# SAP BPA Troubleshooting Guide

## Version 9.0.12.1

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# Chapter 1. Contacting SAP Support Services

## Use

You are experiencing issues and would like to contact SAP Support Services to solve the issue. Depending on your issue, please gather information on the issue you are experiencing. If you are experiencing errors, use the *Get Support Files* action on the erroneous process or process server. If you are experiencing reproducible errors in the user interface (like JCS- errors or responseXML errors), retrieve the application server trace or log file. Please ensure you have the correct logs, from the correct application server and around the time the issue occurred. Incomplete Support tickets are the most frequent cause for delays.

Create an OSS ticket and assign it to component XX-PART-REDWOOD or XX-PART-REDWOOD-CPS. Attach as much information as you can find, this will speed up the diagnostics phase.

# Chapter 2. 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 4 *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 process definition for the XBP and XAL interfaces, requires no restart of the process server, the *Queue* the process 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]

# 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 process 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 process definition.

# Procedure

## Setting the Audit Level

1. Navigate to *Environment > SAP*.

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 0-3) 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.

# Tuning Memory Usage and Garbage Collection

## Use

The JVM manages the memory it is allocated by the OS automatically. Once a threshold is reached, the memory consumed by unused objects is freed (deallocated) and made available to the application again. The memory footprint of a JVM running a JEE application server is the combined footprint of the application server and all web applications it is running. SAP recommends to use a dedicated application server for SAP BPA.

For SAP NetWeaver application servers, please read SAP Note 723909 [http://service.sap.com/sap/support/notes/-723909]; it contains valuable information and links to a number of JVM-related SAP Notes.

## Determining Application Server Base Memory Usage

The JVM gets a certain amount of memory allocated, this memory pool is used by the JVM. You use the following JVM parameters to inspect the allocated memory:

- `-XMS` - the initial amount of memory allocated to the JVM

- `-XMX` - the maximum amount of memory that can be allocated to the JVM (excluding PermSize)

- `-XX:PermSize` - the initial amount of memory allocated to the permanent generation of the JVM

- `-XX:MaxPermSize` - the maximum amount of memory allocated to the permanent generation of the JVM

The initial amount of memory available to the JVM is XMS + XXPermSize (latter defaults to 64Mb on most platforms). The maximum amount of memory that can be allocated to the JVM is `-XMX` + `-XX:MaxPermSize`.

Once you have set up the application server, you can inspect current idle memory usage. Most application servers have built-in tools to inspect the current memory footprint; refer to the application server-related documentation.

You can also use tools such as jconsole, which is available in Sun/Oracle, SAP, and HP JVM's; if you use a JVM from a different vendor, refer to the JVM-specific documentation. On SAP NetWeaver you use CA Wily Introscope to monitor SAP BPA; in Wily, the node will be named *Redwood Cronacle*. See SAP Note 1579474 [http://-service.sap.com/sap/support/notes/1579474] for instructions on how to add the management module for SAP BPA to CA Wily Introscope.

> ### ℹ Note
>
> Inspecting the memory footprint using Task Manager or tools like top will not give you reliable data.

# Garbage Collection

Java uses garbage collection rather than requiring the programmer to free memory explicitly. This means that the amount of memory used will slowly climb until the system detects that it is running low on memory (often triggered by a memory allocation request). At this point the Garbage Collector (GC) runs, and looks around for memory that is allocated but no longer used by the application (called Garbage). It frees some/all of this and then returns the request.

The actual implementation of this varies considerably from Java 1.4 through to Java 7 (1.7), and is considerably more sophisticated than is explained here.

Java 1.4 uses a *stop the world* collector, the application is stopped while GC runs. This can cause pauses (see below).

