CA Workload Automation Agent for UNIX, Linux, Windows, or i5/OS

Release Notes

r11.3 SP2, Cumulative 1

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 CA7 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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Contents

Chapter 1: Welcome

Welcome to CA Workload Automation Agent for UNIX, Linux, or Windows. This document includes information about changes to existing features, a complete list of fixed issues, supported platform information and system requirements, and known issues for this release, if any. Relevant documentation may also be included for significant fixes or changes.

For the latest version of the Release Notes, visit http://ca.com/support. Service pack releases do not feature a full updated documentation set with a bookshelf. You can find the Release Notes by searching the Find Other Product Documentation section on the Documentation page.

Upgrading the Agent to 11.3 SP2

If you are using CA WA Agent for UNIX, Linux, Windows, or i5/OS r11.3 or higher, you can upgrade to r11.3 SP2 using a patch. To apply the r11.3 SP2 patch, use the current patch utility. The patch installer updates the Java Runtime Environment (JRE) supplied with the agent and provides the same fixes and features as the full installer.

Note: Patch upgrade from Release 7 to r11.3 SP2 is not supported.

You can find the latest CA Workload Automation Agent solutions and patches on CA Support Online:

https://support.ca.com/irj/portal/anonymous/phpsupcontent?contentID=83c50203-e6a9-427a-afa6-f1dbac9438cf&productID=8075

More information:

CA WA Agent for Remote Execution Stops Working after Upgrade (see page 19)

Upgrade the Agent to r11.3 SP2 on UNIX

If you are using CA WA Agent for UNIX, Linux, or i5/OS r11.3 or higher, you can upgrade to r11.3 SP2 using a patch. On AIX systems, you must remove the cached dynamic libraries from memory as root before you can upgrade the agent.

Follow these steps:

1. Stop the agent:

   ```
   agent_install_path/cybAgent -s
   ```

   agent_install_path

   Specifies the agent installation directory.

   Note: On AIX, you must stop the agent using root.

2. (AIX only) Run the following command as root to remove the cached dynamic libraries from memory:

   ```
   slibclean
   ```

3. Download and unpack the supplied tar.Z file into a temporary location, such as /cybagent/tmp:

   ```
   cd /cybagent/tmp
   uncompress < patch.tar.Z | tar xvf -
   ```

   patch

   Specifies the name of the patch file.

   The temporary location contains the necessary files for installing the patch.

4. Change the permission of installPatch.sh to 755:

   ```
   chmod 755 installPatch.sh
   ```

5. Apply the patch using the following command:

   ```
   installPatch.sh agent_install_path patch_file patch_id
   ```

   patch_file

   Specifies the archive file that contains the patching files. The file has a TAR extension on UNIX.

   patch_id

   Specifies the ID of the patch that is being applied. The ID is usually the name of the file that is downloaded from CA Support Online.

   Example: /cybAgent/tmp/installPatch.sh /opt/CA/CAWA_Agent patch_solaris_x86.tar RO55420

6. Start the agent:

   ```
   agent_install_path/cybAgent &
   ```

Upgrade the Agent to r11.3 SP2 on Windows

If you are using CA WA Agent for Windows r11.3 or higher, you can upgrade to r11.3 SP2 using a patch.

Follow these steps:

1. Stop the agent:

   agent_install_path\cybAgent -s

   agent_install_path

   Specifies the agent installation directory.

2. Download and unpack the supplied .caz file into a temporary location, such as C:\temp\patch:
   CAZIPXP -u *patch*.caz

   patch

   Specifies the name of the patch file.

   Note: The CAZIPXP utility must reside in the same directory as the .caz file. You can download the CAZIPXP utility from CA Support Online at https://support.ca.com/irj/portal/phpsupcontent?contentID=cb74d332-823b-427e-a6de-811dc2183fb1&fromKBResultsScreen=T.

   The temporary folder contains the necessary files for installing the patch.

3. Apply the patch using the following command:

   installPatch.bat *agent_install_path patch_file patch_id*

   patch_file

   Specifies the archive file that contains the patching files. The file has a ZIP extension on Windows.

   patch_id

   Specifies the ID of the patch that is being applied. The ID is usually the name of the file that is downloaded from CA Support Online.

   Example: installPatch.bat "C:\Program Files\CA\CAWA Agent" patch_windows64.zip RO55422

4. Start the agent:

   agent_install_path\cybAgent -a

Chapter 2: Changes to Existing Features

This chapter documents changes made to existing features in CA WA Agent for UNIX, Linux, Windows, or i5/OS r11.3 SP2.

This section contains the following topics:

Support for New Platforms

The agent supports the following new platforms:

- HP-UX PA-RISC 11i v1 (11.11)
- HP-UX Itanium 11i v2 (11.23)
- Windows Server 2012
- Windows 8

More information:

UNIX and Linux Platforms (see page 47)
Windows Platforms (see page 50)

Native 64-Bit Support on AIX

The agent now has native 64-bit support on AIX. You can install a 64-bit agent on AIX 5.3, 6.1, or 7.1.

More information:

UNIX and Linux Platforms (see page 47)

Configuring the Sort Order that Files are Processed in During File Monitoring

When monitoring files using a File Trigger job, the agent processes the files that match the monitoring criteria in ascending alphabetical order. The agent does not preserve the order that the files are created or modified in.

In this release, you can now specify the following new agent parameter to configure the sort order that files are processed in:

filemonplugin.strategy

Specifies the sort order that the agent uses to process the files that match the file monitoring criteria. You can specify the following values for the sort order:

native_order

Sorts the files in the native order.

Note: The native order depends on how the files are stored in the directory and how the JRE retrieves them. To preserve the order that the files are created or modified in, we recommend that you use time_asc.

alpha_asc

Sorts the files in ascending alphabetical order.

alpha_desc

Sorts the files in descending alphabetical order.

time_asc

Sorts the files by creation/modification time, with the oldest file processed first (first in, first out).

time_desc

Sorts the files by creation/modification time, with the newest file processed first (last in, first out).

size_asc

Sorts the files by size, with the smallest file processed first.

size_desc

Sorts the files by size, with the largest file processed first.

Default: alpha_asc

Note: If you specify an invalid value for the sort order, the default value (alpha_asc) is used.

Cannot Redirect Standard Output or Error to a Different Directory Using Relative Paths (Windows only)

Valid on CA Workload Automation AE

If you specify a relative path for the standard output or standard error files, you cannot redirect the job output to a different directory. By default, the job output is written to the agent directory.

You can now set the oscomponent.initialworkingdirectory parameter on the agent to redirect the job output to a different directory.

Consider the following JIL:

```
insert_job: win_stdout
job_type: CMD
machine: winagent
command: “C:\COMMON\Backup”
owner: Administrator@wade09
std_out_file: %AUTO_JOB_NAME%.log
std_err_file: %AUTO_JOB_NAME%.err
```

If the oscomponent.initialworkingdirectory parameter is set to a specific path, the job output is written to the directory specified by the path. For example, if oscomponent.initialworkingdirectory=c:\tmp\log\, the standard output is written to c:\tmp\log\win_stdout.out and the standard error is written to c:\tmp\log\win_stdout.err.

If the oscomponent.initialworkingdirectory parameter is set to USER, the job output is written to the home directory of the specified owner (or its default). For example, if the home directory of Administrator is C:\User\Administrator, the standard output is written to C:\User\Administrator\win_stdout.out and the standard error is written to C:\User\Administrator\win_stdout.err.

Note: If the oscomponent.initialworkingdirectory parameter is set to USER and the user/password of the specified owner (or its default) do not exist, the job fails with a submission error (SUBERROR).

Chapter 3: Known Issues

The chapter details the known issues in CA WA Agent for UNIX, Linux, Windows, or i5/OS r11.3 SP2.

This section contains the following topics:

Resource Temporarily Unavailable Errors on AIX

Valid on AIX

Symptom:

When running jobs on AIX, some of the jobs fail to complete with submission errors (SUBERROR). The job log contains the following error message:

```
CAWA_E_20039 Cannot fork a new process to execute the job:/usr/bin/ksh,
reason:Resource temporarily unavailable.Error code: 11
```

Solution:

The error can occur because of a memory issue.

Check the maximum number of user processes on your system using the following command:

```
lsattr -E -l sys0 -a maxuproc
```

Sample output:

```
maxuproc 128 Maximum number of PROCESSES allowed per user True
```

To resolve the issue, we recommend that you increase the number of user processes to 1024 using the following command:

```
chdev -l sys0 -a maxuproc=1024
```

Unable to Restart the Agent on z/Linux or AIX

Valid on z/Linux and AIX

Symptom:

After I run UNIX jobs, I stop the agent, but it cannot be restarted. The defaultlog_agent.log contains the following exception and the stack trace:

```
main.MainThread.CybTcpipControllerPlugin.initialize[:283] -
cybermation.library.communications.CybConversationException: Address already in use
…
```

Solution:

The issue occurs when the operating system does not release the agent listening port.

