CA Workload Automation Agent for SAP

Implementation Guide

r11.3

CA Technologies Product References

This document references the following CA Technologies products:

- CA Process Automation
- CA Workload Automation AE
- CA Workload Automation Agent for Application Services (CA WA Agent for Application Services)
- CA Workload Automation Agent for Databases (CA WA Agent for Databases)
- CA Workload Automation Agent for i5/OS (CA WA Agent for i5/OS)
- CA Workload Automation Agent for Linux (CA WA Agent for Linux)
- CA Workload Automation Agent for Micro Focus (CA WA Agent for Micro Focus)
- CA Workload Automation Agent for Microsoft SQL Server (CA WA Agent for Microsoft SQL Server)
- CA Workload Automation Agent for Oracle E-Business Suite (CA WA Agent for Oracle E-Business Suite)
- CA Workload Automation Agent for PeopleSoft (CA WA Agent for PeopleSoft)
- CA Workload Automation Agent for Remote Execution (CA WA Agent for Remote Execution)
- CA Workload Automation Agent for SAP (CA WA Agent for SAP)
- CA Workload Automation Agent for UNIX (CA WA Agent for UNIX)
- CA Workload Automation Agent for Web Services (CA WA Agent for Web Services)
- CA Workload Automation Agent for Windows (CA WA Agent for Windows)
- CA Workload Automation CA 7 Edition
- CA Workload Automation DE
- CA Workload Automation Desktop Client (CA WA Desktop Client)
- CA Workload Automation ESP Edition
- CA Workload Control Center

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- Information about user communities and forums
- Product and documentation downloads
- CA Support policies and guidelines
- Other helpful resources appropriate for your product

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Contents

Chapter 1: Introduction

This section contains the following topics:

Intended Audience

This document is for system administrators who are responsible for upgrading, installing, and configuring agents.

You require knowledge of the operating system where the agent is installed and any third-party products or software technology that the agent uses.

Notes:

- The term *Windows* refers to any Microsoft Windows operating system supported by the agent.
- The UNIX instructions in this document also apply to Linux systems unless otherwise noted.

Agents and Agent Plug-ins

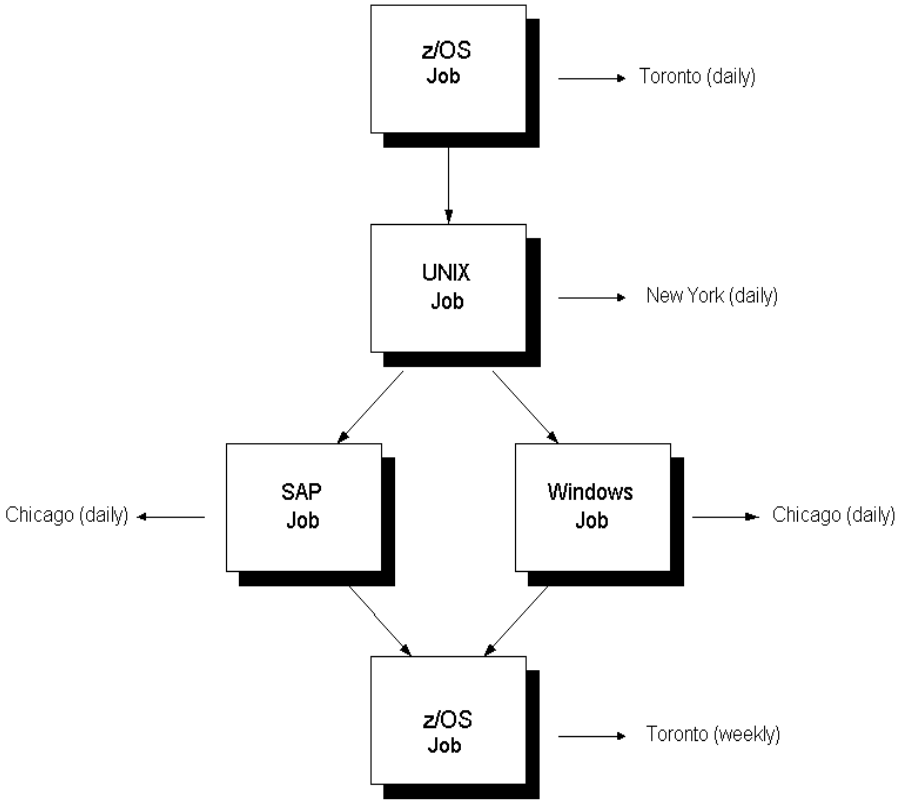
Agents are the key integration components of CA Technologies workload automation products. Agents let you automate, monitor, and manage workload on all major platforms, applications, and databases. To run workload on a particular system, you install an agent on that system. If your workload must run on a UNIX computer, for example, you can install and configure the CA WA Agent for UNIX. The agent lets you run UNIX scripts, execute UNIX commands, transfer files using FTP, monitor file activity on the agent computer, and perform many other tasks.

You can extend the functionality of the agent by installing one or more agent plug-ins in the agent installation directory. If you have a relational database such as Oracle, for example, you can install a database agent plug-in to query and monitor the database. Other agent plug-ins are also available. For more information about agent plug-ins, see the *Implementation Guide* for the appropriate agent plug-in.

Note: The agent plug-ins are only available for UNIX, Linux, and Windows operating environments.

Example: Workload with Different Types of Jobs

The following workload contains z/OS jobs, a UNIX job, an SAP job, and a Windows job, running on different computers, in different locations, and at different times:



CA WA Agent for SAP

The CA WA Agent for SAP provides an interface between a scheduling manager and the SAP system. The agent plug-in lets a user perform tasks such as the following:

- Run SAP R/3 workload
- Execute SAP programs (ABAPs), monitor ABAP status, and cancel ABAP execution
- Determine success or failure of SAP jobs
- Delete SAP jobs
- List SAP jobs, ABAPs, variants, job count, and printers
- List and set SAP parameters
- Retrieve SAP spool files and deliver spool files to various recipients

Agent Plug-in Communication with SAP

The SAP Agent plug-in is based on the following parts of an SAP Scheduling System:

- XBP External Interface for SAP Background Processing
- XMI External Monitor Interface

The API of the SAP Java Connector (SAP JCo) package, which is available from SAP, provides communication with SAP systems.

Job Types Supported by CA WA Agent for SAP

With the CA WA Agent for SAP, you can define and run the following types of jobs:

Batch Input Session (BDC)

Imports large amounts of data from external systems to the SAP system.

Business Warehouse InfoPackage

Transfers data from a data source.

Business Warehouse Process Chain

Executes a sequence of processes defined through SAP as a process chain.

Data Archiving

Puts information into storage units as described in an SAP Archiving Object.

Event Monitor

Monitors and triggers SAP events.

Process Monitor

Monitors for a specific SAP process status.

SAP

Scheduled an SAP R/3 job on an SAP system.

SAP Job Copy

Copies an existing SAP job.

Chapter 2: Implementation Checklist

This section contains the following topics:

How to Install and Configure CA WA Agent for SAP

The CA WA Agent for SAP installs into the CA WA Agent for UNIX, Linux, or Windows installation directory.

Note: Before installing the agent plug-in, you must install and configure the agent.

To install and configure the agent plug-in, follow these steps:

1. Review the system requirements in the *CA Workload Automation Agent for SAP Release Notes*.
2. Collect information for your SAP system (see page 14).
3. Decide whether to create an alias (see page 14).
4. Install the agent plug-in (see page 19).
5. Install the SAP Java Connector (SAP JCo) (see page 20).
6. Modify the cybAgent file (AIX and Solaris systems only) (see page 21).
7. Configure the scheduling manager to work with the agent plug-in (see page 29).
8. (Optional) Run a verification test (see page 29).
9. (Optional) Configure the agent plug-in.

Collecting Information for Your SAP System

Before you install the agent plug-in, collect the following information from your SAP administrator:

Note: You can get the SAP destination, host, and system number from the SAPGUI properties dialog. The agent plug-in uses these values in a connection properties file to establish an RFC connection to the SAP system.