The two horizontal lines show the minimum required and maximum used heap sizes. If these are close together, then increasing the maximum heap size will be helpful. If they are too far apart, you may get pauses as large amounts of garbage is collected.
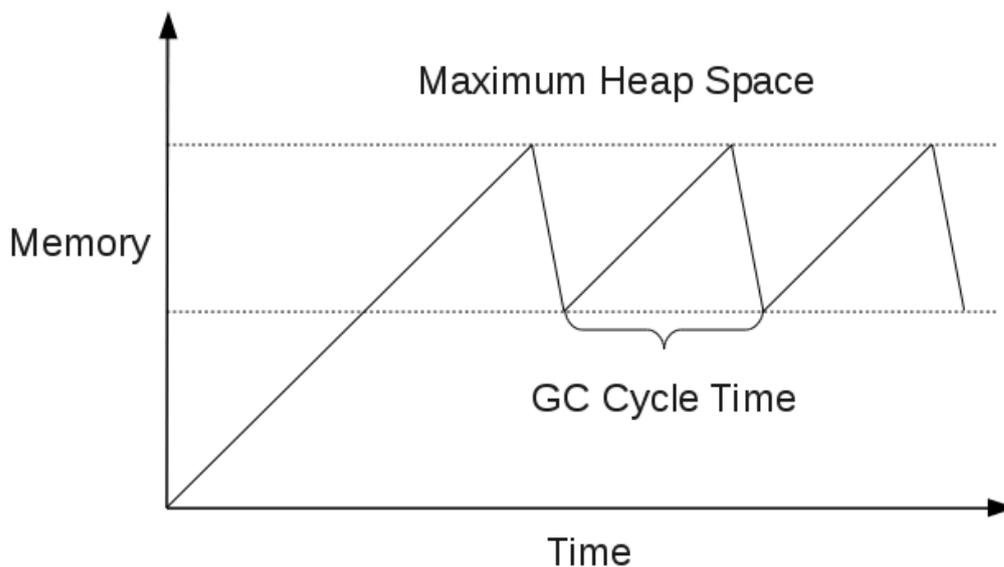


## G1 Garbage Collector

The G1 garbage collector allows large heaps with limited GC latency. This means heap sizes of around 6GB or larger, and stable and predictable pause time below 0.5 seconds would benefit greatly from switching to the G1 garbage collector.

You should consider the G1 garbage collector if you experience one or more of the following issues:

- Full GC durations are too long and/or too frequent.

- The rate of object allocation rate or promotion varies significantly.

- Undesired long garbage collection or compaction pauses (longer than 0.5 to 1 second)

# Problems and Solutions

If you are getting OutOfMemoryError (OOME) then you need to increase the maximum heap size, simple.

If you are getting long pauses where the application is not responding, GC may be running a long time as it has to do a lot of work. Look at the GC cycle time (see graph above), the amount of memory between the two horizontal lines (or how much churn there is) and the GC log (if you have one) to see if this may be the case. If you are not getting a GC at least once a day, then you may be getting this problem. In this case it may make sense to reduce the maximum amount of memory available, or use GC options to increase the frequency (generally by setting a recommended size for something other than `-Xmx`).

On Java 1.5+ you may be able to enable a concurrent garbage collector that cuts down on pauses.

If in doubt, and it is possible to increase the amount of memory, take some measurements (a GC log and some timing measurements for performance), increase the amount of memory and take the measurements again. In general Java benefits from more memory allocated.

# Getting a GC log

Add the following to the startup (works with the Sun VM and derivatives):

```
-XX:+PrintGCTimeStamps -XX:+PrintClassHistogram -XX:+PrintGCDetails -verbose:gc -Xloggc:/path/to/gc.log
```

You can check this before changing any SAP NetWeaver settings, make sure the paths for `java` and `-loggc:` are correct, and run:

```
/path/to/java/used/by/nw/bin/java -XX:+PrintGCTimeStamps -XX:+PrintClassHistogram -XX:+PrintGCDetails -verbos \
e:gc -Xloggc:/path/to/gc.log
```

If gc.log is created, then the options are well enough supported that you can pass them to SAP NetWeaver. Once you have reconfigured and restarted NW you can look at the GC log for more information.

## Other logs to look for

Generally (it depends on the VM) OOME is logged to `stdout` or `stderr` (and thus should be captured to a file).

- On Redwood Platform : Check if scheduler.xml contains `swallowOutput=true` (in which case the output goes to the web app logger), otherwise check where `stderr` and `stdout` go.

- On SAP NetWeaver: Check the default trace file for messages.

- On other application server: check where `stderr` and `stdout` go.

Finally, check for `hs_err_pid<xx>.log` files. These should be in `j2ee/cluster/server<n>` (on SAP NetWeaver and Redwood Platform) but are generally written to the current working directory, which may be somewhere else.

