

Starting with version 4.1, WebSphere Studio Asset Analyzer no longer uses Net.Data. If you are replacing a version earlier than 4.1 with version 4.1 or later, you should remove old WebSphere Studio Asset Analyzer Net.Data macros by doing the following steps:

1. Remove the directory that contains the old Net.Data macros by using a command such as `rm -rf /usr/lpp/dmh/macro`
2. Edit your `httpd.conf` file and remove the following line:

```
Protect /netdata-cgi/db2www/dmh* DMH_Prot
```

---

## Installing the Server Component on Windows or AIX

Use this section only if the Server Component is going to be running on WebSphere Application Server for Windows or WebSphere Application Server for AIX. Ignore this section if the Server Component is running on WebSphere Application Server on z/OS. If you have an earlier version installed, you do not have to uninstall it; the ISMP install automatically picks up the existing settings of your configuration and reinstalls the Web apps.



**Prerequisites:** If you are planning to scan distributed assets, the following prerequisites must be satisfied:

- The WebSphere Studio Asset Analyzer database must have been created with distributed assets enabled.
- The machine on which you are installing must have access to the distributed source code that you plan to scan.

Download, install, and configure the Windows or AIX Server Component by performing the following tasks:

1. Set up the connection to the DB2 database on z/OS.
2. Download the Server Component installer.
3. Install the Server Component.
4. Configure distributed scan roots.
5. Verify the installation of the Server Component.
6. Start the distributed scanner.

## Setting up the connection to the database

To access the DB2 database on z/OS, do the following steps for Windows or for AIX.

**Windows:** To access the host database from Windows, you need to define an alias for the remote database. To define the alias, do the following steps:

1. Click the appropriate sequence from the following list to start the DB2 Client Configuration Assistant. The sequence varies with the level of Windows and the version of DB2 that you are using.
  - **Start -> Programs -> IBM DB2 -> Client Configuration Assistant**
  - **Start -> Programs -> DB2 for Windows NT -> Client Configuration Assistant**
  - **Start -> All Programs -> IBM DB2 -> Set -up tools -> Configuration Assistant**
2. In the Configuration Assistant, right click the list of aliases to start a wizard.
3. Follow the steps in the wizard to create another alias.

After you define the alias, ensure that you can connect to the database by doing the following steps:

1. Select the new database alias in the Client Configuration Assistant.
2. Click **Test**.
3. Supply the userid and password that is be used to connect to the database. (The userid must be eight or fewer characters.)
4. Correct any errors that you encounter in accessing the database before you proceed.

**Restriction:** If you are using DB2 UDB Runtime Client V8.1 for Windows, you must install fixpack 6 to avoid communication problems with WebSphere Application Server.

**AIX:** Ensure that you have the proper access to the product database on z/OS by doing the following steps to connect to MVS from DB2:

1. Catalog a node for MVS by using a command such as DB2 CATALOG TCP/IP NODE name REMOTE host SERVER 446 OSTYPE MVS . For example:  
`db2 catalog tcpip node v33ec104 remote v33ec104.svl.ibm.com server 446 ostype mvs`

2. Catalog a database on the remote MVS system to the node by using a command such as DB2 CATALOG DB name [AS alias] AT NODE node\_name AUTHENTICATION SERVER . For example:  

```
db2 catalog db STLEC1 as STLEC4 at node v33ec104 authentication server
```

## Downloading the Server Component installer

Download the installation program, `wsaasetup.jar`, to your Windows or AIX machine by using FTP or a similar file transfer program in binary mode. The program is typically found in the `/usr/lpp/dmh/downloads` directory.

## Installing the Server Component

After you have downloaded the InstallShield executable, do the following steps to install the Server Component:

1. Start WebSphere Application Server.
2. Open a command window, and change to the directory that contains the installer jar file.
3. Ensure that Java version 1.3.1 or above is set up in the current environment. You can determine the version by running this command: `java -version`. If JRE v1.3.1+ is not currently defined in the environment, you can do so by performing the following steps. (Use SET on Windows or EXPORT on AIX.)
  - a. Add the JRE v1.3.1+ runtime bin directory to the PATH variable.
  - b. Set the JAVA\_HOME variable to the root directory of the JRE.
4. Run the installer wizard, which guides you through the installation, by issuing the command `java -jar wsaasetup.jar`.
5. Provide the information that the wizard requests:
  - a. Specify an install directory in the root of a drive, using only the characters a-z, A-Z, 0-9 and \_ in the directory name. For example: `c:\dmh`.  
**Tip:** The installation path cannot have any blanks in the name, such as `c:\Program Files\dmh`.
  - b. Click **Runtime install** under "Select the type of install to perform."
6. Reboot or restart the following applications as appropriate:
  - **Windows:** you must either reboot your machine, or restart WebSphere Application Server and DB2.
  - **AIX:** you must restart WebSphere Application Server and DB2.

If you fail to perform this step, you will get the error message " 'wsaaHome' variable not defined" when you try to access the web application.

## Verifying the Server Component installation

You can now verify the installation of the Server Component by attempting to bring up the main page. To access WebSphere Studio Asset Analyzer, do the following steps:

1. Ensure that the WebSphere Application Server and HTTP Server, if applicable, are started.
2. Click **Start** -> **Programs** -> **IBM WebSphere Studio** -> **Asset Analyzer** to bring up the browser with the Web interface. You are prompted with a system logon.
3. Enter your user name and password. Click **OK**.

The WebSphere Studio Asset Analyzer interface opens at the Home page. Verify that there is a timestamp, such as Wednesday, August 13, 2003 5:30:28 PM PDT, in the bottom right corner of this page. If there is no timestamp, WebSphere Studio

Asset Analyzer is not accessing the database properly and other WebSphere Studio Asset Analyzer operations will fail. The most likely cause of this problem is with JDBC. To determine the cause of the problem, check the logs that were produced when you started WebSphere Application Server and the HTTP Server. In particular, look for DB2 connection errors in those logs, such as messages indicating that JDBC is not mounted, is not configured properly, or is otherwise not communicating properly with DB2. Correct any errors before proceeding.

---

## Installing the Distributed Scanner Component on Windows or AIX

Use this section only if the Server Component is going to be running on WebSphere Application Server for z/OS, and users are going to work with distributed assets.

If you installed the Server Component on Windows or AIX, skip this section: you do not need to install the Distributed Scanner Component, because the Scanner Component is a subset of the Server Component when installed on Windows or AIX.