To prevent this issue from occurring on z/Linux, we recommend that you set the following parameter in the agentparm.txt file:

```
oscomponent.closefds=200
```

This parameter causes the agent to close file descriptors, preventing the scripts or binaries of the user from inheriting them.

Note: If this setting does not resolve the issue, increase the value of oscomponent.closefds up to a maximum of 300.

On AIX, oscomponent.closefds is set to 200 by default, but it can be increased to a maximum of 300 if necessary.

CA WA Agent for Remote Execution Stops Working after Upgrade

Symptom:

After I upgrade the agent to r11.3 SP2 using the patch utility, CA WA Agent for Remote Execution stops working.

Solution:

During the patch upgrade, the third-party library sinetfactory.jar is replaced by an older version that is included with the agent. To correct this problem, restore the sinetfactory.jar file with the version that CA WA Agent for Remote Execution requires.

To correct this problem

1. Stop the agent:
   - On UNIX:

     agent_install_path/cybAgent -s
   - On Windows:

     agent_install_path\cybAgent -s

   agent_install_path

   Specifies the agent installation directory.
2. Copy the sinetfactory.jar file from the backup directory created by the patch utility:
   - On UNIX:

     agent_install_path/patches/*patch_id*/backup/jars
   - On Windows:

     agent_install_path\patches*patch_id*\backup\jars

   patch_id

   Specifies the ID of the patch that is being applied. The ID is usually the name of the file that is downloaded from CA Support Online.

   You will use this file to replace the sinetfactory.jar file that is included with the agent.
3. Locate the sinetfactory.jar file in the agent installation directory:
   - On UNIX:

     agent_install_path/jars
   - On Windows:

     agent_install_path\jars

4. Replace the sinetfactory.jar file in this directory with the version that you copied in Step 2.
5. Restart the agent:
   - On UNIX:

     agent_install_path/cybAgent &
   - On Windows:

     agent_install_path\cybAgent -a

   The sinetfactory.jar file is restored.

Unable to Start Agent after Configuring the Agent for WebLogic

Valid on AIX and z/Linux

Symptom:

When I configure the CA WA Agent for Application Services plug-in for WebLogic, my agent fails to start. The issue occurs when the SNMP connector is enabled on the agent.

Solution:

If you configure the plug-in for WebLogic using the instructions in the *CA Workload Automation Agent for Application Services Implementation Guide*, the following agent parameters will be set:

```
javax.xml.transform.TransformerFactory=com.sun.org.apache.xalan.internal.xsltc.trax.TransformerFactoryImpl
javax.xml.parsers.SAXParserFactory=com.sun.org.apache.xerces.internal.jaxp.SAXParserFactoryImpl
javax.xml.parsers.DocumentBuilderFactory=com.sun.org.apache.xerces.internal.jaxp.DocumentBuilderFactoryImpl
```

On agents using IBM JVMs (AIX and z/Linux), these values are incorrect.

Note: The preceding values are correct for agents using non-IBM JVMs (HP-UX, HP-Itanium, Solaris, and Linux).

To correct this problem on AIX and z/Linux

1. Configure the following parameters in the agentparm.txt file to the values shown:

   ```
   javax.xml.transform.TransformerFactory=com.ibm.xtq.xslt.jaxp.compiler.TransformerFactoryImpl
   javax.xml.parsers.SAXParserFactory=com.ibm.xml.xlxp.api.jaxp.impl.SAXParserFactoryImpl
   javax.xml.parsers.DocumentBuilderFactory=org.apache.xerces.jaxp.DocumentBuilderFactoryImpl
   ```

2. Start the agent.

i5/OS Job Fails with Spool File Reading Failure

Valid on i5/OS

When running an i5/OS job, the job sometimes fails with the following error message:

```
...MAIN STATE FAILED SetEnd Cmpc(4001) Status(Spool file reading failure. Unable to retrieve *USER return code. See previous messages in the log.) LStatus(Spool file reading failure. Unable to retrieve *USER return code. See previous messages in the log.)...
```

In this issue, the defaultlog_agent.log file located in the agent installation directory contains the following error:

```
Exception reading joblog spool file:
com.ibm.as400.access.ClientAccessDataStream incompatible with
com.ibm.as400.access.NPDataStream
```

This issue is due to a known issue with a third-party library that the agent uses. This issue will be fixed in a future release.

chkusr Utility Not Supported on i5/OS

Valid on i5/OS

The chkusr utility that is provided with the agent is not supported on i5/OS because the standard PAM (Pluggable Authentication Modules) library that chkusr uses is not applicable to the i5/OS environment. This issue will be addressed in a future release.

Chapter 4: Fixed Issues

Fixes in r11.3 SP2 Cumulative 1

This section describes the issues that were resolved in CA WA Agent for UNIX, Linux, Windows, or i5/OS r11.3 SP2 Cumulative 1.

Support for Current Working Directory Relative Path Profile Sourcing

You can now configure the agent on UNIX to source job or global profiles relative to the initial working directory when the specified profile does not contain a full path.

You can specify the following agent parameter to configure how the agent sources profiles that do not contain a full path:

oscomponent.profiles.src.location.iwd

Specifies whether the initial working directory is used to source the specified profile when it does not contain a full path.

true

Indicates that the initial working directory is used to source the specified profile when it does not contain a full path.

Note: If the profile is located in a subdirectory under the initial working directory, specify the profile using a relative path: *subdirectory*/my_profile or ./*subdirectory*/my_profile.

false

Indicates that the *installDir*/profiles directory is used to source the specified profile when it does not contain a full path.

Default: false

Note: If the profile path starts with a /, it is considered a full path, for example: /*subdirectory*/my_profile. In this case, the oscomponent.profiles.src.location.iwd setting is ignored.

Example: Assign a Job Profile Without a Path

This example assigns the my_profile profile to a Command job without a path. If oscomponent.profiles.src.location.iwd is set to true, the agent sources the my_profile profile from the initial working directory. Otherwise, the agent sources the my_profile profile from the profiles directory under the agent installation directory.

```
insert_job: test_run
job_type: CMD
machine: unixagent
command: /bin/touch /tmp/test_run.out
profile: my_profile
```

Example: Assign a Job Profile Using a Relative Path

This example assigns the my_profile profile to a Command job using a relative path. If oscomponent.profiles.src.location.iwd is set to true, the agent sources the my_profile profile from the sub_dir directory under the initial working directory. Otherwise, the agent sources the my_profile profile from the profiles/sub_dir directory under the agent installation directory.

```
insert_job: test_run
job_type: CMD
machine: unixagent
command: /bin/touch /tmp/test_run.out
profile: ./sub_dir/my_profile
```

Example: Assign a Job Profile Using a Full Path

This example assigns the my_profile profile to a Command job using a full (absolute) path. The oscomponent.profiles.src.location.iwd setting is ignored.

```
insert_job: test_run
job_type: CMD
machine: unixagent
command: /bin/touch /tmp/test_run.out
profile:  /sub_dir/my_profile
```

Command Job Fails When Using a Glob for Standard Input (Windows only)

Valid on CA Workload Automation AE

When you specify the standard input as a global binary large object (glob), command job fails on Windows. This issue has been fixed.

Agent Hangs During Shutdown (UNIX only)

To initiate and track the shutdown, the agent uses PIDs and the ps command, which are prone to error. In rare cases, the shutdown can hang due to the ps command not completing. This issue has been fixed.

Delays in Job Submission Due to Retrieving Large Spool File

Valid on Linux and Solaris

When retrieving a large spool file, the submission of jobs can be delayed, causing the agent to appear to be unresponsive. Jobs are submitted when the spool file processing completes.

To resolve this issue, the following modifications have been made to the agent:

- The thread pool is used for spool file retrieval
- More tracing information is written to the plugin_log_runner.log file when log.level=8 to aid debugging
- Optimization of spool file retrieval to take fewer I/O requests, allowing the agent to complete retrieval requests faster

Cannot Download Files from a Mainframe Server Using USS

When trying to download files from a mainframe server using UNIX System Services (USS) for z/OS, the jobs fail with the following error:

```
The system cannot find the path specified
```

In this issue, the agent incorrectly treated PDF files as mainframe data sets instead of as UNIX files. This issue has been fixed.

Incorrect Output Produced in Windows When Using a UNIX-like Emulator

When a UNIX-like emulator such as MKS Toolkit is used to execute a shell script, the job produces incorrect output in Windows. In this issue, the shell script performed operations using case-sensitive environment variable names, which the agent incorrectly converted to upper case. This issue has been fixed.

Cannot Comment Out Variable Assignment in Profile File (UNIX only)

Valid on CA Workload Automation AE

The agent fails to start if a line in a profile file contains a commented out variable assignment, for example:

```
#BL_USER_SPECIFIC_LAB001_VAL_2=user_specific_LAB001_val2
```

This issue has been fixed.

Cannot Retrieve Standard Output File When Initial Working Directory is Set to User (UNIX only)

When the initial working directory is set to USER (oscomponent.initialworkingdirectory=USER) in the agentparm.txt file, the agent cannot locate the standard output file. This issue has been fixed.