Information	Your Value
SAP destination, which corresponds to the Description field on the SAPGUI properties dialog	
Host, which corresponds to the Application Server field on the SAPGUI properties dialog	
System number, which corresponds to the System number field on the SAPGUI properties dialog	
User ID and password for a user who has access to your SAP system	
SAP logon interface, which is the XBP version: XBP 1.0 or XBP 6.1 (2.0)	

Deciding Whether to Create an Alias

Note: If you are installing the agent plug-in to work with CA Workload Automation DE, you must set up an alias. Setting up an alias for use with other scheduling managers is optional.

You install an agent plug-in into the agent installation directory to extend the core functionality of the agent. By default, the agent plug-in operates under the same agent name that is assigned to the agent. An alias lets you create a unique agent name for an agent plug-in, which is useful for controlling agent security or for setting up clustered environments.

Suppose you have installed an agent named AGT10 on a UNIX computer. Users who have access to that agent through their security permissions specify AGT10 as the agent name in their job definitions. Now suppose that you install an agent plug-in into the installation directory for AGT10. You can create an alias for the agent plug-in, for example, AGT10_DB. You can then restrict access to that alias to only those users that run database workload. Those specific users then must specify AGT10_DB as the agent name in their job definitions.

Each agent plug-in has a default alias that you can enable during installation. For example, the agent plug-in for CA WA Agent for Databases has the default alias *agentname*_DB. You can enable or change the default alias name after installation. To work, you must also configure the alias on the scheduling manager.

To configure agent aliasing for clustered environments, see the *CA Workload Automation Agent for UNIX, Linux, or Windows Implementation Guide*.

Chapter 3: Installing the Agent Plug-in

This section contains the following topics:

SAP Agent Plug-in Installation Options

The interactive installation program prompts you for the following information:

SAP Destination

Specifies the default SAP destination name that the agent plug-in uses. This value corresponds to the Description field on the SAPGUI properties dialog.

Note: This value is used to name the connection properties file, which stores the information the agent plug-in uses to establish an RFC connection to the SAP system.

Example: CE2 (The agent stores the SAP connection data in the CE2.properties file.)

Host

Specifies the application server name for the default SAP destination. This value corresponds to the Application Server field on the SAPGUI properties dialog.

Note: If an SAP router string exists, enter the SAP router string followed by the application server name (no spaces).

Example: /H/10.1.3.33/H/204.79.199.244/H/172.16.65.16

System number

Specifies the system number for the default SAP destination. The value must have two digits. This value corresponds to the System number field on the SAPGUI properties dialog.

Example: 00

Client

(Optional) Specifies the SAP client number.

Language

(Optional) Specifies the default language for all SAP destinations.

Default: EN (for English)

User

(Optional) Specifies the default SAP user ID to run SAP jobs under.

Note: We recommend that you specify a value for this parameter. If you do not specify a value, you can experience problems monitoring SAP jobs under some conditions.

Password

Specifies the password for the default SAP user ID. This value is required if the default SAP user ID is defined. The installation program encrypts the password.

Note: We recommend that you specify a value for this parameter. If you do not specify a value, you can experience problems monitoring SAP jobs under some conditions.

Email address of the agent

Specifies the email address for the agent plug-in. When the job sends spool file output, the agent plug-in uses this email address as the address of the sender.

Note: The email address is an arbitrary value. Select a name that helps your users identify an email as originating from the agent plug-in.

SMTP Mail Server

Specifies the email server the agent plug-in uses to send email.

SAP logon interface

Specifies the XBP version. The value can be XBP 1.0 or XBP 6.1 (2.0).

Note: For recent SAP releases, use XBP 6.1 (2.0).

Would you like to enable children monitoring?

Sets whether the children for all SAP jobs are monitored.

- Y—Monitors the SAP job and its immediate children.
- N—Monitors the parent SAP job but none of its children.

You can also tell the agent to monitor children for a specific job. When tuning for performance, you can reduce the number of calls to the SAP system by disabling children monitoring.

Default: N

Note: Children monitoring requires XBP 2.0 (6.10).

Do you want to set up the alias?

Sets whether the default alias is enabled for the agent plug-in.

- Y—Enables the default alias.
- N—Disables the default alias.

Default: N

Note: The default alias for CA WA Agent for SAP is AGENTNAME_SAP.

Controlling the Agent Plug-in

You control the agent plug-in using the agent where the plug-in is installed. Depending on your operating system, you have several options for starting or stopping the agent. On UNIX, you must issue a command to run a start or stop script. On Windows, you must start or stop the agent as a Windows service using the command prompt.

Note: For instructions to start and stop the agent, see the *CA Workload Automation Agent for UNIX, Linux, or Windows Implementation Guide*.

Install CA WA Agent for SAP

You install CA WA Agent for SAP using an interactive program that prompts you for the required information.

To install CA WA Agent for SAP

1. Copy the sap.pak file into the directory where the agent is installed. You can copy this file from the product CD or download a zip file that contains the file from the CA Support Online website, found at http://ca.com/support.
2. Change to the agent installation directory. For example, type the following command:

   ```
   cd /CA/CA_System_Agent_R11_3
   ```

3. Type the following command to stop the agent:

   ```
   ./cybAgent -s
   ```

   The agent stops.

4. Type the following command to start the installation program:

   `./PluginInstaller sap.pak installdir`

   installdir

   Specifies the agent installation directory.

   For example, type the following command:

   `./PluginInstaller sap.pak .`

   The CA WA Agent for SAP installation program opens.

5. Enter the information the installation program prompts you for.

   The installation program displays a message and closes automatically upon a successful installation.

6. Type the following command to start the agent:

   `./cybAgent &`

   The agent starts.

More information:

Deciding Whether to Create an Alias (see page 14)

Install the SAP Java Connector (SAP JCo)

For the agent to communicate with an SAP system, you must install the SAP Java Connector (SAP JCo) package.

Notes:

- The required minimum version is SAP JCo 2.1.9. CA WA Agent for SAP is not compatible with SAP JCo 3.0.x.
- Whether you use the 32-bit or 64-bit JCo version depends on the JVM provided with the agent. For specific JCo versions, see the *CA Workload Automation Agent for UNIX, Linux, or Windows Release Notes*.
- For Windows systems, you require the msvsr71.dll and msvcp71.dll files. You must add these files to the agent installation directory.

To install the SAP Java Connector

1. Log in to SAP Service Marketplace.
2. Navigate to SAP Java Connector, Tools & Services.
3. Download the latest version of SAP JCo for your operating system.

4. Stop the agent if it is running.
5. Remove any previous version of the JCo library from the agent installation directory.

   For example, to remove SAP JCo 2.1.6, complete these steps:

   a. Delete the following files and links from the agent installation directory:
      - *2.1.6.*
      - librfccm* and libsapjcorfc.* (UNIX)
      - librfc32.dll and sapjcorfc.dll (Windows)

   b. Delete the sapjco-2.1.6.jar file from the jars/ext subdirectory of the agent installation directory.
6. Extract the sapjco.jar file to jars/ext subdirectory of the agent installation directory.
7. Extract the following libraries to the agent installation directory:
   - On UNIX, extract librfccm and libsapjcorfc.
   - On Windows, extract librfc32.dll and sapjcorfc.dll.
8. Start the agent.

   The SAP Java Connector is installed.

Modify the cybAgent file (for AIX and Solaris)

If you are installing the agent plug-in on an AIX or Solaris system, you must modify the cybAgent file after completing the installation. This step is necessary for AIX installations to increase the heap space for downloading large files. This step is necessary for Solaris installations to add environment variables required by SAP JCo 2.1.9.

To modify the cybAgent file

1. Change to the agent installation directory.
2. Stop the agent.
3. Open the cybAgent file for editing.

4. Add the following command for your system after the first line in the file:
   - On AIX, add the following two lines:

     ```
     LDR_CNTRL=MAXDATA=0x80000000
     export LDR_CNTRL
     ```

     The script should look similar to the following:

     ```
     #!/bin/sh
     LDR_CNTRL=MAXDATA=0x80000000
     export LDR_CNTRL
     LIBPATH=.:./jre/bin:./jre/bin/classic
     export LIBPATH
     exec `pwd`/cybAgent.bin "$@"
     ```

   - On Solaris, add the following two lines:

     ```
     LD_PRELOAD_32=/usr/lib/libCrun.so.1
     export LD_PRELOAD_32
     ```

5. Save and close the cybAgent file.
6. Start the agent.

   The cybAgent file is modified for your system.

