

# **SAP CPS Troubleshooting Guide**

**Version M28.49-54820**



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# Chapter 1. Troubleshooting Connections to SAP Systems

## Use

The process server uses BC-XBP, XAL and XMW to connect to SAP Systems via JCo, each of these interfaces provide an *XMI Audit level* to diagnose problems. There are 6 *Audit Levels*, from 0 to 3, by default, the *Audit Level* is 0. The higher the *Audit Level* the more information is logged.

## Setting the Audit Level

There are two ways to set the *XMI Audit Level*:

- In the [SAP System object](#) in the repository for interfaces XBP, XAL, and XMW. It requires a restart of the process server.
- With the [SAP\\_SetXmiAuditLevel](#) job definition for the XBP and XAL interfaces, requires no restart of the process server, the *Queue* the job runs in defines the SAP System to troubleshoot.

Warning:

It is strongly recommended to increase the *Audit Level* sequentially, starting with level 1 and increasing by 1. If you immediately set the *Audit Level* to 5; bear in mind that the TXMILOGRAW table will fill rapidly.

## Inspecting the Log

Use transaction **RZ15** to inspect the log.

## Performance Problems

See the following topic from the NetWeaver documentation if you need to troubleshoot performance problems: [JCo Exceptions](http://help.sap.com/saphelp_nw70ehp1/helpdata/en/f6/daea401675752ae10000000a155106/-frameset.htm) [http://help.sap.com/saphelp\_nw70ehp1/helpdata/en/f6/daea401675752ae10000000a155106/-frameset.htm]

## Enabling XMI Logging to Troubleshoot Issues

### Use

When problems arise with remote SAP Systems and the problem could not be troubleshooted with the [SAP\\_SetXmiAuditLevel](#) job definition, you should consider settings the *Audit Level* on the *SAP System* repository object. This is especially helpful for troubleshooting login or authorizations issues.

Please consult the User guide documentation for extensive documentation on the *SAP System* repository object. The *SAP System* object allows an independent *Audit Level* to be set on any combination of protocols. This value is read every time the process server of the SAP System is started, so when you change this value you will also need to restart the process server. This is why we recommend using the [SAP\\_SetXmiAuditLevel](#) job definition.



## Procedure

### Setting the Audit Level

1. Navigate to *Environment > SAP Systems*.
2. Choose *Edit* from the context menu of the problematic *SAP System*.
3. Choose the tab of the interface you wish to troubleshoot.
4. Fill a value (number 1-5) into the *Audit Level* field.
5. Choose *Save and Close*.

### Restarting the process server

1. Navigate to *Environment > Process Servers*.
2. Choose *Edit*
3. Choose *Shutdown* from the context menu of the problematic *SAP System*.
4. Choose *Refresh* until the process server is displayed as shutdown.

# Chapter 2. Troubleshooting SAP CPS or JAVA AS issues

## Use

When you encounter an issue in SAP CPS and you do not have enough information in the error message from SAP CPS, you should consult the log of the JAVA application server.

If you would like to report an issue, it is required to provide SAP Support staff with the log of the application server. Depending on the JAVA application server you are using, the log files are stored at different locations.

See SAP Note 1095476 for more information on troubleshooting AS Java.

1. [Troubleshooting Performance Problems on NetWeaver](#)
2. [Inspecting Log Files in SAP NetWeaver](#)
3. [Inspecting Log Files in Windows Standalone Edition](#)

## Troubleshooting Performance Problems on NetWeaver

### Use

When you encounter performance problems on SAP NetWeaver, you must first isolate the application that is causing the performance problems. You can stop the SAP CPS application in SAP NetWeaver and monitor system performance to see if the problem is related to SAP CPS.

To troubleshoot startup issues, you prevent applications from starting automatically when SAP NetWeaver starts. Specify `Initially_Not_Started_Apps` for SAP CPS in Visual Administrator.

Once you have determined that SAP CPS is the cause of performance issues, you contact your SAP support services representative.

See SAP Note 1095476 for more information on troubleshooting AS Java-related issues.

### Initially\_Not\_Started\_Apps

The *Visual Administrator* tool is located in the following location:

```
<sap_install>/<SID>/<Instance>/j2ee/admin
```

For example:

```
S:\usr\sap\D0S\JC23\j2ee\admin
```

See SAP Note 914045 for more information.

## Thread-Dumps

Thread dumps allow SAP support representatives to analyze the Java threads running at the time of the dump and inspect what these are doing. It is invaluable to troubleshoot performance issues. You should only create thread dumps on SAP support services request.

Thread dumps are created using the `jcmon` tool or by sending the `jlaunch` process the `SIGQUIT` signal (Unix).

Example on Unix:

```
$ kill -3 <pid>
```

The `<pid>` variable is the process id (pid) of the `jlaunch` process, you use `ps -ef | grep jlaunch` on Unix systems to determine the pid of a `jlaunch` process.

Using `jcmon`, you first need to locate the executable, which is usually stored in one of the following locations:

- `<sap_install>/<SID>/<Instance>/exe`
- `<sap_install>/<SID>/SYS/exe/uc/<OS_Name>`

The `<sap_install>` variable is the installation path of your SAP NetWeaver instance. The `<SID>` variable is the unique system id of your SAP instance, `<Instance>` the instance name.

Example:

```
S:\usr\sap\D0S\JC23\exe
```

or

```
/usr/sap/D0S/JC23/exe
```

You also need to provide a profile to `jcmon`. Profiles are stored in `<sap_install>/<IN>/SYS/profile/<profile>`.

```
jcmon pf=S:\usr\sap\D0S\SYS\profile\D0S_JC23_DSAP-710-SAP
```

The thread dump will be saved to `<sap_install>/<SID>/<Instance>/work/std_<node_name>.out`.



### Note

Check for the existence of the JVM parameter `-XX:+HeapDumpOnCtrlBreak` as this parameter will force the creation of a heap dump instead of a thread dump! Heap dump can be very large, the size of the memory heap and can cause both performance issues as well as filesystem-related issues.

See SAP Note 710154 and SAP Note 1095473 for more information on thread dumps.

## Heap-Dumps

Heap dumps contain the memory allocated to SAP NetWeaver. Depending on the size of the memory pool that SAP NetWeaver is using, heap dumps can become very large. You should not repeatedly create memory dumps

without monitoring disk-space. Heap dumps also use resources on the system, creating heap dumps repeatedly, like every 2 seconds, can cause severe performance issues.

There are two ways to create heap dumps. You must choose if you want to create a heap dump as soon as the first `OutOfMemoryError` error occurs or if you want to specify when a dump should be created. The procedure to trigger a heap dump manually is the same as a thread dump, the parameter referenced below controls if a heap dump or a thread dump is created. Depending on this choice, you must set one of the following JVM parameters (also known as Java settings or Java parameters).

- `-XX:+HeapDumpOnOutOfMemoryError` - creates a heap dump as soon as the first `OutOfMemoryError` error occurs
- `-XX:+HeapDumpOnCtrlBreak` - waits for you to request a heap dump



## Note

You must restart the SAP NetWeaver instance when you change JVM parameters for these to take effect.

You set JVM parameters with the config tool. You can find config tool in the following directory:

```
<sap_stall>\<SID>\<INSTANCE>\j2ee\configtool
```

For example:

```
/usr/sap/D0S/JC23/j2ee/configtool/configtool.sh
```

or

```
S:\usr\sap\D0S\JC23\j2ee\configtool\configtool.bat
```

The heap dump will be written to one of the following locations, depending on whether it was triggered manually or automatically:

- `<sap_install>/<SID>/<instance>/j2ee/cluster/server<N>/java_pid<pid>.hprof` - for automatically triggered heap dumps
- `<sap_install>/<SID>/<instance>/j2ee/cluster/server<N>/java_pid<pid>.hprof.<timestamp>` - for manually triggered heap dumps

See SAP Note 710146 and SAP Note 723909 or more information on setting JVM parameters.

See SAP Note 1289240 for more information on how to troubleshoot memory-related errors.

See SAP Note 1053604 for an example of generating a heap dump on HP-UX.

## Prerequisites

- Administrative privileges are required on the SAP NetWeaver instance
- JVM requirements for heap dumps, (see SAP Note 1004255)
  - SUN JVMs 1.4.2\_12 or higher, on all platforms where the VM is available

- HP-UX VM 1.4.2\_11 or higher



### Warning

If a VM from another vendor is used, or an older version of the Sun and HP-UX VMs, then the server might not start at all if you specify the JVM parameter.

See SAP Note 718901 if an upgrade of the JDK to one of the specified versions is needed.

## Procedure

### Stopping the SAP CPS Web Application

1. Log-on to `http://<host>:<port>/nwa`
2. Navigate to *Administration > Applications*
3. Select *Get Application Name* and fill `scheduler` into the *Search by Specific Criterion* field, choose *Go*.
4. Select `scheduler-ear` and choose *Stop* in the *Applications Details* field.

### Prevent '&product\_title' from starting when SAP NetWeaver starts

1. Start the *Visual Administrator* tool and log in.
2. Expand *<your server> > Services > Deploy*.
3. Select *Application* (below right-hand side)
4. Locate `redwood.com/scheduler-ear` in the list and choose the *Properties* tab.
5. Select *Initially\_Not\_Started\_Apps* and fill `true` into value field.
6. Choose *Save* and restart the application server of the SAP NetWeaver instance.



### Note

You must not leave this field blank! To reset this parameter, you must specify a semi-colon (;) into the value field.



### Note

You should only change this value and restart. If you change other settings, the setting might not be persisted!

### Create Thread Dumps

1. Start the `jcmn` tool and enter 20 for *Cluster Administration Menu*
2. Enter 10 for *Dump stacktrace*.
3. Confirm creation.

## Create Heap Dumps

1. Start config tool
2. Expand your instance, select the server.
3. Fill the required parameter into the *Java Parameters* field.
4. Choose *Save*.
5. Restart the application server of the SAP NetWeaver instance.
6. Start the jcmmon tool and enter 20 for *Cluster Administration Menu*
7. Enter 10 for *Dump stacktrace*.
8. Confirm creation.

## See Also

- [Monitoring – JCMon](http://help.sap.com/saphelp_nw70ehp1/helpdata/en/ca/fe074152aff323e10000000a155106/-frameset.htm) [http://help.sap.com/saphelp\_nw70ehp1/helpdata/en/ca/fe074152aff323e10000000a155106/-frameset.htm]
- [Deploy Service](http://help.sap.com/saphelp_nw04/helpdata/en/0e/fb29feebc73248a3d097a229a5d548/-frameset.htm) [http://help.sap.com/saphelp\_nw04/helpdata/en/0e/fb29feebc73248a3d097a229a5d548/-frameset.htm]
- [Connecting to a Database](http://help.sap.com/saphelp_nw70ehp1/helpdata/en/4e/-d1cf8d09a94ae79319893c2537d3a0/frameset.htm) [http://help.sap.com/saphelp\_nw70ehp1/helpdata/en/4e/-d1cf8d09a94ae79319893c2537d3a0/frameset.htm]

# Setting the Log Level and Inspecting Log Files in SAP NetWeaver

## Use

When you encounter issues with SAP CPS, the logs of the application server are always a great source of information. The logs are available in Visual Administrator and NetWeaver Administrator. The easiest and quickest way to get to the log files is to use NetWeaver Administrator however, so this topic will focus on that approach. SAP CPS writes to the default log file, so this is the log to inspect.

SAP support will request these logs when you file a support request.



### Note

When you file a support request, please make sure you provide the log files from the correct system; if you are running NetWeaver in a cluster and SAP CPS is executed on one or more nodes, please provide the logs from all nodes where SAP CPS can run.

If you need to troubleshoot a specific component of SAP CPS, you create a tracing location for the given class, all SAP CPS classes start with `com.redwood.scheduler`. For example `com.redwood.scheduler.core`



## Warning

Setting `com.redwood.scheduler.core` to log level `debug` will generate a lot of output and will usually be pointless, as SAP NetWeaver overwrites log files when it has reached the maximum size!

## Prerequisites

- The URL to the NetWeaver system
- Sufficient privileges to inspect log files, please refer to the NetWeaver documentation if you are not able to access NetWeaver Administrator.

## Procedure

Setting the Log Level

1. Open a web browser and navigate to `http://<host>:<port>/nwa`
2. Log on and navigate to *System Management -> Configuration -> Log Configuration*.
3. Switch to *Show Tracing Locations* and choose *Create Location*.
4. Fill in the Java class of the component you want to debug and set the severity to a low level at first and increase the severity as needed.
5. Choose *Save*. The data will be written to the standard trace location.



## Note

Setting a high severity on a low-end component will generate a great amount of data, since SAP NetWeaver overwrites log files based on size, you might end up missing critical information.

Inspect Log Files

1. Open a web browser and navigate to `http://<host>:<port>/nwa`
2. Log on and navigate to *System Management -> Monitoring -> Logs and Traces*
3. Choose *Default Trace* in the *Select View* drop-down, look for logs with `redwood.com/scheduler-ear` in the *Application* column around the time the issue occurred.
4. Once you have located a log entry, choose *Open Record Details* and if you need more information, choose *Open Full Record Information*.
5. Choose *Close Full Record Information* and *Close Record Details* when you have finished viewing the error.

## See Also

- [Common Logging Categories](#)

# Inspecting Log Files in Windows Standalone Edition

## Use

When you encounter issues with SAP CPS, the logs of the application server are always a great source of information.

The Windows Standalone Edition stores its log files in `<installation_directory>\j2ee\cluster\server1\logs` as several files:

- `db-init.log` - the database initialization log, this is helpful for issues arising on newly installed systems or systems that have recently been upgraded
- `scheduler.log` - the server log, this log should contain information on issues that occurred after the start of Redwood Platform.
- `catalina.out` - the Redwood Platform console log, this log should contain startup information and any severe errors that occur in SAP CPS.

If you are on Unix, you can use `tail -f` on the log files to get real-time information.

If you are on Windows, you can use advanced text editors or you might want to stop the Windows Standalone Edition service and restart it in "console" mode. To start the Windows Standalone Edition in "console" mode, you must run `<installation_directory>\j2ee\cluster\server1\bin\start.cmd`. You should increase the buffer size of the console.

## Procedure

Increasing the buffer size of the console window

1. Choose *Properties* from the title bar
2. On the *Layout* tab, enter 9999 into the *Screen Buffer Size* field.
3. Choose *OK* and choose *Apply properties to current window only* and choose *OK*.



### Note

If you do not want to perform this every time you start the Windows Standalone Edition in console mode, you can choose *Save properties for future windows with the same title*, but it might have effect on other Redwood Platform servers on that system.

# System Tools and Platform Agent logging

## Use

All tools, including the platform agent itself, log in a common logging format and use the same arguments to overrule the default logging settings.

These arguments are:

```
[-f <file>] [-l <loglevel>]
```



Argument	Description
-f <file>	Filename where to log to. The default for tools is stderr.
-l <loglevel>	A single string that sets the log level. The default for the log-level is "info". The string is case-insensitive.

If the executable is called without the `-f` or `-l` switches the environment variables `JCS_LOGFILE` and `JCS_LOGLEVEL` are used. If these are not set then the default values are used.

## Log-level

The log level parameter is defined as:

```
<loglevel> ::= <element>,...
<element> ::= [[<process>.]<category>=<level>
<process> ::= { network-processor | job-processor | jtool }
<level>    ::= { none | fatal | error | warn | info | debug | net | trace }
```

- `<category>` can contain '\*' to match any following characters
- `<category>` is one of a list of internal categories. To get an up-to-date explanation of all available variations of `<category>` you can type `jtool -l help`.

## Log File

The log file can contain a filename pattern, stderr, or - (for stderr). It may contain any of the following [substitution parameters](#):

- `${ProcessId}` - Process id of the process
- `${ProcessType}` - Process type (standalone, service, ...)
- `${ProcessName}` - Process name (network-processor, ...)
- `${InstallDirectory}` - install directory.
- `${TraceDirectory}` - `${DataRootDirectory}/trc`.
- `${DataRootDirectory}` - Base directory for platform agent files.
- `${ProcessServer}` - Name of the process server that the agent is configured for.
- `${FileSeparator}` - Character(s) between directory and file (for example / on Unix and \ on Windows).

## Logging in the system tools

The tools log to stderr, unless `-l <logfile>` is used or `JCS_LOGFILE` is set. The stderr output will end up in `stderr.log` when the tool is run as part of a scheduled job.

## Logging in the platform-agent

The [Process server parameters](#) parameter `LogLevel` will override logging as soon as the Central Scheduler has established a connection with the Platform Agent. The default value for that parameter is `${TraceDirectory}${FileSeparator}${ProcessServer}-${ProcessName}-${ProcessId}.log`.

To analyze problems when the process server does not want to start, set the logging level as follows:

- UNIX: Add/change the log level in file `${InstallDir}/etc/startup/${instance}/loglevel`. The platform-agent script logs to `${InstallDir}/etc/log/<instance>/<instance>.log`. The network-processor logs to the same location until it is configured.
- Microsoft Windows: Change the settings for the instance using the *Scheduler Service Manager*; see the [Configuring Platform Agents on Windows](#) section for more information.

## Example

To set a single environment variable that tells the network-processor to be very verbose, the job agent not at all, the jftp agent somewhat and the rest normal, you could use:

```
JCS_LOGLEVEL=info,jftp.*=warn,job-processor.*=error,network-processor.*=debug
```

Some more valid element examples:

```
Trace  
*=DEBUG  
http.*=info,job.*=debug  
network-processor.*=warn  
job-processor.*=debug
```

# Chapter 3. Common Database Errors

## Use

### This object has been deleted

#### Platform

This error has been reported on MaxDB, please refer to the [MaxDB bug 1153160]<http://www.sapdb.org/webpts?wpts-detail=yes&ErrorType=0&ErrorID=1153160>

] for more information.

#### Specific Error message

No specific error message. Objects that have NOT been deleted are marked as such in the user interface, in an inconsistent manner.

#### Resolution

This problem is due to a bug in MaxDB; specific queries do not always return all rows. Check the above bug to see if this has been fixed in a newer MaxDB version. Disabling the query rewrite parameter *MergeExistentialSubquery* works around the problem. This should not result in any substantial performance loss.

To disable the query rewrite parameter *MergeExistentialSubquery*, perform the following update query as user *SYSDBA*:

```
update queryrewriterules
set active = 'NO'
where rulename = 'MergeExistentialSubquery'
```

# Chapter 4. Common SAP-Related Errors

## Use

## JCo Issues

If you encounter dependency problems, see SAP Note 684106 on Windows. On UNIX/GNU/Linux, use `ldd` (GNU/Linux), `otool` (Mac OS X), or the native dependency checker for your platform.

## Error: E XM 034 Internal problem

### Platform

Reported with different SAP releases when scheduling an ABAP with any of the *SAP\_AbapRun* job definitions.

### Specific Error Message

```
BAPI exception while calling BAPI_XBP_JOB_ADD_ABAP_STEP: E XM 034 Internal problem (function BAPI_XBP_JOB_ADD
```

### Resolution

A parameter of the job has an illegal value. Open the system log via transaction **SM21** for around the time the error occurred and locate

```
EFN|BP_JOB_EDITOR: Job <job_name> is invalid. Reason:  
EFT|> Step <n> contains illegal values  
EF2|BP_STEPLIST_EDITOR: Invalid step values (step <n> ) found. Reason:  
EF8|> <reason>
```

In the above example, `<job_name>` is the name of the job, `<n>` is the step number, `<reason>` should provide you with enough information to find a resolution.