**Prerequisites:** If you are planning to scan distributed assets, the following prerequisites must be satisfied:

- The WebSphere Studio Asset Analyzer database must have been created with distributed assets enabled.
- The machine on which you are installing must have access to the distributed source code that you plan to scan.

Download, install, and configure the Windows or AIX scanner component by performing the following tasks:

1. Set up the connection to the DB2 database on z/OS.
2. Download the WebSphere Studio Asset Analyzer installation jar file (/usr/lpp/dmh/downloads/wsaasetup.jar).
3. Install the Distributed Scanner Component.
4. Start the distributed scanner.

## Setting up the connection to the database

To access the DB2 database on z/OS, do the following steps for Windows or for AIX.

**Windows:** To access the host database from Windows, you need to define an alias for the remote database. To define the alias, do the following steps:

1. Click the appropriate sequence from the following list to start the DB2 Client Configuration Assistant. The sequence varies with the level of Windows and the version of DB2 that you are using.
  - **Start -> Programs -> IBM DB2 -> Client Configuration Assistant**
  - **Start -> Programs -> DB2 for Windows NT -> Client Configuration Assistant**
  - **Start -> All Programs -> IBM DB2 -> Set -up tools -> Configuration Assistant**
2. In the Configuration Assistant, right click the list of aliases to start a wizard.
3. Follow the steps in the wizard to create another alias.

After you define the alias, ensure that you can connect to the database by doing the following steps:

1. Select the new database alias in the Client Configuration Assistant.
2. Click **Test**.
3. Supply the userid and password that is be used to connect to the database. (The userid must be eight or fewer characters.)
4. Correct any errors that you encounter in accessing the database before you proceed.

**Restriction:** If you are using DB2 UDB Runtime Client V8.1 for Windows, you must install fixpack 6 to avoid communication problems with WebSphere Application Server.

**AIX:** Ensure that you have the proper access to the product database on z/OS by doing the following steps to connect to MVS from DB2:

1. Catalog a node for MVS by using a command such as DB2 CATALOG TCP/IP NODE name REMOTE host SERVER 446 OSTYPE MVS . For example:  

```
db2 catalog tcpip node v33ec104 remote v33ec104.svl.ibm.com server 446 ostype mvs
```
2. Catalog a database on the remote MVS system to the node by using a command such as DB2 CATALOG DB name [AS alias] AT NODE node\_name AUTHENTICATION SERVER . For example:  

```
db2 catalog db STLEC1 as STLEC4 at node v33ec104 authentication server
```

## Downloading the Distributed Scanner Component installer

Download the WebSphere Studio Asset Analyzer install jar file to your Windows or AIX machine by using FTP or a similar file transfer program in binary mode. You can find the install jar file in /usr/lpp/dmh/downloads/wsaasetup.jar.

## Installing the Distributed Scanner Component

After you have downloaded the installation jar file, do the following steps to install the Scanner Component on AIX or Windows:

1. Start WebSphere Application Server.
2. Open a command window, and change to the directory that contains the jar file.
3. Ensure that Java version 1.3.1 or above is set up in the current environment. You can determine the version by running this command: `java -version`. If JRE v1.3.1+ is not currently defined in the environment, you can do so by performing the following steps. (Use SET on Windows or EXPORT on AIX.)
  - a. Add the JRE v1.3.1+ runtime bin directory to the PATH variable.
  - b. Set the JAVA\_HOME variable to the root directory of the JRE.
4. Issue the command `java -jar wsaasetup.jar`, which guides you through the installation.
5. Provide the information that the installer requests:
  - a. Specify an install directory in the root of a drive, using only the characters a-z, A-Z, 0-9 and \_ in the directory name. For example: `c:\dmh`. There is a panel on which you can select whether to install the server component or just the scanner component.

**Tip:** The installation path cannot have any blanks in the name, such as `c:\Program Files\dmh`.
  - b. Click **Distributed scanner install** under "Select the type of install to perform."

6. Reboot or restart the following applications as appropriate:
  - **Windows:** you must either reboot your machine, or restart WebSphere Application Server.
  - **AIX:** you must restart WebSphere Application Server.

If you fail to perform this step, you will get the error message " 'wsaaHome' variable not defined" when you try to access the web application.

---

## Starting the distributed scanner

Use this section only if you plan to scan distributed assets.

To start the distributed scanner, do the following steps:

1. On Windows click **Start -> Programs -> IBM WebSphere Studio -> Asset Analyzer -> Distributed Scanner**
2. On AIX:
  - a. Open a command window, and then change to the installdir/assetloc directory.
  - b. Run the command `alrun.sh`

**Start scanner before adding scan roots:** You must run the distributed scanner at least once before you can add scan roots. Starting the scanner puts information about the current distributed site into the database, so that you can add scan roots through the product Web interface.

**AIX environment settings:** The shell that you use to run the distributed scanner must contain the environment setting that is required for DB2 access. These settings are located in the `db2profile` script that is located in the DB2 user home-directory/`sqlib`. The default DB2 user, usually called `db2inst1`, has this setting in its profile. You can move to this user by using the command `su - db2inst1`, or by importing the settings of the `db2inst1` user shell to your own shell.

### Windows paging size:

On Windows you might need to increase the virtual memory page size to prevent abnormal program termination when running the distributed scanner. WebSphere Studio Asset Analyzer initially sets the maximum heap size used by the Java virtual machine to 500 MB. Out-of-memory errors can occur when distributed assets are scanned, if the Windows virtual memory page size is set to a value less than 500 MB. If the Java virtual machine attempts to allocate more than the page size, it returns a C++ error that indicates an abnormal program termination. The solution is to set the Windows virtual memory page size to a value greater than 500 MB. The recommended size is equivalent to 1.5 times the amount of RAM on your system. To change the Windows virtual memory page size, do the following steps. You must be logged on to Windows as an administrator to perform this procedure.

1. Click **Start -> Settings -> Control Panel**, and then double click **System**.
2. On the **Advanced** tab, click **Performance Options**.
3. On the Performance Options dialog, under **Virtual memory**, click **Change**.
4. On the Virtual Memory dialog, under **Drive**, click the drive that contains the paging file that you want to change (the drive on which the scanner runs).
5. Under **Paging file size** for selected drive, type a new paging file size in megabytes in the Maximum size (MB) field, and then click **Set**.