Excessive World Writeable Privileges (UNIX only)

The following files that the agent creates on UNIX have excessive world writeable privileges, which can conflict with auditing policies:

- Temporary working shell scripts (CA Workload Automation AE only)
- Standard output and standard error files
- Job logs
- Spool files

To customize the permissions of these files, we highly recommend that you add both of the following parameters to the agentparm.txt file:

oscomponent.defaultfile.permission

Specifies the standard UNIX file permission in octal notation starting with 0. The four-digit octal code specifies the default file access permissions for the following files that the agent creates:

- Temporary working shell scripts (CA Workload Automation AE only)
- Standard output and standard error files
- Job logs
- Spool files

Example: 0600 (grants read and write permissions to the owner, but prevents anybody else from accessing the file)

Notes:

- If oscomponent.defaultfile.permission is not specified, all files the agent creates will have the same permissions as before 11.3 SP1 cumulative 4.
- Temporary working shell scripts are granted execute permissions by the agent regardless of this parameter.
- This parameter does not change the access permission of the spool directory (that is, drwxrwxrwt).

oscomponent.umask

Provides support for the umask command, which turns off (disables) specific permissions that the oscomponent.default.permission parameter allows. The three-digit octal code sets the file mode creation mask (umask) for the following files that the agent creates:

- Temporary working shell scripts (CA Workload Automation AE only)
- Standard output and standard error files
- Job logs
- Spool files

Example: 066 (assuming the default file access permission is 666, this value turns off read and write permissions for the group and others)

Notes:

- If oscomponent.umask is not specified, the default umask of the user that started the agent is used for job logs, spool files, and wrapping scripts.
- For standard output and error files, the default umask of the user that runs the job is used with an exception on AIX and HP-UX. On AIX and HP-UX, the default umask is only used if the umask is set in the user profile.

Notes:

- The oscomponent.defaultfile.permission parameter defines the baseline for file permissions. The umask value further restricts which permissions are allowed to determine the final file permission. The umask value can be set in the oscomponent.umask parameter, the user profile, the job profile, and other sources.
- For job logs, spool files, and wrapping scripts, the agent determines the final file permission using the oscomponent.defaultfile.permission and oscomponent.umask parameters.
- For standard output and error files, the agent determines the final file permission using the oscomponent.defaultfile.permission parameter and the umask value that takes precedence. For example, if you set the umask value in the user profile and job profile, the umask value in the job profile takes precedence. If the umask value is set to 022 in the user profile and 021 in the job profile, the final umask value is 021.
- If you redirect the output of the command in an argument, these parameters do not apply and the file permission depends on the operating system. For example, if you specify the command as "/usr/bin/echo" and the argument as "TEST >> /tmp/TEST.OUTPUT.COMMAND", the file permission of TEST.OUTPUT.COMMAND is unspecified.
- On CA Workload Automation AE, if you get a 4030 completion code, it means that the agent could not read or write to the temporary wrapper script the agent creates. To resolve the error, verify that the combination of oscomponent.defaultfile.permission and oscomponent.umask parameters give the owner at least read and write permission.

Example: Customize the Permissions of the Agent Working Files on CA Workload Automation ESP Edition

In this example, the following agent parameters are set:

```
oscomponent.umask=113
oscomponent.defaultfile.permission=0664
```

When the agent creates the following files, the permissions are set as indicated in parentheses:

- Job logs (-rw-rw-r--)
- Spool files (-rw-rw-r--)

If no user is specified in the job, the permission of the standard output and error files is -rw-rw-r--. If a user is specified in the job with a default umask of 022, the permission of the standard output and error files is -rw-r--r--.

Example: Customize the Permissions of the Agent Working Files on CA Workload Automation AE

In this example, the following agent parameters are set:

```
oscomponent.umask=066
oscomponent.defaultfile.permission=0600
oscomponent.noforceprofile=true
oscomponent.cmdprefix.force=true
oscomponent.profiles.src.delay=true
oscomponent.profiles.global.override=true
```

The job profile has a umask value of 111.

When the agent creates the following files, the permissions are set as indicated in parentheses:

- Temporary working shell scripts (-rwx--x--x)
- Standard output and standard error files (-rw-------)
- Job logs (-rw-------)
- Spool files (-rw-------)

File Watcher Jobs Fail if Watch File Path Contains Spaces or UNC Format

Valid on CA Workload Automation AE

When running a File Watcher job, the job fails if the path specified in the watch_file attribute contains spaces, for example:

```
insert_job: fw11
job_type: FW
machine: winagent
watch_file:"C:/Program Files/CA/WA Agent R11.3.2/filewatcher.exe"
owner:Administrator@winagent
```

In addition, the job fails if the path specified in the watch_file attribute is a UNC path, for example:

```
watch_file: \\CYBNT\MyDesktop\notify.txt
```

These issues has been fixed.

User Verify Command Fails (Windows only)

If the following parameters are set in the agentparm.txt file, the User verify command fails on CA Workload Automation AE:

```
oscomponent.cmdprefix.force=true
oscomponent.cmdprefix.force.quotes.full=true
oscomponent.lookupcommand=true
```

In addition, Windows jobs fail on other scheduling managers with these settings if no user is specified in the job definition.

This issue has been fixed.

Fixes in r11.3 SP2

This section describes the issues that were resolved in CA WA Agent for UNIX, Linux, Windows, or i5/OS r11.3 SP2.

Text Monitoring Job Succeeds When the Search String Occurs Outside the Date Range

A Text Monitoring job with date/time search mode succeeds when the line containing the searched string is beyond the upper boundary of the date range. This issue has been fixed.

In addition, a new parameter was added for text searches based on line numbers:

objmon.textmon.lines.upper.include

Indicates whether to include the upper line number (TO) in the search range for Text Monitoring jobs.

true

Includes the upper line number (TO) in the search range (inclusive).

false

Excludes the upper line number (TO) from the search range (exclusive).

Default: false

Note: This parameter does not affect text searches that are based on date/time or regular expressions, which always include the upper boundary in the search.

Partial Job Output When Using Same File for Standard Output and Error (UNIX only)

If you specify the same file for standard output and standard error, the job output is partial. The issue occurs when you use > to overwrite the contents of the standard output and standard error files, for example:

```
std_out_file: > /tmp/avt_c_test.log
std_err_file: > /tmp/avt_c_test.log
```

After the fix, the information in the standard output and standard error files is complete.

Refused by Agent Security When Running File Watcher Jobs

Valid on CA Workload Automation AE

When you run a File Watcher job with local security enabled (security.level=on), the job is refused by agent security. This issue does not occur with File Trigger jobs.

You can now set up your security.txt file to allow File Watcher jobs to run with local security enabled.

Example: Allowing File Watcher Jobs to Run on UNIX

To allow File Watcher jobs to run on UNIX, allow access to the filewatcher executable and the directory where the spool and log files are created.

The following security.txt file allows File Watcher and UNIX command jobs to run:

```
c a * * *
f a * * +
x d * * +
x a * * /CA/WA_Agent_R11_3/filewatcher
x a * * /CA/WA_Agent_R11_3/spool/SCH/MAIN/WAAE_WF0.1/*
```

Note: When running File Watcher and UNIX command jobs, the agent creates temporary shell scripts in the spool directory. As a result, if you allow File Watcher jobs to run, you cannot prevent UNIX command jobs from running.

Example: Allowing File Watcher Jobs to Run on Windows

To allow File Watcher jobs to run on Windows, allow access to the filewatcher.exe executable.

The following security.txt file allows File Watcher jobs to run, but prevents Windows command jobs from running:

```
c a * * *
f a * * +
x d * * +
x a Admin* Admin+ C:\Program Files\CA\WA Agent R11.3\filewatcher.exe
```

Support for Running Windows Interactive Jobs in Session 0

In Windows XP/Server 2003 and prior versions, both services and applications used the same session (Session 0). As a result, Windows services could run interactive applications in the same session as user applications. Users could also run applications in other sessions using Terminal Services (Remote Desktop).

Windows applications (GUI and console) run in an environment called Windows Station/Desktop. Window Station/Desktop provides the resources and environment (such as fixed heaps) necessary for the applications to run. The resources provided by each Window Station/Desktop is limited. Some applications (such as Microsoft Excel) require more resources than non-interactive Window Station/Desktop can provide. In that case, the job needs to be run interactively.

When running interactive jobs, the user logs in to the interactive Windows Station/Desktop or connects to it using the Remote Desktop. The interactive Windows Station/Desktop receives user mouse/keyboard input and is visible to the user.

To run interactive jobs, you can use Terminal Services or Session 0.

Terminal Services

Starting with Windows Vista/Server 2008, services run in Session 0 and applications run in session 1 and above (Terminal Services).