## Error: Time stamp "FROM\_TIMESTAMP" is invalid

### Platform

Reported with different SAP releases with XBP 3.0, when synchronizing event history criteria.

### Specific Error Message

```
BAPI exception while calling BAPI_XBP_BTC_EVTHISTORY_GET: E XM 251 Time stamp "FROM_TIMESTAMP" is invalid [,
```

## Resolution

Time zone information is client-dependent and has to be maintained in each client separately. The report TZCUSTIM imports time zone data into a client.

Please refer to SAP Note 198411 for more information.

## Error: ABAP/4 processor: TSV\_TNEW\_OCCURS\_NO\_ROLL\_MEMORY

### Platform

Reported with a MiniWas installation.

### Specific Error Message

```
180006 20100613 00 516 Job started 0
180007 20100613 00 550 Step 001 started (program RSUSR000, variant , user ID BCUSER) 0 001 RSUSR000 BCUSER
180011 20100613 00 671 ABAP/4 processor: TSV_TNEW_OCCURS_NO_ROLL_MEMORY 20100613180010MASALANSAP BCUSER
000100 65 TSV_TNEW_OCCURS_NO_ROLL_MEMORY 20100613180010MASALANSAP BCUSER
180011 20100613 00 518 Job cancelled 0
```

## Resolution

Set the XBP level to 1.0 and restart the SAP process server.

## Error: I:XM:233 BAPI\_XBP\_NEW\_FUNC\_CHECK

### Platform

Reported when attempting to enable XBP 3.0 job interception features on a system that does not have XBP 3.0.

### Specific Error Message

```
BAPI exception: RFC function module = BAPI_XBP_NEW_FUNC_CHECK, message type=E, id=XM,
number=233, text=I:XM:233 BAPI_XBP_NEW_FUNC_CHECK,
msgv1=BAPI_XBP_NEW_FUNC_CHECK, msgv2=, msgv3=, msgv4=
```

## Resolution

Upgrade the remote SAP System to a version that supports XBP 3.0 or do not attempt to enable XBP 3.0 job interception features on that system.

# Error: You have no authorization to log on to interface XBP

## Platform

This error can occur on any SAP Basis 3.1 or higher

## Specific Error message

```
BAPI exception: RFC function module = BAPI_XMI_LOGON, message type=E, id=XM,
number=026, text=You have no authorization to log on to interface XBP,
msgv1=XBP, msgv2=, msgv3=, msgv4=
```

## Resolution

Check the [Authorizations](#) of the RFC user.

- Make sure the REDWOOD role has all the required privileges.
- Make sure the user specified has been granted the REDWOOD role.
- Check the *S\_XMI\_PROD* Authorizations and make sure the *XMI logging: company name* is set to **REDWOOD**. This entry *is* case-sensitive.

# Error Incomplete Layout

## Platform

This error can occur on all known SAP Industry Solutions platforms, it indicates that the layout of a mass activity is not complete.

## Specific Error Message

```
Exception while calling /SCJS/MA_GET_LAYOUT : 126: Incomplete Layout
definitions
  at
com.redwood.scheduler.connector.sap.rfc.jco2.connection.impl.ClientConnectionImpl.call(ClientConnectionImpl.j
  at
com.redwood.scheduler.connector.sap.rfc.connection.AbstractRfcConnection$4.doPerform(AbstractRfcConnection.ja
  at
com.redwood.scheduler.connector.sap.rfc.connection.RemoteFunctionCall.perform(RemoteFunctionCall.java:130)
  at
com.redwood.scheduler.connector.sap.rfc.connection.AbstractRfcConnection.perform(AbstractRfcConnection.java:4
  at
com.redwood.scheduler.connector.sap.rfc.connection.AbstractRfcConnection.execute(AbstractRfcConnection.java:2
  at
com.redwood.scheduler.connector.sap.rfc.jco2.connection.impl.SapFunctionModuleWrapper.execute(SapFunctionModu
  at
com.redwood.scheduler.connector.sap.rfc.jco.AbstractSapFunctionModule.execute(AbstractSapFunctionModule.java:
  at
com.redwood.scheduler.connector.sap.rfc.command.impl.MassActivityImportCommand.doExecute(MassActivityImportCo
  at
com.redwood.scheduler.connector.sap.rfc.command.impl.AbstractMassActivityCommand.execute(AbstractMassActivit
```

```
at
com.redwood.scheduler.connector.sap.rfc.command.AbstractXbpCommand.doExecute(AbstractXbpCommand.java:123)
at
com.redwood.scheduler.connector.sap.rfc.command.AbstractCommand.execute(AbstractCommand.java:56)
at
com.redwood.scheduler.connector.sap.rfc.service.SapJobWork.doWork(SapJobWork.java:106)
at
com.redwood.scheduler.infrastructure.workqueue.Worker.run(Worker.java:59)
at java.lang.Thread.run(Unknown Source)
Caused by: com.sap.mw.jco.JCO$AbapException: (126) BAD_LAYOUT: Incomplete
Layout definitions
at com.sap.mw.jco.JCO$Function.getException(JCO.java:18207)
at com.sap.mw.jco.JCO$Client.execute(JCO.java:3298)
at
com.redwood.scheduler.connector.sap.rfc.jco2.connection.impl.ClientConnectionImpl.call(ClientConnectionImpl.j
... 13 more
```

## Resolution

This usually means that the mass activity in question is not usable in the SAP system, and import is not useful, if this is the case, you may ignore this error. If you receive this error for a mass activity that you want to use, please contact SAP support services.

# Chapter 5. Common Platform-Related Errors

## Use

### JCS-116012: Warning: Transient communication failure: HTTP response code: 500

## Symptoms

SAP CPS was recently updated and the process servers are started for the first time. The platform agent is configured to update automatically, however, the update fails.

In the installation directory, which in this example is `/opt/redwood/agent/`, a new folder exists which is named `0_<m>_<n>`, however, the security mode is not set correctly.

You may experience one or more of these symptoms, in which case you should perform the steps in resolution to find the exact issue.

In these examples, the following variables are used:

- `<m>` - milestone, for example 28.
- `<n>` - patch-level, for example 32.
- `<os>` - operating system, for example `linux`.
- `<platform>` - the hardware platform, for example `x86`.
- `/opt/redwood/agent` - installation path.
- `default` - instance name of the platform agent.

## Platform

This has been reported on GNU/Linux and it could affect other UNIX flavors.

## Specific Error message

In SAP CPS, the following operator messages can be seen:

```
JCS-116012: Warning: Transient communication failure: HTTP response code: 500
JCS-116008: Platform agent update for "<os>-<platform>" to "M<m>.<n>" failed. The agent is still running vers
Service "PlatformAgentService" on process server "<process_server>" stopped unexpectedly.
```



## Resolution

The platform agent process must be restarted on the remote system with debug mode enabled to find the exact error; specify debug in `/opt/redwood/agent/etc/startup/default/loglevel`.

In this specific case, the updater could not update the following file, because it was installed as user `root`.

```
error 2010-11-10 13:05:23,739 CET [30968-http-request #7 tid=4147821424] opsys.file - Cannot open file '/opt/
error 2010-11-10 13:05:23,739 CET [30968-http-request #7 tid=4147821424] opsys.update - Cannot write to versi
```

```
$ ls -l /opt/redwood/agent/etc/startup/default/version
-rw-r--r-- 1 root root 7 Nov 10 13:41 /opt/redwood/agent/etc/startup/default/version
```

```
chown jdoe:jdoe /opt/redwood/agent/etc/startup/default/version
```

## id: illegal option u

### Platform

This error has been reported during the installation of the platform agent on Solaris and is due to the fact that the `id` command does not accept the POSIX-compliant `-u` switch.

### Resolution

Temporarily put a POSIX-compliant `id` in the front of your path before executing the installation script.

On Solaris, a POSIX-compliant `id` binary can be found in `/usr/xpg4/bin`

```
$ PATH=/usr/xpg4/bin:$PATH
$ export PATH
$ sh solaris-sparc.sh
```

## run\_KSH: No such file or directory

### Platform

This error has been reported on various Unix flavors, among which GNU/Linux. This error occurs when the job-processor cannot locate `ksh` which must reside, or be symbolically linked to, `/bin/ksh` and needs to execute a KSH job.

### Specific Error message

```
error 2010-03-19 12:33:30,811 WST [14188-Main tid=4158101184] opsys.job
- Cannot execute Redwood Job 81 '/home/user/jobs/81/run_KSH': No such file or directory
```

## Resolution

Install `ksh`, `pksh` or any `ksh88` or `ksh93` compatible shell.

# network-processor: OS initialization failed

## Platform

This error has been reported on Tru64.

## Specific Error Message

```
<install_path>/<version>/bin/network-processor: OS initialization failed  
error 2011-05-18 11:50:52 CEST [<pid>-platform-agent] Scheduler network-processor instance '<instance>' died
```

## Resolution

Install a UTF character set, like for example `en_US.UTF8`.

# Chapter 6. Common AS/400-Related Errors

## Use

The following document lists common errors encountered when submitting jobs in AS/400 systems.

## Error: No output

The job has no output.

## Specific Error Message

[None]

## Resolution

If the job has no output, either the *LOG* parameter or the *SPLFACN* parameter will need to be specified in the *AS400JobAppend* parameter. You should do this on the process server level, since all jobs will then use this value. See the section *Setting the AS400JobAppend Parameter* in the Administration guide.

## Error: Job timed out (after a few seconds), or CPF3C53

This error can occur if the job description is set to detach the spool files from the job and hence delete the job.

## Specific Error Message

CPF3C53

## Resolution

See the section *Setting the AS400JobAppend Parameter* in the Administration guide.

## Error: CPFDCFC2

## Specific Error Message

CPFDCFC2 Error(s) occurred during running of QWPZHPT1.

## Resolution

You need to grant the user you are running the jobs as the *\*USE* permission on QWPZBC.

The procedure to follow is:

## Common AS/400-Related Errors

- Do `WRKMSG QSYSOPER` - you should see a message.
- Do `WRKPRB` - you should see a problem.
- Work with the problem, should see an error.
- The printer (for example `PRT01`) not existing is a red herring, problem is lack of permission on `QWPZBC`.

This error occurs if the customer has restricted access to the `QWPZBC` object. We use this object to transform the job output and log files into a format that we can copy across to SAP CPS.

# Chapter 7. Resetting the Database of the Windows Standalone Edition

## Use

The Windows Standalone Edition comes with a built-in Apache Derby database which should only be accessed via the Windows Standalone Edition, it can occur that the database becomes corrupt in some way. To prevent this from impacting your business, you can back the database up by shutting down the Redwood Platform server and making a copy of the following directory:

```
<InstallDir>/j2ee/cluster/global/derby/crimson
```

When you are unable to revert to the backup, you can use the crimson-pristine.zip archive to create an empty database, simply rename the crimson directory and unzip the archive directly into the `<InstallDir>/j2ee/cluster/global/derby` directory; upon successful completion you should see a crimson directory containing a file called `service.properties` and two directories: `log` and `seg0`.

## Procedure

To backup the database

1. Navigate to `<InstallDir>/j2ee/cluster/server1/bin` and execute `stop.cmd`
2. Navigate to `<InstallDir>/j2ee/cluster/global/derby`
3. Backup the crimson directory
4. Navigate to `<InstallDir>/j2ee/cluster/server1/bin` and execute `start.cmd`

Reset the Derby database

1. Navigate to `<InstallDir>/j2ee/cluster/server1/bin` and execute `stop.cmd`
2. Navigate to `<InstallDir>/j2ee/cluster/global/derby`
3. Move the crimson directory
4. Unzip the crimson-pristine.zip file. If you use the built-in Windows extraction tool, remember to remove the last folder name of the default extraction path, so that it equals `<InstallDir>/j2ee/cluster/global/derby`.
5. Navigate to `<InstallDir>/j2ee/cluster/server1/bin` and execute `start.cmd`

# Chapter 8. Reference

## SAP RFC User Privileges

### Use

Each ABAP stack you want to interact with needs a privileged user. SAP recommends it to be a System user for normal batch processing and a Dialog user if this user also has to be used as the Step user.

The following section describes the privileges required by the RFC user to interact with the ABAP stack of SAP Systems. To assign the following privileges, navigate to *Tools > Administration > User Maintenance > Role Administration > Roles* (transaction **PFCG**) and see the [Assigning SAP Authorizations to the RFC User](#) procedure for more information.



### Note

Whenever an authorization problem occurs, you can log into the SAP system as the user and execute transaction **SU53**. You can use the output of this transaction to identify any missing authorizations.

## SAP Authorizations for XBP and BW

### AAAB - Cross-application Authorization Objects

#### S\_RFC - Authorization check for RFC access

Name	Required Authorizations
Activity	* (or Execute)
Name of RFC to be protected	*, or all of BATG, FRFC, OCSB, RFC1, SALX, SCCA, SDI-FRUNTIME, SDTX, SG00, SRFC, SXBP, SXMI, SYST, SVAR_RFC, SXBP_VAR, and SYSU
Type of RFC object to be protected	FUGR (Function group)

If you are using XBP transports, the following two RFC's need to be added:

/SCJS/1XBP, /SCJS/2XBP

If you are using ISU transports, the following two RFC's need to be added:

/SCJS/1ISU and /SCJS/2ISU

If you want to retrieve the SAP syslog from within SAP CPS with the GetSupportFiles functionality, you also need the following RFC:

SXMB

For BW, the list with names of RFCs to be protected has to be extended with following authorizations (unless the list contains just \* (all RFCs)):

Name	Required Authorizations
Name of RFC to be protected	RSBC, RSAB, BATG, RSPC_API

This is required to be able to use RFC, and is thus an absolute requirement.

## BC\_A - Basis: Administration

### S\_ADMI\_FCD - System Authorizations

Name	Required Authorizations
System administration functions	SP01, SP0R, SPAD

### S\_BTCH\_ADM - Background Processing: Background Administrator

Name	Required Authorizations
Background administrator ID	*

### S\_BTCH\_JOB - Background Processing: Operations on Background Jobs

Name	Required Authorizations
Job operations	*
Summary of jobs for a group	*

While it is possible to individually assign authorizations to delete background jobs, display spool requests, copy or repeat jobs, display the job processing log, release jobs and to display the job queue, all of them are required for proper function of the product.

### S\_BTCH\_NAM - Background Processing: Background User Name

Name	Required Authorizations
Background User Name for Authorization	*

### S\_PROGRAM - ABAP: program run checks

Name	Required Authorizations
Authorization group ABAP program	*(or the required authorization group)
User action ABAP program	BTCSubmit

### S\_RZL\_ADM - CCMS: System Administration

Name	Required Authorizations
Activity	01

### S\_SPO\_ACT - Spool: Actions

Name	Required Authorizations
Authorization field for spool	*
Value for authorization check	*

## S\_SPO\_DEV - Spool: Device authorizations

Name	Required Authorizations
Long device names	*

## S\_TABU\_DIS - Table maintenance (via standard tools such as SM30)

Name	Required Authorizations
Activity	03
Authorization group	*

The *S\_TABU\_DIS* authorization is needed for importing BW InfoPackage groups. Additionally, it is required for all SAP releases that have neither [XBP 3.0](#) nor [transports](#) (as of M28) in order to be able to import SAP calendars.

The following table illustrates the various combinations and the requirements:

	M28 (without transports) or earlier with XBP 2.0 or earlier	M28 (without transports) or earlier with XBP 3.0	M28 with transports
Run InfoPackagestable RSMONRQTAB	o	o	o
Import InfoPackage Groupstable RSPAKPOS	x	x	x
Import SAP Calendarstable THOCS and TFACS	x	-	-

- o - (optional) the official API will be used, which is slower and sometimes not reliable
- x - (mandatory) this functionality requires access to the table via RFC\_READ\_TABLE
- - - no direct table access is needed

## S\_OC\_DOC

Only required if you want to archive spool lists.

Name	Required Authorizations
Activity	24 (or *)

## S\_OC\_ROLE

Required for sending spool-lists to recipients or archiving spool lists

Name	Required Authorizations
Activity	ADMINISTRATOR (or *)

## S\_OC\_SEND - Authorization Object for Sending

Required for sending spool lists to recipients

Name	Required Authorizations
------	-------------------------



Valid communication methods	* (or any communication methods you want to be able to use)
Range of number of recipients allowed per send operation	* (or the desired value, for example 100)

## S\_XMI\_LOG - Internal access authorization for XMI log

Name	Required Authorizations
Access method for XMI log	*

## S\_XMI\_LOG - Internal access authorization for XMI log

Name	Required Authorizations
Access method for XMI log	*

## S\_XMI\_PROD - Auth. for external management interfaces (XMI)

Name	Required Authorizations
XMI logging: company name	REDWOOD (or *)
Product	*
Interface ID	*



### Note

Please note that this has to be set to REDWOOD and not your company name.

This is the minimal set of authorizations required by SAP CPS.

## SAP Authorizations for BW Process Chains

### S\_RS\_ALL

You need to assign the S\_RS\_ALL profile to the user, this is done as follows:

If you want to schedule process chains and/or InfoPackages, then you must also assign the S\_RS\_ALL profile to the REDWOOD role. This can be done as follows:

1. Navigate to *Tools > Administration > User Maintenance > Role Administration > Roles* (transaction **PFCG**).
2. Create a new role REDWOOD, or edit the existing one if it already exists.
3. Select the *Authorizations* tab.
4. Choose *Change Authorization Data*. If the system shows a list of templates, choose *Do not select templates*.
5. You should now be in *Change role: Authorizations*.
6. Choose *Edit > Insert authorization(s) > From profile* and fill S\_RS\_ALL into the profile field, apply the change. Notice that the required authorizations have been added automatically.

## S\_DEVELOP - ABAP Workbench

When the *synchronous* flag is switched on, the following authorization is also required for process chains:

Name	Required Authorizations
ACTVT	16
DEVCLASS	*
OBJNAME	*
OBJTYPE	PROG
P_GROUP	*

## AAAB - Cross-application Authorization Objects

SAP Authorizations required for XAL and XMW synchronization.

### S\_RFC - Authorization check for RFC access"

Name	Required Authorizations
Name of RFC to be protected	*, or all of FRFC, OCSB, SALX, SXMI, SYST, SDTX, RFC1, SDIFRUNTIME, SG00, SRFC, SYSU
Type of RFC object to be protected	FUGR

## SAP Authorizations for Industry Solutions (ISU)

### S\_DEVELOP - ABAP Workbench

Name	Required Authorizations
ACTVT	03
DEVCLASS	EE20
OBJNAME	*
OBJTYPE	*
P_GROUP	*

## SAP Authorizations for SAP Applications

The role *SAP\_BC\_REDWOOD\_COMM\_EXT\_SDL* is required for Business Automation Enabler (BAE).

Please make sure, that the role has the following authorizations:

### S\_RFC\_ADM

Name	Required Authorizations
Activity	All activities
Internet Communication Framework	*
Logical Destination	CRONACLE*, REDWOOD
Type of Entry in RFCDES	All values



## Note

ABAP users connecting to SAP CPS require the role `SAP_BC_BATCH_ADMIN_REDWOOD`.