## Scanning AIX file systems from Windows:

The WebSphere Studio Asset Analyzer distributed file system scanner on Windows supports the scanning of AIX file systems through the use of any network directory mapping technology, such as SAMBA, to map an AIX directory onto a Windows NT drive. On AIX file systems, you can define a soft link in a directory to some other directory. WebSphere Studio Asset Analyzer scans the mapped directory as it does any other directory. When an AIX file system contains cyclic soft links, the file system scanner scans the same code over and over (for up to 1000 levels). For example, if directory A has a soft link to Directory B and B has a soft link to A, then the file system scanner will scan A then A/B then A/B/A then A/B/A/B, and so on. When scanning AIX, verify that soft links have no cyclic referencing.

---

## Configuring what metrics are exposed

WebSphere Studio Asset Analyzer calculates basic metrics and statistics for software assets and makes them available through the Web interface. These measurements can be reported for individual programs and files, and aggregate totals and averages can be reported for applications. See the online help for the details of this function. Click **Product overview** -> **Statistics and metrics** for an overview. Click the related links in that topic for more details.

You can configure what metrics are exposed in the interface by updating the product database table DMH\_SYSTEM\_ATTR: add or remove entries as described in this section.

The following three database tables govern what metric information is displayed:

### DMH\_SYSTEM\_ATTR

If there is a row in this table with the value (*nnn*, 600, *x*, CURRENT TIMESTAMP), the values of attribute *nnn* from the DMH\_NUM\_PROPERTY table are exposed on the Statistics tabs of the Application details and Program summary pages.

### DMH\_NUM\_PROPERTY

Holds the attributes that are associated with ID *nnn*.

### DMH\_ATTR\_NAME

Holds name-value pairs, where the name describes the attribute identified by *nnn*.

The database tables are documented in the product online help. Click **Administrative information** -> **Database tables**, and then click the table of interest.

## Suppressing exposure

When you install WebSphere Studio Asset Analyzer, the DMH\_SYSTEM\_ATTR database table is populated with the following inserts for attributes that are to be exposed:

```
106 600    current timestamp
602 600    current timestamp
603 600    current timestamp
604 600    current timestamp
```

which correspond to the following entries in table DMH\_ATTR\_NAME:

106 Number of lines in file  
602 Halstead Effort  
603 Essential Complexity  
604 Cyclomatic Complexity

To have one or more of these attributes not exposed in the interface, remove the corresponding row in table DMH\_SYSTEM\_ATTR.

## Adding exposure

To add metrics that are to be exposed on the interface, do the following steps:

1. Pick an attribute ID, *ddd*, from 650 to 699, and create an associated description (a name-value pair).
2. Add a row to the DMH\_ATTR\_NAME table with your name-value pair.
3. Populate the DMH\_NUM\_PROPERTY table with the values that correspond to *ddd*.
4. Add a row to the DMH\_SYSTEM\_ATTR table with the value (*ddd*, 600, *x*, CURRENT\_TIMESTAMP).

---

## Setting up for WebSphere Studio Asset Analyzer Web Services

You need WebSphere Application Server 5.1 or later to use WebSphere Studio Asset Analyzer Web Services; older versions of WebSphere Application Server are not supported.

If you require external programmatic client access to the WebSphere Studio Asset Analyzer inventory, you need WebSphere Studio Asset Analyzer Web Services to be available. To make these services available, install an additional enterprise application that is provided with WebSphere Studio Asset Analyzer by doing the following steps:

1. **With WebSphere Application Server on Windows:** If you are using WebSphere Application Server on Windows, first download via FTP or a similar method the /usr/lpp/dmh/install/wsaexternal.ear file from MVS to your local workstation or server.
2. Install the Web Services application from the WebSphere Application Server Administrative console:
  - a. Click **Applications** -> **Enterprise Applications**.
  - b. Click **Install**.
  - c. **With WebSphere Application Server on MVS:** Click **Server path**, and then type /usr/lpp/dmh/install/wsaexternal.ear.  
**With WebSphere Application Server on Windows:** Set the local or server path, depending on whether you downloaded the ear file to your local workstation or server, respectively.
  - d. Click **Next**.
  - e. Click **Generate Default Bindings**. Keep the default settings, such as virtual host = default\_host.
  - f. Click **Next**.
  - g. Ignore the warning about "template policy file without any permission" by clicking **Continue**.
  - h. On Step 1, click **Next** to accept the defaults.
  - i. On Step 2, click **wsaa web module**, and then click **Next**.
  - j. On Step 3, click **wsaa web module**, and then click **Next**.

- k. On Step 4, click **Next** to accept the defaults.
  - l. On the last step, click **Finish**.
  - m. Click **Save to Master Configuration**, and do the steps for saving to the master configuration.
3. Start the Web Services application from the WebSphere Application Server Administrative console:
- a. Click **Applications** -> **Enterprise Applications**.
  - b. Select WsaaExternal.ear, and then click **Start**.



---

## Chapter 4. Verifying that the product was successfully installed and configured

To verify that WebSphere Studio Asset Analyzer was successfully installed and configured, you run an installation verification program (IVP) that uses a sample PDS library and a sample CICS region, both of which are provided with the product.

First, you work with WebSphere Studio Asset Analyzer ISPF panels to load a logical CICS region. If you have installed the Windows or AIX Server Component, you must use the Scanner to load the verification EAR file. Then you access WebSphere Studio Asset Analyzer from your workstation browser to complete the IVP. During verification, you complete the following steps:

1. “Loading a logical CICS region”
2. “Taking an inventory of PDS members” on page 36
3. “Verifying component counts” on page 37
4. “Loading and verifying distributed components” on page 38
5. “Resetting the database to its initial state” on page 40

---

### Loading a logical CICS region

To help you verify that WebSphere Studio Asset Analyzer recognizes CICS regions and includes associated transactions in the database inventory, WebSphere Studio Asset Analyzer provides a logical CICS region. Use the DMHINIT utility by running the TSO command `EX 'yourHLQ.SDMHREXX(DMHINIT)'` to load the logical system into the database.

To access the main options panel and load the logical CICS region, do these steps:

1. Edit the data set `yourHLQ.SDMHSIMP(DMHREG01)`, and change the name of the site to your own site name. This avoids introducing an extra row in your `DMH_SITE` table, and ensures that subsequent counts are accurate.
2. Select ISPF Option 6.
3. Enter the following command, substituting your DSN high-level qualifier for `yourHLQ`.  
`EX 'yourHLQ.SDMHREXX(DMHINIT)'`
4. Select Option 3, Utilities.
5. Select Option 3, On-demand load.
6. Enter `yourHLQ.SDMHSIMP(DMHREG01)` in the **Database import file** field.
7. Press **Enter** to edit the JCL stream.
8. Submit the job by entering the **SUB** command.
9. Check the steps for zero return codes.