# Maximum Heap in 64 and 32-bit Systems

Oracle JVM's and IBM JVM's (some memory regions only, see link below) require one or more (IBM JVM) contiguous blocks of memory

Most platforms now have a 64-bit mode that allows access to more memory. There are some areas to watch out for:

- 32-bit JVM's (generally around 3Gb on UNIX, between 1.2Gb and 1.5Gb on Windows)

- Older 64-bit JVM's use nearly 2x as much memory (as all pointers are now twice the size). So, if you need to go over the limit the 32-bit VM for a given platform supports, you will need to consider a 1.7 or 1.8 JVM 64-bit JVM. Newer virtual machines (Java 1.6 and above on most platforms) implement something called *object pointer compression* to alleviate this problem. This allows large heap sizes (>4Gb) without the downside of 64 bit pointers.

SAP recommends to use a 64-bit system and JVM.

## IBM JVM

- How the IBM JVM manages memory [http://publib.boulder.ibm.com/infocenter/realtime/v2r0/-index.jsp?topic=%2Fcom.ibm.rt.doc.20%2Frealtime%2Fdiagnose_oom_understanding.html]

- JVM performance tuning [http://pic.dhe.ibm.com/infocenter/wchelp/v7r0m0/topic/-com.ibm.commerce.admin.doc/refs/rpmtuningjvmsettings.htm]

- Edit Performance Configuration Settings [http://pic.dhe.ibm.com/infocenter/sb2bi/v5r2/-index.jsp?topic=%2Fcom.ibm.help.performance_mgmt.doc%2FSIPM_JVMDefaultParameters.html]

## Oracle and HP JVM's

- Java HotSpot™ Virtual Machine Performance Enhancements [http://docs.oracle.com/javase/7/docs/technotes/-guides/vm/performance-enhancements-7.html]

- Tuning the Java Runtime System [http://docs.oracle.com/cd/E26576_01/doc.312/e24936/tuning-java.htm]

- Java HotSpot™ Virtual Machine Performance Enhancements [http://docs.oracle.com/javase/7/docs/technotes/-guides/vm/performance-enhancements-7.html]

- Tuning the Java Runtime System [http://docs.oracle.com/cd/E26576_01/doc.312/e24936/tuning-java.htm]

- FAQ [http://www.oracle.com/technetwork/java/hotspotfaq-138619.html]

## SAP JVM

- SAP Note 1579474 - Management Modules for Introscope delivered by SAP [http://service.sap.com/sap/-support/notes/1579474]

## Windows Platforms

Memory Limits for Windows Releases [http://msdn.microsoft.com/en-us/library/windows/desktop/-aa366778%28v=vs.85%29.aspx]

# Memory errors during startup

In some cases (for example when far too little memory is allocated) you may not be able to start the application server because of a rogue web application. In this case you need to disable the application. On SAP NetWeaver you can do this using SAP Note [914045](http://service.sap.com/sap/support/notes/914045) [http://service.sap.com/sap/support/notes/914045] - Initially_Not_Started_Apps. See [help.sap.com/saphelp_nw04/helpdata/en/0e/fb29feebc73248a3d097a229a5d548/content.htm](http://:) [http://:] for more information.

# Tuning SAP BPA Database Queries

## Use

Row limits (all databases except Oracle) and hints (Oracle) have been introduced. These can be set on the low-level SQL-layer that connects to the database.

> **ⓘ Note**
>
> Special care must be taken when you set these; always refer to your DBA for assistance. SAP recommends you also consult a SAP SAP BPA consultant prior to setting these.

## Accessing Support Facility

You use the built-in *Support Facility* to inspect, set and modify row limits or hints. The *Support Facility* is available at the following URL `http[s]://<server>:<port>/<context>/support`.

- `<server>` - FQDN of your SAP BPA system

- `<port>` - Port of your SAP BPA system

- `<context>` - the web application context, usually `scheduler`

An example URL: `https://pr1.masalan.com:53000/scheduler/support`

## Inspecting and Setting Row Limits or Hints

To display the available options, specify the following in the *Query* field of the Support Facility:

```
/* HELP */
```

> **ⓘ Note**
>
> Please type the **exact** text above, upper-case. There is always a space after a `/*`, `:`, and before `*/`.