By default, the agent runs interactive jobs using Terminal Services. To run interactive jobs using Terminal Services, the following conditions must be met during job submission:

- The user that is specified to run the job must be logged in to the agent computer, either using Remote Desktop or locally
- The user must be logged in to the agent computer exactly once

If these conditions are not met, the job fails with one of the following submission errors:

```
Unable to locate interactive logon session
```

```
Multiple active logon sessions
```

Session 0

To overcome these limitations, the agent now supports running Windows interactive jobs in Session 0. To run Windows interactive jobs in Session 0, set the following parameter in the agentparm.txt file:

```
oscomponent.interactive.sessionzero=true
```

With this setting, an interactive job runs in Session 0. In Windows XP/Server 2003, the application window displays in the same way as user applications. In Windows Vista/Server 2008 and newer versions, the Interactive Services Detection service must be running. A dialog displays asking the user to switch to that application. Only a single pair of Windows Station/Desktop is available.

Running interactive jobs in Session 0 have the following disadvantages:

- Application has to be granted access to run in that session. Thus, you can potentially run into issues with the limited number of entries in the Window Station/Desktop Access Control Lists (ACL).
- In Windows XP/Server 2003, if the user logs on/off interactively, the ACL can be reset. If the user application tries to create more windows (require more access to the Window Station/Desktop), the application can fail.
- If the agent is restarted, it loses track of the logon sessions. Thus, the agent is unable to clean up adequately after applications complete their execution.
- Since there is only one Window Station/Desktop, applications can run out of User/GDI heap, thus limiting the number of concurrently running jobs. We recommend that you limit the number of concurrent running jobs to no more than 10 at a time.

Important! Microsoft has determined that using interactive programs in Session 0 is a security vulnerability.

http://msdn.microsoft.com/en-us/windows/hardware/gg463353.aspx

Starting with Windows Server 2008 R2, the Interactive Services Detection service is not started automatically. You must manually start the Interactive Services Detection service.

Starting with Windows Server 2012, the Interactive Services Detection service cannot be started without a change to the system registry. Microsoft warns that making this registry change has the potential to destabilize the operating system. This option may not be supported in the next release.

As long as Microsoft continues to provide backward compatibility, CA will continue to support this functionality even at the expense of system security and stability. CA urges all Workload Automation customers find alternatives to using Session 0 for their Workload Automation tasks.

Additional Parameters

Depending on your environment, you may also require the following parameters to use Session 0.

oscomponent.su.newconsole

(Optional) Sets whether to force the agent to create a console when running a Windows job.

true

Creates a console when running a Windows job.

false

Does not create a console when running a Windows job.

Default: false

oscomponent.cmdprefix.force.redir.inline

(Optional) Sets whether the agent forces inline redirection. In some cases, such as Windows Server 2008 R2, inline redirection is required for the console to be displayed in Session 0.

true

Forces inline redirection using cmd.exe /c *command args stdin_file* >*stdout_file* >*stderr_file*.

false

Does not force inline redirection.

Default: false

Note: This parameter requires oscomponent.cmdprefix.force=true and affects FTP verbose mode. If regular redirection is used, the command ftp –s:command_file will not output raw FTP commands with completion codes as per FTP protocol.

oscomponent.cmdprefix.force.redir.ifstdon

(Optional) Sets whether to prevent the agent from redirecting STDOUT/STDERR if none are specified in the job definition.

true

Prevents the agent from redirecting STDOUT/STDERR if none are specified in the job definition. If the output of the command requires user input, such as pause, it is displayed in the cmd.exe console window.

false

Does not prevent the agent from redirecting STDOUT/STDERR if none are specified in the job definition.

Default: false

Note: This parameter requires oscomponent.cmdprefix.force=true and the Windows job has to be interactive.

Note: If you are not logged in when the job is submitted, you might need to restart the "Interactive Services Detection" service to receive the prompt.

More information:

Configure the Agent for Windows Interactive Jobs (see page 56)

File Watcher Job Fails When the Watch File is a Variable

Valid on CA Workload Automation AE

If a variable is specified in the watch_file attribute for a File Watcher job, the job fails with the following error:

```
Invalid format, Name should represent full path
```

The issue occurs when the name of the file does not contain the full path and does not apply to File Trigger jobs. This issue has been fixed.

Job Output Gets Truncated When Argument Ends with a Backslash (Windows only)

When a command job is run under a user with a slash (\) at the end of the argument that is passed to the command, the job output gets truncated. This issue has been fixed.

Jobs Fail When Writing to STDOUT or STDERR Files Larger than 2 GB (UNIX only)

When a 32-bit agent attempts to write to a standard out or standard error file with a size greater than 2 GB, the job fails with a "File too large" error. This issue has been fixed.

Job Output Does Not Include All the FTP Generated Output (Windows only)

If you run a job that performs an FTP, the output of the job does not include all the FTP generated output. As a result, the output of the job does not match the output of FTP when executed at the command line.

You can now add the following parameters in the agentparm.txt file to include all the FTP generated output:

```
oscomponent.cmdprefix.force.redir.inline=true
oscomponent.cmdprefix.force=true
oscomponent.lookupcommand=true
```

Agent Fails to Start After Applying Windows Security Patches

After applying Windows security patches to the agent computer, the agent fails to start. This issue occurs when the agent crashes, causing files in the database directory on the agent to get corrupted.

Agent Fails to Start After Rebooting Server (UNIX only)

When rebooting the server that the agent is running on, the agent sometimes fails to start. This issue occurs when the PID that is specified in the agent status file gets used by some other process. After the fix, the agent starts if it is not already running regardless of the PID in the status file.

Failure to Process KILLJOB Events

Valid on CA Workload Automation AE

When using the term_run_time attribute to terminate a job automatically after a specified number of minutes, an error similar to the following message can occur:

```
CAUAJM_I_40245 EVENT: CHK_TERM_RUNTIME  JOB: test_sleepterm
CAUAJM_W_40032 Another KILLJOB for job test_sleepterm is in progress. Nothing to do.
```

This issue occurs when the max_run_time KILLJOB event is processed after the job completes, but before CA Workload Automation AE has been updated that the job is complete. A KILLJOB event that is issued in this time window between the actual completion and the CA Workload Automation AE update is not correctly processed. The unprocessed KILLJOB event prevents any additional KILLJOB events from being issued for that job. After you apply the associated fix on CA Workload Automation AE, this timing issue can no longer occur.

Cannot Override the Initial Working Directory Using the PWD Environment Variable

If the oscomponent.initialworkingdirectory agent parameter is set, the initial working directory cannot be overridden in the job using the PWD environment variable. After the fix, the PWD value that is set in the job definition overrides the oscomponent.initialworkdingdirectory setting on the agent, for example:

In the agentparm.txt file:

```
oscomponent.initialworkingdirectory=USER
```

In the JIL:

```
command: dir
envvars: PWD=C\:\temp
```

Before the fix, the output from the dir command is from the user's home directory. After the fix, the output from the dir command is from the C:\temp directory.

File Watcher Job Fails When Directory Does Not Exist (Windows only)

Valid on CA Workload Automation AE

If the directory of the monitored file in a File Watcher job does not exist, the job fails before running with the message <Scan Failed>. No job log files are generated on the agent. After the fix, the File Watcher job continues to run if the specified directory does not exist.

Enable AES 256-bit Encryption for CA Workload Automation CA7 Edition

The agent now supports AES 256-bit encryption for messages that are sent between the agent and CA Workload Automation CA7 Edition.

Note: CA Workload Automation CA7 Edition requires IBM z/OS Integrated Cryptographic Service Facility (ICSF) on the mainframe. To set up requirements on CA Workload Automation CA7 Edition, see the *CA Workload Automation CA7 Edition AES256 Enhancement* document.

By default, the Java Cryptography Extensions (JCE) permits the use of 128-bit keys with the strong Jurisdiction Policy Files. Thus, the agent permits the coding of 32-characters keys when it is installed. To enable the use of the AES 256-bit keys, the JCE requires the Unlimited Jurisdiction Policy Files. Download these files from the appropriate vendor as a post-installation step of the agent. Because of US Export Compliance considerations in using the Unlimited Jurisdiction Policy Files, consult your legal department for more information.

Follow these steps:

1. Download the (JCE) Unlimited Strength Jurisdiction Policy Files:
   - Windows, Linux (x86 and x64), Solaris (SPARC and x86): Oracle
   - AIX, z/Linux, i5/OS: IBM
   - HP-UX: Referred to Oracle
2. Extract the local_policy.jar and US_export_policy.jar files from the downloaded archive (zip) file.
3. Copy the local_policy.jar and US_export_policy.jar files to the following location, overwriting the existing policy files:
   - On UNIX:

     `installDir/jre/lib/security`
   - On Windows:

     `installDir\jre\lib\security`
4. Use the keygen utility to enter the 64-character hexadecimal key to use in the AES encryption algorithm.

   The following example shows setting up the key and saving it to the default location:

   ```
   Keygen 0x000102030405060708090A0B0C0D0E0F101112131415161718191A1B1C1D1E1F AES
   ```
5. Restart the agent.

Job Failed When BLOB Did Not Contain Any Data

Valid on CA Workload Automation AE

In a command job, you can specify standard output or standard error as a binary large object (blob). If the size of the standard output or standard error file is 0 after the job runs, the job fails. After the fix, a warning message is written in the job log and the job completes successfully.