You will verify that the CICS components loaded successfully when you complete section “Verifying component counts” on page 37.

---

## Taking an inventory of PDS members

To take an inventory of PDS members, you use the WebSphere Studio Asset Analyzer browser interface and a sample PDS library.

To access WebSphere Studio Asset Analyzer, do the following steps:

1. In the **Address** field of your browser, enter the address of WebSphere Studio Asset Analyzer. This address is of the following form:

```
http://<hostname>/dmh
where
```

<hostname> is your server's name such as www.ibm.com or www.ibm.com:9080

You are prompted with a system logon.

2. Enter your WebSphere Studio Asset Analyzer administrator userid and password. Click **OK**.

You might be prompted twice.

3. Click **Database -> Inventory**. The inventory wizard opens in a separate window.

If you do not see the Inventory menu, the userid that you used does not have administrator authority.

To complete taking the inventory, do these steps:

1. "Taking an inventory of the sample PDS library"
2. "Checking the status of inventory collection" on page 37
3. "Checking results of your inventory in the browser" on page 37

## Taking an inventory of the sample PDS library

For IVP, WebSphere Studio Asset Analyzer provides a sample library *yourHLQ.SDMHSSRC* that includes COBOL, Assembler, PL/I, and JCL members. During the inventory phase, WebSphere Studio Asset Analyzer performs the following operations:

- Scans information about the sample library into the DB2 database that you created earlier
- Identifies the PDS members and their characteristics (such as main or include and the language type)
- Creates and assigns concatenation sets to identify the search path for included files

To take an inventory of the library *yourHLQ.SDMHSSRC*, complete the following steps in the Inventory wizard:

1. On the Choose a site page, click the name of your site from the drop-down list, and then click **Next**.
2. If the Choose scan type page is visible, click **MVS Default Catalog**. (This page is presented only if you have added more scan types, such as SCLM.) Click **Next**.
3. On the Specify the container page:
  - a. In the **MVS PDS or PDSE Library** field, enter the name of the library to be scanned: *yourHLQ.SDMHSSRC*.
  - b. Leave the asterisk '\*' in the **Limit file search** field, so that all members of the data set are scanned (the default).
  - c. Click **Next**.

4. On the Assign to application page, click **Next** to accept the **Do not assign to an application** default.
5. On the Assign default concatenation sets page, click **Next** to have the default concatenation sets assigned.
6. On the Add to the queue page, click **Next** to queue the inventory request.
7. On the Process queued requests page:
  - a. Make any necessary changes to the JOB card.
  - b. Click **Finish**.

## Checking the status of inventory collection

The inventory scan takes several minutes to complete.

To check the progress of your scan, click **Database -> Analysis queue**. The Analysis queue information page opens. This page contains the status of assets that are in the process of being scanned into the inventory database.

The highlighted line labeled **Inventory collection requests in-progress** shows how many members are yet to be scanned into the inventory database. By refreshing this window, you see the values for this line change.

If you monitor the status of this job and check the return code value on MVS, it should complete with RC=0. In general however, any job that you submit that generates a return code value greater than zero has encountered a problem. You should investigate and correct the error.

## Checking results of your inventory in the browser

To view the assets that you scanned during the IVP, click **Explore -> MVS assets**.

---

## Verifying component counts

When you take an inventory of the verification sample, the information about the sample CICS region and PDS members is loaded into the product DB2 database. To verify that the information in the database is correct, you need to check the counts for the sample components.

**Tip:** Your counts will differ from those shown here if you have performed any scans besides exactly what was outlined in the previous section. For example, if you have scanned any Distributed assets, your counts will not be the same as those shown here.

To check the counts, do the following steps:

1. Open the product browser interface.
2. Check the counts on the Home page against those shown here; they should match.<sup>3</sup>

---

3. If you started the Distributed scanner before running this IVP, the Site count will be 2.

Common assets	Total
Application	0
Container	2
File	74
Impact analysis	0
Site	1

3. Click **Explore** -> **MVS assets**.
4. Check the counts on the Explore MVS assets page against those shown here; they should match.

Run time	Total	Program	Total	Data	Total
Batch job	29	BMS map definition	1	Data element	2952
CICS group	2	BMS map set definition	1	Data set	140
CICS online region	1	Concatenation set	1	Data store	70
CICS transaction	4	DB2 stored procedure	0	DB2 column	9
DB2 system	2	Entry point	25	DB2 table	2
IMS subsystem	0	IMS PSB	0	DD name	899
IMS transaction	0	Literal	936	I/O record description	125
IMS DBD	0	Program	16		
Run unit	36				

## Loading and verifying distributed components

If you have installed the Windows or AIX Server or Distributed Scanner, be sure that you have followed the instructions at “Verifying the Server Component installation” on page 28 before proceeding.

After you have completed the installation and configuration of the Windows or AIX components of WebSphere Studio Asset Analyzer, use the provided samples to verify your installation. Take an inventory of the TradeSample application, which is installed when you install the Windows or AIX server components of WebSphere Studio Asset Analyzer; and then verify the results.

### Loading the distributed asset sample

To take an inventory for your installation verification, do the following steps from the product Web interface. You must have WebSphere Studio Asset Analyzer administrative authority.

1. Start the distributed scanner to ensure that the distributed site is loaded into the database. (“Starting the distributed scanner” on page 31)
2. Click **Database** -> **Analysis queue**.
3. On the Analysis queue information page, click the number for Distributed scan roots.
4. On the Distributed scan roots page, click **Create a new distributed scan root** on the **Actions** list. The Distributed scan root wizard opens in a new window.
5. On the Create new distributed scan root page, type and name and a description for the scan root, and then click **Next**.
6. On the Specify resource manager page, select **File system** as the **Resource manager**, and then click **Next**.

7. On the Specify resource type specific information page, type *install-dir\assetloc\SampleSource\TradeSample.ear* in the **Path** field (where *install-dir* is the product installation directory). Click **Next**.
8. On the Specify runtime environment page, click **Next**.
9. On the Review page, select **Add to the analysis queue now**, and then click **Next**.
10. Start the distributed scanner (“Starting the distributed scanner” on page 31).

You can click the help icon (?) on any page of the wizard for help with that page.

For other configuration information, see the help topic “Setting the schedule and scanning options.” You can access this help topic by clicking **Taking an inventory** -> **Taking an inventory of distributed assets** -> **Setting up scanners to take an inventory** -> **Setting the schedule and scanning options**.

When the scanner completes, the database is populated and you can proceed with verification.