The output of the `HELP` keyword can be seen below:

```
/* SECURITY: <objectType> */ <query> - set security for <objectType>
/* SECURITY: ? <objectType> */ - get security for <objectType>
/* CACHE: enable */ - enable cache
/* CACHE: disable */ - disable cache
/* CACHE: flush */ - flush cache
/* CACHE: ? */ - query cache enabled/disabled
/* CACHE: statistics */ - get cache statistics
/* ROW_LIMIT: enable */ - enable row limits
```

```
/* ROW_LIMIT: disable */ - disable row limits
/* ROW_LIMIT: ? */ - query row limits enabled/disabled
/* CONTEXT_RULES: */ flush - (single word only) reset thread context mapping rules to defaults
/* CONTEXT_RULES: */ <name>=<regex> - (may be multiple lines, ordered) set thread context mapping rules
/* CONTEXT_RULES: ? */ - get thread context mapping rules
/* HINT: <context> */ <hints> - set hints for <context> to <hints>
/* HINT: ? */ <query> - query all hints
```

> ℹ️ **Note**
>
> The above listed keywords are **case-sensitive**.

> ℹ️ **Note**
>
> Although a test query is executed using your *hint/row limit* prior to saving your settings, great care must be taken when these are set.

## ROW_LIMITS

You set ROW_LIMITS for all supported databases except Oracle. Note that ROW_LIMITS are not applied to queries that specifically expect all rows to be returned.

## HINTS

You set HINTS for Oracle databases.

# See Also

docs.oracle.com/cd/B19306_01/server.102/b14211/hintsref.htm [http://:]

# Chapter 3. Troubleshooting Common Errors on Application Servers

## Use

The following topic covers troubleshooting issues on non-NetWeaver application servers.

## Locating Log Files

When SAP BPA is installed on an application server and you have an issue that prevents you from accessing the SAP BPA interface, you must locate the application server log files. The specific location can usually be customized, this topic lists the default location of log files.

## Redwood Platform

The log files for the application server can be found in the following location:

- `<install_dir>/j2ee/cluster/server1/log` - default log directory of the SAP BPA application

  - `dbinit.log` - log file listing the database

  - `scheduler.log` - revolving SAP BPA log file

    - `scheduler.log<n>` - older log files

- `<install_dir>/j2ee/cluster/adminserver1/log` - default log directory of the admin server application

  - `scheduler.log` - revolving log file of the SAP BPA admin server

## Oracle WebSphere

If you need to troubleshoot the WebSphere application server, the logs can be found at the following locations:

- `<install_root>/WebSphere/AppServer/logs`

- `<install_root>/profiles/<profile_name>/logs/<server_name>`

## IBM WebLogic

- base directory (for example bea/wlserver_10.3) - this will be referred to as `<weblogic_home>`

- domain (for example `<weblogic_home>/samples/domains/wl_server`) - this will be referred to as `<weblogic_domain>`

- server instance (for example `<weblogic_domain>/servers/examplesServer`) - this will be referred to as `<server_home>`

The primary log files are in a location that you will have defined when installing the application and configuring log4j logging:

Within `<weblogic_domain>/lib/log4j.properties` are two properties:

- `log4j.appender.SCHEDULER.File` - defines where the `scheduler.log` file is. The default is `/var/log/scheduler/scheduler.log`

- `log4j.appender.DBINIT.File` - defines where the `db-init.log` file is. The default is `/var/log/scheduler/db-init.log`

Other logs that may contain useful information are the general WebLogic server logs:

- `$server_home/logs` - server runtime logs should keep details of startup/shutdown as well as application deployment logs, it is also where the job logs are stored.

Depending on whether you have changed the configuration in the log4j.properties file or not the two directories that are needed are:

1. /var/log/scheduler

2. $server_home/logs

# SAP JCo Issues

The JCo library is used to connect to the ABAP stack of an application server. Incorrectly installed JCo libraries will prevent you from connecting and scheduling workload on SAP application servers.

The most common reasons for not being able to load the JCo libraries are dependency issues.

# 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 BPA application in SAP NetWeaver and monitor system performance to see if the problem is related to SAP BPA.