New Agent Parameters for Connecting with a JMX Console

When configuring the agent to connect with a JMX console, you can now specify the following new agent parameters for accessing the JMX console:

management.jmx.security.user

(Optional) Specifies the user for accessing the JMX console. You can use this parameter together with management.jmx.security.password to ensure that only authorized users can view, monitor, and control the agent using the JMX console.

management.jmx.security.password

(Optional) Specifies the password for the user name specified in the management.jmx.security.user parameter.

Note: The password must be encrypted. To encrypt a password, use the Password utility that is provided with the agent. For more information about the Password utility, see the *CA Workload Automation Agent for UNIX, Linux, or Windows Implementation Guide*.

Using Environment Variables that Start with an Underscore

If a job uses an environment variable that starts with an underscore (_), the job does not run. After the fix, jobs with environment variables that start with an underscore run correctly.

Malformed AFMs Caused Agent to Crash

AFMs are messages that are sent between the agent and the scheduling manager. In this issue, the agent failed to parse an invalid AFM, causing the agent to crash. After the fix, the agent rejects AFMs with malformed mandatory AFM fields.

Cannot Resolve STDOUT or STDERR Environment Variables

If you define STDOUT and STDERR as agent-wide or manager-specific environment variables, the variables are not resolved in the job definition.

For example, on UNIX, the following JIL attributes are defined on CA Workload Automation AE:

```
std_out_file: $STDOUT
std_err_file: $STDERR
```

On Windows, the following JIL attributes are defined on CA Workload Automation AE:

```
std_out_file: %STDOUT%
std_err_file: %STDERR%
```

To allow the agent to resolve the environment variables, set the following parameter to true in the agentparm.txt file:

```
oscomponent.lookupcommand=true
```

In addition, on CA Workload Automation ESP Edition or CA Workload Automation DE, set the following parameter to false or disable it in the agentparm.txt file:

```
oscomponent.noforceprofile=false
```

On CA Workload Automation AE, set the following parameters to true in the agentparm.txt file:

```
oscomponent.noforceprofile=true
oscomponent.cmdprefix.force=true
oscomponent.profiles.src.delay=true
```

After you configure the agent, these variables are resolved correctly in the job definition.

Verifying the Specified Job Profiles Exist Before the Job Runs (UNIX only)

Valid on CA Workload Automation AE

In CA Workload Automation AE, the agent sources the profile before running the job. In 11.3, if the job profile specified in the job definition does not exist, the job fails without an appropriate error message. You can now specify the following agent parameter to force profile checking:

oscomponent.profiles.src.verify

Specifies whether the agent verifies that the job profile specified in the job definition exists before the job runs. This parameter is applicable if oscomponent.profiles.src.delay is set to true.

true

Indicates that the agent verifies that the job profile specified in the job definition exists before the job runs. If the specified job profile does not exist, the job returns a submission error indicating the reason for the error.

false

Indicates that the agent does not verify that the job profile specified in the job definition exists before the job runs. If the specified job profile does not exist, the job fails without an appropriate error message.

Default: false

More information:

Configure the Agent for Legacy Remote Agent on UNIX (see page 59)

Redirecting Standard Output and Error with Windows Interactive Jobs

If a Windows interactive job redirects standard output or error, the job runs once and then fails on subsequent runs. You can now run Windows interactive jobs that redirect standard output or error.

Setting the Current Working Directory Using PWD or HOME Environment Variables (Windows only)

If the set the PWD or HOME environment variables in a Windows job, the current working directory is not affected. After the fix, you can set the current working directory using the PWD or HOME environment variables in a Windows job. To set the current working directory, the agent checks the PWD environment variable first and then checks the HOME environment variable.

Memory Consumption of File Watcher Jobs

Valid on CA Workload Automation AE

In r11.3, each File Watcher job started in its own JVM. As a result, each job consumed up to 512 MB of memory depending on the platform and machine configuration. After the fix, each File Watcher job consumes about 1 MB of memory. As a result, you can now run a lot more File Watcher jobs in parallel without running out of memory.

Using Glob Regular Expressions in File Watcher Jobs

Valid on CA Workload Automation AE

In r11.3, File Watcher jobs do not support global binary large object (glob) regular expressions on UNIX. After the fix, you can use glob regular expressions with File Watcher jobs on UNIX. On Windows, you can use the * (match any sequence of characters) and ? (match any single character) wildcards with File Watcher jobs.

Agent Did Not Send the Failed Keyword When a SUBERROR Occurred (Windows only)

When a Windows job with an execution user has a submission error (SUBERROR), the agent does not send the Failed keyword in the AFM. For example, as the result of this issue, an external job was mistakenly completed when its external dependency had a SUBERROR. After the fix, the agent sends the Failed keyword when a SUBERROR occurs.

Job Failed When Command Name and Arguments are Enclosed in Quotes (Windows only)

In the job definition, when the command name and arguments are enclosed in quotes, as in the following example, the job fails:

```
"C:\Program files\test.bat"  "20"   " In Progress"
```

The issue occurs when oscomponent.cmdprefix.force is set to true, causing the agent to prefix cmd.exe for every Windows job.

To address this issue, an additional parameter has been added to the agentparm.txt file:

oscomponent.cmdprefix.force.quotes.full

Specifies whether the agent wraps the entire command in double quotes before the Windows command interpreter (cmd.exe) runs the command. This parameter is applicable if oscomponent.cmdprefix.force is set to true.

true

Indicates that the agent wraps the entire command in double quotes before cmd.exe runs the command. Set this parameter to true to allow commands that have spaces in their path run without error, for example:

```
"C:\ Program Files (x86)\command.bat" "C:\ Program Files (x86)\input-file"
```

Notes:

- Commands that contain embedded blanks in their paths succeed, for example: "C:\Program Files\program.exe".
- Commands with arguments fail if the entire command, including arguments, is quoted, for example: "C:\tools\program.exe arg1 arg2".

false

Indicates that the agent does not wrap the entire command in double quotes before cmd.exe runs the command.

Notes:

- Commands that contain embedded blanks in their paths fail, for example: "C:\Program Files\program.exe".
- Commands with arguments succeed if the entire command, including arguments, is quoted and the path does not contain embedded spaces, for example: "C:\tools\program.exe arg1 arg2".

Default: false

After you configure the agent, the command runs correctly.

Specifying the Order Profiles are Sourced (UNIX only)

In 11.3, the agent sources the job profile first before EWAGLOBALPROFILE (/etc/auto.profile). You can now specify the following agent parameter to control the order profiles are sourced in:

oscomponent.profiles.src.order.global.first

Indicates whether EWAGLOBALPROFILE (/etc/auto.profile) is sourced before or after the job profiles.

true

Indicates that EWAGLOBALPROFILE is sourced first before the job profile.

false

Indicates that EWAGLOBALPROFILE is sourced last after the job profile.

Default: false

More information:

Configure the Agent for Legacy Remote Agent on UNIX (see page 59)

Enabling Chained Commands in a Job (UNIX only)

Currently, you cannot specify chained commands in a job, for example:

```
bin/sleep 10; echo hello
```

You can now add the following agent parameter to control whether chained commands are supported:

oscomponent.wrapper.exec.force

Specifies whether the wrapper script the agent generates puts exec in front of the target script or binary. This parameter is applicable if oscomponent.cmdprefix.force is set to true.

true

Indicates that the wrapper script the agent generates puts exec in front of the target script or binary.

false

Indicates that the wrapper script the agent generates does not put exec in front of the target script or binary. As a result, you can specify chained commands in a job, for example, bin/sleep 10; echo hello.

Note: If this parameter is set to false, you cannot send a signal to the job.

Default: false

More information:

Configure the Agent for Legacy Remote Agent on UNIX (see page 59)

Chapter 5: Supported Systems and Requirements

This section contains the following topics:

UNIX and Linux Platforms

CA WA Agent for UNIX or Linux r11.3 SP2 supports the following platforms:

Notes:

- These operating environments have been certified at the time of General Availability (GA). Additional operating environments may be certified post GA. For current information regarding operating environment support, check the CA Workload Automation Agent Product page at http://ca.com/support and follow the CA Workload Automation Compatibility Information link under the Product Status section.
- The agent has native 64-bit support on AIX, HP-UX Itanium, and Linux.
- You can run a 32-bit agent on a 64-bit operating system, as long as the 32-bit libraries are installed.
- You can migrate from a 32-bit Release 7 agent to a 64-bit r11.3 SP2 agent on the same operating system. For more information about migration, see the *Implementation Guide*.