## Verifying distributed asset counts

When you take an inventory of the verification sample, the information about the sample components is loaded into the product DB2 database. To verify that the sample information in the database is correct, you need to check the counts for the sample components. To check the counts after you finish scanning the verification sample, do the following steps:

1. Open the product browser interface.
2. Check the counts on the Home page against those shown here. This screen shows the counts for both IVPs (MVS and distributed). If you have not run the MVS IVP, your numbers will be different.

Common assets	Total
Application	1
Container	3
File	995
Impact analysis	0
Site	2

3. Click **Explore** -> **Distributed assets**.
4. Check the counts on the Explore Distributed assets page against those shown here; they should match.

Containers	Total	Java	Total	Web	Total
Archive file	3	Java package	35	EJB	8
EAR file	1	Java bytecode class	697	HTML file	0
WAR file	1	Java bytecode method	6344	JSP file	5
EJB-JAR	1	Java bytecode field		XML file	6
J2EE client file	0	Java source class	3104	Servlet	1
Connector archive	0		149	JSP tag	226
				JSP tag library	12
				Tag library validator	0
				Servlet event listener	0
				Filter	0

Other	Total	WebSphere app server	Total
Archive manifest file	7	Application server	0
C++	0	Generic server	0
Text file	1	J2C connection factory	0
User input asset	0	J2C resource adapter	0
Unresolved asset	0	JMS connection factory	0
Generic asset	4	JMS destination	0
		Cell	0
		Clone	0
		Datasource	0
		JDBC driver	0
		JMS provider	0
		Mail session	0
		Node	0
		Server group	0
		URL	0
		URL provider	0
		Virtual host	0

## Verifying asset attribute search

To verify using attribute searches on your sample, do these steps:

1. Click the number in the **Total** column beside **Java package** in the **Java** list.
2. On the Java package summary page, click **Advanced search**.
3. Select **Contained classes** from the **Attribute** list.
4. Type Account in the **Value** field.
5. Click **Go**.

You should get a search result of three Java packages.

You have completed installing and setting up the distributed server.

---

## Resetting the database to its initial state

The information that you scanned into the database during verification is intentionally retained. After you successfully complete the IVP, you should reset the database to its original installation state. Otherwise, information about the sample library is included in results when WebSphere Studio Asset Analyzer is used in production.

To reset the database to its initial state, use the Database Clean Utility (a DB2 batch job that runs program DSNTEP2) to process dynamic SQL DELETE statements for all IVP-generated rows in the database tables. Do the following steps:

1. Update member DMHCLDB in the library *yourHLQ*.SDMHCNTL by following the directions listed under Customization Instructions in the job prologue.

**&DMHPLPX:** The value you use for the &DMHPLPX JCL variable in the DMHCLDB job should be that of the "High-level qualifier for the tables" field of the ISPF panel on page 13.

2. If you chose to enable WebSphere Studio Asset Analyzer for scanning distributed assets when you created the database, you need to remove the comment characters from the DELETE statements for the distributed asset tables. They begin with the comment "-- DISTRIBUTED ASSETS".
3. Submit the job by entering the **SUB** command.
4. Check the steps in the JESYSMSG JES2 output for a condition code of 0000, except step DMHCLDB which has a condition code of 0004. Review the SYSPRINT DMHCLDB output, scanning for the following results on the **DELETE** statements:
  - SQLCODE = 000, which indicates successful execution of a row delete
  - SQLCODE = 100, which indicates no rows found to delete

The following example shows the output messages for table DMH\_CMPNT\_NUM\_ATTR:

```

***INPUT STATEMENT:  DELETE FROM DMH.DMH_CMPNT_NUM_ATTR;
SQLWARNING ON DELETE  COMMAND, PREPARE  FUNCTION
RESULT OF SQL STATEMENT:
DSNT404I SQLCODE = 100, NOT FOUND:  ROW NOT FOUND FOR FETCH,
        UPDATE, OR DELETE, OR THE RESULT OF A QUERY IS AN EMPTY TABLE
DSNT418I SQLSTATE   = 02000 SQLSTATE RETURN CODE
DSNT415I SQLERRP    = DSNXRSTD SQL PROCEDURE DETECTING ERROR
DSNT416I SQLERRD    = -160  0  -1  -1  0  0 SQL DIAGNOSTIC
                    INFORMATION
DSNT416I SQLERRD    = X'FFFFFF60'  X'00000000'  X'FFFFFFF'
                    X'FFFFFFF'  X'00000000'  X'00000000'  SQL DIAGNOSTIC

```

You can ignore this condition.

5. If there are any errors (except SQLCODE = 100), correct them and then resubmit the job.

---

## Restricting access to administrative functions

The default configuration for WebSphere Studio Asset Analyzer allows all users to access all functions. If you want to limit which users have the ability to perform administrative tasks, such as deleting components, deleting the projects of other users, and taking inventory, specify their TSO userids in the "Administrator userids" field of the Set up panel.

After saving your changes, you must restart WebSphere for the changes to take effect.

This concludes the configuration and installation verification for WebSphere Studio Asset Analyzer. See the following chapter for information on migrating from earlier releases of WebSphere Studio Asset Analyzer. See the softcopy manuals and online help for further information on how to use the product.

### RELATED TASKS

"Defining product defaults" on page 10

---

## Updating this guide in your online help

The version of this configuration and migration guide from the Web is more up-to-date than the copy that is installed as part of the online help system for WebSphere Studio Asset Analyzer. If you have the proper authority, you can replace the copy in the online help with the copy from the Web. See the product readme file for instructions.





---

## Chapter 5. Solving problems

Use this section to solve problems that you might encounter while working with WebSphere Studio Asset Analyzer. Many problems can be attributed to an incorrect or incomplete installation or configuration of prerequisite products. Use the following tips to ensure that you have eliminated the cause of common problems:

### Tips:

#### Prerequisite IVPs

Verify the correct installation and configuration of prerequisite product stack before you proceed with installation and configuration of WebSphere Studio Asset Analyzer by running all IVP steps for the prerequisite products.

#### HTTP Server

Use `/usr/lpp/dmh/bin/dmh_httpd.conf` as guide when you configure HTTP.

**JDBC** Ensure that JDBC connections are functioning properly with respect to HTTP Server and DB2 communications.

#### WebSphere Studio Asset Analyzer IVP

Perform the WebSphere Studio Asset Analyzer IVP steps to verify proper installation and configuration of the WebSphere Studio Asset Analyzer product itself

In the following descriptions, the **bold, underlined text** identifies the general area of the problem.