# Default SAP Job Definitions

## Use

SAP-specific job definitions can be recognized by their prefix `SAP_` and their job definition type which is `SAPR3` for most, the only exceptions are for Java Scheduler job definitions that have the `JXBP` job definition type. Some parameters have both long and short versions of their values. The long values are used in drop-down menus in the submit wizard. The long versions are more verbose than the short ones, however, the short version must be used in job chains, so both are listed here.

The following SAP job definitions are available:

- *SAP\_AbapRun*
- *SAP\_AbapRunPrint*
- *SAP\_AbapRunPrintExt*
- *SAP\_BW\_GenerateInfoPackageGroup*
- *SAP\_BW\_ImportInfoPackageGroups*
- *SAP\_BW\_ImportInfoPackages*
- *SAP\_BW\_ImportProcessChainDefinition*
- *SAP\_BW\_ImportProcessChains*
- *SAP\_BW\_InfopackageRun*
- *SAP\_BW\_MaintainProcessChainDefinition*
- *SAP\_BW\_Process*
- *SAP\_BW\_ProcessChain*
- *SAP\_BW\_ProcessChainRun*
- *SAP\_BW\_RestartProcess*
- *SAP\_BW\_RestartProcessChain*
- *SAP\_CcmsJob*
- *SAP\_CcmsJobCheckStatus*
- *SAP\_CcmsJobGetApplicationLog*
- *SAP\_CcmsJobGetApplicationLogHandles*
- *SAP\_CcmsJobGetLog*
- *SAP\_CcmsJobGetSpool list*

- *SAP\_CcmsJobGetStatistics*
- *SAP\_CcmsJobGetStatus*
- *SAP\_CcmsJobModifyHeader*
- *SAP\_ClosingCockpit\_AbapRun*
- *SAP\_ClosingCockpit\_ManualTask*
- *SAP\_CopyVariant*
- *SAP\_DeleteCcmsMonitors*
- *SAP\_DeleteVariant*
- *SAP\_ExternalCommandRun*
- *SAP\_ExternalProgramRun*
- *SAP\_GenerateCcmsJobDefinition*
- *SAP\_GetBatchResources*
- *SAP\_GetEventHistory*
- *SAP\_GetInstalledComponents*
- *SAP\_GetXmiLog*
- *SAP\_ImportAbapParameterDefinition*
- *SAP\_ImportAbapPrograms*
- *SAP\_ImportApplicationServers*
- *SAP\_ImportArchiveObjects*
- *SAP\_ImportBatchEvents*
- *SAP\_ImportCalendars*
- *SAP\_ImportCcmsJobs*
- *SAP\_ImportCcmsMonitors*
- *SAP\_ImportExternalCommands*
- *SAP\_ImportOutputDevices*
- *SAP\_ImportRecipients*
- *SAP\_ImportVariantDefinition*
- *SAP\_ImportVariants*
- *SAP\_Info*
- *SAP\_InterceptedJob*

- *SAP\_JXBP\_GenerateJobDefinition*
- *SAP\_JXBP\_ImportJobDefinitions*
- *SAP\_MA\_CopyParameters*
- *SAP\_MA\_CreateParameters*
- *SAP\_MA\_DeleteDunningProposal*
- *SAP\_MA\_ImportMassActivities*
- *SAP\_MA\_ImportMassActivity*
- *SAP\_MA\_MassActivityRun*
- *SAP\_MA\_MassActivityTemplateRun*
- *SAP\_MA\_ResumeMassActivity*
- *SAP\_MA\_ShowMassActivity*
- *SAP\_MA\_StopMassActivity*
- *SAP\_MaintainXbpOptions*
- *SAP\_PI\_GetChannelStatus*
- *SAP\_PI\_ImportChannels*
- *SAP\_PI\_StartChannel*
- *SAP\_PI\_StopChannel*
- *SAP\_RaiseEvent*
- *SAP\_ReleaseInterceptedJobs*
- *SAP\_ReloadApplicationLinks*
- *SAP\_RunTemplateJob*
- *SAP\_SetXmiAuditLevel*
- *SAP\_SolutionManager\_AbapRun*
- *SAP\_StoreVariant*
- *SAP\_SynchronizeEventHistoryCriteria*
- *SAP\_SynchronizeInterceptionCriteria*
- *SAP\_SynchronizeTerminatedCcmsJobs*

## SAP\_AbapRun

### Use

This job definition is used to run ABAP's via the XBP interface in SAP Systems.

This job definition works with every version of the XBP interface, yet it offers a limited set of print and archive parameters (only those that are available in XBP 1.0) if you do not load the Redwood Transport files.

### Parameters

Name	Description	Data Type	Default Expression	Default List of Values
ABAP_PROGRAM_NAME	ABAP program	String		
ABAP_VARIANT_NAME	ABAP variant	String		
TEMPORARY_VARIANT	Create temporary variant?	String	N	Y,N
ARCHIVE_INFO	Archive info	String		
ARCHIVE_OBJECT	Document type	String		
ARCHIVE_SAPOBJECT	Archive SAP object	String		
CLIENT	SAP client	String		
DELETE_JOB	Delete job when finished?	String	N	Y,N
JOBCLASS	SAP job class	String	C	A,B,C
JOBCOUNT	SAP job count	String		
JOBNAME	SAP job name	String		
LANGUAGE	SAP language for the step	String		
PRINT_ARCMODE	Print/Archive mode	String	1 (Print only)	1 (Print only) 2 (Archive only) 3 (Print and Archive)
PRINT_BANNERPAGE	Selection cover sheet?	String	N	Y,N
PRINT_COPIES	# of copies	String	1	
PRINT_DESTIN	Printer	String		
PRINT_EXPIRATION	Expiration in days	String	8	0 (Do not Delete)1-8 days
PRINT_IMMEDIATE	Print immediately?	String	N	Y,N
PRINT_NUMCOLUMNS	Print columns per page	String		
PRINT_NUMLINES	Print lines per page	String		
PRINT_RECIPIENT	Spool list recipient	String		
PRINT_RELEASE	Release print job?	String	N	Y,N
PRINT_SAPBANNER	SAP cover page?	String	D (System Default)	D (System Default)Y (Print)N (Do not print)
PRINT_SHOWPASSWD	Authority for printing	String		
SAP_SYSTEMS	SAP System	String		

SAP_USER_NAME	SAP user name	String		
SHOWLOG	Retrieve job log?	String	Y	Y,N
SHOWSPOOL	Retrieve spool list?	String	Y	Y,N
TARGET_GROUP	SAP target server group name	String		
TARGET_SERVER	SAP target server name	String		
TEMPORARY_VARIANT	Create temporary variant?	String	N	Y,N

If you set *Print/Archive mode* to *Archive only* or *Print and Archive*, the following additional Archive parameters must be filled:

- *Archive SAP object* - Referred to as *Obj.type* in SAPGUI
- *Archive object* - Referred to as *Doc.type* in SAPGUI
- *Archive info* - Referred to as *Information* in SAPGUI
- *Archive text information field* - Referred to as *Text* in SAPGUI



### Note

If you need to use the optional *Archive text information field* parameter, known as *Text* in SAPGUI, you will have to use the job definition `SAP_AbapRunPrint` or `SAP_AbapRunPrintExt`.

## Advanced

By adding the following two parameters, you can make jobs wait on events in SAP:

Parameter	Description	Direction	Data Type
STARTCOND_EVENTID	batch event id	In	String
STARTCOND_EVENTPARM	parameter of the event id	In	String

Note that you have to duplicate the job definition and modify the duplicate.

## More Information

[Handling ABAP programs](#)

## SAP\_AbapRunPrint

### Use

This job definition is used to run ABAP's via the XBP interface in SAP Systems.

This job definition makes use of the extended capabilities of the XBP 2.0 interface, which provides an extended set of print and archive parameters.

This job definition works on every version of the XBP interface, yet on versions below 2.0 the new functionality is disabled if you do not have the [transport files](#) installed.

## Parameters

Name	Description	Data Type	Default Expression	Default List of Values
ABAP_PROGRAM_NAME	ABAP program	String		
ABAP_VARIANT_NAME	ABAP variant	String		
TEMPORARY_VARIANT	Create temporary variant?	String	N	Y,N
ARCHIVE_ARCTEXT	Archive text information field	String		
ARCHIVE_AR_OBJECT	Document type	String		
ARCHIVE_INFO	Archive info	String		
ARCHIVE_SAP_OBJECT	Archive SAP object	String		
CLIENT	SAP client	String		
DELETE_JOB	Delete job when finished?	String	N	Y, N
JOBCLASS	SAP job class	String	C	A, B, C
JOBCOUNT	SAP job count	String		
JOBNAME	SAP job name	String		
LANGUAGE	SAP language for the step	String		
PRINT_ARMOD	Print/Archive mode	String	1	
PRINT_FOOTL	Print a footer?	String	N	Y, N
PRINT_LICT	Print lines per page	String		
PRINT_LISZ	Print columns per page	String		
PRINT_PAART	Print format	String		
PRINT_PDEST	Printer	String		
PRINT_PEXPI	Expiration in days	String	8	0 (Do not Delete)1-8 days
PRINT_PLIST	Spool list name	String		
PRINT_PRABT	Department on cover page	String		
PRINT_PRBER	Authority for printing	String		
PRINT_PRBIG	Selection cover sheet?	String	N	Y, N
PRINT_PRCOP	# of copies	String	1 (Print only)	1 (Print only) 2 (Archive only) 3 (Print and Archive)
PRINT_PRDSN	Spool dataset name	String		
PRINT_PRIMM	Print immediately?	String	N	Y, N
PRINT_PRNEW	New spool?	String	Y	Y, N
PRINT_PRREC	Spool list recipient	String		
PRINT_PPREL	Release print job?	String	N	Y, N
PRINT_PRSAP	SAP cover page?	String	D (System Default)	D (System Default)Y (Print)N (Do not print)
PRINT_PRTXT	Cover sheet title	String		



PRINT_PRUNX	OS cover sheet?	String	D (System Default)	D (System Default)Y (Print)N (Do not print)
PRINT_PTYPE	Spool type	String		
SAP_SYSTEMS	SAP System	String		
SAP_USER_NAME	SAP user name	String		
SHOWLOG	Retrieve job log?	String	Y	Y, N
SHOWSPOOL	Retrieve spool list?	String	Y	Y, N
TARGET_GROUP	SAP target server group name	String		
TARGET_SERVER	SAP target server name	String		
TEMPORARY_VARIANT	Create temporary variant?	String	N	Y,N

If you set *Print/Archive mode* to *Archive only* or *Print and Archive*, the following Archive parameters should be filled:

- *Archive SAP object* - Referred to as Obj.type in SAPGUI
- *Archive object* - Referred to as Doc.type in SAPGUI
- *Archive Info* - Referred to as Information in SAPGUI

## Advanced

By adding the following two parameters, you can make jobs wait on events in SAP:

Parameter	Description	Direction	Data Type
STARTCOND_EVENTID	batch event id	In	String
STARTCOND_EVENTPARM	parameter of the event id	In	String

Note that you have to duplicate the job definition and modify the duplicate.

## More Information

[Handling ABAP programs](#)

## SAP\_AbapRunPrintExt

### Use

This job definition is used to run ABAP's via the XBP interface in SAP Systems.

This job definition makes use of the extended capabilities of the XBP 3.0 interface to set the spool list recipient and retrieve application log and batch statistics of the SAP job.

This job definition works on every version of the XBP interface, yet on versions below 3.0 the new functionality is disabled if you do not have the [transport files](#) installed.

## Parameters

Name	Description	Data Type	Default Expression	Default List of Values
ABAP_PROGRAM_NAME	ABAP program	String		
ABAP_VARIANT_NAME	ABAP variant	String		
TEMPORARY_VARIANT	Create temporary variant?	String	N	Y,N
ARCHIVE_ARCTEXT	Archive text information field	String		
ARCHIVE_AR_OBJECT	Document type	String		
ARCHIVE_INFO	Archive info	String		
ARCHIVE_SAP_OBJECT	Archive SAP object	String		
CLIENT	SAP client	String		
DELETE_JOB	Delete job when finished?	String	N	
JOBCLASS	SAP job class	String	C	A, B, C
JOBCOUNT	SAP job count	String		
JOBNAME	SAP job name	String		
LANGUAGE	SAP language for the step	String		
PRINT_ARMOD	Print/Archive mode	String	1 (Print only)	1 (Print only) 2 (Archive only) 3 (Print and Archive)
PRINT_FOOTL	Print a footer?	String	N	Y, N
PRINT_LICT	Print lines per page	String		
PRINT_LISZ	Print columns per page	String		
PRINT_PAART	Print format	String		
PRINT_PDEST	Printer	String		
PRINT_PEXPI	Expiration in days	String	8	0 (Do not Delete)1-8 days
PRINT_PLIST	Spool list name	String		
PRINT_PRABT	Department on cover page	String		
PRINT_PRBER	Authority for printing	String		
PRINT_PRBIG	Selection cover sheet?	String	N	Y, N
PRINT_PRCOP	# of copies	String	1	
PRINT_PRDSN	Spool dataset name	String		
PRINT_PRIMM	Print immediately?	String	N	Y, N
PRINT_PRNEW	New spool?	String	Y	
PRINT_PRREC	Spool list recipient	String		
PRINT_PRREL	Release print job?	String	N	Y, N
PRINT_PRSAP	SAP cover page?	String	D (System Default)	D (System Default)Y (Print)N (Do not print)
PRINT_PRTXT	Cover sheet title	String		

PRINT_PRUNX	OS cover sheet?	String	D (System Default)	D (System Default)Y (Print)N (Do not print)
PRINT_PTYPE	Spool type	String		
REC_BLIND_COPY	Recipient blind copy flag	String	N	Y, N
REC_COPY	Recipient copy flag	String	N	Y, N
REC_DELIVER	Report send status	String	_ (System Default)	_ (System Default) A (Always) E (On error) N (Never)
REC_EXPRESS	Recipient express flag	String	N	Y, N
REC_MAILSTATUS	Report status by e-mail	String	_ (System Default)	_ (System Default) A (Always) E (On error) N (Never)
REC_NO_FORWARDING	Recipient no forwarding flag	String	N	Y, N
REC_NO_PRINT	Recipient no print flag	String	N	Y, N
REC_RECIPIENT	Spool list recipient	String		
REC_TYPE	Recipient type	String	U (Internet User)	U (Internet User) B (SAP user) O (SAP-Office user) P (Personnel distribution list) C (Shared distribution list) F (Fax number)
SAP_SYSTEMS	SAP System	String		
SAP_USER_NAME	SAP user name	String		
SHOWAPPLLOG	Retrieve application logs?	String	Y	Y, N
SHOWLOG	Retrieve job log?	String	Y	Y, N
SHOWSPOOL	Retrieve spool list?	String	Y	Y, N
SHOWSTAT	Retrieve job statistics?	String	Y	Y, N
TARGET_GROUP	SAP target server group name	String		
TARGET_SERVER	SAP target server name	String		
TEMPORARY_VARIANT	Create temporary variant?	String	N	Y,N

If you set *Print/Archive mode* to *Archive only* or *Print and Archive*, the following Archive parameters should be filled:

- *Archive SAP object* - Referred to as Obj.type in SAPGUI
- *Archive object* - Referred to as Doc.type in SAPGUI
- *Archive Info* - Referred to as Information in SAPGUI

## Advanced

By adding the following two parameters, you can make jobs wait on events in SAP:

Parameter	Description	Direction	Data Type
STARTCOND_EVENTID	batch event id	In	String

STARTCOND_EVENTPARM	parameter of the event id	In	String
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Note that you have to duplicate the job definition and modify the duplicate.

## More Information

[Handling ABAP programs](#)

## SAP\_BW\_GenerateInfoPackageGroup

### Use

Generate an InfoPackage group in an SAP System.

### Parameters

Name	Description	Direction	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String	
INFOPACK-AGEGROUP_NAME	SAP BW InfoPackage group	In	String	
JOBDEF_NAME	Name for the generated job definition	In	String	
OVERWRITE	Overwrite existing job definitions?	In	String	Y
APPLICATION	Application	In	String	
SHOWLOG	Retrieve job log?	In	String	Y

## SAP\_BW\_ImportInfoPackageGroups

### Use

Import InfoPackage groups from an SAP System.

### Parameter

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String

## SAP\_BW\_ImportInfoPackages

### Use

Import InfoPackages.

### Parameters

Name	Description	Direction	Data Type	Default Expression
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SAP_SYSTEMS	SAP System	In	String	
INFOPACKAGE_NAME	Technical name of the SAP BW InfoPackage	In	String	
MAX_COUNT	Max. count	In	Number	
DROP_OLD_SELECTION	Drop old selection?	In	String	Y
IPAK_INFOSOURCE	Info source of the SAP BW InfoPackage	In	String	
IPAK_SOURCESYSTEM	Source system of the SAP BW InfoPackage	In	String	
IPAK_DATASOURCE	Datasource of the SAP BW InfoPackage	In	String	

## SAP\_BW\_ImportProcessChainDefinition

### Use

Import the definition of a Process Chain.

### Parameters

Name	Description	Direction	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String	
PCHAIN_NAME	Technical name of the SAP BW Process Chain	In	String	
DROP_OLD_SELECTION	Drop old selection?	In	String	Y

### More Information

[Importing and Running Process Chains](#)

## SAP\_BW\_ImportProcessChains

### Use

Import process chains.

### Parameters

Name	Description	Direction	Data Type	Default Expression
DROP_OLD_SELECTION	Drop old matching values?	In	String	Y
IMPORT_CHAIN_DEFINITION	Import process chain definition?	In	String	
MAX_COUNT	Max. count	In	Number	
PCHAIN_NAME	Technical name of the SAP BW Process Chain	In	String	

PCHAIN_TEXT	Description of the SAP BW process chain	In	String	
SAP_SYSTEMS	SAP System	In	String	

## More Information

[Importing and Running Process Chains](#)

## SAP\_BW\_InfopackageRun

### Use

This job definition is used to run InfoPackages in SAP BW.

### Parameters

Name	Description	Data Type	Direction	Default Expression
JOBNAME	SAP BW job name	In	String	
NAME	Technical name of the SAP BW InfoPackage	In	String	
REQUESTID	Request ID of an SAP BW InfoPackage run	Out	String	
SAP_SYSTEMS	SAP System	In	String	
SHOWLOG	Retrieve job log?	In	String	Y

## SAP\_BW\_MaintainProcessChainDefinition

### Use

Maintain the definition of a Process Chain.

### Parameters

Name	Description	Direction	Data Type	Default Expression	Default List of Values
SAP_SYSTEMS	SAP System	In	String		
PCHAIN_NAME	Technical name of the SAP BW Process Chain	In	String		
BW_PROCESS_TYPE	Type of the SAP BW process	In	String		
BW_PROCESS_VARIANT	Variant (name) of the SAP BW process	In	String		
BW_MAX_RESTARTS	Number of automatic restarts on error	In	Number		
BW_RESTART_DELAY	Delay needed to restart.	In	Number	10	

BW_RE- START_DELAY_TIME_UNIT	Unit of the delay (seconds or minutes)	In	String	M(Minutes)	M (Minutes) S (Seconds)
BW_RESTART_UNCHECKED	Restart unchecked	In	String		
BW_ERROR_PROCESS_TYPE	Type of the SAP BW process to restart on error	In	String		
BW_ERROR_PROCESS_VARIANT	Variant (name) of the SAP BW process to restart on error	In	String		

## SAP\_BW\_Process

### Use

This job definition represents a process of a BW Process Chain. It is not supposed to be scheduled by the user.