Platform	Supported Versions	OS Architecture	Agent Architecture	Notes
AIX	5.3 6.1 7.1	32/64-bit	32/64-bit	On AIX 6.1, install the latest fix pack from IBM: http://www-933.ibm.com/support/fixcentral

Platform	Supported Versions	OS Architecture	Agent Architecture	Notes
HP-UX PA-RISC	11i v1 (11.11) 11i v2 (11.23) 11i v3 (11.31)	32/64-bit	32-bit	On HP-UX PA-RISC 11.11, install the latest Java and JRE patches from HP: ■ http://ftp.hp.com/pub/softlib/hpuxjava-patchinfo/g-11.11-6.0-1111.0812.html ■ https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPUXJDKJRE60 We recommend that you increase the number of threads per process on the HP-UX system. Otherwise, the following error can occur when multiple jobs are run at the same time: java.lang.OutOfMemoryError: unable to create new native thread To increase the number of threads per process, increase the value of the max_thread_proc parameter on the HP-UX system. We recommend that you set it to 1024. On HP-UX PA-RISC 11.23, install the latest Java patches from HP: http://ftp.hp.com/pub/softlib/hpuxjava-patchinfo/g-11.23-6.0-1123.1012.html
HP-UX Itanium	11i v2 (11.23) 11i v3 (11.31)	64-bit	64-bit	On HP-UX Itanium 11.23, install the latest Java and JRE patches from HP: ■ http://ftp.hp.com/pub/softlib/hpuxjava-patchinfo/g-11.23-6.0-1123.1012.html ■ https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPUXJDKJRE60
Linux	RHEL 4, 5, or 6 SUSE Linux Enterprise Server 9, 10, or 11	X64 or x86 32/64-bit 32/64-bit	32/64-bit	Before installing the agent on Linux, install the following: ■ libstdc++33-32bit or compat-libstdc++ 32-bit (depending on availability) ■ glibc-2.4 32-bit

Platform	Supported Versions	OS Architecture	Agent Architecture	Notes
Solaris	9, 10, or 11	SPARC 32/64-bit x86 32/64-bit	32-bit	
z/Linux	RHEL 4,5, or 6 SUSE Linux Enterprise Server 9, 10, or 11	31/64-bit 31/64-bit	32-bit	Before installing the agent on z/Linux, install the following: ■ libstdc++33-32bit or compat-libstdc++ 32-bit (depending on availability) ■ glibc-2.4 32-bit

UNIX and Linux System Requirements

The following table lists the minimum and recommended hardware requirements and software requirements for the agent.

Notes:

- Based on your workload volume and environment, you can require additional disk space.
- A Java Runtime Environment (JRE) runs the agent. The JRE is supplied with the agent for all platforms except z/Linux. For z/Linux, install the required JRE version.

Important! Do not replace the JRE that comes with the agent.

Platform	Minimum Disk Space Required	Minimum Temporary Disk Space for Installation	JRE Version	Notes
AIX	300 MB	500 MB	JRE 1.6 SR13 FP2	
HP-UX	300 MB	500 MB	JRE 1.6 update 19	
Solaris	300 MB	500 MB	JRE 1.6 update 45	
Linux	300 MB	500 MB	JRE 1.6 update 45	
z/Linux			JRE 1.6 SR8, or higher (31-bit)	The JRE is not supplied with the agent.

Windows Platforms

CA WA Agent for Windows r11.3 SP2 supports the following Windows platforms:

Notes:

- These operating environments have been certified at the time of General Availability (GA). Additional operating environments may be certified post GA. For current information regarding operating environment support, check the CA Workload Automation Agent Product page at http://ca.com/support and follow the CA Workload Automation Compatibility Information link under the Product Status section.
- The agent has native 64-bit support on Windows.
- The native CA WA Agent for Windows r11.3 fully exploits 64-bit technology with optimal performance running on the 64-bit version of the operating system. Earlier releases of the agent running 32-bit mode, while supported, have inherent limitations on 64-bit Windows. We recommend, if running the agent on the Windows 64-bit version of the operating system, that you match the native agent to run in 64-bit mode.
- You can migrate from a 32-bit Release 7 agent to a 64-bit r11.3 SP2 agent on the same operating system. For more information about migration, see the *Implementation Guide*.

Platform	Supported Versions	OS Architecture	Agent Architecture
Windows	XP SP3 Professional	32/64-bit	32/64-bit
	Server 2003 R2	32/64-bit	32/64-bit
	Server 2003 SP1	32/64-bit	32/64-bit
	Vista	32/64-bit	32/64-bit
	Server 2008	32/64-bit	32/64-bit
	Server 2008 R2 SP2	64-bit	64-bit
	7	32/64-bit	32/64-bit
	8	32/64-bit	32-64-bit
	Server 2012	64-bit	64-bit

Windows System Requirements

The following table lists the minimum and recommended hardware requirements and software requirements for the agent.

Notes:

- Based on your workload volume and environment, you can require additional disk space.
- A Java Runtime Environment (JRE) runs the agent. The JRE is supplied with the agent.

Important! Do not replace the JRE that comes with the agent.

Platform	Minimum Disk Space Required	Minimum Temporary Disk Space for Installation	JRE Version
Windows	300 MB	500 MB	JRE 1.6 update 45

i5/OS Platforms

The agent supports any i5/OS or i5 system that supports i5/OS, Version V5R4M0, or higher.

Note: Ensure that IBM PTF SI27705 is installed on V5R4MO systems.

i5/OS System Requirements

CA Workload Automation Agent for i5/OS requires the following environments:

- J2SE 5.0 32-bit (5722-JV1, Option 8)

  Note: To install the agent on i5/OS systems, you must have J2SE 5.0 32-bit installed and the JAVA_HOME environment must be set to JDK 1.5, for example:

  ```
  JAVA_HOME= /QOpenSys/QIBM/ProdData/JavaVM/jdk50/32bit
  ```

- PASE (5722SS1 - Portable Application Solutions Environment, option 33)
- TCP/IP (5722-TC1) or TCP/IP (5722-AC1, AC2 or AC3) if you are using the agent to run SSL FTP workload
- Installation of the latest i5/OS CUM distribution
- The required group PTF levels for your i5/OS system

  For V5R4, the required minimum group PTF levels are as follows:

Group PTF	Level	Description
SF99540	9321	CUMULATIVE PTF PACKAGE C9321540
SF99539	118	Group Hiper PTF
SF99291	22	Java Group PTF
SF99315	13	TCP/IP Group PTF

For V6R1, the required minimum group PTF levels are as follows:

Group PTF	Level	Description
SF99610	10047	CUMULATIVE PTF PACKAGE C0047610
SF99609	57	Group Hiper PTF
SF99562	11	Java Group PTF
SF99354	5	TCP/IP Group PTF

For V7R1, the required minimum group PTF levels are as follows:

Group PTF	Level	Description
SF99710	11116	CUMULATIVE PTF PACKAGE C1116710
SF99709	46	Group Hiper PTF
SF99572	6	Java Group PTF
SF99367	5	TCP/IP Group PTF

Chapter 6: Related Documentation

This chapter includes documentation updates made as a direct result of the functionality changes and fixed issues in this service pack.

Note: CA Workload Automation Agent for UNIX, Linux, Windows, or i5/OS r11.3 SP2 includes the Release Notes only. This chapter refers to and should be read in conjunction with the CA Workload Automation Agent for UNIX, Linux, Windows r11.3 and CA Workload Automation Agent for i5/OS r11.3 documentation sets.

This section contains the following topics:

Configure the Agent for Windows Interactive Jobs

You can configure the agent that is installed on a Windows computer to submit jobs in interactive mode instead of in batch mode. Interactive mode lets users view and interact with jobs that invoke Windows Terminal Services or user interface processes, for example, Notepad.

Note: Not all scheduling managers support Windows Interactive jobs. Consult the *Release Notes* for your scheduling manager to determine whether this enhancement is supported.

To configure the agent for Windows interactive jobs

1. Change to the agent installation directory.
2. Stop the agent.
3. Open the agentparm.txt file.
4. Set the following parameter:

   ```
   oscomponent.interactive=true
   ```

   Note: By default, the agent runs interactive jobs using Terminal Services. To run interactive jobs using Terminal Services, the user that is specified to run the job must be logged in to the agent computer, either using Remote Desktop or locally. Also, the user must be logged in to the agent computer exactly once. If these conditions are not met during job submission, the job fails with a submission error. To overcome these limitations, run interactive jobs in Session 0.
5. (Optional) Define the following parameters to run interactive jobs in Session 0:

   oscomponent.interactive.sessionzero

   Sets whether the agent runs the interactive job in Session 0.

   true

   Runs all interactive jobs using Session 0. The user is not required to log in to the agent computer before the job runs. A greater amount of resources is available to run the job.

   false

   Runs all interactive jobs using Terminal Services.

   Default: false

oscomponent.su.newconsole

(Optional) Sets whether to force the agent to create a console when running a Windows job.

true

Creates a console when running a Windows job.

false

Does not create a console when running a Windows job.

Default: false

oscomponent.cmdprefix.force.redir.inline

(Optional) Sets whether the agent forces inline redirection. In some cases, such as Windows Server 2008 R2, inline redirection is required for the console to be displayed in Session 0.

true

Forces inline redirection using cmd.exe /c *command args stdin_file* >*stdout_file* >*stderr_file*.

false

Does not force inline redirection.