---

**ISMP (InstallShield) install** The install fails immediately with a message similar to the following:

#### **Unable to find compatible JVM**

**Explanation:** A compatible JVM could not be found on the machine where you are attempting to run the WebSphere Studio Asset Analyzer installation.

**Problem Determination:** You need to install one of the compatible JVMs on the machine where you are installing WebSphere Studio Asset Analyzer by performing the following steps:

1. Download and install Java Runtime Environment 1.4.1 from Sun Microsystems
2. Reboot your machine.
3. Restart the install.

---

**Database manager** In the browser, you see a message similar to the following:

**`com.ibm.websphere.ce.cm.StaleConnectionException: [IBM][CLI Driver] SQL1032N  
No start database manager command was issued. SQLSTATE=57019`**

**Explanation:** DB2 UDB V8.1 for Windows cannot communicate with WebSphere Application Server.

**Problem Determination:** Install DB2 UDB V8.1 for Windows fixpack 6.

---

**WebSphere Studio Asset Analyzer web app** The WebSphere Studio Asset Analyzer Web application does not start on WebSphere Application Server 5, and the WebSphere Application Server error log (such as WAS/logs/server1/SystemErr.log) shows the following exception:

**Stack trace:**

```
com.ibm.dmh.msg.WsaaException: DMH5132E - The system property wsaaHome is not defined
at com.ibm.dmh.CommonInitializer.init(Unknown Source)
at com.ibm.dmh.servlet.DmhPageServlet.init(Unknown Source)
```

**Explanation:** The JVM system property wsaaHome is not being set.

**Problem Determination:** Reboot your computer. If rebooting does not solve the problem, do the following steps:

1. In the WebSphere Application Server admin console, click **Servers** -> **App Servers** -> **server** -> **Process Definition** -> **Java Virtual Machine**
2. If the field **Generic JVM arguments** contains -DwsaaHome=xxx, where xxx is any value), remove the argument; and then click **Apply**.
3. Click **Custom Properties**.
4. Enter a new property with the name wsaaHome whose value is the location where you installed WebSphere Studio Asset Analyzer, such as c:/dmh. Click **Apply**.
5. Save the changes to the master configuration.
6. Restart WebSphere Application Server to pick up the changes.

---

**Windows install** You encounter installation errors during the Windows install step

**Problem Determination:**

- Are you using the WebSphere Application Server on Windows Configuration?
  - Are you running WebSphere Application Server 5.0?
    - Is your WebSphere Application Server Admin Server running?
    - You must manually start the Admin Server by using the menu options (click **Start** -> **Programs** -> **WebSphere**)
  - Did you update WebSphere Application Server with information specific to WebSphere Studio Asset Analyzer? Bring up the Admin Console and look for the following entries:
    - wsaa, wsaaHELP and wsaaCrawler web applications under Enterprise Applications
    - *yourDatabaseName* under Resources->JDBC Providers
    - Updated JVM settings for WebSphere Studio Asset Analyzer under these entries:
      - (WebSphere Application Server 4.0) Nodes->nodeName -> Application Servers -> Default Server
      - (WebSphere Application Server 5.0) Servers->Application Servers->server 1->
- Did you reboot prior to using WebSphere Studio Asset Analyzer? There are JVM and DB2 settings that need to be picked up prior to running WebSphere Studio Asset Analyzer. Rebooting is the most foolproof means of updating these settings on your machine.
- Check your installation log for any further information. (Located in (\$temp)\wsaainstall.log.)

---

**Scanning distributed assets** During scanning of distributed assets, you get a C++ error indicating an abnormal program termination

**Explanation:** When the Java virtual machine attempts to allocate more than the page size, it returns this error.

**Problem Determination:** Is your Windows virtual memory page size set to a value less than 500 MB? See "Windows paging size" on page 31 and the online help for more detail.

---

**Home page** Your WebSphere Studio Asset Analyzer Home page does not come up

**Problem Determination:**

- Are you using the WebSphere Application Server on Windows Configuration?
  - Are you running WebSphere Application Server 5.0?
  - Did you apply fixpack 2?

- WebSphere Application Server 5.0.2 has a bug that requires manual intervention after WebSphere Studio Asset Analyzer is installed to update the class loader.
- WebSphere Application Server 5.0.3 fixes this problem.
- Are you using the correct URL to access the WebSphere Studio Asset Analyzer product?

**Home page Your WebSphere Studio Asset Analyzer Home page comes up, but nothing is displayed**

**Problem Determination:**

- Verify that a date stamp and a timestamp are displayed on the Home page.
- There is likely a problem with your JDBC communications. Did you verify the correct installation and configuration of JDBC, DB2, HTTP Server and WebSphere Application Server?

**Inventory menu There is no Inventory menu on the interface.**

**Explanation:** You are using a userid that is not identified as a WebSphere Studio Asset Analyzer administrator.

**Problem Determination:** Identification is made via the dmhAdministrators property, which is configured during WebSphere Studio Asset Analyzer Windows installation and via the *yourHLQ.SDMHREXX(DMHINSTL)* step on MVS.

**Port conflicts You are using WebSphere Application Server 5.0 and have trouble with port conflicts.**

**Problem Determination:** You might have to specify an HTTP port other than 80 when you configure WebSphere Application Server. Be sure to include that port number in the address that you use in the browser.

**AIX poor performance Scanning AIX file systems takes an unexpected amount of time.**

**Explanation:** The AIX file system contains cyclic soft links.

**Problem Determination:** See the description of cyclic soft links in "Scanning AIX file systems from Windows" on page 32.

**Product not accessible on port 80 The WebSphere Studio Asset Analyzer servlet cannot be accessed by the default port 80.**

**Explanation:** One possible problem is that the Web Server Plugin has not been registered with HTTP Server. This is the case if you can access WebSphere Studio Asset Analyzer by the following address (with an port other than 80):

`http://hostname:9080/dmh/DmhPageServlet?pagetype=searchall`

.

**Problem Determination:** Do the following steps:

1. Update httpd.conf to include the following line:

`ServerInit /WebSphere Application Server directory/V5R0M0/AppServer/config/cells/plugin-cfg.xml`

2. Verify that you have specified the port numbers correctly with DMHINSTL Set Up (Option 0).
3. Restart the HTTP Server

**Distributed scanner The distributed scanner does not start.**

**Explanation:** When you click **Start -> Programs -> IBM WebSphere Studio -> Asset Analyzer -> Distributed Scanner**, nothing happens. (You might see a command window for a fraction of second.) You probably have a problem with the Java path in your system.