### Parameters

Name	Description	Data Type	Default Expression
ID	SAP BW process id	String	
JOB_COUNT	SAP BW process batch job count	String	
LOGID	SAP BW process chain logid	String	
NAME	SAP BW process name	String	
SHOWLOG	Retrieve job log?	String	Y
TYPE	SAP BW process type	String	

## SAP\_BW\_ProcessChain

### Use

This job definition represents an SAP BW Process Chain. It is not supposed to be scheduled by the user.

### Parameters

Name	Description	Direction	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String	
NAME	Technical name of the SAP BW Process Chain	In	String	
LOGID	SAP BW process chain LogID	In/Out	String	
SYNCHRONOUS	Synchronous run?	In	String	N
SIMULATE	Simulate run?	In	String	N
NOPLAN	No plan?	In	String	N
SHOWLOG	Retrieve job log?	In	String	Y

## SAP\_BW\_RestartProcess

### Use

This job restarts an instance of a process of an SAP BW Process Chain. You do not have to submit this job definition, when a job of a process chain fails, the parent job of the job chain will have an operator message with which you can restart the process chain or one or more of its children. Restarting process chains requires *ProcessServerService.SAP.ProcessChainRestart* [license key](#).

### Parameters

Name	Description	Direction	Data Type	Default Expression	Values
SAP_SYSTEMS	SAP System	In	String		
NAME	SAP BW process name	In	String		
ID	SAP BW process id	In	String		
TYPE	SAP BW process type	In	String		CHAIN, TRIGGER, ABAP ...
PCHAIN_NAME	Technical name of the SAP BW Process Chain	In	String		
LOGID	SAP BW process chain LogID	In	String		
BW_RESTART_UNCHECKED	Restart unchecked	In	String	N	Y, N
JOBCOUNT	SAP BW process batch job count	In	String		
SHOWLOG	Retrieve job log?	In	String	N	Y, N

### More Information

[Restarting Process Chains](#)

## SAP\_BW\_RestartProcessChain

### Use

This job restarts an instance of an SAP BW Process Chain. You do not have to submit this job definition, when a job of a process chain fails, the parent job of the job chain will have an operator message with which you can restart the process chain or one or more of its children. Restarting process chains requires *ProcessServerService.SAP.ProcessChainRestart* [license key](#).

### Parameters

Name	Description	Direction	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String	
NAME	Technical name of the SAP BW Process Chain	In	String	



LOGID	SAP BW process chain LogID	In/Out	String	
BW_RESTART_UNCHECKED	Restart unchecked	In	String	Y

## SAP\_BW\_ProcessChainRun

### Use

This job definition is used to run BW Process Chains in SAP.

### Parameters

Name	Description	Data Type	Default Expression	Default List of Values
CHAIN_RESTARTABLE	Make processes restartable on error?	String	F (Failed)	F (Failed) A (All) N (Not restartable)
LOGID	SAP BW process chain LogID	String		
NAME	Technical name of the SAP BW Process Chain	String		
NOPLAN	No plan?	String	N	Y, N
SAP_SYSTEMS	SAP System	String		
SHOWLOG	Retrieve job log?	String	Y	Y, N
SIMULATE	Simulate run?	String	N	Y, N
SYNCHRONOUS	Synchronous run?	String	N	Y, N

## SAP\_CcmsJob

### Use

This job definition represents an SAP batch process that is monitored by SAP CPS yet running under full control of the SAP System. It is not supposed to be scheduled by the user.

### Parameters

Name	Description	Data Type	Default Expression
CLIENT	SAP client	String	
DELETE_JOB	Delete job when finished?	String	N
JOB_COUNT	SAP job count	String	
JOBNAME	SAP job name	String	
SAP_USER_NAME	SAP user name	String	
SHOWLOG	Retrieve job log?	String	Y
SHOWSPOOL	Retrieve spool list?	String	Y

## SAP\_CcmsJobCheckStatus

### Use

This job checks if the status of up to 10 SAP batch jobs in the database is valid and updates the database otherwise. It is not supposed to be scheduled by the user.

### Parameters

Name	Description	Direction	Data Type
CLIENT	SAP client	In	String
JOB_COUNT	SAP job count	In	String
JOB_COUNT_1	SAP job count 1	In	String
JOB_COUNT_10	SAP job count 10	In	String
JOB_COUNT_2	SAP job count 2	In	String
JOB_COUNT_3	SAP job count 3	In	String
JOB_COUNT_4	SAP job count 4	In	String
JOB_COUNT_5	SAP job count 5	In	String
JOB_COUNT_6	SAP job count 6	In	String
JOB_COUNT_7	SAP job count 7	In	String
JOB_COUNT_8	SAP job count 8	In	String
JOB_COUNT_9	SAP job count 9	In	String
JOB_NAME	SAP job name	In	String
JOB_NAME_1	SAP job name 1	In	String
JOB_NAME_10	SAP job name 10	In	String
JOB_NAME_2	SAP job name 2	In	String
JOB_NAME_3	SAP job name 3	In	String
JOB_NAME_4	SAP job name 4	In	String
JOB_NAME_5	SAP job name 5	In	String
JOB_NAME_6	SAP job name 6	In	String
JOB_NAME_7	SAP job name 7	In	String
JOB_NAME_8	SAP job name 8	In	String
JOB_NAME_9	SAP job name 9	In	String
JOB_STATUS	Job status	Out	String
JOB_STATUS_1	Job status 1	Out	String
JOB_STATUS_10	Job status 10	Out	String
JOB_STATUS_2	Job status 2	Out	String
JOB_STATUS_3	Job status 3	Out	String
JOB_STATUS_4	Job status 4	Out	String
JOB_STATUS_5	Job status 5	Out	String
JOB_STATUS_6	Job status 6	Out	String
JOB_STATUS_7	Job status 7	Out	String

JOB_STATUS_8	Job status 8	Out	String
JOB_STATUS_9	Job status 9	Out	String
SAP_SYSTEMS	SAP System	In	String

## SAP\_CcmsJobGetApplicationLog

### Use

Get an application log of an SAP batch job.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
CLIENT	SAP client	In	String
JOBNAME	SAP job name	In	String
JOBCOUNT	SAP job count	In	String
JOB_ID	Job id	In	Number
LOGHANDLE	Application log handle	In	String

## SAP\_CcmsJobGetApplicationLogHandles

### Use

Get the list of application log handles of an SAP batch job.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
CLIENT	SAP client	In	String
JOBNAME	SAP job name	In	String
JOBCOUNT	SAP job count	In	String
JOB_ID	Job id	In	Number

## SAP\_CcmsJobGetLog

### Use

Get the job log of an SAP batch job.

### Parameters

Name	Description	Direction	Data Type	Default Value
CLIENT	SAP client	In	String	

CONSIDER_SIZE_CON- STRAINTS	Consider file size constraints?	In	String	N
JOB_COUNT	SAP job count	In	String	
JOB_NAME	SAP job name	In	String	
JOB_ID	Job id	In	Number	
SAP_SYSTEMS	SAP System	In	String	

## SAP\_CcmsJobGetSpool list

### Use

Get a spool list of an SAP batch job.

Name	Description	Direction	Data Type	Default Value
CLIENT	SAP client	In	String	
CONSIDER_SIZE_CON- STRAINTS	Consider file size constraints?	In	String	N
JOB_COUNT	SAP job count	In	String	
JOB_NAME	SAP job name	In	String	
JOB_ID	Job id	In	Number	
SAP_SYSTEMS	SAP System	In	String	
SPOOLID	Spool list ID	In	String	
STEP_NUMBER	Step number of the SAP batch job	In	Number	

## SAP\_CcmsJobGetStatistics

### Use

Get the runtime statistics of an SAP batch job.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
CLIENT	SAP client	In	String
JOB_NAME	SAP job name	In	String
JOB_COUNT	SAP job count	In	String
JOB_ID	Job id	In	Number

## SAP\_CcmsJobModifyHeader

### Use

### Parameters

Name	Description	Direction	Data Type	Default Expression
CLIENT	SAP client	In	String	
EVENT_ID	Event ID	In	String	
EVENT_PARAMETER	Event parameter	In	String	
JOB_COUNT	SAP job count	In	String	
JOB_NAME	SAP job name	In	String	
PERIODIC	Periodic job?	In	String	
READ_JOB_INFO	Read job info?	In	String	Y
RELEASE_JOB	Release job in SAP?	In	String	N
SAP_SYSTEMS	SAP System	In	String	
START_TIME	Start time	In	DateTimeZone	
TARGET_GROUP	SAP target server group name	In	String	
TARGET_SERVER	SAP target server name	In	String	

## SAP\_CcmsJobGetStatus

### Use

This job retrieves the status of an SAP batch job.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
CLIENT	SAP client	In	String
JOB_NAME	SAP job name	In	String
JOB_COUNT	SAP job count	In	String
JOB_STATUS	Job status	Out	String

## SAP\_ClosingCockpit\_AbapRun

### Use

Run an ABAP report from SAP Closing Cockpit.

## Parameters

Name	Description	Direction	Data Type	Default Expression	Default List of Values
SAP_SYSTEMS	SAP System	In	String		
CLIENT	SAP client	In	String		
JOBNAME	SAP job name	In	String		
ABAP_PROGRAM_NAME	ABAP program	In	String		
ABAP_VARIANT_NAME	ABAP variant	In	String		
TEMPORARY_VARIANT	Create temporary variant?	String	N	Y,N	
JOBCLASS	SAP job class	In	String	C	A, B, C
SAP_USER_NAME	SAP user name	In	String		
TARGET_SERVER	SAP target application server name	In	String		
JOBDOCID	Job documentation ID	In	String		
PRINT_ARMOD	Print/Archive mode	In	String	1 (Print only)	1 (Print only) 2 (Archive only) 3 (Print and Archive)
PRINT_PDEST	Printer	In	String		
PRINT_PRTXT	Cover sheet title	In	String		
PRINT_PRCOP	# of copies	In	String	1	
PRINT_PRNEW	New spool?	In	String	Y	Y, N
PRINT_PLIST	Spool list name	In	String		
PRINT_PRIMM	Print immediately?	In	String	N	Y, N
PRINT_PRREL	Release print job?	In	String	N	Y, N
PRINT_PEXPI	Expiration in days	In	String	8	0 (Do not Delete)1-8 days
PRINT_LICT	Print lines per page	In	String		
PRINT_LISZ	Print columns per page	In	String		
PRINT_PAART	Print format	In	String		
PRINT_PRBIG	Selection cover sheet?	In	String	N	Y, N
PRINT_PRSAP	SAP cover page?	In	String	D (System Default)	D (System Default)Y (Print)N (Do not print)
PRINT_PPREC	Spool list recipient	In	String		
PRINT_PPRABT	Department on cover page	In	String		
PRINT_PPRBER	Authority for printing	In	String		
PRINT_PPRDSN	Spool dataset name	In	String		
PRINT_PPTYPE	Spool type	In	String		

## Reference

PRINT_FOOTL	Print a footer?	In	String	N	Y, N
PRINT_PRUNX	OS cover sheet?	In	String	D (System Default)	D (System Default) Y (Print) N (Do not print)
ARCHIVE_SAP_OBJECT	Archive SAP object	In	String		
ARCHIVE_AR_OBJECT	Document type	In	String		
ARCHIVE_INFO	Archive info	In	String		
ARCHIVE_ARCTEXT	Archive text information field	In	String		
REC_RECIPIENT	Spool list recipient	In	String		
REC_TYPE	Recipient type	In	String	U (Internet User) B (SAP user) O (SAP-Office user) P (Personnel distribution list) C (Shared distribution list) F (Fax number)	
REC_COPY	Recipient copy flag	In	String	N	Y, N
REC_BLIND_COPY	Recipient blind copy flag	In	String	N	Y, N
REC_EXPRESS	Recipient express flag	In	String	N	Y, N
REC_NO_FORWARDING	Recipient no forwarding flag	In	String	N	Y, N
REC_NO_PRINT	Recipient no print flag	In	String	N	Y, N
REC_DELIVER	Report send status	In	String	_ (System Default)	_ (System Default) A (Always) E (On error) N (Never)
REC_MAILSTATUS	Report status by e-mail	In	String	_ (System Default)	_ (System Default) A (Always) E (On error) N (Never)
SAP_CC_LDAY_P	Closing key day (as single value)	In	String		
SAP_CC_LDAY_S	Closing key day (as range)	In	String		
SAP_CC_PERIOD_P	Period (as single value)	In	String		
SAP_CC_PERIOD_S	Period (as range)	In	String		
SAP_CC_GJAHR_P	Financial year (as single value)	In	String		

SAP_CC_GJAHR_S	Financial year (as range)	In	String		
SAP_CC_RESPONSIBLE	Responsible	In	String		
SAP_CC_EXECUTIVE	Executioner	In	String		
SAP_CC_ESTIMATED_RUNTIME	Estimated runtime	In	Number		
SAP_CC_MAX_START_DELAY	Max. start delay	In	Number		
SAP_CC_CONTEXT_ID	Context ID	In	String		
SAP_CC_CONTEXT_DESCR	Context descriptions	In	String		
SAP_CC_EXE_USR_SMTP	Executioner user email address	In	String		
SAP_CC_RES_USR_SMTP	Responsible user email address	In	String		
SAP_CC_SMTP_SERVER	SMTP server	In	String		
SHOWLOG	Retrieve job log?	In	String	Y	Y, N
SHOWSPOOL	Retrieve spool list?	In	String	Y	Y, N
SHOWSTAT	Retrieve job statistics?	In	String	Y	Y, N
SHOWAPPLLOG	Retrieve application logs?	In	String	Y	Y, N
DELETE_JOB	Delete job when finished?	In	String	N	Y, N

## More Information

[Handling ABAP programs](#)

# SAP\_ClosingCockpit\_ManualTask

## Use

Manual task in the context of SAP Closing Cockpit.

## Parameters

Name	Description	Direction	Data Type
JOB_ID	Job id	In	Number
SAP_CC_CONTEXT_DESCR	Context descriptions	In	String
SAP_CC_CONTEXT_ID	Context ID	In	String
SAP_CC_ESTIMATED_RUNTIME	Estimated runtime	In	Number
SAP_CC_EXECUTIVE	Executioner	In	String
SAP_CC_EXE_USR_SMTP	Executioner user email address	In	String
SAP_CC_MAX_START_DELAY	Max. start delay	In	Number
SAP_CC_RESPONSIBLE	Responsible	In	String
SAP_CC_RES_USR_SMTP	Responsible user email address	In	String
SAP_CC_SMTP_SERVER	SMTP server	In	String



SAP_CC__GJAHR_P	Financial year (as single value)	In	String
SAP_CC__GJAHR_S	Financial year (as range)	In	String
SAP_CC__LDAY_P	Closing key day (as single value)	In	String
SAP_CC__LDAY_S	Closing key day (as range)	In	String
SAP_CC__PERIOD_P	Period (as single value)	In	String
SAP_CC__PERIOD_S	Period (as range)	In	String

## SAP\_CopyVariant

### Use

Copy a variant from SAP CPS or from one SAP System to another.

### Parameters

Name	Description	Direction	Data Type	Default Expression	Default List of Values
SAP_SYSTEMS	SAP System	In	String		
CLIENT	SAP client	In	String		
ABAP_PROGRAM_NAME	ABAP program	In	String		
ABAP_VARIANT_NAME	ABAP variant	In	String		
TARGET_SAP_SYSTEMS	Target SAP System	In	String		
TARGET_CLIENT	Target client	In	String		
TARGET_VARIANT	Target variant name	In	String		
WRITE_MODE	If the variant already exists in the SAP System	In	String	E (Fail)	E (Fail) S (Skip) R (Replace) C (Change)

### More Information

[Handling Variants](#)

## SAP\_DeleteCcmsMonitors

### Use

This job definition is used to delete CCMS monitors from the alert tree of SAP CPS so that these monitors are no longer fed with values from the SAP CCMS monitoring infrastructure.

### Parameters

Name	Description	Data Type
MONITOR_NAME	CCMS monitor name	String
MONITOR_SET_NAME	CCMS monitor set name	String

SAP_SYSTEMS	SAP System	String
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## More Information

[Integrating CCMS Monitors](#)

## SAP\_DeleteVariant

### Use

Delete a variant from an SAP System.

### Parameters

Name	Description	Direction	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String	
CLIENT	SAP client	In	String	
ABAP_PROGRAM_NAME	ABAP program	In	String	
ABAP_VARIANT_NAME	ABAP variant	In	String	
CLIENT_ONLY	Client only?	In	String	Y
DELETE_DEFINITION	Delete variant definition?	In	String	Y

## More Information

[Handling Variants](#)

## SAP\_ExternalCommandRun

### Use

This job definition is used to run external commands in SAP. This job definition requires XBP 2.0.

### Parameters

Name	Description	Direction	Data Type	Default Expression
CLIENT	SAP client	In/Out	String	
DELETE_JOB	Delete job when finished?	In	String	Y
EXT_COMMAND_NAME	External command name	In	String	
EXT_COMMAND_PARAMETERS	External command parameters	In	String	
JOBCLASS	SAP job class	In	String	C
JOBCOUNT	SAP job count	Out	String	
JOBNAME	SAP job name	In	String	
LANGUAGE	SAP language for the step	In	String	

OPERATING_SYSTEM	Operating system	In	String	
SAP_SYSTEMS	SAP System	In	String	
SAP_USER_NAME	SAP user name	In	String	
SHOWLOG	Retrieve job log?	In	String	Y
STDERRCNTL	Log external errors to job log?	In	String	Y
STDOUTCNTL	Log external output to job log?	In	String	Y
TARGET_GROUP	SAP target server group name	In	String	
TARGET_HOST	Target host to run the external command	In	String	
TARGET_SERVER	SAP target server name	In	String	
TRACECNTL	Activate external trace?	In	String	N
WAIT_FOR_TERMINATION	Wait for external termination	In	String	Y

## Advanced

By adding the following two parameters, you can make jobs wait on events in SAP:

Parameter	Description	Direction	Data Type
STARTCOND_EVENTID	batch event id	In	String
STARTCOND_EVENTPARM	parameter of the event id	In	String

Note that you have to duplicate the job definition and modify the duplicate.

## SAP\_ExternalProgramRun

### Use

This job definition is used to run external programs in SAP.

### Parameters

Name	Description	Direction	Data Type	Default Expression
CLIENT	SAP client	In/Out	String	
DELETE_JOB	Delete job when finished?	In	String	N
EXT_PROGRAM_NAME	External program name	In	String	
EXT_PROGRAM_PARAMETERS	External program parameters	In	String	
JOBCLASS	SAP job class	In	String	C
JOB COUNT	SAP job count	Out	String	
JOBNAME	SAP job name	In	String	
LANGUAGE	SAP language for the step	In	String	
SAP_SYSTEMS	SAP System	In	String	
SAP_USER_NAME	SAP user name	In	String	

SHOWLOG	Retrieve job log?	In	String	Y
STDERRCNTL	Log external errors to job log?	In	String	Y
STDOUTCNTL	Log external output to job log?	In	String	Y
TARGET_GROUP	SAP target server group name	In	String	
TARGET_HOST	Target host to run the external command	In	String	
TARGET_SERVER	SAP target server name	In	String	
TRACECNTL	Activate external trace?	In	String	N
WAIT_FOR_TERMINATION	Wait for external termination	In	String	Y

## Advanced

By adding the following two parameters, you can make jobs wait on events in SAP:

Parameter	Description	Direction	Data Type
STARTCOND_EVENTID	batch event id	In	String
STARTCOND_EVENTPARAM	parameter of the event id	In	String

Note that you have to duplicate the job definition and modify the duplicate.