Default: false

Note: This parameter requires oscomponent.cmdprefix.force=true and affects FTP verbose mode. If regular redirection is used, the command ftp –s:command_file will not output raw FTP commands with completion codes as per FTP protocol.

oscomponent.cmdprefix.force.redir.ifstdon

(Optional) Sets whether to prevent the agent from redirecting STDOUT/STDERR if none are specified in the job definition.

true

Prevents the agent from redirecting STDOUT/STDERR if none are specified in the job definition. If the output of the command requires user input, such as pause, it is displayed in the cmd.exe console window.

false

Does not prevent the agent from redirecting STDOUT/STDERR if none are specified in the job definition.

Default: false

Note: This parameter requires oscomponent.cmdprefix.force=true and the Windows job has to be interactive.

Note: If you are not logged in when the job is submitted, you might need to restart the "Interactive Services Detection" service to receive the prompt.

6. (Optional) Define the following parameters:

   oscomponent.shell

   Specifies the executable file name for an alternative Windows shell.

   Default: explorer.exe

   oscomponent.interactive.session.ignoreinactive

   Sets whether the agent reuses an inactive terminal session.

   - false—Ignores an inactive terminal session. If the session is disconnected remotely, the interactive job fails.
   - true—Reuses an inactive terminal session.

   Default: false

7. Save and close the agentparm.txt file.
8. Start the agent.

   The agent is configured for Windows interactive jobs.

Configure the Agent for Legacy Remote Agent on UNIX

Note: This procedure applies to CA Workload Automation AE only. The CA Workload Automation AE documentation refers to the Remote Agent (auto_remote) as the legacy agent.

CA Workload Automation Agent for UNIX, Linux, or Windows replaces the Remote Agent that was provided with Unicenter AutoSys JM r4.5 and r11. By default, the agent behaves differently than the legacy agent for sourcing job profiles and global profiles, deleting spool files and job logs, and so on. You must manually add or edit the parameters in the agentparm.txt file to configure the agent to behave like the legacy agent.

Follow these steps:

1. Change to the agent installation directory.
2. Enter the following command:

   ```
   ./cybAgent -s
   ```

   The agent stops.
3. Open the agentparm.txt file and edit or add the following parameters to configure the agent, as follows:

   ```
   oscomponent.environment.variable=agent_installation_directory/profiles/WAAE.t
   xt
   oscomponent.environment.variable_manager_instance_name_SCH=agent_installation
   _directory/profiles/instance_name.txt
   oscomponent.joblog.success.autocleanup=true
   agent.spool.success.autocleanup=true
   runnerplugin.spool.clean.enable=true
   runnerplugin.spool.expire=7d
   agent.resourcemon.enable=true
   filemon.firstscan.skip=true
   oscomponent.noexitcode=256
   oscomponent.auth.pam.svc=sshd
   security.cryptkey=cryptkey.txt
   oscomponent.cmdprefix.force=true
   oscomponent.noforceprofile=true
   oscomponent.profiles.src.delay=true
   oscomponent.profiles.src.order.global.first=true
   oscomponent.profiles.src.verify=true
   oscomponent.initialworkingdirectory=USER
   oscomponent.lookupcommand=true
   ```

   agent_installation_directory

   Specifies the path to the directory where the agent is installed.

   instance_name

   Specifies the name of the CA Workload Automation AE instance.

4. Save the agentparm.txt file.
5. Enter the following command:

   ```
   ./cybAgent -a
   ```

   The agent starts and is configured for legacy remote agent.

Notes:

- The oscomponent.environment.variable parameter is set to the location of the WAAE.txt file. The WAAE.txt file defines the environment settings for jobs started on behalf of all managers for all instances of CA Workload Automation AE. For more information about the WAAE.txt file and the environment variables, see the CA Workload Automation AE *Administration Guide* or the *User Guide*.
- The oscomponent.environment.variable_manager_*instance_name*_SCH parameter is set to the location of the *instance_name*.txt file. The *instance_name*.txt file includes the path to the auto.profile file, which is one of the several objects that source the environment for a job. For more information about the auto.profile file and how the environment for a job is sourced, see the *CA Workload Automation AE Administration Guide* or the *User Guide*.
- To run CA Workload Automation AE utilities as jobs, ensure that a CA Workload Automation AE client is installed on the computer where the agent is installed. If you have installed the agent on a computer where no other agents were installed previously, you must copy the WAAE.txt and *instance_name*.txt files from the computer where an agent is installed to the *agent_installation_directory*/profiles directory and then configure the parameters in the agentparm.txt file.
- When you set the following parameters, the agent executes a temporary shell script without sourcing the user's profile:

  ```
  oscomponent.noforceprofile=true
  oscomponent.cmdprefix.force=true
  ```

- When you set the following parameter, the agent drops the sourcing of the profiles into the temporary shell script:

  ```
  oscomponent.profiles.src.delay=true
  ```

- When you set the following parameter, the agent sources the UNIX global profile first prior to execution:

  ```
  oscomponent.profiles.src.order.global.first=true
  ```

- When you set the following parameter, the agent verifies the existence of a job profile prior to execution:

  ```
  oscomponent.profiles.src.verify=true
  ```

  If the job profile does not exist, the job terminates and returns an error.

Configure the Agent for Legacy Remote Agent on Windows

Note: This procedure applies to CA Workload Automation AE only. The CA Workload Automation AE documentation refers to the Remote Agent (auto_remote) as the legacy agent.

CA Workload Automation Agent for UNIX, Linux, or Windows replaces the Remote Agent that was provided with Unicenter AutoSys JM r4.5 and r11. By default, the agent behaves differently than the legacy agent for sourcing job profiles and global profiles, deleting spool files and job logs, and so on. You must manually add or edit the parameters in the agentparm.txt file to configure the agent to behave like the legacy agent.

Follow these steps:

1. Change to the agent installation directory.
2. Stop the CA Workload Automation Agent (*MYAGENT*) service from the Windows Service Control Manager.

   MYAGENT

   Specifies the name of the agent.
3. Open the agentparm.txt file and edit or add the following parameters to configure the agent, as follows:

   ```
   oscomponent.environment.variable=agent_installation_directory\Profiles\WAAE.txt
   oscomponent.environment.variable_manager_instance_name_SCH=agent_installation_directory\Profiles\instance_name.txt
   oscomponent.joblog.success.autocleanup=true
   agent.spool.success.autocleanup=true
   runnerplugin.spool.clean.enable=true
   runnerplugin.spool.expire=7d
   agent.resourcemon.enable=true
   filemon.firstscan.skip=true
   oscomponent.noexitcode=256
   security.cryptkey=cryptkey.txt
   oscomponent.cmdprefix.force=true
   oscomponent.initialworkingdirectory=USER
   oscomponent.lookupcommand=true
   ```

   agent_installation_directory

   Specifies the path to the directory where the agent is installed.

   instance_name

   Specifies the name of the CA Workload Automation AE instance.
4. Save the agentparm.txt file.

5. Start the CA Workload Automation Agent (*MYAGENT*) service from the Windows Service Control Manager.

   The agent starts and is configured for legacy remote agent.

Notes:

- The oscomponent.environment.variable parameter is set to the location of the WAAE.txt file. The WAAE.txt file defines the environment settings for jobs started on behalf of all managers for all instances of CA Workload Automation AE. For more information about the WAAE.txt file and the environment variables, see the CA Workload Automation AE Administration Guide or the User Guide.
- The oscomponent.environment.variable_manager_*instance_name*_SCH parameter is set to the location of the *instance_name*.txt file. The *instance_name*.txt file contains a set of environment variables for each CA Workload Automation AE instance. For more information about the environment variables and how the environment for a job is sourced, see the *CA Workload Automation AE User Guide*.
- To run CA Workload Automation AE utilities as jobs, ensure that a CA Workload Automation AE client is installed on the computer where the agent is installed. If you have installed the agent on a computer where no other agents were installed previously, you must copy the WAAE.txt and *instance_name*.txt files from the computer where an agent is installed to the *agent_installation_directory*/Profiles directory and then configure the parameters in the agentparm.txt file.

Configure the Agent to Connect with a JMX Console

A JMX connector, built into the agent, lets you use a JMX console to monitor and control the agent. You can use any JMX console that implements JSR-160 to perform the following tasks on the agent:

- Discover metrics
- Query and modify values of various metrics
- Discover and invoke various functions
- Discover, subscribe, and receive notifications

To configure the agent to connect to a JMX console, configure the following agent parameters on the agent:

management.connector_*n*=jmx

Identifies the type of management connector the agent uses to connect to an external application, where *n* is an integer starting from 1.

Specify jmx to allow a JMX console to monitor and control the agent.

management.jmx.host

Specifies the host name or IP address where the JMX connector listens.

management.jmx.port

Specifies the port where the JMX connector listens.