How to Remove the Agent Plug-in

You can remove an agent plug-in when you no longer require it.

To remove the agent plug-in, follow these steps:

1. Disable the agent plug-in (see page 22).
2. (Optional) Remove the agent plug-in from the scheduling manager (see page 24).

Disable CA WA Agent for SAP

You might want to disable the CA WA Agent for SAP if you want to remove the agent plug-in from your system.

To disable the CA WA Agent for SAP

1. Verify that all workload is complete.
2. Stop the agent.

3. Open the agentparm.txt file located in the agent installation directory.
4. Comment out the plugins.start_internal_*n* parameter, and renumber any subsequent plugins.start_internal_*n* parameters.

   Note: Renumber all other agent plug-ins that are assigned a greater number than the agent plug-in you are uninstalling.
5. Comment out the communication.alias parameter if you created an alias during the agent plug-in installation.

   Note: Renumber any subsequent communication.alias_*n* parameters.
6. Save and close the agentparm.txt file.
7. (Optional) Remove the sap.jar file from the jars subdirectory of the agent installation directory.
8. Start the agent.

Example: Renumber the plugins.start_internal_*n* Parameter

Suppose you have the following agent plug-ins set in the agentparm.txt file:

```
plugins.start_internal_1=runner
plugins.start_internal_2=sap
plugins.start_internal_3=ftp
plugins.start_internal_4=microfocus
```

To disable the agent plug-in for CA WA Agent for SAP, you would modify the agentparm.txt file as follows:

```
plugins.start_internal_1=runner
#plugins.start_internal_2=sap
plugins.start_internal_2=ftp
plugins.start_internal_3=microfocus
```

Example: Renumber the communication.alias_*n* Parameter

Suppose you have two alias agent plug-ins. The agentparm.txt file has the following parameters:

```
communication.alias_1=AGENTNAME_SAP
communication.alias_2=AGENTNAME_MF
```

To disable the agent plug-in for CA WA Agent for SAP, modify the agentparm.txt file as follows:

```
#communication.alias_1=AGENTNAME_SAP
communication.alias_1=AGENTNAME_MF
```

Remove the Agent Plug-in from the Scheduling Manager

In addition to disabling the agent plug-in, you can remove it from the configuration on the scheduling manager.

Note: For detailed instructions to remove the agent from the scheduling manager, see the documentation for your scheduling manager.

Chapter 4: Configuring the SAP System

This chapter contains recommended procedures to configure the SAP system to work with the agent plug-in.

This section contains the following topics:

How to Install the ABAPs for the Agent Plug-in

To use many features of the agent plug-in, we strongly recommend that you install the ABAPs for the agent plug-in.

Note: You require an SAP R/3(R3) or Business Warehouse (BW) system to use the agent plug-in ABAPs.

To install the ABAPs for the agent plug-in, complete these steps:

1. Collect information required to install the ABAPs (see page 25).
2. Install the ABAPs on the SAP system (see page 26).

Collecting Information Required to Install the ABAPs

To install the ABAPs, you require the following information:

- The path to the SAP system
- The system ID of the SAP system

Install the ABAPs on an SAP System

This procedure describes how to install the ABAPs on an SAP system.

Note: If you do not have administrator access to the SAP system, ask your SAP administrator to help install the ABAPs.

To install the ABAPs on an SAP system

1. Copy the BW_ABAPs.zip, R3_ABAPs_NonUnicode.zip, and R3_ABAPs_Unicode.zip files, located in the agent installation directory, onto the computer where your SAP system resides.
2. Extract the files from each zip file.
3. Copy the extracted files for your operating system to the subdirectories named cofiles and data where the SAP system is installed.

   For example, using the default SAP trans directories, copy the files for your operating system as follows:

Operating System	Files to Copy	SAP Directories
UNIX	Any files prefixed with K	/usr/sap/trans/cofiles
UNIX	Any files prefixed with R	/usr/sap/trans/data
Windows (SAP on drive D)	Any files prefixed with K	D:\usr\sap\trans\cofiles
Windows (SAP on drive D)	Any files prefixed with R	D:\usr\sap\trans\data

4. Install the ABAPs using the following commands, substituting the appropriate path to the SAP trans directory:

Type	OS	Syntax
BW	UNIX	cybsapinstBW.ksh *SAP_ID* /usr/sap/trans
BW	Windows	cybsapinstBW *SAP_ID* “D:\usr\sap\trans”
R3	UNIX	cybsapinstR3.ksh *SAP_ID* /usr/sap/trans
R3	Windows	cybsapinstR3 *SAP_ID* “D:\usr\sap\trans”

Notes:

- On Windows, enclose the path name in double quotation marks if the path name has spaces.
- You can run the procedure again if the SAP system was down at the time you installed the ABAPs.

ABAPs for the Agent Plug-in

The following ABAPs are provided with the agent plug-in:

ABAP Name	Purpose	Type	Applies to
Z_CYB_OLTPSOURCE_GET	Get Info Package Details.	RFC	BW
Z_CYB_DUMP_OUTPUT	Get SAP Job dump output information.	RFC	R3
Z_CYB_TRIGGER_EVENT	Trigger SAP Event (XBP 1.0 only).	RFC	R3
Z_CYB_BDC_SESSION	Handle BDC sessions.	RFC	R3
Z_CYB_TABLE_UPDATE	Provide UPDATE and INSERT SQL queries. Used to define SAP Event handler (any XBP level) and set up SAP Job class (XBP 1.0 only).	RFC	R3
Z_CYB_GET_EVENT_LIST	Get list of SAP Events.	RFC	R3
Z_CYB_SWITCH_OPMODE	Switch operational mode. This ABAP is not mandatory for the agent plug-in functionality.	ABAP	R3

Notes:

- BW refers to a Business Warehouse system and R3 refers to a basic SAP system.
- The BW ABAPs are only needed if you have a Business Warehouse system.
- Your SAP administrator can remove the ABAPs from within SAP.

Initialize XBP 2.0 Functionality

To use new background processing features introduced in XBP 2.0, you must turn on the features using SAPGUI.

To initialize XBP2.0 functionality

1. Go to transaction SE38 using SAPGUI and run ABAP program INITXBP2.

   A dialog showing Interception and Parent-Child Functions opens.

2. Select Switch On to enable the appropriate options:
   - Interception (Job interception support)
   - Parent-Child Functions (Parent-Child relationship support)

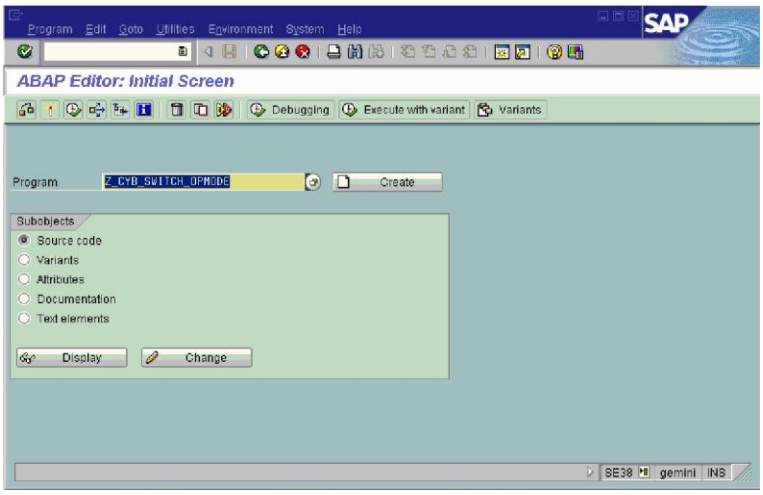
Note: If you cannot find the INTXBP2 ABAP, then XBP 2.0 is probably not installed on your system.