**Problem Determination:** To verify this problem, do one of the follow steps in a command window:

- Type the command `java -version`. If you see a message similar to the following, then Java is not defined in your path: `java' is not recognized as an internal or external command, operable program or batch file.`  
If you see a message similar to the above message or the following message, then Java is not installed correctly in your system: `Error occurred during initialization of VM java/lang/NoClassDefFoundError: java/lang/Object.`

- Change directory to *installdir*/assetloc and type a1run (where *installdir* is the install directory for WebSphere Studio Asset Analyzer). If you see messages similar to the following lines, your Java installation is not correct:

Loading Asset Locator...

JAVA\_HOME=/=\

The system cannot find the path specified.

The system cannot find the path specified.

**User response:** To correct this problem, do one of the following steps:

- Install JDK on your workstation, and then restart the workstation. Verify the installation by using one of the above commands.
- Edit the file *installdir*/bin/setupEnv.bat, and change the first line

```
java -jar ..\lib\wsaaconfigmgr.jar createBatchEnvFile -searchPath ..\config -configFile Common.cfg  
-batchPathname CommonEnv.bat
```

to

```
JDK_installdir\jre\bin\java -jar ..\lib\wsaaconfigmgr.jar createBatchEnvFile -searchPath ..\config  
-configFile Common.cfg -batchPathname CommonEnv.bat
```

where *JDK\_installdir* can be WAS\_INSTALL\_DIR/java.

#### RELATED TASKS

Online help: Solving problems -> MVS problems

Online help: Solving problems -> Distributed server problems

#### RELATED REFERENCES

WebSphere Studio Asset Analyzer Support

---

## Chapter 6. Migrating from WebSphere Studio Asset Analyzer Version 2

If you are installing WebSphere Studio Asset Analyzer Version 4 and have a product database that was loaded with Version 2, you need to instantiate a new database and rescan your existing inventory into the new database.

Before you drop your existing WebSphere Studio Asset Analyzer database, you should consider reviewing the data in particular areas. This review is optional; you need to consider the volume of data in your WebSphere Studio Asset Analyzer database. But a review can provide valuable information for future rescanning and baseline setup.

The following inventory components are those Recommended to review:

- Library names
- Concatenation set names and their corresponding Library assignments
- CICS online region names
- IMS subsystem names
- Application definitions
- Any Impact Analyses with results of special importance

You can use screen prints and spreadsheets to capture information for reloading the database. If you have Microsoft Excel installed and available, you can capture results table data into spreadsheets by doing the following steps:

1. Click **Explore** on the V2 product browser interface.
2. Click the number in the Total column for Library.
3. On the Library summary page, select the number in the Show groups of drop-down list that will show all containers. You can use the Simple and Advanced search functionality to narrow your results.
4. Right click the Library table.
5. Click **Export to Microsoft Excel** on the context menu.

The spreadsheet provides a checklist of Container (called "Library" under earlier releases of WebSphere Studio Asset Analyzer) inventory candidates for the new WebSphere Studio Asset Analyzer 4.1.0 database.

This migration process is necessary due to schema changes in the design of the product database. The new schema provides substantial benefits, including the following new function and enhancements:

- Improved query performance from new and updated indexes and alternate indexes
- Tighter integration of distributed assets
- New support for inventory data from the DB2 system catalog
- Improved SQL reference handling
- New asset annotation capability
- Improved Analysis Status reporting and accuracy
- Improved Analysis Queue processing, such as ordering of types and clean up
- Improved language parser engines for COBOL, PL/I, JCL, and Assembler

- Improved error message handling
- Capability for bookmarking pages and creating custom queries
- Impact analysis for distributed assets

In addition, when you move to Version 4, you can take advantage of the following new enhancements:

- Support for WebSphere Application Server V5 on the z/OS, Windows NT, Windows 2000, and Windows XP Professional platforms
- Usability enhancements
- Support for WebSphere MQ
- Support for DB2 V7 syntax
- Enhanced usability and performance in the user interface
- Choice of using the compiler or the product scanner for COBOL and PL/I source
- Removal of Net.Data prerequisite
- Support for scanning and run time on AIX 5.2 or later

Thus, moving to Version 4 gives you improved performance, better support for distributed assets, new function, and improvements to existing function.

After you have completed your migration, return to “Creating the database” on page 18 and follow the instructions. Ensure that the DROP DATABASE statement to remove the Version 2 database is activated before you create the Version 4 database.

---

## Chapter 7. Migrating from Version 3 or later releases of WebSphere Studio Asset Analyzer

If you are installing a release of WebSphere Studio Asset Analyzer Version 4 and have Version 3.1.0 or an earlier release of Version 4 already installed, you need to use the Version 4.2 migration utility. (If you are migrating from Version 2, follow the instructions in Chapter 6, “Migrating from WebSphere Studio Asset Analyzer Version 2,” on page 47 before using the utility.)

To download the utility and the associated documentation, do the following steps:

1. Go to the WebSphere Studio Asset Analyzer Support Web page.
2. Locate the “Download” section, which is under “Self Help”.
3. Click **Migrating from WebSphere Studio Asset Analyzer for Multiplatforms V4.2**.

### RELATED TASKS

“Defining product defaults” on page 10

---

## Post migration configuration

After you complete these migration steps, you need to complete several configuration steps. Go to “Configuring inventory analyzers” on page 25 and follow the instructions in that section and the sections that follow it to complete WebSphere Studio Asset Analyzer configuration.





---

## Appendix. Installing the AIX Server Component manually

Use this section **only** in case the ISMP install fail; it is a backup procedure and not intended for the standard install.

Use this section only if your users are going to work with distributed assets, or if your installation configuration includes WebSphere Application Server for AIX.