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

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

See SAP Note 1095476 [http://service.sap.com/sap/support/notes/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](http://service.sap.com/sap/support/notes/914045) [http://service.sap.com/sap/support/notes/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-730-SAP
```

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

> ## ℹ 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 dumps can be very large, as they are the size of the memory heap, and can cause both performance issues as well as filesystem-related issues.

See SAP Note 710154 [http://service.sap.com/sap/support/notes/710154] and SAP Note 1095473 [http://-service.sap.com/sap/support/notes/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 [http://service.sap.com/sap/support/notes/710146] and SAP Note 723909 [http://-service.sap.com/sap/support/notes/723909] or more information on setting JVM parameters.

See SAP Note 1289240 [http://service.sap.com/sap/support/notes/1289240] for more information on how to troubleshoot memory-related errors.

See SAP Note [1053604](http://service.sap.com/sap/support/notes/1053604) [http://service.sap.com/sap/support/notes/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](http://service.sap.com/sap/support/notes/1004255) [http://service.sap.com/sap/support/notes/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](http://service.sap.com/sap/support/notes/718901) [http://service.sap.com/sap/support/notes/718901] if an upgrade of the JDK to one of the specified versions is needed.

# Procedure

## Stopping the SAP BPA 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 SAP BPA 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.

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

> ℹ️ **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 `jcmon` 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 `jcmon` 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]

- Deploy Service [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]

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

## Use

When you encounter issues with SAP BPA, 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 BPA 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.

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

When you encounter issues, you first inspect the log files. If you are unable to find the root cause of the issue, you need to find out which categories need a higher log level. You do this by inspecting the logs around the time the issue occurred and increase the log level incrementally.

If you need to troubleshoot a specific component of SAP BPA, you create a tracing location for the given class, all SAP BPA 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 on SAP NetWeaver 7.30 and later

1. Open a web browser and navigate to http://<host>:<port>/nwa

2. Navigate to *Problem Management -> Logs and Traces -> Log Configuration*.

3. Switch to *Show Tracing Locations* enter `scheduler` into the *Location* field and choose *Go*.

4. Navigate to *ROOT LOCATION > com > redwood* and locate the SAP BPA component you want to trace, set a trace level.

5. Choose *Save Configuration*. The data will be written to the standard trace location.

> ℹ️ **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 en up missing critical information.

Inspect Log Files on SAP NetWeaver 7.30

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](#)

- [Configuring Logging and Tracing in SAP NetWeaver 7.30](#) [http://help.sap.com/saphelp_nw73/helpdata/en/94/-15a3e9e65f4af19cc0b41084ac8cbd/frameset.htm]

# Inspecting Log Files in [Cronacle8DocKitInspect-ingLogskit;

## Use

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

Redwood Platform 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 BPA.

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 Redwood Platform service and restart it in "console" mode. To start Redwood Platform 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 Redwood Platform 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.

# Common Redwood Platform-Related Errors

## Use

The following topic lists common errors you may encounter when you use Redwood Platform.

## Address already in use.

### Symptoms

You are attempting to start Redwood Platform and startup fails. In the `scheduler.log` file you find the above error.

### Platform

This can occur on Redwood Platform.

### Specific Error Message