How to Switch SAP Operational Mode

Switching the SAP operational mode is useful if you want to assign a different operational mode for different work shifts. For each shift, you can alternate resource availability to suit the needs of that shift, for example batch at night and interactive during the day.

To switch the SAP operational mode, you must create and define a variant for the CA ABAP Z_CYB_SWITCH_OPMODE ABAP using the ABAP Editor (SE38). Once the variant is available, you can define an SAP R/3 job with the appropriate variant and schedule it when needed.

The following is the ABAP Editor screen (SE38):



Chapter 5: Your Scheduling Manager and the Agent Plug-in

This section contains the following topics:

Configuring the Scheduling Manager to Work with the Agent Plug-in

If you have defined the following items for the agent plug-in, you must configure the items on the scheduling manager:

- An alias
- A user

For detailed configuration instructions, see the documentation for your scheduling manager.

Running a Verification Test

For your verification test, you define and run an SAP R/3 job. To define the job, you require the following information:

Agent name

Specifies the name of your agent or the alias for the agent plug-in if you created an alias.

SAP RFC destination

Specifies the destination value for the Remote Function Call (RFC) connection and gateway information.

Step specifications

Specifies an ABAP.

Example: BTCTEST

For more information about defining an SAP R/3 job, see the documentation for your scheduling manager.

Chapter 6: Configuring the Agent Plug-in

This section contains the following topics:

How to Configure Agent Parameters

You configure agent parameters by editing the agentparm.txt file, located in the agent installation directory. When you install the agent, the installation program adds frequently-configured agent parameters to the file. Other agent parameters exist, which you must manually add to the agentparm.txt file to configure the agent. For any configuration changes to take effect, always stop and restart the agent. For some agent parameters, such as the agent name and communication parameters, also configure the parameters on the scheduling manager.

To configure agent parameters, do the following:

1. Configure agent parameters on the agent (see page 32).
2. Configure agent parameters on the scheduling manager (see page 32).

Configure Agent Parameters on the Agent

Use the following procedure to configure agent parameters on CA WA Agent for UNIX, Linux, or Windows.

To configure agent parameters on the agent

1. Change to the agent installation directory.
2. Stop the agent. At the command prompt, enter the following command:
   - On UNIX:

     ```
     ./cybAgent -s
     ```
   - On Windows:

     ```
     cybAgent -s
     ```

   The agent stops.
3. Open the agentparm.txt file located in the agent installation directory.
4. Edit the parameters to make the required changes.
5. Save and close the agentparm.txt file.
6. Start the agent. At the command prompt, enter the following command:
   - On UNIX:

     ```
     ./cybAgent &
     ```
   - On Windows:

     ```
     cybAgent -a
     ```

   The agent starts and the parameters are configured.

Configure Agent Parameters on the Scheduling Manager

When you change an agent parameter in the agentparm.txt file that is also defined on the scheduling manager, such as the agent name, configure the agent parameter on the scheduling manager.

Note: For detailed instructions to configure agent parameters on the scheduling manager, see the documentation for your scheduling manager.

CA WA Agent for SAP Parameters in the agentparm.txt File

The agent plug-in installation program adds the parameters listed below to the agentparm.txt file. The file is located in the agent installation directory. You can open the agentparm.txt file in any standard text editor.

Note: You must save the file after making edits to persist the changes.

Note: Connection-specific SAP parameters are specified in the connection properties file.

communication.alias_*n*

Defines the alias name for the agent. The *n* suffix increments sequentially for each alias agent.

Note: To enable an alias on the agent, verify that the comment character (#) is removed from the parameter line.

Default: AGENTNAME_SAP

oscomponent.jvm.x.options

Specifies the virtual memory heap size.

Default: -Xmx512M

plugins.start_internal_*n*

Specifies the agent plug-in to start by the core Java agent.

n

Denotes an integer assigned to the agent plug-in, starting at 1. The *n* suffix must increase sequentially for each agent plug-in.

Default: sap

responsedir

Specifies the root directory used for FTP plug-in files.

Default: ./Root.

sap.ad_hoc.monitor.timeout

Specifies the time, in minutes, that an ad hoc SAP job is left to run undisturbed before it terminates. If the job is continued, the counter resets.

Default: 60 (minutes)

sap.ad_hoc.polling.rate.sec

Specifies the polling rate, in seconds, for ad hoc job monitoring.

Default: 20 (seconds)

sap.bw.object.lifetime.min

Specifies the lifetime interval, in minutes, of the Business Warehouse Info Package object after a “Get Info Package” call. After the interval ends, the agent releases the object if the object was not updated or started.

Default: 5 (minutes)

sap.config.ignoreStartupFailures

Sets whether the agent sends requests to the SAP system if it cannot connect to the system at startup. Valid values are as follows:

- false—The agent locks up (no longer sends requests to the target SAP system) if it cannot connect to the default SAP system at startup.
- true—The agent continues sending requests to the SAP system even if it could not connect to the default SAP system at startup.

Default: false

sap.default.destination

Specifies the default SAP destination name that the agent plug-in uses. This value corresponds to the Description field on the SAPGUI properties dialog.

Note: This value is used to name the connection properties file, which stores the information the agent plug-in uses to establish an RFC connection to the SAP system.

Example: CE2 (The agent stores the SAP connection data in the CE2.properties file.)

sap.default.language

(Optional) Specifies the default language for all SAP destinations.

Default: EN (for English)

sap.default.polling.rate.sec

Specifies the job status polling interval in seconds. We recommend using the default.

Default: 10 (seconds)

sap.job.children.cancel

Sets whether the Job Cancel command cancels the children of an SAP job. Valid values are as follows:

- false—Cancels the parent SAP job but none of its children.
- true—Cancels the SAP job and its immediate children. If the parameter sap.job.children.recursive is set to true, then the agent cancels all the children.

Default: false

Note: This parameter requires XBP 2.0 (6.10).

sap.job.children.delete

Sets whether the Job Delete command deletes the children of an SAP job. Valid values are as follows:

- false—Deletes the parent SAP job but none of the children.
- true—Deletes the SAP job and its immediate children. If the parameter sap.job.children.recursive is set to true, then the agent deletes all the children.

Default: false

Note: To delete children (sap.job.children.delete=true), you require XBP 2.0 (6.10).

sap.job.children.monitor

Sets whether the children of an SAP job are monitored. Valid values are as follows:

- false—Monitors the parent SAP job but none of its children.
- true—Monitors the SAP job and its immediate children for all jobs. If the parameter sap.job.children.recursive is set to true, then the agent monitors all the descendants.

When tuning for performance, you can reduce the number of calls to the SAP system by setting this parameter to false.

Default: false

Note: To monitor children (sap.job.children.monitor=true), you require XBP 2.0 (6.10).

sap.job.children.recursive

Enables recursive operations for the parameters sap.job.children.monitor, sap.job.children.delete, and sap.job.children.cancel. Valid values are as follows:

- false—Carries out operations only on the SAP job and its immediate (first level) children.
- true—Carries out recursive operations on all children of an SAP job.

Default: false

Note: To enable the recursive feature (sap.job.children.recursive=true), you require XBP 2.0 (6.10).

sap.job.dump_ref.enabled

Sets whether the agent produces the dump reference required by the Get Dump Output command.

- false—Disables the dump reference when a job terminates.
- true—Enables a dump reference that the Get Dump Output command uses when a job terminates.

When tuning for performance, you can reduce the overhead incurred when the agent retrieves logs (getting the dump reference requires job logs) by setting this parameter to false.

Default: false

sap.job.log.spool_write

Sets whether the agent writes job logs to the agent spool file. Valid values are as follows:

- false—Does not write job logs to the spool file.
- true—Writes the job log to the agent spool file. If child process monitoring is enabled, children job logs are also written to the spool file.

When tuning for performance, you can reduce the overhead incurred when the agent retrieves logs by setting this parameter to false.

Default: false

sap.job.resubmission

Controls whether to use the resubmission feature to handle failed connections during job submission.

- false—Disables the resubmission feature.
- true—Enables the resubmission feature.

Default: true

sap.job.resubmission.wait.sec

Determines how long, in seconds, the agent waits between resubmission attempts.