## SAP\_GenerateCcmsJobDefinition

### Use

This job definition is used to generate a job definition in SAP CPS based on the job definition in SAP. The job name and job count must match exactly one SAP job (these parameters may **not** contain wildcard characters).

### Parameters

Name	Description	Direction	Data Type	Default Expression
ADD_STEP_NUMBERS	Add step numbers to SAP job names?	In	String	N
APPLICATION	Application	In	String	
CLIENT	SAP client	In	String	
CLIENT_SPECIFIC	Generate job definitions for this client only?	In	String	N
CREATE_JOB-DEFS_FOR_STEPS	Create a job definition for each step?	In	String	N
DELETE_JOB	Delete job when finished?	In	String	N
JOBCOUNT	SAP job count	In	String	
JOBDEF_NAME	Name for the generated job definition	In	String	
JOBNAME	SAP job name	In	String	
OVERWRITE	Overwrite existing job definitions?	In	String	Y

OVERWRITE_LANGUAGE	Force step language	In	String	
OVERWRITE_USER	Force step user	In	String	
SAP_SYSTEMS	SAP System	In	String	
SHOWLOG	Retrieve job log?	In	String	Y
SHOWSPOOL	Retrieve spool list?	In	String	Y

## SAP\_GetBatchResources

### Use

This job definition is used to retrieve the batch resources of an application server of an SAP instance at a given date.

### Parameters

Name	Description	Direction	Data Type
ON_DATE	On date	In	DateTimeZone
SAP_SYSTEMS	SAP System	In	String
TARGET_SERVER	SAP target server name	In	String

## SAP\_GetEventHistory

### Use

This job definition is used to retrieve synchronized batch event history from an SAP System.

### Parameters

Name	Description	Direction	Data Type
FROM_TIMESTAMP	Starting from	In	DateTimeZone
SAP_SYSTEMS	SAP System	In	String

## SAP\_GetInstalledComponents

### Use

This job definition is used to retrieve the list of installed components of an SAP System.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String

## SAP\_GetXmiLog

### Use

Retrieves the XMI log.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
XMI_INTERFACE	XMI interface	In	String
FROM_TIMESTAMP	Start time of the XMI log	In	Date Time Zone
TO_TIMESTAMP	End time of the XMI log	In	Date Time Zone
SESSION_ID	XMI session ID	In	String
OBJECT	Object	In	String

## SAP\_ImportAbapParameterDefinition

### Use

This job imports the parameter definition of an ABAP program.

### Parameters

Name	Description	Data Type	Direction	Default Expression
SAP_SYSTEMS	SAP System	In	String	
ABAP_PROGRAM_NAME	ABAP program	In	String	
ABAP_DEF_OVERWRITE	Overwrite ABAP parameters?	In	String	Y

### More Information

[Importing ABAP Program Parameter Definitions](#)

## SAP\_ImportAbapPrograms

### Use

Import ABAP programs.

### Parameters

Name	Description	Direction	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String	
ABAP_PROGRAM_NAME	ABAP program	In	String	
MAX_COUNT	Max. count	In	Number	

DROP_OLD_SELECTION	Drop old selection?	In	String	Y
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## More Information

[Importing ABAP Programs](#)

## SAP\_ImportApplicationServers

### Use

This is an internal job definition to retrieve the list of application servers in an SAP instance and is mainly used for load balancing. This job definition does not need to be submitted by a user.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String

## SAP\_ImportArchiveObjects

### Use

Imports SAP objects and the document types they support.



#### Note

This job definition requires XBP 3.0 enabled on the target system.

### Parameters

Name	Description	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String
DROP_OLD_SELECTION	Drop old selection?	String	Y

## More Information

[Importing Archive Objects](#)

## SAP\_ImportBatchEvents

### Use

This job definition allows you to import SAP batch events, these values are used to create drop-down menus for event history.



#### Note

XBP 3.0 is required.

## Parameters

Name	Description	Direction	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String	
ABAP_PROGRAM_NAME	ABAP program	In	String	
MAX_COUNT	Max. count	In	Number	
DROP_OLD_SELECTION	Drop old selection?	In	String	Y

## More Information

[Importing Batch Events](#)

## SAP\_ImportCalendars

### Use

Import SAP calendars.

## Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
CALENDAR_TYPE	SAP Calendar type	In	String

## More Information

[Importing Calendars](#)

## SAP\_ImportExternalCommands

### Use

Import external commands.

Name	Description	Direction	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String	
EXT_COMMAND_NAME	External command name	In	String	
OPERATING_SYSTEM	Operating system	In	String	
MAX_COUNT	Max. count	In	Number	
DROP_OLD_SELECTION	Drop old selection?	In	String	Y

## More Information

[Importing External Commands](#)



## SAP\_ImportCcmsJobs

### Use

This job definition is used to import CCMS jobs into SAP CPS. These CCMS jobs can then be scheduled to run through SAP CPS allowing you to use the advanced scheduling features of SAP CPS. The job name and job count parameters may contain wildcard characters. In this case all matching jobs will be imported. This job definition scans the SAP System for jobs matching the parameters and calls SAP\_GenerateCcmsJobDefinition with the job name and job count of the matched jobs, where the actual import of the job happens. Moreover, it does conflict resolution when multiple jobs with the same name are found, it will select the latest job that matches the search criteria.

### Parameters

Name	Description	Direction	Data Type	Default Expression	Default List of Values
SAP_SYSTEMS	SAP System	In	String		
CLIENT	SAP Client	In Out	String		
JOBNAME	SAP Job Name	In	String		
JOBCOUNT	SAP Job Count	In	String		
SAP_USER_NAME	SAP User Name	In	String		
JOB_STATUSES	Job statuses to consider	In	String		
FROM_TIMESTAMP	Starting from	In	Date Time Zone		
CLIENT_SPECIFIC	Generate Job Definitions for This Client Only?	In	String	N	Y,N
TEST_RUN	Test run?	In	String	N	Y,N
JOBDEF_NAME	Name of the Generated Job Definition	In	String		
JOBNAME_GENERATION	When multiple jobs match	In	String	P	P (Prefix job name) F (Fail)
OVERWRITE	Overwrite Existing Job Definitions?	In	String	Y	Y,N
OVERWRITE_LANGUAGE	Force Step Language	In	String		
OVERWRITE_USER	Force Step User	In	String		
APPLICATION	Application	In	String		
CREATE_JOBDEFS_FOR_STEPS	Create a Job Definition for Each Step?	In	String	N	N (Never) A (ABAP) S (Step)
EXTENDED_PRINT_PARAMETERS	Generate Extra Print Parameters?	In	String	N	Y,N
ADD_STEP_NUMBERS	Add Step Numbers to SAP Job Names?	In	String	N	Y,N
SHOWLOG	Retrieve Job Log?	In	String	Y	Y,N

SHOWSPOOL	Retrieve Spool Lists?	In	String	Y	Y,N
SHOWAPPLLOG	Retrieve Application Logs?	In	String	N	Y,N
IGNORE_APPL_RC	Ignore Application Return Code?	In	String	N	Y,N
DELETE_JOB	Delete Job When Finished?	In	String	N	Y,N

## More Information

[Importing SAP CCMS Jobs](#)

## SAP\_ImportCcmsMonitors

### Use

This job definition is used to import CCMS monitors from an SAP System. Once the monitors are imported, they will be automatically fed with values from the SAP CCMS monitoring infrastructure, provided XAL is enabled.

### Parameters

Name	Description	Data Type
MONITOR_NAME	CCMS monitor name	String
MONITOR_SET_NAME	CCMS monitor set name	String
SAP_SYSTEMS	SAP System	String

## SAP\_ImportOutputDevices

### Use

Imports output devices (printers) and the formats they support.



### Note

This job definition requires [XBP 2.0 enabled](#) on the target system.

### Parameters

Name	Description	Data Type	Default Expression
SAP_SYSTEMS	SAP System	String	
OUTPUT_DEVICE	The output device to import	String	*
OUTPUT_DEVICE_LONG	The long name of output device to import(XBP 3.0 only)	String	*
CHANGE_TIME	Change time stamp (XBP 3.0 only)	DateTimeZone	*
DROP_OLD_SELECTION	Drop old selection?	String	Y

## More Information

[Importing Output Devices](#)

## SAP\_ImportRecipients

### Use

This job definition is used to import the list of recipients from an SAP System, and will allow drop-down menus with all available recipients of an SAP System. This helps prevent problems due to human errors, like typos.

### Parameters

Name	Description	Direction	Data Type	Default Expression
CLIENT	SAP client	In	String	
DISTRIBUTION_LIST	Distribution list	In	String	
DROP_OLD_SELECTION	Drop old matching values?	In	String	N
SAP_SYSTEMS	SAP System	In	String	
SAP_USER_NAME	SAP user name	In	String	

## SAP\_ImportVariantDefinition

### Use

Import variants definitions of ABAP programs.

### Parameters

Name	Description	Direction	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String	
CLIENT	SAP client	In	String	
ABAP_PROGRAM_NAME	ABAP program	In	String	
ABAP_VARIANT_NAME	ABAP variant	In	String	
DROP_OLD_SELECTION	Drop old selection?	In	String	Y

### More Information^M

- [Handling Variants](#)
- [Importing Variants](#)
- [Importing Variant Definitions](#)

## SAP\_ImportVariants

### Use

Import variants of ABAP programs.

## Parameters

Name	Description	Direction	Data Type	Default Expression
ABAP_PROGRAM_NAME	ABAP program	In	String	
ABAP_VARIANT_NAME	ABAP variant	In	String	
CLIENT	SAP client	In	String	
DROP_OLD_SELECTION	Drop old matching values?	In	String	Y
IMPORT_DEFINITION	Import variant definition?	In	String	
MAX_COUNT	Max. count	In	Number	
SAP_SYSTEMS	SAP System	In	String	

## More Information

- [Handling Variants](#)
- [Importing Variants](#)
- [Importing Variant Definitions](#)

## SAP\_Info

### Use

This job definition is used to retrieve information about the SAP System, like code-page, version, or list of installed components.

## Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String

## SAP\_InterceptedJob

### Use



#### Note

This job definition is deprecated in favor of *SAP\_CcmsJob*.

This job definition used to represent an SAP batch process that was intercepted in the SAP System. It has now been replaced with *SAP\_CcmsJob* and is not supposed to be scheduled by the user.

## Parameters

Name	Description	Data Type	Default Expression
CLIENT	SAP client	String	

DELETE_JOB	Delete job when finished?	String	N
JOB_COUNT	SAP job count	String	
JOBNAME	SAP job name	String	
SAP_USER_NAME	SAP user name	String	
SHOWLOG	Retrieve job log?	String	Y
SHOWSPOOL	Retrieve spool list?	String	Y

## SAP\_JXBP\_GenerateJobDefinition

### Use

This job definition is used to generate JXBP job definitions inside SAP CPS and does not to be submitted by users.

### Parameters

Name	Description	Direction	Data Type	Default Expression
APPLICATION	Application	In	String	
JOBDEF_NAME	Name for the generated job definition	In	String	
JOBNAME	SAP job name	In	String	
OVERWRITE	Overwrite existing job definitions?	In	String	N
SAP_SYSTEMS	SAP System	In	String	
SYSTEM_SPECIFIC	System specific?	In	String	N
SAP_SYSTEMS	SAP System	In	String	

### More Information

[Importing Java Job Definitions](#)

## SAP\_JXBP\_ImportJobDefinitions

### Use

This job definition allows you to retrieve all JXBP job definitions from the SAP Java Scheduler, these will be available in drop-down menus in SAP CPS.

### Parameters

Name	Description	Direction	Data Type	Default Expression
APPLICATION	Application	In	String	
JOBDEF_NAME	Name for the generated job definition	In	String	
JOBNAME	J2EE job definition	In	String	

OVERWRITE	Overwrite existing job definitions?	In	String	N
SAP_SYSTEMS	SAP System	In	String	
SYSTEM_SPECIFIC	System specific?	In	String	N

## More Information

[Importing Java Job Definitions](#)

## SAP\_MA\_CopyParameters

### Use

This job copies a mass activity parameter record and changes the parameters according to the provided parameter set.

This job definition requires the Redwood transport files to be loaded.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
CLIENT	SAP client	String	
MASS_ACTIVITY	Mass activity	In	String
MASS_ACTIVITY_PARAMETER_SET	Mass activity parameter set	In	String
MASS_ACTIVITY_SOURCE_DATE_ID	Source Date ID	In	Date Time Zone
MASS_ACTIVITY_SOURCE_ID	Source Identification	In	String
MASS_ACTIVITY_TARGET_DATE_ID	Target Date ID	In	Date Time Zone
MASS_ACTIVITY_TARGET_ID	Target Identification	In	String
MASS_ACTIVITY_DATE_SHIFT	Date shift	In	Number

## SAP\_MA\_CreateParameters

### Use

This job creates a mass activity parameter record and changes the parameters according to the provided parameter set.

This job definition requires the Redwood transport files to be loaded.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
CLIENT	SAP client	In/Out	String
MASS_ACTIVITY	Mass activity	In	String
MASS_ACTIVITY_PARAMETER_SET	Mass activity parameter set	In	String

MASS_ACTIVITY_TARGET_DATE_ID	Target Date ID	In	Date Time Zone
MASS_ACTIVITY_TARGET_ID	Target Identification	In	String

## SAP\_MA\_DeleteDunningProposal

### Use

This job deletes a dunning proposal of a new mass activity.

This job definition requires the Redwood transport files to be loaded.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
CLIENT	SAP client	In/Out	String
MASS_ACTIVITY	Mass activity	In	String
MASS_ACTIVITY_DATE_ID	Date ID	In	Date Time Zone
MASS_ACTIVITY_ID	Identification	In	String

## SAP\_MA\_ImportMassActivities

### Use

This job imports SAP mass activity definitions.

This job definition requires the Redwood transport files to be loaded.

### Parameters

Name	Description	Direction	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String	
CLIENT	SAP client	In/Out	String	
DROP_OLD_SELECTION	Drop old matching values?	In	String	N

### More Information

[Importing and Running Mass Activities](#)

## SAP\_MA\_ImportMassActivity

### Use

This job imports an SAP mass activity definition.

This job definition requires the Redwood transport files to be loaded.

## Parameters

Name	Description	Direction	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String	
CLIENT	SAP client	In/Out	String	
MASS_ACTIVITY	Mass activity	In	String	
MASS_ACTIVITY_TCODE	Mass activity transaction code	In	String	
DROP_OLD_SELECTION	Drop old matching values?	In	String	N

## More Information

[Importing and Running Mass Activities](#)

## SAP\_MA\_MassActivityRun

### Use

This job creates a parameter record and starts a mass activity run.

This job definition requires the Redwood transport files to be loaded.

## Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
CLIENT	SAP client	In/Out	String
MASS_ACTIVITY	Mass activity	In	String
MASS_ACTIVITY_PARAMETER_SET	Mass activity parameter set	In	String
MASS_ACTIVITY_DATE_ID	Date ID	In/Out	Date Time Zone
MASS_ACTIVITY_ID	Identification	In/Out	String

## More Information

[Importing and Running Mass Activities](#)

## SAP\_MA\_MassActivityTemplateRun

### Use

This job starts a mass activity run using an existing parameter record.

This job definition requires the Redwood transport files to be loaded.

## Parameters

Name	Description	Direction	Data Type
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SAP_SYSTEMS	SAP System	In	String
CLIENT	SAP client	In/Out	String
MASS_ACTIVITY	Mass activity	In	String
MASS_ACTIVITY_DATE_ID	Date ID	In	Date Time Zone
MASS_ACTIVITY_ID	Identification	In	String

## More Information

[Importing and Running Mass Activities](#)

## SAP\_MA\_ResumeMassActivity

### Use

This job resumes processing of an interrupted SAP mass activity run.

This job definition requires the Redwood transport files to be loaded.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
CLIENT	SAP client	In/Out	String
MASS_ACTIVITY	Mass activity	In	String
MASS_ACTIVITY_DATE_ID	Date ID	In	Date Time Zone
MASS_ACTIVITY_ID	Identification	In	String

## More Information

[Importing and Running Mass Activities](#)

## SAP\_MA\_ShowMassActivity

### Use

This job shows the definition of an SAP mass activity.

This job definition requires the Redwood transport files to be loaded.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
CLIENT	SAP client	In/Out	String
MASS_ACTIVITY	Mass activity	In	String

## SAP\_MA\_StopMassActivity

### Use

This job stops an SAP mass activity run.

This job definition requires the Redwood transport files to be loaded.

### Parameters

Name	Description	Direction	Data Type
SAP_SYSTEMS	SAP System	In	String
CLIENT	SAP client	In/Out	String
MASS_ACTIVITY	Mass activity	In	String
MASS_ACTIVITY_DATE_ID	Date ID	In	Date Time Zone
MASS_ACTIVITY_ID	Identification	In	String

## SAP\_MaintainXbpOptions

### Use

This job maintains XBP options for interception and parent/child functionality.

### Parameters

Name	Description	Direction	Data Type	Default Expression	Default List of Values
SAP_SYSTEMS	SAP System	In	String		
INTERCEPTION_ACTION	Interception action	In	String	R (Show)	R (Show) S (Enable) 3 (Enable with XBP 3.0 features) C (Disable)
PARENTCHILD_ACTION	Parent/Child action	In	String	R (Show)	R (Show) S (Enable) C (Disable)
INTERCEPTION_OPTION	Interception enabled?	Out	String		
PARENTCHILD_OPTION	Parent/Child enabled?	Out	String		

### Values

The job will output the current setting when run with R (Show), change the setting and output the result when you use the other values.

Code	Description
S	Enabled
C	Disabled
3	XBP 3.0 features enabled (valid only for interception)

The output can be found in the out parameters on the job and in the output file. Note that to use the XBP 3.0 features your system needs to have XBP 3.0.

## More Information

- [Understanding the Different XBP Interface Releases](#)
- [Enable XBP 2.0 or 3.0 Functionality](#)
- [Enhanced SAP Interfaces with Redwood Transports](#)

## SAP\_PI\_GetChannelStatus

### Purpose

Retrieves the current status of an SAP XI/PI channel.