```
FATAL 2011-11-13 12:57:19,423 Europe/Paris [Redwood Background Startup] com.redwood.scheduler.lifecycle.impl. \
DefaultComponentLifecycleManager - Not all components started successfully; stopping what was started. java.lang.RuntimeExcep
y in use. See http://note.redwood.com/69758 for more information. at com.redwood.scheduler.cluster.messaging.rwm.RWMessageSe
 at com.redwood.scheduler.cluster.messaging.rwm.RWMessaging.<init>(RWMessaging.java:54)
 at com.redwood.scheduler.cluster.naming.rwm.RWMessagingNamingProvider.getClusterMessaging(RWMessagingNamingP \
rovider.java:142) at com.redwood.scheduler.cluster.ClusterComponent.getClusterMessaging(ClusterComponent.java:746)
 at com.redwood.scheduler.cluster.messaging.ClusterMessagingComponent.start(ClusterMessagingComponent.java:10 \
2) at com.redwood.scheduler.lifecycle.impl.StartComponentVisitor.visit(StartComponentVisitor.java:34)
 at com.redwood.scheduler.lifecycle.impl.DefaultComponentLifecycleManager.visitAllComponents(DefaultComponent \
LifecycleManager.java:106)  at com.redwood.scheduler.lifecycle.impl.DefaultComponentLifecycleManager.startComponents(DefaultC
ecycleManager.java:207)  at com.redwood.scheduler.lifecycle.impl.DefaultComponentLifecycleManager.startComponents(DefaultComp
ecycleManager.java:166) at com.redwood.scheduler.lifecycle.impl.DefaultStartup.start(DefaultStartup.java:146)
 at com.redwood.scheduler.lifecycle.impl.DefaultStartup$1.run(DefaultStartup.java:128)
 at java.lang.Thread.run(Thread.java:619)
Caused by: JCS-109002: Unable to bind service RedwoodMessaging to port 10071: Address already in use. See htt \
p://note.redwood.com/69758 for more information. at com.redwood.scheduler.cluster.messaging.rwm.http.HttpServer.start(HttpSer
 at com.redwood.scheduler.cluster.messaging.rwm.RWMessageServer.start(RWMessageServer.java:53)
 at com.redwood.scheduler.cluster.messaging.rwm.RWMessageServer.<init>(RWMessageServer.java:42)
 ... 11 more
Caused by: java.net.BindException: Address already in use
 at java.net.PlainSocketImpl.socketBind(Native Method)
 at java.net.PlainSocketImpl.bind(PlainSocketImpl.java:365)
 at java.net.ServerSocket.bind(ServerSocket.java:319)
 at java.net.ServerSocket.<init>(ServerSocket.java:185)
 at com.redwood.scheduler.cluster.messaging.rwm.http.HttpServer.start(HttpServer.java:77)
 ... 13 more
```

### Resolution

There are two solutions.

If you do not require clustering support you can disable the default clustering implementation:

---

1. Shutdown the server

2. Set the System Property `com.redwood.scheduler.boot.cluster.type=Standalone`

3. Start up the server

4. Create a new Registry Entry as the isolation group administrator - `/configuration/boot/cluster/type` with a value of Standalone.

5. Shutdown the server

6. Remove the System Property `com.redwood.scheduler.boot.cluster.type=Standalone`

7. Start the server

If you require clustering support:

1. Shutdown the server

2. Set the System Property `com.redwood.scheduler.boot.cluster.type=Standalone`

3. Start up the server

4. Create a new Registry Entry as the isolation group administrator - `/configuration/boot/cluster/<hostname>/<instance number>/<node number>/port` with the value being the available port number

   a. Where

   b. `hostname` - is the name of the host - this will be the same as the host defined in your license.

   c. `instance number` - is the instance number of the node. This will be `0` for Redwood Platform, unless overwritten by the System property `com.redwood.scheduler.cluster.rwm.InstanceId`

   d. `node number` - is the number of the cluster node on this server. By default this is mapped from the installation directory, correlating to the number at the end of the directory `j2ee/cluster/server<N>`

   e. For example the default path will be `/configuration/boot/cluster/tomcathost/0/1/port`

5. Shutdown the server

6. Remove the System Property `com.redwood.scheduler.boot.cluster.type=Standalone`

7. Start the server - note the restart can take up to three minutes to start if the shutdown is not completed cleanly. This is due to the failover mechanisms in place.

# Chapter 4. Tracing and Debugging SAP BPA

## Use

You are encountering issues with SAP BPA and need more information on the causes of the issues. SAP BPA ship with extensive logging built-in that can be enabled by category. The list of <u>frequently used categories</u> is available in the reference section of the current guide.

## Server-Side Logging

The server-side log will contain information on the requests processed by the server. Such as process servers connecting to remote systems, or processes reaching status error, or the user interface backend.

The *System_DynamicTrace* is used to trace server-side threads that run the specified classes. Depending on the failing component, you will need to identify the appropriate class; the category to trace will be the class name without `com.redwood.scheduler`. You can usually see which class is failing in exception stacks that are produced by the failing component and logged to `stderr.log` files for processes or the central log of your application server.

## Client-Side Logging

The client-side log will contain information related to the execution of JavaScript code. You issue `Ctrl+Shift+Alt+D` in your browser to enable to log console for the SAP BPA JavaScript logger. Note that this information is not logged to the built-in JavaScript console of your browser.

## Remote System logging

On remote systems, you usually enable logging in the platform itself following the documentation that was provided with the system or application. SAP BPA platform agents and AS/400 servers are exceptions to this rule.