Default: 2 (seconds)

sap.job.steps.all_required

Determines whether a job fails based on a failed step definition. Valid values are as follows:

- false—The agent ignores a failed step definition and continues with the job submission.
- true—The agent fails the job if a step definition fails.

Default: true

sap.logon.company

Identifies the agent company. The required value is Cybermation. This value, with the parameter sap.logon.product identify the agent product for XBP reporting.

Note: Do not change this value.

sap.logon.interface

Identifies the interface used for communication between SAP and the agent. The required value is XBP.

Note: Do not change this value.

sap.logon.product

Identifies the product. The required value is agent. This value, with the parameter sap.logon.company identify the agent product for XBP reporting.

Note: Do not change this value.

sap.logon.version

Specifies the version of XBP as follows:

- 1.0—XBP 1.0
- 2.0—XPB 2.0
- 6.10—alternative to 2.0

Note: If you set the sap.job.children.monitor parameter to true, then this parameter must be set to 2.0 (6.10).

sap.mail.from

Specifies the source email address that the Mailto feature requires. When a job sends email, the sap.mail.from value is the email address or arbitrary value you specify as the source of the email. One email is sent per job.

Default: MyAgent@ESPBusinessAgentForSAP.com

Example: MySAPAgent

sap.max.buffer.size.bytes

Specifies the maximum size of the buffer transferred in an AFM to the scheduling manager. Files greater than this size use the FTP plug-in. We recommend using the default buffer size.

Default: 20480 (20KB)

sap.recip.send_dump

Sets whether the agent sends the job dump to the SAP recipient specified in the job definition.

- false—Does not send the job dump.
- true—Sends the job dump.

When tuning for performance, you can reduce the overhead incurred when the agent retrieves and sends dumps by setting this parameter to false.

Default: false

sap.recip.send_log

Sets whether the agent sends the job log to the SAP recipient specified in the job definition.

- false—Does not send the job log.
- true—Sends the job log.

When tuning for performance, you can reduce the overhead incurred when the agent retrieves and sends logs by setting this parameter to false.

Default: false

sap.report_search.results.default

Defines the default number of entries the agent returns when querying for ABAPs on an SAP system.

Default: 7500

sap.report_search.results.max

Defines the maximum number of entries the agent returns when querying for ABAPs on an SAP system.

Default: 15000

sap.request.timeout.min

Specifies the number of minutes the agent waits for an RFC connection response.

Default: 20 (minutes)

sap.spool.api.SPOOL_LIST_PLAIN

Specifies whether the agent uses the Spool list or Spool list plain table. This parameter is required due to SAP changing its table name for spool list retrieval.

Note: Do not change this value.

sap.step.sf.check_dump

Sets whether the agent checks the step-level success message specified in a job definition against the dump of the job. Valid values are as follows:

- false—Does not check the success message against the job dump.
- true—Checks the success message against the job dump.

When tuning for performance, you can reduce the overhead incurred when the agent retrieves dumps by setting this parameter to false.

Default: false

sap.step.sf.check_log

Sets whether the agent checks the step-level success message specified in a job definition against the log of the job. Valid values are as follows:

- false—Does not check the success message against the job log.
- true—Checks the success message against the job log.

When tuning for performance, you can reduce the overhead incurred when the agent retrieves logs by setting this parameter to false.

Default: false

sap.useRegularExpressions

Specifies the type of message criteria the agent uses to check messages in the job spool file to determine the success or failure of a job.

- false—Enables text string checking as the message criteria.
- true—Enables regular expression checking as the message criteria.

Default: false

smtp.server

Specifies the SMTP server domain name that is required for the Mailto feature.

How to Set Up an Alias for the Agent Plug-in

When you install the agent plug-in, you are prompted to create a default alias, which you can change after installation. If you enable an alias on the agent plug-in, you must also configure the alias on the scheduling manager.

To set up an alias for the agent plug-in, follow these steps:

1. Create an alias for the agent plug-in (see page 40).
2. Configure the alias on the scheduling manager (see page 40).

More information:

Deciding Whether to Create an Alias (see page 14)

Create an Alias for the Agent Plug-in

An alias lets you create a unique agent name for an agent plug-in. Each agent plug-in has a default alias, which you can enable or change.

To create an alias for the agent, configure the following agent parameter on the agent:

communication.alias_*n*

Defines the alias name for the agent. The *n* suffix increments sequentially for each alias agent.

Note: To enable an alias on the agent, verify that the comment character (#) is removed from the parameter line.

Configuring an Alias on the Scheduling Manager

When you create an alias for an agent plug-in, you must also configure the alias on the scheduling manager. You must define the alias on the scheduling manager with the same address, port number, and encryption key as the agent where the agent plug-in is installed.

Note: For detailed instructions to configure an alias on the scheduling manager, see the documentation for your scheduling manager.

Set Default Values for SAP Jobs

You can set default values for SAP jobs by configuring the corresponding properties in the connection properties file. Setting defaults can save time and prevent job definition errors for details that are common to all your jobs. You only need to re-specify these details in a job definition when you want to override the default parameters. You can set default values for the SAP client number, language, SAP user ID and password.

Note: You must encrypt the password before setting the value in the connection properties file.

To set default values for SAP jobs

1. Change to the agent installation directory.
2. Stop the agent.
3. Open the connection properties file, *destname*.properties, for the SAP system.

   destname

   Specifies the SAP destination name.

4. Remove the comment syntax (#) from each of the following properties you want to configure and edit the value:

   jco.client.client

   Specifies the SAP client number. If the client is not specified in the connection properties file, it must be specified in a job definition.

   jco.client.lang

   Specifies the default language to use. If the language is not specified in the connection properties file or in a job definition, the agent plug-in uses the default.

   Default: EN

   jco.client.user

   Specifies the default SAP user ID that SAP jobs run under. If the user ID is not specified in the connection properties file, the user ID must be specified in a job definition.

   Limits: This value is case-sensitive. The SAP system usually requires the user ID in uppercase.

   Note: We recommend that you specify a value for this parameter. If you do not specify a value, you can experience problems monitoring SAP jobs under some conditions.

jco.client.passwd

Specifies the encrypted password for the default SAP user ID set in the jco.client.user parameter. Required if the default user ID is defined. If you enter a password when you install the agent plug-in, the installation program encrypts the password.

Limits: This value is case-sensitive.

Note: We recommend that you specify a value for this parameter. If you do not specify a value, you can experience problems monitoring SAP jobs under some conditions.

5. Save and close the connection properties file.
6. Start the agent.

   The default values are configured for the agent plug-in.

Encrypt the SAP Password

If you define the default SAP user ID and password during the agent plug-in installation, the password is automatically encrypted. However, if you define or change the SAP user ID and password after the agent plug-in is installed, you must encrypt the password and add the encryption to the connection properties file for the SAP system. To encrypt a password, run the password utility provided with the agent.

To encrypt the SAP password

1. Change to the agent installation directory.
2. Type the following command to run the password utility:
   - UNIX command:

     `password`
   - Windows command:

     `password.bat`

   The utility prompts you for the password.
3. Enter your password.

   Note: The password is case-sensitive. The SAP system usually requires the password in uppercase.

   The program responds with your encrypted password.
4. Copy the encrypted string.

Set SAP Connection Parameters

Speak to your SAP system administrator to get the following connection information:

- SAP client number
- Default SAP user and password

To set SAP connection parameters

1. Change to the agent installation directory.
2. Stop the agent.
3. Open the connection properties file, *destname*.properties, for the SAP system.

   destname

   Specifies the SAP destination name.

4. Configure the following properties:

   jco.client.client

   Specifies the SAP client number. If the client is not specified in the connection properties file, it must be specified in a job definition.

   jco.client.lang

   Specifies the default language to use. If the language is not specified in the connection properties file or in a job definition, the agent plug-in uses the default.

   Default: EN

jco.client.user

Specifies the default SAP user ID that SAP jobs run under. If the user ID is not specified in the connection properties file, the user ID must be specified in a job definition.

Limits: This value is case-sensitive. The SAP system usually requires the user ID in uppercase.