### Parameters

Parameter	Description	Direction	Data Type
SAP_SYSTEMS	SAP system	In	String
CHANNEL_NAME	Channel name	In	String
CHANNEL_ID	Channel id	In	String
CHANNEL_STATUS	Channel activation status	Out	String
CHANNEL_STATE	Channel state	Out	String

## SAP\_PI\_ImportChannels

### Purpose

Imports SAP XI/PI channels so you can control the channels from within SAP CPS

### Parameters

Parameter	Description	Direction	Data Type	Default Value
SAP_SYSTEMS	SAP system	In	String	
CHANNEL_NAME	Channel name	In	String	
CHANNEL_SERVICE	Channel service	In	String	
CHANNEL_PARTY	Channel party	In	String	
DROP_OLD_SELECTION	Drop old matching values?	In	String	N

## More Information

[Importing Communication Channels](#)

## SAP\_PI\_StartChannel

### Purpose

Starts an SAP XI/PI channel

### Parameter

Parameter	Description	Direction	Data Type
SAP_SYSTEMS	SAP system	In	String
CHANNEL_NAME	Channel name	In	String
CHANNEL_ID	Channel id	In	String
CHANNEL_STATUS	Channel activation status	Out	String
CHANNEL_STATE	Channel state	Out	String

## SAP\_PI\_StopChannel

### Purpose

Stops an SAP XI/PI channel

### Parameter

Parameter	Description	Direction	Data Type
SAP_SYSTEMS	SAP system	In	String
CHANNEL_NAME	Channel name	In	String
CHANNEL_ID	Channel id	In	String
CHANNEL_STATUS	Channel activation status	Out	String
CHANNEL_STATE	Channel state	Out	String

## SAP\_RaiseEvent

### Use

This job definition is used to raise a batch event in SAP.

### Parameters

Name	Description	Data Type
SAP_SYSTEMS	SAP System	String
EVENT_ID	Event ID	String
EVENT_PARAMETER	Event parameter	String

## SAP\_ReloadApplicationLinks

### Use

This job definition reloads the SAP Application links.

### Parameters

Name	Description	Direction	Data Type	Default Expression
DROP_OLD_SELECTION	Drop old matching values?	In	String	N
SAP_SYSTEMS	SAP System	In	String	

## SAP\_ReleaseInterceptedJobs

### Use

Releases intercepted SAP jobs.

### Parameters

Name	Description	Direction	Data Type
CLIENT	SAP client	In	String
JOBNAME	SAP job name	In	String
SAP_SYSTEMS	SAP System	In	String
SAP_USER_NAME	SAP user name	In	String

## SAP\_RunTemplateJob

### Use

This job definition is used to run a job that exists in SAP by making a copy of this job and running this copy. The original job is not changed. Only jobs with ABAP steps can be run by this job definition.



### Note

Jobs with steps containing external programs or commands require Chargeable version of SAP CPS

### Parameters

Name	Description	Data Type	Default Expression
DELETE_JOB	Delete job when finished?	String	N
FROM_STEP	From step (0, 1 = all steps)	Number	
JOBCOUNT	SAP job count	String	
JOBNAME	SAP job name	String	
SAP_USER_NAME	SAP user name	String	

SHOWLOG	Retrieve job log?	String	Y
SHOWSPOOL	Retrieve spool list?	String	Y
TARGET_GROUP	SAP target group name	String	
TARGET_JOBNAME	SAP target job name	String	
TARGET_SERVER	SAP target application server name	String	

## SAP\_SetXmiAuditLevel

### Use

This job definition lets you manage the audit level of an XMI interface. Valid audit levels are integers ranging from 0 to 3.

### Parameters

Name	Description	Data Type
SAP_SYSTEMS	SAP System	String
AUDIT_LEVEL	Audit level	Number
XMI_INTERFACE	XMI interface	String

## SAP\_SolutionManager\_AbapRun

### Use

Run an ABAP report from SAP Solution Manager.

### Parameters

Name	Description	Direction	Data Type	Default Expression	Default List of Values
SAP_SYSTEMS	SAP System	In	String		
CLIENT	SAP client	In	String		
JOBNAME	SAP job name	In	String		
ABAP_PROGRAM_NAME	ABAP program	In	String		
ABAP_VARIANT_NAME	ABAP variant	In	String		
TEMPORARY_VARIANT	Create temporary variant?	String	N	Y,N	
JOBCLASS	SAP job class	In	String	C	A, B, C
SAP_USER_NAME	SAP user name	In	String		
TARGET_SERVER	SAP target application server name	In	String		
JOBDOCID	Job documentation ID	In	String		

## Reference

PRINT_ARMOD	Print/Archive mode	In	String	1 (Print only)	1 (Print only) 2 (Archive only) 3 (Print and Archive)
PRINT_PDEST	Printer	In	String		
PRINT_PRTXT	Cover sheet title	In	String		
PRINT_PRCOP	# of copies	In	String	1	
PRINT_PRNEW	New spool?	In	String	Y	Y, N
PRINT_PLIST	Spool list name	In	String		
PRINT_PRIMM	Print immediately?	In	String	N	Y, N
PRINT_PRREL	Release print job?	In	String	N	Y, N
PRINT_PEXPI	Expiration in days	In	String	8	0 (Do not Delete)1-8 days
PRINT_LICT	Print lines per page	In	String		
PRINT_LISZ	Print columns per page	In	String		
PRINT_PAART	Print format	In	String		
PRINT_PRBIG	Selection cover sheet?	In	String	N	Y, N
PRINT_PRSAP	SAP cover page?	In	String	D (System Default)	D (System Default)Y (Print)N (Do not print)
PRINT_PPREC	Spool list recipient	In	String		
PRINT_PRABT	Department on cover page	In	String		
PRINT_PRBER	Authority for printing	In	String		
PRINT_PRDSN	Spool dataset name	In	String		
PRINT_PTYPE	Spool type	In	String		
PRINT_FOOTL	Print a footer?	In	String	N	Y, N
PRINT_PRUNX	OS cover sheet?	In	String	D (System Default)	D (System Default)Y (Print)N (Do not print)
ARCHIVE_SAP_OBJECT	Archive SAP object	In	String		
ARCHIVE_AR_OBJECT	Document type	In	String		
ARCHIVE_INFO	Archive info	In	String		
ARCHIVE_ARCTEXT	Archive text information field	In	String		
REC_RECIPIENT	Spool list recipient	In	String		
REC_TYPE	Recipient type	In	String	U (Internet User)	U (Internet User) B (SAP user) O (SAP-Office user) P (Personnel distribution list) C (Shared distribution list) F (Fax number)
REC_COPY	Recipient copy flag	In	String	N	Y, N

REC_BLIND_COPY	Recipient blind copy flag	In	String	N	Y, N
REC_EXPRESS	Recipient express flag	In	String	N	Y, N
REC_NO_FORWARDING	Recipient no forwarding flag	In	String	N	Y, N
REC_NO_PRINT	Recipient no print flag	In	String	N	Y, N
REC_DELIVER	Report send status	In	String	_ (System Default)	_ (System Default) A (Always) E (On error) N (Never)
REC_MAILSTATUS	Report status by e-mail	In	String	_ (System Default)	_ (System Default) A (Always) E (On error) N (Never)
SHOWLOG	Retrieve job log?	In	String	Y	Y, N
SHOWSPOOL	Retrieve spool list?	In	String	Y	Y, N
SHOWSTAT	Retrieve job statistics?	In	String	Y	Y, N
SHOWAPPLLOG	Retrieve application logs?	In	String	Y	Y, N
DELETE_JOB	Delete job when finished?	In	String	N	Y, N

## More Information

[Handling ABAP programs](#)

## SAP\_StoreVariant

### Use

Store a variant of an ABAP program.

### Parameters

Parameter	Description	Data Type	Default Value	Default List of Values
SAP_SYSTEMS	The SAP System	String		
CLIENT	The client of the SAP System	String		
ABAP_PROGRAM_NAME	The variants ABAP program	String		
ABAP_VARIANT_NAME	Variant	String		
WRITE_MODE	The write mode allows you to specify how the job will handle duplicate entries.	String	E (Error) - the job gets the status error, nothing is changed in the SAP System	E (Error) - the job gets the status error, nothing is changed in the SAP System S (Skip) - the variant is skipped R (Replace) - the variant is overwritten with the variant definition from SAP CPS C (Change) - only different parameters are changed, deleted variant parameters will not be removed (recommended)



## SAP\_SynchronizeEventHistoryCriteria

### Use

This job definition is used to synchronize batch event criteria in SAP. This job definition requires XBP 3.0. The *Additional Conditions* parameter allows you to use BNF expressions to create complex expressions, the syntax is as follows:

```
<expr> ::= <term> { OR <term> }
<term> ::= <factor> { AND <factor> }
<factor> ::= [ NOT ] <mask>
<mask> ::= event id mask
```

### Example

In the following example, you include all events in event history which have names (event id's) starting with EventBI or EventBW; you exclude the EventBITest event and all events starting with EventBWtest.

```
not EventBITest and EventBI* or EventBW* and not EventBWtest*
```

### Parameters

Name	Description	Direction	Data Type	Default Expression	Default List of Values
ACTIVATE_RULES	Activate rules after synchronization	In	String	Y	
ADDITIONAL_CONDITIONS	Additional Conditions	In	String		
SAP_SYSTEMS	SAP System	In	String		

## SAP\_SynchronizeInterceptionCriteria

### Use

This job definition synchronizes interception criteria (job control rules) between SAP CPS and SAP. This job definition requires XBP 2.0.

### Parameters

Name	Description	Data Type	Default Expression	Default List of Values
OVERWRITE	Append or overwrite criteria in SAP?	String	A	A (Append) O (Overwrite)
SAP_SYSTEMS	SAP System	String		
SYNC_DIRECTION	Synchronization direction	String	N	N (Show Only) S (SAP -> Scheduler) B (SAP <-> Scheduler) C (Scheduler -> SAP)

## SYNC\_DIRECTION

- Show Only : view option, display current interception criteria as defined in the SAP System as well as job control rules of SAP CPS.
- Scheduler -> SAP: all SAP CPS rules are transferred to SAP and afterwards the SAP table contains the same rules as in SAP CPS.
- With Scheduler <-> SAP: all roles both from SAP CPS and SAP are synchronized. That means the rules of SAP are going into the SAP CPS tables and the rules of SAP CPS are going to the SAP tables. Final result is that both tables are equal with respect to the rule-definitions.
- With SAP -> Scheduler: all SAP rules are transferred to SAP CPS and afterwards the SAP CPS table contain the same rules as in SAP.

## OVERWRITE

Append and Overwrite options only work for syn\_direction SAP CPS -> SAP and SAP CPS <-> SAP.

- Append: keeps the interception criteria that are already in the SAP table intact and adds our rules.
- Overwrite: replaces all interception criteria that might be defined in SAP by our rules.

## SAP\_SynchronizeTerminatedCcmsJobs

### Use

This job definition synchronizes job states between SAP CPS and SAP. Normally, customers will schedule this job definition to run regularly, for example once per day.

### Parameters

Name	Description	Direction	Data Type	Default Expression
SAP_SYSTEMS	SAP System	In	String	
DE-LETE_JOBS_OLDER_THEN	Delete terminated jobs that are older then that number of days	Number		
MAX_ALLOWED_EXCEPTIONS	Max consecutive exceptions allowed	Number		

# Common Logging Categories

## Use

The following list describes the most used categories for tracing:

- `com.redwood.scheduler.action` - Actions and triggers
- `com.redwood.scheduler.alert` - Alerting
- `com.redwood.scheduler.api` - API, RedwoodScript, System and Mail job definition types
- `com.redwood.scheduler.apiint` - API-initialization License and logger
- `com.redwood.scheduler.apissf` - API SchedulerSessionFactory
- `com.redwood.scheduler.audit` - Auditing
- `com.redwood.scheduler.cluster` - Cluster logging
- `com.redwood.scheduler.configuration` - Configuration (registry settings)
- `com.redwood.scheduler.connector` - ERP Connectors
- `com.redwood.scheduler.core` - Core scheduler component
- `com.redwood.scheduler.event` - Events
- `com.redwood.scheduler.file` - Interaction with files
- `com.redwood.scheduler.filters` - Object filters
- `{{com.redwood.scheduler.infrastructure infrastructure`
- `com.redwood.scheduler.iphone` - iPhone interface
- `com.redwood.scheduler.jobchain` - Job chain
- `com.redwood.scheduler.jobchainservice` - Job chain service
- `{{com.redwood.scheduler.jobservice jobservice`
- `{{com.redwood.scheduler.lifecycle lifecycle`
- `com.redwood.scheduler.mail` - Mail module
- `com.redwood.scheduler.model` - Main model
- `com.redwood.scheduler.monitor` - Monitor components
- `com.redwood.scheduler.persistence` - Database persistence
- `com.redwood.scheduler.remote` - Remote API
- `com.redwood.scheduler.script` - Redwood Expression Language
- `{{com.redwood.scheduler.scriptjobservice scriptjobservice`

- `com.redwood.scheduler.security` - security
- `com.redwood.scheduler.shell` - Web-based shell
- `com.redwood.scheduler.standalone` - Standalone server (not clustered)
- `com.redwood.scheduler.statistics` - Job statistics
- `com.redwood.scheduler.support` - Support facility
- `com.redwood.scheduler.supportassist` - SupportAssist
- `com.redwood.scheduler.system` - System objects
- `com.redwood.scheduler.systemjobservice` - Systemjob service
- `com.redwood.scheduler.ui` - User Interface

## JCS Errors

### JCS Errors 101XXX (alert)

CODE	Description
JCS-101000	A loop was detected in a graph
JCS-101001	An invalid schema was detected in an address.
JCS-101002	No gateway was found for the specified address.
JCS-101003	Unable to match an address with a pattern.

### JCS Errors 102XXX (api-impl)

CODE	Description
JCS-102000	An action has vetoed the transaction.
JCS-102001	An application does not belong to the same partition as its parent.
JCS-102002	When a Job is to be automatically submitted due to a JobDefinitionWaitEvent it must have a default Queue.
JCS-102003	The behavior of the object prevents the action being performed.
JCS-102004	An error occurred trying to create a branched-copy for an object.
JCS-102005	The path for a business key is unavailable.
JCS-102006	Jobchain calls must refer to master job definitions if and only if they belong to a master job definition.
JCS-102007	Jobchain calls cannot refer to template job definitions.
JCS-102008	The isolation-group of a partition was changed.
JCS-102009	It is not possible to delete a process server unless it is stopped.
JCS-102010	Only jobs that are steps or calls can be enabled.
JCS-102011	The Custom Library cannot be renamed.
JCS-102012	The in-value of a parameter was changed on a job has started.
JCS-102013	The out-value of a parameter was changed on a job that was already final.

## Reference

JCS-102014	Cannot modify the scheduled start time of a Job once it has already started or if it has already completed.
JCS-102015	Submit frames cannot be changed for maintenance jobs.
JCS-102016	Cannot modify an inbuilt role.
JCS-102017	Only system objects can use system job locks.
JCS-102018	Cannot prepare a non-current job definition.
JCS-102019	Cannot prepare a template job definition.
JCS-102020	The requested action cannot be executed on an object that has not been persisted.
JCS-102021	Cannot submit a job prepared from a non-current job definition.
JCS-102022	The job's parent was modified; this is not allowed.
JCS-102023	Job chain steps cannot be restarted.
JCS-102024	System maintenance jobs cannot be restarted.
JCS-102025	Restricted SAP jobs cannot be restarted.
JCS-102026	Job chain steps cannot be resubmitted.
JCS-102027	System maintenance jobs cannot be resubmitted.
JCS-102028	Restricted SAP jobs cannot be resubmitted.
JCS-102029	The Template property cannot be reverted.
JCS-102030	A job definition that is already used as jobchain call cannot be made a template.
JCS-102031	Calendar type time windows define whole days, so times cannot be set.
JCS-102032	Calendar type time windows define whole days, so time zones cannot be set.
JCS-102033	Cannot use the scheduler session when it is in the detached state.
JCS-102034	The database control connection could not be initialized.
JCS-102035	Creator-grants can only be created at the same time as the object to which they apply.
JCS-102036	An object refers to another object that is in a different isolation group.
JCS-102037	Day shift attributes are only allowed for Calendar type time windows.
JCS-102038	The 'StartAtValue' attribute for a job is not allowed.
JCS-102039	Duplicate ABAP client number combination.
JCS-102040	An "early" timeout has occurred before an operation completed successfully.
JCS-102041	No RFC connect string given.
JCS-102042	No J2EE connect string given.
JCS-102043	Too many XBP clients have been defined.
JCS-102044	Too many J2EE clients of a given type have been defined.
JCS-102045	Too many SAP systems have been defined.
JCS-102046	A job-definition has a forbidden related object.
JCS-102047	An attempt has been made to set a field that must be null.
JCS-102048	A security grant has been made by a subject that is not a user.
JCS-102049	A loop has been detected in a series of objects that must form a hierarchy without any loops.
JCS-102050	Inconsistent object types for matches/overrides of an ImportRule.

## Reference

JCS-102051	A status handler attached to a job chain has an action of IgnoreJobChainDefault.
JCS-102052	The user has tried to do something that they do not have privileges to do.
JCS-102053	The user has been designated as a super reader, and they have tried to call persist. This is not allowed.
JCS-102054	The branch timestamp must be set if (and only if) the object is not the master.
JCS-102055	Users are not allowed to set the RaiserObject or ClearerObject to something else then the current user or a job.
JCS-102056	An event can only be deleted when it is has been cleared.
JCS-102057	The expression cannot be compiled.
JCS-102058	The hold on submit expression is invalid.
JCS-102059	The time window status specified requires a time window.
JCS-102060	The time window status specified requires no time window.
JCS-102061	The specified operation is illegal.
JCS-102062	The specified operation is illegal.
JCS-102063	Transaction vetoed due to license conditions being violated.
JCS-102064	An operation was underway when the thread was interrupted.
JCS-102065	JobDefinitionKeepType is specified and JobDefinitionKeepUnits is not set to job.
JCS-102066	The queue expression is invalid.
JCS-102067	The priority expression is invalid.
JCS-102068	Root exception for reasons a master object reference is invalid.
JCS-102069	An invalid persistence phase was specified.
JCS-102070	Invalid return-code mapping expression.
JCS-102071	The state transition that is trying to be done is not allowed for the current state
JCS-102072	Base class for all exceptions relating to invalid status handlers.
JCS-102073	A global object refers to another object that is isolated.
JCS-102074	An object refers to another object that is not allowed due to isolation.
JCS-102075	Job-files can only be associated with a service if the service supports job-files.
JCS-102076	A job cannot be modified when it has reached a final state status.
JCS-102077	A job finished with an unexpected final status.
JCS-102078	The job is not part of a recurrence group.
JCS-102079	There is no SAP system for this process server.
JCS-102080	Transaction vetoed due to a licensing problem.
JCS-102081	The value provided for the client number was malformed.
JCS-102082	The value provided for the J2EE user name is malformed.
JCS-102083	The process definition to be called on error is invalid.
JCS-102084	A mandatory field is not set.
JCS-102085	A mandatory job parameter was not set.
JCS-102086	Master objects must have themselves as master.
JCS-102087	Minimum value must be smaller then maximum value.