Default: 1099

management.jmx.security.user

(Optional) Specifies the user for accessing the JMX console. You can use this parameter together with management.jmx.security.password to ensure that only authorized users can view, monitor, and control the agent using the JMX console.

management.jmx.security.password

(Optional) Specifies the password for the user name specified in the management.jmx.security.user parameter.

Note: The password must be encrypted. To encrypt a password, use the Password utility that is provided with the agent. For more information about the Password utility, see the *CA Workload Automation Agent for UNIX, Linux, or Windows Implementation Guide*.

Set the Encryption on the Agent Using the Keygen Utility

You can install the agent with one of four types of encryption: AES, Blowfish, DES, or DESEDE. The encryption key is specified during the agent installation, but you can change it any time using this procedure.

The keygen utility provided with the agent lets you encrypt a key. By default, the encryption key is stored in the cryptkey.txt file located in the agent installation directory. You can replace the encryption key in this file or specify a different file to store it.

Note: Make a note of the encryption key, and set the same value on the scheduling manager.

Follow these steps:

1. Change to the agent installation directory.
2. Enter the following command at the command prompt:

   keygen `0x`*`key cipher destination`*

   key

   Defines the encryption key the agent uses to communicate with the scheduling manager. The encryption key must be prefixed with 0x and followed by the number of characters required for the chosen cipher algorithm:

   - AES—32- or 64-character hexadecimal encryption key.

     Note: AES 256-bit encryption requires a 64-character hexadecimal key.
   - Blowfish—32 to 64 even-numbered character hexadecimal encryption key
   - DES—16-character hexadecimal encryption key
   - DESEDE—48-character hexadecimal encryption key

   Limits: 16-64 alphanumeric characters (any digits and letters A-F only)

   Notes:

   - CA Workload Automation AE and CA Workload Automation CA7 Edition support only AES encryption. Consult the documentation for your scheduling manager to determine which encryption types are supported.
   - If you omit the 0x prefix, the keygen utility interprets the inputted value as a 16-character passphrase and not as a hexadecimal number. If you enter less than 16 characters, the keygen utility appends the passphrase with spaces for the missing number of characters. The keygen utility will internally encode the 16-character passphrase into a 32-character hexadecimal character AES encryption key.

cipher

Specifies the type of cipher algorithm the agent uses to encrypt and decrypt messages sent to the scheduling manager. The agent supports the following types:

- AES—Advanced Encryption Standard that uses a 32- or 64-character encryption key. AES is the algorithm required by U.S. Government organizations to protect sensitive (unclassified) information (FIPS-140-2 compliance).
- BLOWFISH—A license-free encryption algorithm that uses an encryption key of 32 to 64 even-numbered characters.
- DES—Data Encryption Standard that uses a 16-character encryption key.
- DESEDE—Triple Data Encryption Algorithm that applies the DES algorithm three times to each data block.

Default: DES

Note: CA Workload Automation AE and CA Workload Automation CA7 Edition support only AES encryption. Consult the documentation for your scheduling manager to determine which encryption types are supported.

destination

(Optional) Specifies the name of a text file that stores the encryption key.

Default: cryptkey.txt

Note: If you specify a new text file, update the security.cryptkey parameter in the agentparm.txt file.

The keygen utility replaces the encryption key.

Example: Encrypt a Key

This example encrypts the key 0x1020304050607080 for 16-character (DES) encryption:

```
keygen 0x1020304050607080 DES
```

Agent Parameters Used for Troubleshooting

The following parameters were added:

filemonplugin.strategy

Specifies the sort order that the agent uses to process the files that match the file monitoring criteria. You can specify the following values for the sort order:

native_order

Sorts the files in the native order.

Note: The native order depends on how the files are stored in the directory and how the JRE retrieves them. To preserve the order that the files are created or modified in, we recommend that you use time_asc.

alpha_asc

Sorts the files in ascending alphabetical order.

alpha_desc

Sorts the files in descending alphabetical order.

time_asc

Sorts the files by creation/modification time, with the oldest file processed first (first in, first out).

time_desc

Sorts the files by creation/modification time, with the newest file processed first (last in, first out).

size_asc

Sorts the files by size, with the smallest file processed first.

size_desc

Sorts the files by size, with the largest file processed first.

Default: alpha_asc

Note: If you specify an invalid value for the sort order, the default value (alpha_asc) is used.

objmon.textmon.lines.upper.include

Indicates whether to include the upper line number (TO) in the search range for Text Monitoring jobs.

true

Includes the upper line number (TO) in the search range (inclusive).

false

Excludes the upper line number (TO) from the search range (exclusive).

Default: false

Note: This parameter does not affect text searches that are based on date/time or regular expressions, which always include the upper boundary in the search.

oscomponent.cmdprefix.force.quotes.full

Specifies whether the agent wraps the entire command in double quotes before the Windows command interpreter (cmd.exe) runs the command. This parameter is applicable if oscomponent.cmdprefix.force is set to true.

true

Indicates that the agent wraps the entire command in double quotes before cmd.exe runs the command. Set this parameter to true to allow commands that have spaces in their path run without error, for example:

```
"C:\ Program Files (x86)\command.bat" "C:\ Program Files (x86)\input-file"
```

Notes:

- Commands that contain embedded blanks in their paths succeed, for example: "C:\Program Files\program.exe".
- Commands with arguments fail if the entire command, including arguments, is quoted, for example: "C:\tools\program.exe arg1 arg2".

false

Indicates that the agent does not wrap the entire command in double quotes before cmd.exe runs the command.

Notes:

- Commands that contain embedded blanks in their paths fail, for example: "C:\Program Files\program.exe".
- Commands with arguments succeed if the entire command, including arguments, is quoted and the path does not contain embedded spaces, for example: "C:\tools\program.exe arg1 arg2".

Default: false

oscomponent.defaultfile.permission

Specifies the standard UNIX file permission in octal notation starting with 0. The four-digit octal code specifies the default file access permissions for the following files that the agent creates:

- Temporary working shell scripts (CA Workload Automation AE only)
- Standard output and standard error files
- Job logs
- Spool files

Example: 0600 (grants read and write permissions to the owner, but prevents anybody else from accessing the file)

Notes:

- If oscomponent.defaultfile.permission is not specified, all files the agent creates will have the same permissions as before 11.3 SP1 cumulative 4.
- Temporary working shell scripts are granted execute permissions by the agent regardless of this parameter.
- This parameter does not change the access permission of the spool directory (that is, drwxrwxrwt).

oscomponent.profiles.src.location.iwd

Specifies whether the initial working directory is used to source the specified profile when it does not contain a full path.

true

Indicates that the initial working directory is used to source the specified profile when it does not contain a full path.

Note: If the profile is located in a subdirectory under the initial working directory, specify the profile using a relative path: *subdirectory*/my_profile or ./*subdirectory*/my_profile.

false

Indicates that the *installDir*/profiles directory is used to source the specified profile when it does not contain a full path.

Default: false

Note: If the profile path starts with a /, it is considered a full path, for example: /*subdirectory*/my_profile. In this case, the oscomponent.profiles.src.location.iwd setting is ignored.

oscomponent.profiles.src.order.global.first

Indicates whether EWAGLOBALPROFILE (/etc/auto.profile) is sourced before or after the job profiles.

true

Indicates that EWAGLOBALPROFILE is sourced first before the job profile.

false

Indicates that EWAGLOBALPROFILE is sourced last after the job profile.

Default: false

oscomponent.profiles.src.verify

Specifies whether the agent verifies that the job profile specified in the job definition exists before the job runs. This parameter is applicable if oscomponent.profiles.src.delay is set to true.

true

Indicates that the agent verifies that the job profile specified in the job definition exists before the job runs. If the specified job profile does not exist, the job returns a submission error indicating the reason for the error.

false

Indicates that the agent does not verify that the job profile specified in the job definition exists before the job runs. If the specified job profile does not exist, the job fails without an appropriate error message.

Default: false

oscomponent.umask

Provides support for the umask command, which turns off (disables) specific permissions that the oscomponent.default.permission parameter allows. The three-digit octal code sets the file mode creation mask (umask) for the following files that the agent creates:

- Temporary working shell scripts (CA Workload Automation AE only)
- Standard output and standard error files
- Job logs
- Spool files

Example: 066 (assuming the default file access permission is 666, this value turns off read and write permissions for the group and others)

Notes:

- If oscomponent.umask is not specified, the default umask of the user that started the agent is used for job logs, spool files, and wrapping scripts.
- For standard output and error files, the default umask of the user that runs the job is used with an exception on AIX and HP-UX. On AIX and HP-UX, the default umask is only used if the umask is set in the user profile.

oscomponent.wrapper.exec.force

Specifies whether the wrapper script the agent generates puts exec in front of the target script or binary. This parameter is applicable if oscomponent.cmdprefix.force is set to true.

true

Indicates that the wrapper script the agent generates puts exec in front of the target script or binary.

false

Indicates that the wrapper script the agent generates does not put exec in front of the target script or binary. Set this parameter to false to enable chained commands, for example, bin/sleep 10; echo hello.

Note: If this parameter is set to false, you cannot send a signal to the job.

Default: false

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