Note: We recommend that you specify a value for this parameter. If you do not specify a value, you can experience problems monitoring SAP jobs under some conditions.

jco.client.passwd

Specifies the encrypted password for the default SAP user ID set in the jco.client.user parameter. Required if the default user ID is defined. If you enter a password when you install the agent plug-in, the installation program encrypts the password.

Limits: This value is case-sensitive.

Note: We recommend that you specify a value for this parameter. If you do not specify a value, you can experience problems monitoring SAP jobs under some conditions.

5. Save and close the connection properties file.
6. Start the agent.

   The agent plug-in is configured to connect with load balancing.

Example: Set SAP Connection Parameters

The following is an example of a connection properties file:

```
jco.client.client=800
jco.client.lang=EN
jco.client.user=CYBUSER
jco.client.passwd=720858F651C7648E
```

How to Configure Load Balancing

The agent plug-in uses the connection properties files to determine the method required to connect to the SAP system. By default, the agent plug-in installation program configures the connection properties file to connect without load balancing.

The connection properties file is named *destname*.properties, where *destname* is the SAP destination name.

Without load balancing, one connection properties file is required for each system ID (SID). With load balancing, all work is submitted using a group to the same message server, and only one connection properties file is required.

Note: To use SAP load balancing, the server must translate requests for symbolic port names into actual port numbers.

To configure load balancing, do the following:

1. Set SAP connection parameters (see page 43).
2. Configure the agent plug-in to connect with load balancing (see page 45).
3. Configure the server for symbolic port name translation (see page 47).

Configure the Agent Plug-in to Connect with Load Balancing

With load balancing, all work is submitted using a group to the same message server. Speak to your SAP system administrator to get the following connection information:

- Host name of the SAP message server
- SAP group name created using SAPGUI
- SAP system ID

To configure the agent plug-in to connect with load balancing

1. Change to the agent installation directory.
2. Stop the agent.
3. Open the connection properties file, *destname*.properties, for the SAP system.

   destname

   Specifies the SAP destination name.

4. Configure the following properties:

   jco.client.mshost

   Specifies the SAP message server.

   jco.client.group

   Specifies the SAP group name.

   Note: The value for jco.client.group must be a group that has been previously created using the SAPGUI.

   jco.client.r3name

   Specifies the SAP system ID.

5. Save and close the connection properties file.
6. Start the agent.

   The agent plug-in is configured to connect with load balancing.

Example: Connection with Load Balancing

The following is an example of a connection properties file modified for load balancing:

```
jco.client.mshost=gemini
jco.client.group=CYB2003
jco.client.r3name=CYB
jco.client.client=800
jco.client.lang=EN
jco.client.user=CYBUSER
jco.client.passwd=720858F651C7648E
```

Configure the Server for Symbolic Port Name Translation

The agent plug-in uses SAP libraries that use symbolic port names internally. To use SAP load balancing, the server must translate requests for symbolic port names into actual port numbers.

The following procedure adds an entry to etc services that causes the server to translate requests for the symbolic port name "sapmsCYB" into the actual port number 3600.

To configure the server for symbolic port name translation, do one of the following:

- On UNIX systems, edit the /etc/services file and add a line similar to the following:

  ```
  sapmsCYB 3600/tcp # SAP connection service
  ```

  Note: Replace CYB with your SAP system ID. Your computer might be configured to use NIS/YP or another method for looking up symbolic port names.

- On Windows systems, edit the services file in your operating system directory and add a line similar to the following:

  ```
  sapmsCYB 3600/tcp # SAP connection service
  ```

  Note: Replace CYB with your SAP system ID.

Test for NIS/YP or Other Protocols (UNIX Systems)

You can test for NIS/YP or similar symbolic port name translation.

To test for NIS/YP or similar symbolic port name translation

1. Edit /etc/services and add the sapmsCYB 3600/tcp line.
2. Type the following command:

   ```
   telnet localhost sapmsCYB
   ```

   Note: If you get an error about a bad or unknown port number, your system is not using /etc/services.
3. Do one of the following if /etc/services is not used on your UNIX computer:
   - Ask your system administrator to reconfigure the UNIX computer to use /etc/services.
   - Ask your system administrator to update the server that provides service name translation with the sapmsCYB 3600/tcp line.

Define Additional SAP System Connections

When you install the agent plug-in, the installation program prompts you to configure a connection to one SAP system. You can configure the agent plug-in to connect to multiple SAP systems. Each SAP system requires a separate connection properties file.

To define an additional SAP system connection

1. Change to the agent installation directory.
2. Stop the agent.
3. Copy the connection properties file for the SAP system that was created when the agent plug-in was installed.

   This file contains the information the agent plug-in requires to connect to the default SAP system.
4. Rename the copy of the connection properties file to *destname*.properties

   destname

   Specifies the SAP destination name.

   Note: *destname* is the RFC destination name to specify in an SAP job definition.
5. Open the new connection properties file and modify the parameters with values for the additional SAP system connection.
6. Save and close the new connection properties file.
7. Start the agent.

   The agent plug-in is configured to connect with the additional SAP system.

Example: Define an Additional SAP System Connection

The following is an example of a connection properties file defined for an SAP system connection without load balancing:

```
jco.client.client=800
jco.client.lang=EN
jco.client.user=SAPUSER
jco.client.passwd=720858F651C7648E
```

Clearing the FTP and Spool Files Automatically

The agent plug-in creates SAP spool files and FTP response files during its normal operation. By default, these files do not clear automatically. You should clear these files periodically. If the file system where these files reside reaches its maximum size, the agent and the agent plug-in cannot continue to run.

FTP Response Files

The FTP response files are a temporary repository for large data buffers that otherwise would be sent as part of an Automated Frame Message (AFM). When a large data buffer is transferred from SAP, it is placed in a FTP response file. The location of the FTP response files is defined in the responsedir parameter in the agentparm.txt file. The default location is ./Root.

SAP Spool Files

Spool files are stored based on the scheduling manager name and job identifier as received in an Automated Framework Message (AFM). The agent creates a directory and file structure based on the following:

- The value specified in the responsedir parameter in the agentparm.txt file.
- Scheduling manager name (for example, MANAGER) in the AFM.
- The arbitrary name MAIN received in AFMs.
- The job name in the AFM.
- A final qualifier, added to the job name to make the entry unique. This qualifier is the time, in milliseconds, when the file was stored.

Example: SAP Spool File

Suppose the value for the responsedir parameter in the agentparm.txt file is root. If the scheduling manager named MANAGER sends an AFM for Application TEXT16.1 with job name AMSAP.A1, the spool file is stored as follows:

```
/export/home/userid/espbusinessAgentforsap/root/manager/main/
TEST16.1/AMSAP.A1.1036000
```

Enable Regular Expressions to Check Spool File Messages

You can specify a success message or failure message within an SAP job definition. The agent plug-in checks that message against messages in the job spool file to determine whether the job completes successfully or fails. By default, the agent plug-in uses text string checking as the message criteria. You can change the default so that the agent plug-in uses regular expression checking as the message criteria.

Note: The agent plug-in uses the rules covered by Java class Pattern java.util.regex. To use regular expressions, see the success message and failure message descriptions for SAP R3 jobs.

To enable regular expressions to check spool file messages, configure the following parameter on the agent:

sap.useRegularExpressions

Specifies the type of message criteria the agent uses to check messages in the job spool file to determine the success or failure of a job.

- false—Enables text string checking as the message criteria.
- true—Enables regular expression checking as the message criteria.

Default: false

Chapter 7: Setting Up SAP Authorizations

This chapter describes how to set up SAP authorizations for the agent plug-in and describes the authorization requirements. Because each ABAP program or module can have its own authorization requirements, the SAP_ALL profile is recommended for all job types.

Note: If you use the SAP_ALL profile, you do not need any other authorizations.

To restrict the scheduling manager user, you must add a list of authorizations to the scheduling manager user. The authorizations you require depend on the SAP Agent features used.

This section contains the following topics:

General Authorizations

You need general authorizations for all job types. Before you assign values to the authorization objects, you must display technical names. To do this from the Authorizations screen, select Utilities, Technical Names.