## Reference

JCS-102088	Jobfile component could not be located. All jobfile content is retrieved via this component.
JCS-102089	Specified isolation-group is missing.
JCS-102090	A related object for this type of job definition is missing.
JCS-102091	A reserved job-definition parameter is required but missing.
JCS-102092	Specified user is missing.
JCS-102093	License does not allow model modification.
JCS-102094	Monitored object is does not define a business key.
JCS-102095	Referenced time window must be a Calendar since this time window is a Calendar.
JCS-102096	A job can only be deleted when it is in a final state.
JCS-102097	Non-master objects must refer to the current master.
JCS-102098	No default ABAP client has been defined for the SAP system.
JCS-102099	An attempt was made to update an object, and the corresponding row could not be found in the database.
JCS-102100	An attempt has been made to change a non-modifiable field.
JCS-102101	An attempt has been made to change a non-modifiable object.
JCS-102102	An attempt was made to link a new object to a one to one relationship, but the relationship was already filled.
JCS-102103	Setting the field of an object would introduce an object cycle.
JCS-102104	Olson name of timezone does not match the name.
JCS-102105	The reply to an OperatorMessage was not allowed.
JCS-102106	The ReplyExpression attribute is not a valid regular expression.
JCS-102107	Replies are not allowed for this OperatorMessage.
JCS-102108	The reply to an OperatorMessage is not formatted correctly.
JCS-102109	The reply to an OperatorMessage can only be set once.
JCS-102110	The job chain call has a parameter mapping that refers to a parameter that does not belong to the job definition referred to by the call.
JCS-102111	Baseclass for parameter mapping exceptions
JCS-102112	The target parameter of a JobChainCallOutReferenceParameter must be on the master job chain
JCS-102113	Parameter types of parameter mapping do not match
JCS-102114	Parameter direction of parameter mapping is incorrect
JCS-102115	Order of mapped parameter calls is incorrect
JCS-102116	An attempt is being made to change a partition of an object.
JCS-102117	The parameters are not valid for the period function on a time window element.
JCS-102118	Grant is for a type of object that has no defined privileges.
JCS-102119	Privilege subjects cannot be associated with a specific isolation group.
JCS-102120	Either both or neither of ProcessServer and Service must be specified for job-files.
JCS-102121	The recurrence pattern was changed on a job-group that has no modifiable jobs associated with it.

## Reference

JCS-102122	An exception related to recurrence actions on a job.
JCS-102123	An attempt has been made to set both a Submit Frame and a Recurrence pattern on this Job.
JCS-102124	The value of the registry entry must match the session user.
JCS-102125	Often an operation cannot be performed if an associated object is not visible.
JCS-102126	Root class for problems with related objects of job definitions.
JCS-102127	Base class for problems relating to a reserved job-definition parameters.
JCS-102128	A parameter definition has a reserved name.
JCS-102129	A parameter definition has a reserved name.
JCS-102130	A reserved job-definition parameter has the wrong type.
JCS-102131	Role-grants cannot be modified; they must be deleted and recreated.
JCS-102132	Grantor does not have the role with grantable rights.
JCS-102133	The related ImportRuleDefinition must support matching.
JCS-102134	The related ImportRuleDefinition must support overriding.
JCS-102135	Base class for exceptions relating to the isolation of SAP systems.
JCS-102136	Isolation of an isolated SAP system would be violated.
JCS-102137	SAP system should be isolated but is not.
JCS-102138	An attempt was made to change the scheduling settings on a job that has a recurrence pattern.
JCS-102139	The scheduling parameter evaluated to a queue that does not exist.
JCS-102140	The routing parameter evaluated to a process server that does not exist.
JCS-102141	The routing parameter evaluated to a process server that does not have any queues.
JCS-102142	An error was encountered while evaluating and/or applying a scheduling parameter.
JCS-102143	An error was encountered while evaluating a scheduling parameter.
JCS-102144	Internal error obtaining script engine for expression.
JCS-102145	An attempt was made to call setDirect on a sealed object.
JCS-102146	Custom non-rank privileges require advanced-security.
JCS-102147	Base-class for exceptions relating to security grants.
JCS-102148	Grant created at a level that is not appropriate for the given level.
JCS-102149	Base-class for exceptions relating to security privilege grants.
JCS-102150	Grantor does not have rights to modify the specified privilege.
JCS-102151	The next value in the sequence could not be retrieved for some reason.
JCS-102152	Sequence could not be created and/or initialized for some reason.
JCS-102153	Root class for runtime exceptions related to sequences.
JCS-102154	The ProcessServerService that is being deleted is needed by the ProcessServer to handle a JobDefinitionType that is still defined for the ProcessServer.
JCS-102155	Process server services can only be added or deleted when the process server is not running.
JCS-102156	Operation could not be performed because an object is no longer current.
JCS-102157	A status handler has an attribute that is forbidden for the given handler action.



## Reference

JCS-102158	A status handler is missing a required attribute for the given handler action.
JCS-102159	The string provided for the given field is too long.
JCS-102160	A security grant has been given to a subject that cannot receive grants.
JCS-102161	A timeout expired before an operation completed successfully.
JCS-102162	Too many default ABAP client have been defined for the SAP system.
JCS-102163	Job must be assigned to a process-server.
JCS-102164	More than one object shares the same sequence number.
JCS-102165	Job cannot be restarted for some unknown reason.
JCS-102166	Job cannot be resubmitted for some unknown reason.
JCS-102167	Transaction vetoed due to a feature not being licensed.
JCS-102168	Transaction vetoed due to neither of two features being licensed.
JCS-102169	The value provided for the given field is not contained in the list of values for this field./
JCS-102170	The value provided for the given field is too large./
JCS-102171	The value provided for the given field is too small
JCS-102172	A forbidden value field for this parameter has been set.
JCS-102173	A forbidden value field for this parameter type has been set.
JCS-102174	A forbidden value field for this parameter direction has been set.
JCS-102175	Only chained jobs can be disabled.
JCS-102176	Holding a job in is forbidden based on its current status.
JCS-102177	Killing of jobs that are jobchain steps is not possible.
JCS-102178	Only executing jobs can be killed.
JCS-102179	Olson name is not known to system.
JCS-102180	Name of timezone matches another timezone's Olson name.
JCS-102181	Mandatory job parameter for call missing mapping.
JCS-102182	Job actions are not licensed.
JCS-102183	Invalid action source.
JCS-102184	The behavior of the object prevents the action being performed.
JCS-102185	The table must have a mandatory column called Key
JCS-102186	The specified column for this table is not nullable
JCS-102187	The specified column for this table is a number
JCS-102188	The specified column for this table is a date
JCS-102189	The specified column is not allowed for this table
JCS-102190	Data is required for a simple constraint.
JCS-102191	Data is required for a simple constraint.
JCS-102192	Renaming of the object is not permitted when attached to a SAP system.
JCS-102193	A BeforeDefinitionChange Trigger has vetoed the transaction.
JCS-102194	Compilation failed.
JCS-102195	An unexpected compiler exception occurred.
JCS-102196	Match compilation failed.

Reference

JCS-102197	Persist not allowed.
JCS-102198	Two fields are set that conflict with each other.
JCS-102199	The specified audit level is not allowed for this object type
JCS-102200	ReportColumn Object Definition does not match the ObjectDefinition of the Report.
JCS-102201	Exception for when the overdue action (change status, raise event) is invalid. Either an status or an event to raise must be defined.
JCS-102202	The check on the RELEntryPoint has failed .
JCS-102203	Simple constraints cannot be applied to this data type.
JCS-102204	The Object Definition for the Audited object was not defined.
JCS-102205	The System Process Server cannot be a Process Server resource.
JCS-102206	Invalid method signature for RELEntryPoint.
JCS-102207	Attribute on a time window element is out of bounds and does not match the special value for "last".
JCS-102208	Isolation group creation prevented by license.
JCS-102209	Maximum number of retries for branching the job definition was exceeded.
JCS-102210	File component could not be located. All file content is retrieved via this component.
JCS-102211	The transaction has been vetoed because it contains a non-unique order value.
JCS-102212	An isolated SAP system can't be created in the GLOBAL partition.
JCS-102213	An isolated SAP system can't be created because two or more clients defined for this SAP system.
JCS-102214	An isolated SAP system can't be created because non-standard services exists in the current configuration.
JCS-102215	Job chain calls may not have a submit frame.
JCS-102216	Job chain calls may not have a recurrence.
JCS-102217	Job chain calls may not have a recurrence.
JCS-102218	An isolated SAP system can't be created another SAP system is already found in this isolation group.
JCS-102219	The value provided for the client interface version was malformed.
JCS-102220	The field that the user tried to change is restricted.
JCS-102221	The detail that the user tried to change is restricted.
JCS-102222	Query Filter Simple constraints can only be applied to the String data type.
JCS-102223	An attempt was made to save an object into a different isolation group than the one that the user is currently logged in with.
JCS-102224	A step or call can only be deleted when its parent is in a final state.
JCS-102225	A step or call can only be deleted when its parent can be deleted.
JCS-102226	An attempt was made to delete the inbuilt custom library.
JCS-102227	A wrapped job can only de deleted if the corresponding wrapped job can be seen.
JCS-102228	A wrapped job can only de deleted if the corresponding wrapped job can be deleted.

JCS-102200	An attempt was made to store an object in the database that would have violated uniqueness constraints.
JCS-102201	An attempt was made to delete an object that is still in use by another object.
JCS-102260	Wrapper for ForeignKeyViolationVetoWrapperExceptions.

## JCS Errors 103XXX (api-int)

CODE	Description
JCS-103000	An action was performed on an object that is not possible.
JCS-103001	This indicates that an error has occurred while trying to perform a query.
JCS-103002	Cancellation of jobs that are jobchain steps is not allowed.
JCS-103003	Jobs can only be canceled prior to execution.
JCS-103004	A request was made for a file from a job, and the file with the required name did not exist.
JCS-103005	Root exception for reasons a job parameter is invalid.
JCS-103006	A request was made for a file from a job, and the file with the required name did not exist.
JCS-103007	A request was made for a job, however the job did not exist.
JCS-103008	An exception occurred with a parameter.
JCS-103009	An error was encountered while retrieving a parameter mapping value.
JCS-103010	A parameter was not found.
JCS-103011	No value was specified for a required parameter.
JCS-103012	No value was specified for a required parameter.
JCS-103013	An invalid value was specified for a parameter.
JCS-103014	The parameter contains invalid substitution variables.
JCS-103015	Restarting this job is prohibited.
JCS-103016	Resubmitting this job is prohibited.
JCS-103017	Checker implementation expects key of a specific type.
JCS-103018	You cannot delete your own isolation group.
JCS-103019	The current user has no isolation group.

## JCS Errors 104XXX (api)

CODE	Description
JCS-104000	A communal scheduler session factory has not been published yet.
JCS-104001	An exception was thrown while processing the callback.
JCS-104002	Base class for exceptions relating to exporting objects.
JCS-104003	Unable to search job file because of a permanent remote exception.
JCS-104004	Search failed for a some reason.
JCS-104005	Unable to search job file because of a remote exception.
JCS-104006	Remote login failed.
JCS-104007	Unable to list directory because of a permanent remote exception.

JCS-104008	List directory for some reason.
JCS-104009	Unable to list directory because of a remote exception.
JCS-104010	The specified reply was invalid.

## JCS Errors 105XXX (as400)

CODE	Description
JCS-105000	AS400 connection exception.
JCS-105001	AS/400 security violation exception.
JCS-105002	AS/400 job failed exception.
JCS-105003	AS/400 invalid parameter exception.
JCS-105004	AS/400 event exception.

## JCS Errors 106XXX (audit)

CODE	Description
JCS-106000	The transaction requires a reason to be defined to explain the modification.

## JCS Errors 107XXX (cl-api)

CODE	Description
JCS-107000	Duplicate component registration exception.
JCS-107001	Registration currently forbidden.
JCS-107002	The component manager is currently unavailable. This is normally a temporary problem.
JCS-107003	A communal scheduler session factory has not been published yet.

## JCS Errors 108XXX (cl-impl)

CODE	Description
JCS-108000	Registration of a component was attempted after the component lifecycle commenced.
JCS-108001	JNDI bindings failed.
JCS-108002	No backend could retrieve the jobfile; all backends reported a permanent failure.
JCS-108003	No backend could retrieve the jobfile, but at least one backend reported a transient failure. This indicates that the same request might succeed in the future.
JCS-108004	An IO exception occurred accessing a local file.
JCS-108005	An IO exception occurred accessing a jobfile.
JCS-108006	An IO exception occurred accessing a local file.
JCS-108007	An IO exception occurred accessing a file.
JCS-108008	No backend could retrieve the file; all backends reported a permanent failure.
JCS-108009	No backend could retrieve the file, but at least one backend reported a transient failure. This indicates that the same request might succeed in the future.

JCS-108010	The Scheduler has not been configured and has no JNDI configuration.
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## JCS Errors 109XXX (cluster)

CODE	Description
JCS-109000	This exception is thrown when a JNDI lookup succeeds, but the object returned is not of the expected type.
JCS-109001	Lookup of an object returned null.

## JCS Errors 110XXX (configuration)

CODE	Description
JCS-110000	Base class for all configuration-related checked exceptions.
JCS-110001	Base class for all configuration-related unchecked exceptions.
JCS-110002	This is the root exception for all problems relating to a configuration entry.
JCS-110003	This is the root exception for all problems relating to a configuration entry that should have been detected earlier.
JCS-110004	This is the root exception for all problems relating to the value of a configuration entry.
JCS-110005	Missing configuration entry.
JCS-110006	Configuration entry should be a number, but does not appear to be.
JCS-110007	Value of configuration entry is not within the acceptable range.
JCS-110008	Value of configuration entry is too high.
JCS-110009	Value of configuration entry is too low.
JCS-110010	Class given for configuration value cannot be loaded.
JCS-110011	Class given for configuration value does not inherit from the correct type.
JCS-110012	Value of configuration entry is not in allowed list.
JCS-110013	Value of boolean entry is invalid.
JCS-110014	Configuration is not an enumeration, but was accessed as one.
JCS-110015	Value of configuration entry is too long.

## JCS Errors 111XXX (core)

CODE	Description
JCS-111000	Problem with service class.
JCS-111001	Service class could not be located.
JCS-111002	Service class could not be instantiated.
JCS-111003	A running instance of expected service could not be located.
JCS-111004	A job is submitted on a Queue that has no ProcessServer that provides Resource, JobDefinitionType and Service that are required to run the Job.
JCS-111005	One of the handler services has received a message type that it does not know how to handle.

JCS-111006	The Job Router does not know about an object that the Job is trying to route onto.
JCS-111007	The process server has no services.
JCS-111008	The Job Router could not load a required related object from the database.

## JCS Errors 112XXX (db-init)

CODE	Description
JCS-112000	The system can not run the system job because the user does not have the appropriate privileges.
JCS-112001	The system_isolation_setuser job could not find the user in the database.
JCS-112002	The system can not run the system_isolation_setuser job because the registry entry could not be found.
JCS-112003	An application could not be located.
JCS-112004	An export rule-set could not be located.
JCS-112005	An expected input job-file could not be found.
JCS-112006	An object that needs to be upgraded could not be found.
JCS-112007	A system job definition could not be located.
JCS-112008	An error occurred ensuring that the object and field definitions are initialized correctly.
JCS-112009	A field definition already exists but is a reference to the wrong type of object.
JCS-112010	A field definition already exists but is of the wrong type.
JCS-112011	An definition is required, but was marked for deletion.
JCS-112012	This is a special exception, that will only be thrown by the db-init component, and only during the configure phase.
JCS-112013	This exception indicates that one of the epoch initializers has failed.
JCS-112014	Existing object definitions were found that should not be present.
JCS-112015	Existing object field definitions were found that should not be present.
JCS-112016	An object related to a job-definition has been encountered but is not handled.
JCS-112017	An import cannot complete due to unresolved references.
JCS-112018	The wrong number of objects was found.
JCS-112019	An invalid mode was specified for the upgrade job.
JCS-112020	Not all job-files were cleanly deleted.
JCS-112021	An import rule-set was specified that could not be located.
JCS-112022	An object that needs to be upgraded could not be found.
JCS-112023	Base exception class for all Schema Initialization exceptions.
JCS-112024	The database schema could not be located in the database and the system is not configured to perform self initialization.
JCS-112025	An exception occurred when trying to upgrade the database schema.
JCS-112026	The Open SQL schema is out of date. The Schema Initialization component will never automatically update OpenSQL databases.
JCS-112027	The database schema is out of date and the scheduler is not configured to self-upgrade.

## JCS Errors 113XXX (export)

CODE	Description
JCS-113000	A model reference cannot be read because it defines no business key.
JCS-113001	Relation {0} on {1} refers to {5}, which defines no business key.
JCS-113002	Reading was attempted for a type of object where this is not supported.
JCS-113003	Writing was attempted for a type of object where this is not supported.
JCS-113004	An unknown field was set for this type of object.
JCS-113005	The parent field could not be set using the supplied business key.
JCS-113006	The field could not be set using the supplied value.
JCS-113007	The field could not be set using the supplied value.
JCS-113008	A nested object of the given type is not known.
JCS-113009	Business key not for expected type of object.
JCS-113010	An object with the same business key is already registered.
JCS-113011	Resolving a business key failed for some reason.
JCS-113012	The object corresponding to this business key does not exist.
JCS-113013	The object for this business-key cannot be resolved without first resolving other objects, but they in turn depend require this business-key.
JCS-113014	An unknown error occurred during archival.
JCS-113015	An attempt was made to export an object where this is not supported.
JCS-113016	An attempt was made to archive an object that does not define a business key.
JCS-113017	Base class for exceptions relating to importing objects.
JCS-113018	An exception occurred while trying to parse the import source.
JCS-113019	An import was performed, but no object was defined in the process.
JCS-113020	A written object does not have the business key it was declared to have.
JCS-113021	A object being created does not match the type of its declared business key.
JCS-113022	An object being created should replace an existing object, but the existing object could not be loaded.
JCS-113023	An object is being replaced by the model writer, but has a different parent to the existing object.
JCS-113024	An override was applied to an object of the wrong type.
JCS-113025	An override was applied to a job definition that has no script.
JCS-113026	An override was applied with a null value for a RuleDefinition that needs this value.
JCS-113027	An parameter override was applied where a parameter with the supplied name could not be found on the object.
JCS-113028	An import action failed to execute when run as part of the override clauses.
JCS-113029	An object was used, but it needs to be defined in the same session.
JCS-113030	Two parent objects maintain the same collection as nested objects but are not consistent.
JCS-113050	Multiple keys could not be found during an import.

## JCS Errors 114XXX (infrastructure)

CODE	Description
JCS-114000	Root exception for all exceptions where the request cannot be understood.
JCS-114001	A portion of the URL is malformed and cannot be parsed.
JCS-114002	The value of a component in the URL cannot be parsed.
JCS-114003	Request is missing information.
JCS-114004	Request is empty; did not contain any information.
JCS-114005	A component was encountered that was not expected; either it's not allowed, or is a duplicate.
JCS-114006	A character encoding was missing from the JVM.
JCS-114007	A problem occurred relating to locating and reading the initial translation data.
JCS-114008	Translation data for the given language could not be location.
JCS-114009	Translation data for the given language could not be read.
JCS-114010	An exception occurred during XML serialization.
JCS-114011	Contents of SLIM file are invalid.
JCS-114012	A specified key in a SLIM file is not allowed.
JCS-114013	A zero-length (empty) SLIM key was encountered.
JCS-114014	Translation text is invalid.
JCS-114015	Incomplete escape-sequence encountered at the end of translation text.
JCS-114016	Invalid escape-sequence encountered in translation text.
JCS-114017	The JNDIComponent has not be initialized and JNDILookup's cannot be performed.
JCS-114018	General secure-storage exception.