### Prerequisites:

- WebSphere Application Server version 5.1 installed and running
- DB2 7.2 or later installed and running

The files that are provided for the AIX configuration are the following installation files:

#### **wsaa\_aix.tar**

WebSphere Studio Asset Analyzer: the runtime and the distributed scanner

#### **wsaacrawler\_aix.tar**

The WebSphere Studio Asset Analyzer distributed scanner only (includes the file viewer)

#### **wsaahelp.ear**

The WebSphere Studio Asset Analyzer online help

#### **wsaadbutil\_aix.tar**

The database migration utility

After you have completed the steps in the following subsections, you can run the WebSphere Studio Asset Analyzer distributed scanner by doing the following steps:

1. Change to the *install\_directory/assetloc* directory.
2. Run the following command: `alrun.sh`.

---

## Accessing the database

Ensure that you have the proper access to the product database on MVS by doing the following steps to connect to MVS from DB2:

1. Catalog a node for MVS by using a command such as the following:

```
DB2 CATALOG TCP/IP NODE name REMOTE host SERVER 446 OSTYPE MVS
```

For example:

```
db2 catalog tcpip node v33ec104 remote v33ec104.svl.ibm.com server 446 ostype mvs
```

2. Catalog a database on the remote MVS system to the node by using a command such as the following:

```
DB2 CATALOG DB name [AS alias] AT NODE node_name AUTHENTICATION SERVER
```

For example:

```
db2 catalog db STLEC1 as STLEC4 at node v33ec104 authentication server
```

---

## Installing the files

Copy and install the provided files by doing the following steps:

1. Copy the required files to a temporary directory, such as `/tmp`.
2. Untar the file to the installation directory, usually `/usr/lpp/dmh`, by doing the following steps:
  - a. Create the destination directory with the proper access permissions.
  - b. Change into the destination directory, and untar the file with this command: `tar -xvf path`, where *path* is full path of the tar file.
  - c. Ensure that proper access permission to the untarred files is granted to the users who are going to use the product.
3. Edit the `install_location/config/Common.cfg` file, and insert your system settings by doing the following steps:
  - a. Modify the properties defined in the file to match the settings of your system.
  - b. Save the file, and make a backup of it in another location.
4. Change to the `install_location/install` directory.

---

## Installing JVM properties

Install the proper JVM properties in WebSphere Application Server by doing the following steps:

1. Change to the `install_location/install` directory.
2. Run the following command: `JvmPropertyUpdate.sh install`.
3. Correct any errors from the script.
4. Ensure that there is a property called `wsaaHome` in the servers `JavaProcessDef:/JavaVirtualMachine` properties file and that it is set to the installation directory for the product by doing the following steps:
  - a. Open the Admin Console of WebSphere Application Server. You can use a browser on any machine that can access the AIX system. The address is usually `http://AIX_host_name:9090/admin`.
  - b. Click **Servers**, and then click **Application Servers**.
  - c. Select the server on which you have the product installed. This is the server that you specified in the `Common.cfg` file (3).
  - d. Click **Process Definition**.
  - e. Click **Java Virtual Machine** in the Additional Properties section.
  - f. Click **Custom Properties** (at the bottom of the screen).
  - g. Verify that the `wsaaHome` property is there and with the proper destination, the `install_directory`.

---

## Installing the JDBC provider

Install the JDBC provider by doing the following steps:

1. Run the following command: `JdbcDriverAdmin.sh install`.
2. Correct any errors.
3. Ensure that the JDBC provider is properly installed in WebSphere Application Server and that it can access the product database on MVS by doing the following steps:
  - a. Open the Admin Console of WebSphere Application Server.

- b. Click **Resources**, and then click **JDBC Providers**.
- c. Ensure that the proper JDBC provider is in the **Node** level. This is the provider that you specified in Common.cfg (3 on page 52).
- d. Click the proper provider, and ensure that the properties are properly set.
- e. Click **Data Sources (Version 4)**, and ensure that the proper Data Source is defined.
- f. Click the proper Data Source.
- g. Verify that the properties are set according to the settings in the Common.cfg file (3 on page 52), and that they are compatible with your systems settings.

---

## Installing the Web application

Install the WebSphere Studio Asset Analyzer Web application into WebSphere Application Server by doing the set of steps that is appropriate for your installation.

If you are installing the scanner only, doing the following steps:

1. Run the following command: `WebAppAdmin.sh install WsaaScanner`.
2. Correct any errors from the script.
3. Ensure that the application is installed in WebSphere Application Server by doing the following steps:
  - a. Open the Admin Console of WebSphere Application Server.
  - b. Click **Applications**, and then click **Enterprise Applications**.
  - c. Verify that the **wsaadistscan** application is installed.
4. Run the following command: `WebAppAdmin.sh start WsaaScanner`.
5. Correct any errors from the script.
6. Ensure that the Application is started by doing the following steps:
  - a. Open the Admin Console of WebSphere Application Server.
  - b. Click **Applications**, and then click **Enterprise Applications**.
  - c. Verify that the **wsaadistscan** application is started (that there is a green arrow in the status area).

If you are installing the run time, doing the following steps:

1. Run the following command: `WebAppAdmin.sh install Wsaa`.
2. Correct any errors from the script.
3. Ensure that the application is installed in WebSphere Application Server by doing the following steps:
  - a. Open the Admin Console of WebSphere Application Server.
  - b. Click **Applications**, and then click **Enterprise Applications**.
  - c. Verify that the **wsaa** application is installed.
4. Run the following command: `WebAppAdmin.sh start Wsaa`.
5. Correct any errors from the script.
6. Ensure that the Application is started by doing the following steps:
  - a. Open the Admin Console of WebSphere Application Server.
  - b. Click **Applications**, and then click **Enterprise Applications**.
  - c. Verify that the **wsaa** application is started (that there is a green arrow in the status area).

---

## Installing online help

To install the online help for the product, do the following steps:

1. Run the following command: `WebAppAdmin.sh install WsaaHelp`.
2. Correct any errors from the script.
3. Ensure that the application is installed in WebSphere Application Server by doing the following steps:
  - a. Open the Admin Console of WebSphere Application Server.
  - b. Click **Applications**, and then click **Enterprise Applications**.
  - c. Verify that the **wsaaHELP** application is installed.
4. Run the following command: `WebAppAdmin.sh start WsaaHelp`.
5. Correct any errors from the script.
6. Ensure that the Application is started by doing the following steps:
  - a. Open the Admin Console of WebSphere Application Server.
  - b. Click **Applications**, and then click **Enterprise Applications**.
  - c. Verify that the **wsaaHELP** application is started (that there is a green arrow in the status area).

---

## Starting the scanner

To start the distributed scanner, do the following steps:

1. Change to the `installdir/assetloc` directory.
2. Run the following command:

```
alrun.sh
```

**Tip:** The shell that you use to run the distributed scanner must contain the environment setting that is required for DB2 access. These settings are located in the `db2profile` script that is located in the DB2 user home-directory/`sqllib`. The default DB2 user, usually called `db2inst1`, has this setting in its profile. You can move to this user by using the command `su - db2inst1`, or by importing the settings of the `db2inst1` user shell to your own shell.

---

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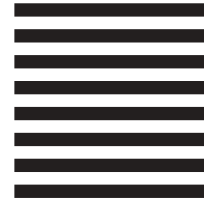
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