Scheduling Manager Function	Authorization Object	Values
Submitting and monitoring jobs and batch inputs for the RFC user	S_BTCH_JOB Batch Processing: operations on batch jobs	JOBACTION ■ DELE—Delete background jobs ■ LIST—Display spool requests created by jobs ■ PLAN—Copy or repeat jobs ■ PROT—Display job processing logs ■ RELE—Release jobs (automatic release after scheduling possible) ■ SHOW—Display job queue JOBGROUP Names of permitted job groups

Scheduling Manager Function	Authorization Object	Values
Specifying an SAP user	S_BTCH_NAM Batch Processing: input of a batch user name	BTCUNAME Background username authorized to define background jobs
Reading job logs including Coverpage = YES	S_TMS_ACT TemSe: Actions on Objects	*STMSACTION* ■ CRE—Create TemSe object ■ REA—Read TemSe object ■ DEL—Delete TemSe object ■ APP—Append TemSe object ■ MOD—Modify TemSe object. STMSOBJECT The value “LT*” authorizes a user to use all TemSe Objects beginning with “LT”. STMSOWNER ■ OWN—Own TemSe objects ■ GRP—External TemSe objects in own clients ■ OCL—TemSe objects in external clients
Print Immediately = YES	S_SPO_DEV Spooler: Device Authorization	SPODEVICE The value "LP*" authorizes a user to use all printers beginning with "LP" in spool administration.
XBP Register on XMI interface (necessary for CPIC user)	S_XMI_PROD Authorization for External Management Interface (XMI)	EXTCOMPANY Name of authorized company EXTPRODUCT Company's tool INTERFACE ID of XMI interface (use XBP)

Scheduling Manager Function	Authorization Object	Values
Archive Parameter	S_WFAR_PRI ArchiveLink Authorizations for accessing Print Lists	OAARCHIV You use this field to check access authorization for particular content servers. The content servers must be maintained. OAOBJEKTE Access authorization can be differentiated by maintained object types. The object types allow application-oriented access to documents. You can use all maintained object types. OADOKUMENT You use this authorization field to check access to document types. All global document types are permitted. ACTVT You use this authorization field to define particular access modes to stored documents. The following activities are provided: ■ 01: Generate—Allows print lists to be stored. ■ 02: Change—Allows stored print lists to be changed. ■ 03: Display—Allows stored print lists to be displayed. ■ 04: Print—Allows stored print lists to be printed. ■ 06: Delete—Allows stored print lists to be deleted. ■ 70: Administration—Allows stored print lists to be managed. PROGRAM Name of report

Scheduling Manager Function	Authorization Object	Values
Archive Parameter	S_WFAR_OBJ ArchiveLink Authorizations for accessing Documents	OAARCHIV Use this field to check the access authorizations for certain content servers. These content servers must be maintained. OAOBJEKTE The access authorization can be distinguished according to the maintained object types. Using the object types, you can control the application-related access to documents. You can use all maintained object types. OADOKUMENT Use this field to check the access to document types. All global document types are allowed. ACTVT Use this field to define certain access modes for stored documents. The following activities are provided: ■ 01: Generate—Allows documents to be stored. ■ 02: Change—Allows stored documents to be changed. ■ 03: Display—Allows stored documents to be displayed. ■ 04: Print—Allows stored documents to be printed. ■ 06: Delete—Allows stored documents to be deleted. ■ 70 : Administration—Allows stored documents to be managed. **Example** **Field** **Values** OAARCHIV A1 OAOBJEKTE BKPF OADOKUMENT * ACTVT 01,03,04
The S_RFC authorization is required for all RFC communication.	Name and type of RFC to be protected	ACTVT 16 Execute RFC_NAME This field currently contains the name of the function group. The check only applies to the first 18 characters RFC_TYPE FUGR

Authorization for Extending XBP Functionality

To support the full functionality of the agent plug-in, you need the authorizations listed in the following table. These authorizations let you access SAP data that the XBP interface does not provide.

The agent plug-in queries tables using the RFC_READ_TABLE function. For each scheduling manager function, the name of the table and the name of the group accessed are listed. The tables are listed for your information only. You only have to grant access at the table group level.

Scheduling Manager Function	Authorization Object
List of ABAPs (D010SINF - SS)	S_TABU_DIS
List of Variants (VARI - SS)	
List of available Modules (CVERS - SS)	Grant authorization for the following table groups: SA, SC, SS.
List of Events (BTCEVTJOB - SC)	
List of Printers (TSP03 - SC)	
Variant Description (VARID - SS)	
List of Jobs (TBTCO - SC)	
List of Archive Objects (ARCH_OBJ - SS)	
Archive Object Description (ARCH_TXT - SS)	
BDC session status (APQI - SC)	
List of SAP Office Users (SOUD - SA)	

Authorization for Data Archiving Jobs

The following table lists authorization for Data Archiving jobs:

Scheduling Manager Function	Authorization Object	Values
Defining an Archiving job	S_ARCHIVE Application area for Archiving object area and Archiving object	APPLIC Name of application area: FI, BC, CO, ... ARCH_OBJ Name of archive object: FI_DOCUMNT, ... *ACTVT* Activities for archive object and application area ■ 01 Everything is allowed: Create archives (ARCHIVE_OPEN_FOR_WRITE) Start delete program (ARCHIVE_OPEN_FOR_DELETE) Reload (ARCHIVE_OPEN_FOR_MOVE) Read and analyze archives (ARCHIVE_OPEN_FOR_READ) ■ 02 Change mode in archive management ■ 03 Read and analyze archives (ARCHIVE_OPEN_FOR_READ) and display mode in archive management

Authorization for Batch Input Session (BDC) Jobs

Add the following authorization if your ABAP uploads any data from a file:

Scheduling Manager Function	Authorization Object	Values
Defining a BDC job	S_DATASET Physical file name and ABAP program name	PROGRAM Name of the ABAP/4 program that contains the access. You can restrict the file access to a few known access programs. ACTVT ■ 33-Normal file read ■ 34-Normal file write or deletion ■ A6-Read file with filter (operating system command) ■ A7-Write to a file with filter (operating system command) FILENAME Name of the operating system file. Here, you can restrict the accessible files.

Authorization for Business Warehouse (BW) Jobs

The following table lists the authorization for BW Process Chain and BW InfoPackage jobs:

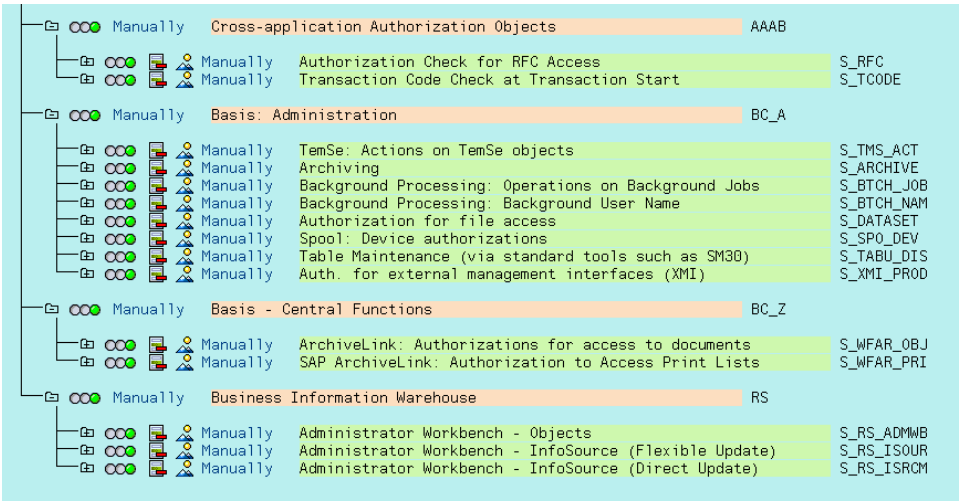
Scheduling Manager Function	Authorization Object	Values
Checking BW Process Chain job status by querying RSPCPROCESSLOG - &NC& table Getting BW InfoPackage job status by querying RSMONRQTAB - SC table	S_TABU_DIS Grant authorization to the following table group.	ACTVT 03: Display DICBERCLS &NC&, SC
Defining a BW InfoPackage job	S_RS_ISRCM Authorization object for Direct Update	