## JCS Errors 115XXX (jobchainservice)

CODE	Description
JCS-115000	A new iteration of a step could not be created.

## JCS Errors 116XXX (jobservice)

CODE	Description
JCS-116000	A platform agent could not be initialized because its already in use by another process-server..
JCS-116001	The Job Runner could not be instantiated for some reason.
JCS-116002	The Job Runner has had an error when executing the job.
JCS-116003	An error occurred while processing the process server parameters while starting the service.
JCS-116004	The Job Runner could not create an output file
JCS-116005	An error occurred during auto update
JCS-116006	The latest version of the installer for the platform could not be found.



JCS-116007	The platform agent is not configured for, or does not support, auto update.
JCS-116008	The platform agent update failed.
JCS-116009	The platform agent restart failed.
JCS-116010	The platform agent returned an HTTP response code indicating failure.
JCS-116011	Failed to connect to platform agent; the network returned an error.
JCS-116012	Failed to connect to platform agent; the network returned an error. The message is classified as transient (we hope it will go away the next time).

## JCS Errors 117XXX (mailservice-api)

CODE	Description
JCS-117000	mail invalid parameter exception.
JCS-117001	No mail server defined.

## JCS Errors 118XXX (security)

CODE	Description
JCS-118000	Cannot instantiate any HTTP authentication provider.
JCS-118001	Security exception
JCS-118002	Exception creating a user
JCS-118003	Exception creating a user
JCS-118004	Exception importing security
JCS-118005	Exception importing a user
JCS-118006	Exception creating a role
JCS-118007	Exception creating a role
JCS-118008	Exception importing a role
JCS-118009	No such isolation group exception
JCS-118010	Invalid SystemId

## JCS Errors 119XXX (servlet)

CODE	Description
JCS-119000	Root exception for all reasons a jobfile cannot be located.
JCS-119001	There is no known job-file that has the given unique identifier.
JCS-119002	There is no known log-file for a Trigger that has the given unique identifier.
JCS-119003	There is no known Trigger that has the given unique identifier.
JCS-119004	There is no known job that has the given identifier.
JCS-119005	There is no job-file from a job with the given file-number.
JCS-119006	The specified object cannot be located.
JCS-119007	A session could not be created because a user could not be associated with it.

## JCS Errors 120XXX (ui)

CODE	Description
JCS-120000	Base class for UIExceptions.
JCS-120001	Base class for concurrent update exceptions.
JCS-120002	The requested object is no longer available, it has either been deleted or the security settings prevent viewing the object.
JCS-120003	Illegal type of the requested object.
JCS-120004	The linked object is no longer available, it has either been deleted or the security settings prevent viewing the object.
JCS-120005	A mandatory field is not being set.
JCS-120006	The object that needs to be updated has been modified by another user.
JCS-120007	The object that needs to be acted upon does not have the named action.
JCS-120008	The data could not be decoded to the desired type.

## JCS Errors 121XXX (module-r2w)

CODE	Description
JCS-121000	The configuration could not be found to contact the watcher.

## JCS Errors 122XXX (agent-api)

CODE	Description
JCS-122000	Root exception for all exceptions where the request cannot be understood.
JCS-122001	The call is not supported.

## JCS Errors 122XXX (model)

CODE	Description
JCS-122000	While trying to submit a job one of the constraints has been violated.
JCS-122001	A day has been entered that is out of the specified allowed range.
JCS-122002	The dirty list on the session is not empty, therefore the requested operation cannot be completed
JCS-122003	The database is in an inconsistent state since a duplicate primary key was found.
JCS-122004	Exceptions derived from here indicate a failure to retrieve the file content that is likely permanent in nature.
JCS-122005	Exceptions derived from here indicate a failure to retrieve the file content that is likely transient in nature; a retry may succeed.
JCS-122006	A user that has been marked as inactive cannot login.
JCS-122007	An attempt was made to create more objects than the license allows.
JCS-122008	The value for the given key is not valid.
JCS-122009	The name of the object is invalid

Reference

JCS-122010	An operation has been attempted that requires that the Job has a parent, but it does not.
JCS-122011	Exceptions derived from here indicate a failure to retrieve the jobfile that is likely permanent in nature.
JCS-122012	Exceptions derived from here indicate a failure to retrieve the jobfile that is likely transient in nature; a retry may succeed.
JCS-122013	Exceptions derived from here indicate a license violation
JCS-122014	Exceptions derived from here indicate a failure to retrieve the directory content that is likely permanent in nature.
JCS-122015	Exceptions derived from here indicate a failure to retrieve the directory content that is likely transient in nature; a retry may succeed.
JCS-122016	Only clean JobDefinitions can be prepared. This exception will be thrown when prepare has been called on a JobDefinition that has been modified since being retrieved from the database, or that has not yet been persisted to the database.
JCS-122017	No timezone could be found to calculate this TimeWindowElement. This means that the object that includes the TimeWindow should set the TimeZone to use for the calculation of the TimeWindow, or a TimeZone must be set on the TimeWindow or TimeWindowElement.
JCS-122018	The object could not be created since it would violate the object constraints.
JCS-122019	The object has been marked for deletion, no operations are allowed on the object anymore.
JCS-122020	The object is already on the dirtylist in another subsession.
JCS-122021	The object is not attached to a session, and cannot be used anymore.
JCS-122022	The object used for assignment is not from the same session as the object it is being assigned to
JCS-122023	An import override rule could not be applied to an object.
JCS-122024	A Parameter was set, but using the wrong type of data.
JCS-122025	An error was encountered while evaluating a default parameter value.
JCS-122026	An attempt has been made to raise an event that has isPendingEventsAllowed==false, and the event is already raised.
JCS-122027	Internal error in a period function.
JCS-122028	Period functions should implement the PeriodFunctionCalculator interface.
JCS-122029	Unable to configure and/or retrieve a low-level persistence factory.
JCS-122030	Error during computing recurrence.
JCS-122031	Error in the recurrence pattern.
JCS-122032	An error was encountered while evaluating the return-code mapping.
JCS-122033	Baseclass for checked exceptions thrown by the API.
JCS-122034	Unable to persist.
JCS-122035	Invalid string literal.
JCS-122036	The string passed in does not represent a valid ObjectType.
JCS-122037	Invalid enumeration value.
JCS-122038	The persist call did not update any rows in the database.
JCS-122039	Unable to persist.
JCS-122040	An exception occurred during the execution of a persistence layer method.

JCS-122041	Baseclass for unchecked exceptions thrown by the API.
JCS-122042	The scheduler API is currently unavailable. This is normally a temporary problem.
JCS-122043	An error has occurred while trying to configure a Scheduler component.
JCS-122044	An error was encountered while evaluating and/or applying a scheduling parameter.
JCS-122045	An error was encountered while evaluating and/or applying a scheduling parameter.
JCS-122046	An error occurred calculating the opening or closing of a time window.
JCS-122047	Attribute on a time window element is out of bounds.
JCS-122048	CalculateNextClose should only be called on an open time window.
JCS-122049	Time window {0} cannot be called with a NULL opening time.
JCS-122050	An attempt was made to use an unlicensed feature.
JCS-122051	The object that was passed in is of an incorrect type.
JCS-122052	The report generation failed.
JCS-122053	ProcessServers can never have multiple browsable ProcessServerServices.

## JCS Errors 123XXX (persistence)

CODE	Description
JCS-123100	An attempt was made to update an object, however it failed, either because the object has been deleted, or because it has been previously modified.
JCS-123101	An error was encountered while trying to parse the SQL statement.

## JCS Errors 124XXX (script-java)

CODE	Description
JCS-124000	Validation of the RELEntryPoint failed because the method signature or class could not be found.
JCS-124001	Classes must extend the predefined Stub class where the Stub class is the name of the class with Stub appended to it.
JCS-124002	Classes must extend the predefined Stub class where the Stub class is the name of the class with Stub appended to it.
JCS-124003	The source cannot define an abstract class.
JCS-124004	No source has been defined.
JCS-124005	The import definition in the source is not valid.
JCS-124006	Source has not been correctly started. It must start with a {, import or package statement.
JCS-124007	Importing or accessing classes is restricted to a predefined safe list of classes.
JCS-124008	Importing or accessing classes is restricted to a predefined safe list of classes.
JCS-124009	Line number mapping failed with a duplicate end token.
JCS-124010	Line number mapping failed with unended token.
JCS-124011	Line number mapping is not allowed.
JCS-124012	Line number mapping is not open.

JCS-124013	Line number mapping failed with a end token that does not match the range description.
JCS-124014	No class has been defined in the source
JCS-124015	Source has not be correctly terminated. It must end with a }.

## JCS Errors 125XXX (constraint)

CODE	Description
JCS-125000	An attempt was made to submit a job where the parameter was longer than allowed.

## JCS Errors 126XXX (iphone)

CODE	Description
JCS-126000	The reply for an operator message was not in the expected format.
JCS-126001	An IO error occurred while receiving the reply for an operator message.
JCS-126002	The intended reply for an operator message could not be determined.
JCS-126003	A push subscription could not be found.

## JCS Errors 130XXX (apns)

CODE	Description
JCS-130000	The APNS proxy returned an error.
JCS-130001	The APNS proxy reported that push notifications are disabled for a subscription ID.
JCS-130002	Could not locate key-store with certificate to contact APNS proxy.

## JCS Errors 131XXX (dblayer-sql)

CODE	Description
JCS-131000	Failed to upgrade the database. The upgrade operation is not supported.

# Glossary

## Use

### A

#### ABAP [SAP]

ABAP is a programming language that the SAP R/3 software and later most other software by SAP AG was written in.

## **ABAP program [SAP]**

A program written in the ABAP language.

## **Application**

An object used to group objects like job definitions and job chains.

## **AS/400 [IBM]**

In SAP CPS the older names AS/400 and OS/400 are used to refer to the hardware and operating system as these are the names that have been in use longest. There are at least two other names for the machine:

- From 2000-2004 the machine was known as the IBM eServer iSeries (generally abbreviated as iSeries).
- Since 2004 the machine has been known as the IBM i5 and the operating system as i5/OS.

## **B**

### **Batch Input Sessions [SAP]**

A special SAP job that processes incoming data. A directory is designated in SAP as the Batch Input Folder. Applications can send data, in a special SAP format called iDocs, to the SAP System by placing the files in this directory. The ABAP program RSBDCSUB reads the batch input folder and submits a new SAP job for every file it finds.

## **C**

### **CCMS [SAP]**

The SAP Computer Center Management System (CCMS) is part of an SAP solution that provides common functionality such as user management, monitoring and background jobs.

### **CCMS Job [SAP]**

A background request in CCMS for the execution of one or more ABAP programs and/or repeating system commands.

### **CEN [SAP]**

The SAP monitoring architecture assumes that a system in your system landscape is the central monitoring system (CEN). The monitoring information for your system landscape is collected by this system and displayed in the Structure Alert Monitor.

### **Client [SAP]**

In SAP terminology, a self contained unit in an R/3 system with separate master records and its own set of tables. An SAP Mandanten identified by a 3 digit (numeric) field in SAP CPS.

## **Constraints**

Constraints are conditions that parameters must fulfill.

## Context Menu

A list of context sensitive actions that appears by right-clicking. Also called pop-up menus, speed menus, quick menus or shortcut menus.

## E

### EAR

Enterprise Application Archive. A file that contains a Web-based application. An EAR file is an archive of MIME type "application/zip" and can be extracted with any pack program. It always contains a file in which all of the components belonging to the archive are described. Further applications are necessary to enable the correct implementation of the applications contained in the archive after extraction.

## Endpoint

An endpoint is a device that is connected as part of a computer network.

## Event

Jobs can wait for one or more events to happen before they start. SAP CPS has two types of events: job events (raised by jobs having specific job statuses or return codes) and file events (raised by files that are created or modified on the operating system). File events require the Platform Agent Module, please check your [license](#).

## F

### Format

A format can be assigned to a job definition. The format defines the type of output that the job generates or captures.

## G H I

### GRMG [SAP]

You can use the Generic Request and Message Generator (GRMG) to monitor the availability of technical components and entire business processes. GRMG is suitable both for technical monitoring and for application monitoring.

### i5/OS [IBM]

see AS/400

### Instance [SAP]

An administrative unit that groups components of an SAP System. The SAP System identification.

### iSeries [IBM]

see AS/400

## Isolation Group

Isolation groups are used to isolate objects from specific users. Some users can access all isolation groups while others can only access one or more; this is controlled with roles. In the Free of Charge version, isolation groups isolate SAP client/instance combinations from each other allowing you to interact with only one at any given time.

## J

### Job

A job is a job definition that is submitted to the process server. When users request the execution of a script, a process server creates a job record in the jobs table, calculates the start time and set the job status to SCHEDULED.

### Job Chain

A job chain is a special job definition that has no command text and executes one or more job definitions (job chain jobs) in parallel or sequentially. The job chain jobs are grouped into steps. All job chain jobs in one step are executed directly (parallel processing) and process server waits until all job chain jobs get a final job status before proceeding with a next step (sequential processing).

### Job Count [SAP]

A job count is a number that represents the id of a job in an SAP System. It is sometimes referred to as *Job Id* in some SAP Systems.

### Job Definition

A job definition defines a process to be executed by the process server. A job definition consists of the command text to be executed and several runtime and scheduling controls.

### Job Execution

SAP CPS determines when a job can be run according to the specified start date, time window, and so on. A job is executed in a queue. When the start time arrives, the process server creates a runner and executes the job.

### Job Id [SAP]

A job id is a number that represents the id of a job in an SAP System. It is sometimes referred to as **Job Count** in some SAP Systems. There is also a job id in SAP CPS, which is SAP CPS specific and is the *unique* identifier of a job in an instance of SAP CPS.

### Job Status

Indicates the current condition of a job, such as Scheduled, Never, Queued, Hold, QueueHold, Overdue, EventWait, LockWait, Running, Completed, Console, Waiting, Deleting, Error, Canceled, or Killed.

### JXBP

Java External Background Processing is an interface to the JAVA stack of an SAP NetWeaver AS. It offers scheduling capabilities for Message-Driven Beans.



## **K**

### **Keep Clause**

The conditions used to determine how many versions of the job output should be kept.

### **Keep Until**

Keep Until is used to specify how long trace files for a specific process server should be kept. The process server checks every 15 minutes for trace files that should be deleted.

## **L**

### **Lock**

Locks are used to make sure that specific job definitions do not run concurrently. You can add multiple locks to a job definition to define which jobs can and cannot run together.

## **M**

### **Mass Activities [SAP]**

A special set of SAP transactions are used to define mass activities. A mass activity run results in a moderate number of jobs can be processed in parallel. This allows good resource usage of large computer systems with multiple CPUs, but avoids the large overheads of too many jobs.

### **Module**

SAP CPS provides a number of ERP interfaces, utilities and systems tools. These are called Modules.

### **MVS [IBM]**

See z/OS.

## **N O**

### **Node**

A node is a device that is connected as part of a computer network. A monitor node is an element of the monitor tree. A leaf node in the monitor tree is a node that does not have any children.

### **OS/390 [IBM]**

See z/OS.

### **OS/400 [IBM]**

See AS/400.

## P Q

### PI [SAP]

The PI interface allows you to connect to NetWeaver AS Java systems and control communication channels.

### Precondition Functions

A precondition is a Boolean Redwood Expression Language function stored in the repository. If the outcome of the function evaluates to `true`, SAP CPS proceeds with the step or job chain job; if the outcome evaluates to `null` or `false`, SAP CPS skips the step or job chain job and sets the job status to `Skipped`.

### Process Chain

A sequence of processes that are scheduled in the background to wait for a particular event. Some of these processes trigger an additional event, which in turn can start other processes.

### Process Server

Process servers are used to execute jobs.

### Queue

Jobs are executed in queues. A queue can be open or held. While a queue is held, no new jobs are started in the queue.

## R

### Recurrence

Recurrence is used to request multiple executions of a script. There are two types of job recurrence, structured recurrence and calendar recurrence. Structured recurrence is based on a pattern, and calendar recurrence is based on calendar dates.

### Rescheduling

Restarting any job that has a final status (such as `Completed`, `Error`, or `Canceled`) or changing the properties of a scheduled or queued job (such as its start time).

### Resource

A process server provides one or more resources, such as an Oracle database, an HP LaserJet printer, or a Windows environment. By assigning these resources to the job definition definitions, all jobs for these job definitions are executed by the appropriate process servers.

## S

### SCH [SAP]

The Business Information Warehouse - Job Scheduling (BW-SCH) interface allows other systems to schedule Process Chains and InfoPackages in SAP BW.

## Scheduler

The scheduler is used to refer to the SAP CPS server, usually as *Central Scheduler*.

## Scheduling Parameters

A job definition contains a queue, status on submit, and priority. These scheduling parameters define how the process server handles jobs after they are submitted.

## Submit Frame

A submit frame is a cyclic calendar which forces a job to be executed respectively. When job definition execution is requested and a submit frame is used, the corresponding job will be restarted automatically by a process server according to the frequency defined in the submit frame.

## T

### Time Window

A time window defines a time zone in which the job is allowed to be executed. A job calendar that defines the period of time during which a job or a queue can be active. A time window consists of time intervals with either fixed run dates and times or rules such as the first working day of the month, or a combination of run dates and times, and rules. A time window is open whenever one of the time elements of this time window is open.

### Time Zones

Time zones are areas of the Earth that have adopted the same standard time. All time zones are defined relative to Coordinated Universal Time (UTC). Time zones are generally centered on meridians of a longitude (a multiple of 15 degrees) which makes neighboring time zones one hour apart. The one hour separation is not always universal, and time zone shapes can be quite irregular because they usually follow the boundaries of states or countries.

## U V W X Y Z

### Variant [SAP]

A variant is a named object containing a set of valid parameter values that an ABAP program requires to do its work. Only ABAP programs that require parameters require variants. The idea behind a variant is that the parameter values change less often than batch jobs are run. In other words, they can be re-used. The variant concept also allows for extreme task differentiation, where one person determines the contents of the variant, and another person does the scheduling of the ABAP program with the variant.

### XAL [SAP]

The External Interface for Alert Management (BC-XAL or XAL) is an interface to the SAP CCMS monitoring infrastructure. It allows other systems to retrieve monitor information from the SAP System.

### XBP [SAP]

External Background Processing (BC-XBP) is an interface to the SAP *CCMS Job Scheduling and Event Handling System*. It allows other systems to submit, monitor, and intercept jobs as well as raise and clear events in an SAP System.

## **XMW [SAP]**

External Monitoring Write (BC-XMW or XMW) is an interface to the SAP CCMS monitoring infrastructure. It allows other systems to create, edit, and update SAP Monitors.

## **z/OS [IBM]**

The software platform running on IBM Mainframe computers, currently named *IBM System z*. z/OS has had many names over the years, including MVS and OS/390.

## **zSeries [IBM]**

The name of the hardware platform, generally referred to as Mainframe, has been named eServer zSeries, then zSeries for short.

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zlib.h -- interface of the 'zlib' general purpose compression library  
version 1.1.3, July 9th, 1998

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The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files <ftp://ds.internic.net/rfc/rfc1950.txt> (zlib format), [rfc1951.txt](ftp://ds.internic.net/rfc/rfc1951.txt) (deflate format) and [rfc1952.txt](ftp://ds.internic.net/rfc/rfc1952.txt) (gzip format)

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