Scheduling Manager Function	Authorization Object	Values
Defining a BW InfoPackage job	S_RS_ISOUR Authorization object for Flexible Update	RSAPPLNM Enter the application component key that the user can edit. RSISOURCE Enter the InfoSources with flexible updating that the user can edit. RSISRCOBJ You use the subobject to specify the part of the InfoSource the user can edit. The following subobjects exist: ■ Definition—Definition ■ CommStruc—Communication structure ■ TrnsfrRule—Transfer rules ■ Data—Data ■ InfoPackag—InfoPackage ■ MetaData—Metadata ACTVT Determines whether you can display, maintain, request, or update a subobject: ■ Display InfoSource definition (Activity = 03) ■ Display InfoSource communication structure (Activity = 03) ■ Display InfoSource transfer rules (Activity = 03) ■ Display InfoSource data (Activity = 03) ■ Maintain InfoSource definition (Activity = 23) ■ Maintain InfoSource communication structure (Activity = 23) ■ Maintain InfoSource transfer rules (Activity = 23) ■ Maintain InfoSource InfoPackage (Activity = 23) ■ Maintain InfoSource data (Activity = 23) ■ Request InfoSource data (Activity = 49)

Note: Every BW Process Chain job step can require additional authorizations. Resolve these authorizations before submitting BW Process Chain jobs.

Sample Screenshot for Authorizations

The following is a sample SAPGUI authorization screen that you can access using transaction PFCG:



Chapter 8: Troubleshooting the Agent Plug-in

This section contains the following topics:

Agent Plug-in is Unable to Communicate with the SAP System

Valid on Red Hat Enterprise Linux 5

You must install libstdc++.so.5 before installing CA Workload Automation Agent for SAP; otherwise, the agent plug-in is unable to communicate with the SAP system.

Configuration Analyzer Validation Checks

The Configuration Analyzer is loaded during the initialization of the agent plug-in. Using the config.properties file, the Configuration Analyzer performs validation checks against the agent plug-in configuration.

The Configuration Analyzer checks the configuration of the following components in the order listed:

1. SAP
2. Mail
3. FTP

Note: To perform the checks, the config.properties file must exist in the agent installation directory. Bypassing the Configuration Analyzer is not recommended. Do not edit or change the values in the config.properties file.

Message Types

Error, warning, and status messages are recorded in the sap_config.log file, which is located in the agent installation directory.

Message Type	Description
Error	Recorded when critical configuration issues are encountered during the agent startup. When an error is encountered, a message is logged in sap_config.log and the relevant component is locked.
Warning	Recorded when the Configuration Analyzer encounters a potential problem or a situation that could inhibit Configuration Analyzer functionality.
Status	Recorded as a one-line status summary of the Configuration Analyzer at the end of the sap_config.log file. The summary lists the number of errors and warnings issued by the Configuration Analyzer.

Example: Status Message

The following is an example of a status message:

```
Thu Apr 10 13:38:50.391 EDT 2003: CybSAPConfigAnalyzer - CybSAPConfigAnalyzer
completed with 0 Error(s) and 0 Warning(s).
```

SAP-related Log Files

In a standard agent plug-in installation, the log files are maintained in a directory named log, which resides in the agent installation directory.

The following logs contain messages for the agent plug-in:

Log File	Description	Log Level
sap_plugin.log	Agent plug-in initialization messages	4,2
sap_config.log	Messages from the SAP agent plug-in Configuration Analyzer	4,2
sap_communicator.log	SAP job monitoring and communication between the agent plug-in and the SAP system	4,2
db_communicator.log	Communication between the agent plug-in and the SAP database	4,2

Log File	Description	Log Level
sap_backup.log	Storage of jobs being processed	4,2
sap_collections.log	Agent plug-in internal SAP job queue changes	4,2
sap_wobhandler.log	Messages about incoming operations	4,2

Note: For more information about agent logs, see the *CA Workload Automation Agent for UNIX, Linux, or Windows Implementation Guide*.

Increase the Polling Rate when SAP is Slow to Respond

If your jobs run for a long time, you can increase the polling rate the agent plug-in uses to check job status. Increasing the polling rate will reduce the number of requests the agent plug-in makes to the SAP system. By default the polling rate is set to 10 seconds.

To increase the polling rate, configure the following agent parameter on the agent:

sap.default.polling.rate.sec

Specifies the job status polling interval in seconds. We recommend using the default.

Default: 10 (seconds)

Handle Slow SAP Connections

The agent plug-in may have trouble creating new SAP connections resulting in a timeout, for example when your system is operating slower than usual. By default, the agent plug-in waits 60 seconds for a response from the SAP system before it signals a connection problem. You can change the connection wait time by adding the following parameter to the agentparm file, and increasing the time:

sap.default.connection.wait.sec

Specifies the total time in seconds the agent plug-in waits for a response from SAP.

Close Failed Connections

By default, the agent plug-in attempts to close failed connections. If you experience problems closing failed connections, configure the following agent parameter on the agent:

sap.connection.abandonFailedConnections

Abandons failed connections when set to true.

Wrong State Reported for an SAP BW Process Chain

Valid on UNIX and Windows

The agent can report an SAP Business Warehouse (BW) process chain as failed even though it is marked as completed by SAP. Under some conditions, SAP can mark a process chain as failed (red) and then continue processing it. The agent considers the reported process chain failure as the final state.

To correct this problem

Apply the following SAP notes:

- 1460640 - Correction: Synchronous run turns red during log refresh
- 1396417 - Correction: Status "Red" if request does not exist yet

Note: If the problem continues after applying the SAP notes, please investigate the problem with SAP before contacting CA support.

Chapter 9: Related Documentation

Documentation for the agent and scheduling managers is available in PDF format at http://ca.com/support.

Note: To view PDF files, you must download and install the Adobe Reader from the Adobe website if it is not already installed on your computer.

This section contains the following topics:

CA Workload Automation AE Documentation

To work with the agent and CA Workload Automation AE, see the following documentation:

Task	Documentation
Configure the scheduling manager to work with the agent	*CA Workload Automation AE UNIX Implementation Guide* *CA Workload Automation AE Windows Implementation Guide*
Define, monitor, and control jobs	*CA Workload Automation AE Reference Guide* *CA Workload Automation AE User Guide* *CA Workload Control Center Workload Scheduling Guide*

CA Workload Automation DE Documentation

To work with the agent and CA Workload Automation DE, see the following documentation:

Task	Documentation
Configure the scheduling manager to work with the agent	*CA Workload Automation DE Admin Perspective Help*
Define jobs	*CA Workload Automation DE Define Perspective Help*
Monitor and control jobs	*CA Workload Automation DE Monitor Perspective Help*

Note: The online help is available in HTML and PDF formats.

CA Workload Automation ESP Edition Documentation

To work with the agent and CA Workload Automation ESP Edition, see the following documentation:

Task	Documentation
Configure the agent to work with the scheduling manager	*CA Workload Automation ESP Edition Installation and Configuration Guide*
Define jobs	*ESP Business Agent for SAP Guide to Scheduling Workload*
Monitor and control jobs	*CA Workload Automation Agent for UNIX, Linux, or Windows Guide to Scheduling Workload* *CA Workload Automation ESP Edition Operator's Guide*

CA Workload Automation CA 7 Edition Documentation

To work with the agent and CA Workload Automation CA 7 Edition, see the following documentation:

Task	Documentation
Configure the scheduling manager to work with the agent	*CA Integrated Agent Services Implementation Guide* *CA Workload Automation CA 7 Edition Interface Reference Guide* *CA Workload Automation CA 7 Edition Systems Programming Guide*
Define, monitor, and control jobs	*CA Integrated Agent Services User Guide* *CA Workload Automation CA 7 Edition Interface Reference Guide* *CA Workload Automation CA 7 Edition Database Maintenance Guide* *CA Workload Automation CA 7 Edition Command Reference Guide*

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