## Platform Agents

SAP BPA platform agents and the tools that ship with them have their own logging facility. Platform agents log locally until a connection has been established with the central SAP BPA server after which the logs are sent to the central SAP BPA server. The system tools that ship with platform agents log locally, only. You use the `JCS_LOGLEVEL` and `JCS_LOGFILE` environment variables to set logging criteria. See <u>Tracing and Debugging System Tools and Platform Agents</u> for more information.

## AS/400 Servers

The AS/400 platform ships with extensive native logging mechanisms which can be retrieved from the system by SAP BPA using a specially crafted AS/400 process definition. See <u>Tracing and Debugging AS/400 Connections</u> for more information.

# Example

## Enable logging for the server-side platform agent file component

You want to retrieve an output file and receive a `JCS-108003` error instead; in fact for this example, the platform agent is not running.

1. Navigate to *Definitions > Process Definitions*

2. Choose *Submit* from the context-menu of the *System_DynamicTrace* process definition

3. Fill `jobfile=debug` into the *Trace String* field and 5 into the *Minutes to Run*

4. Submit the process definition and attempt to retrieve the file once more.

5. Once you have received the error again attempting to access the file, you can kill the *System_DynamicTrace* process or wait for the 5 minutes.

6. Open the log file and search for the file id printed in the `JCS-108003` error, you might have to remove Thousand separators depending on your locale as the number will be logged as `123456789` not `123,456,789`

7. Notice the `Caused by: JCS-116012: Warning: Transient communication failure: Connection refused` in the log; this means that the remote server, where the platform agent runs, is not accepting connections on the configured platform agent's port - in other words, the `network-processor` is not running or listening on an incorrect port.

## Enabling the Client-Side Logger JavaScript

You experienced JavaScript Errors in the User Interface and upon contacting SAP BPA Support, have been requested to enable client-side logging.

1. Issue `Ctrl+Shift+Alt+D` in your browser logged in the desired SAP BPA instance

2. fill `javascript=trace` into the *Tracestring* field and choose *Apply*

3. Reproduce the steps you sued to cause the JavaScript errors

4. Provide SAP Support with the output of the logger console

# Tracing and Debugging System Tools and Platform Agents

The platform agent running OS jobs on hosts has extensive logging capabilities. You may be asked to enable extra logging by customer support or you may want to reduce logging by overriding the default values.

## Logging in the platform agent boot phase

When the process server never becomes Running at all and remains stuck at Connecting you can log the initial connection phase between the platform agent (on the OS) and the process server (in the central SAP BPA server) as follows:

- UNIX: Add/change the loglevel 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 ( see the Administration Guide ) section for more information.

# Logging of the agent under normal circumstances

If there is a problem with the platform agent that needs analysis or if you want to reduce the logging output for the entire lifecycle you need to change the Process server parameters ( see the Administration Guide ) parameter `LogLevel`. The value of this parameter is used as the logging level as soon as the central SAP BPA server has established a connection with the Platform Agent.

This means that the normal procedure for changing the logging level of a platform agent is to set the `LogLevel` Process server parameter to a new value and then stop/start the process server via the GUI.

The logfiles that are created can be retrieved by clicking the blue "i" button in the right hand top corner of the GUI and then selecting the *Get Support Files...* option. If this fails then you can find them on the host where the agent is running. The default value for the location is {{${TraceDirectory}${FileSeparator}${ProcessServer}-${Process-Name}-${TimeStamp}-${ProcessId}.log. }}

# Process Server parameters

## Loglevel

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`.

## Logfile

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

- ${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).

- ${TimeStamp} - Ordered form of timestamp when the file was created.

## Agent Log File Retention

You use the LogFileSize ( see the Administration Guide ) (in megabytes) and LogFileRetention ( see the Administration Guide ) (count) process server parameters to specify the number and size of log files, respectively. Note that a new log file is created each time you restart and that the size limitation is only checked at regular intervals; this file can grow slightly larger than the limit.

The defaults are 100 and 10, meaning 10 files of 100 MB each.

If the LogFile ( see the Administration Guide ) parameter contains a format that changes over time the filename is exactly according to the format set by LogFile. If it does not older files are moved over and renamed to -1, -2 ... -<n>.

# Logging in the system tools

The system tools start out at the default loglevel info or the Process Server LogLevel parameter when used within an OS job.

To overrule the logging level either set LogLevel to a more precise value that sets a value for the tool, or set a command line argument:

```
[-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.

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 process.

# 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
```

# Tracing and Debugging AS/400 Connections

## Use

You want to debug your AS/400 connection. System_DynamicTrace ( see the Administration Guide ) only logs messages from SAP BPA, not the connection to the AS/400 system. SAP BPA uses the JTOpen library to connect to AS/400 systems and offers an AS/400-specific a `trace.dynamic` action to capture logging from the JTOpen library.

Create an AS/400 process definition with the following source:

```
[Action]
action=trace.dynamic
category.Conversion=true
category.Datastream=true
category.Diagnostic=true
category.Error=true
category.Information=true
category.JDBC=true
category.PCML=true
category.Proxy=true
category.Thread=true
category.Warning=true
```

This process will run until you *kill* it and allows you to trace connections to AS/400 connections.

> ✅ **Tip**
>
> If you wish to have it run for a specific period of time, such as 5 minutes for example, you navigate to the *Runtime Limits* tab in the process definition editor and specify 5 minutes for Maximum, check *Kill process* to forcefully terminate the process once the limit has been reached.

# Chapter 5. 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?wptsdetail=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 6. Common LDAP Errors

## Use

There are three primary failures that can happen when trying to access LDAP

1. `Login failed due to server error.` - There are multiple possible reasons for this, and to determine the cause you'll need to look into the debug logs of `com.masalan.scheduler.security.impl.external.ldap`.

2. `Username or Password incorrect` - this means you've put in the wrong username or password.

3. `Login details correct, but you are not allowed to access the scheduler` - this means that a username and password was found and authenticated correctly in LDAP - but the user did not have the appropriate (mapped) role; for example, it didn't have `scheduler-user` or the search criteria for the group was not correct (for example *Group Search Expression* was wrong, or the *Group Base DN* was wrong).

To troubleshoot LDAP, you access the debug logs of `com.masalan.scheduler.security.impl.external.ldap`. In there you'll see a corresponding error message:

## Login Failed

```
Login attempt, username=<username> failed
```

Followed by the stack trace of the cause.

## Connection Refused

```
javax.naming.CommunicationException: localhost:10389 [Root exception is java.net.ConnectException: Connection \
 refused]
```

This means that SAP BPA cannot connect to the server

## Invalid Search Request

```
javax.naming.NameNotFoundException: [LDAP: error code 32 - NO_SUCH_OBJECT: failed for MessageType : SEARCH_RE \
QUEST
```

This means that there was a configuration error. By looking at the next lines in the stack trace you can see which field was in error. For example if you look at the baseDn value it is likely to be the cause:

## Invalid Base DN

```
Message ID : 2
SearchRequest
baseDn : 'ou=groups,o=masalan'
filter : '(uniqueMember=2.5.4.3=kirk,2.5.4.11=users,2.5.4.11=directory,2.5.4.10=masalan)'
```

In this case the `baseDn` should be `ou=groups,ou=directory,o=masalan` as `ou=groups,o=masalan` doesn't exist in the tree so it throws the `NameNotFoundException`.

Note that if the Base DN is incorrect but maps to an existing node, you'll end up with a message *Login details correct, but you are not allowed to access the scheduler* rather than the server message that gets thrown because it doesn't exist.

# Chapter 7. Common SAP BPA Errors

## Use

The following topic lists errors you may encounter in SAP BPA using built-in System process definitions or modules.

## javax.mail.MessagingException: Exception reading response

You receive the following error message when emails are sent (using System_Mail_Send or Active Monitoring Module). This error indicates that a timeout has been exceeded.

### Specific Error Message

```
javax.mail.MessagingException: Exception reading response;
  nested exception is:
java.net.SocketTimeoutException: Read timed out
at com.sun.mail.smtp.SMTPTransport.readServerResponse(SMTPTransport.java:1611)
at com.sun.mail.smtp.SMTPTransport.issueSendCommand(SMTPTransport.java:1494)
at com.sun.mail.smtp.SMTPTransport.finishData(SMTPTransport.java:1321)
at com.sun.mail.smtp.SMTPTransport.sendMessage(SMTPTransport.java:637)
at javax.mail.Transport.send0(Transport.java:189)
at javax.mail.Transport.send(Transport.java:118)
at com.redwood.scheduler.infrastructure.mail.Mailer.sendMessage(Mailer.java:167)
at com.redwood.scheduler.infrastructure.mail.Mailer.sendMessage(Mailer.java:71)
at com.redwood.scheduler.infrastructure.mail.Mailer.sendMessage(Mailer.java:41)
at com.redwood.scheduler.system.jobs.SendMail.sendMessage(SendMail.java:191)
at com.redwood.scheduler.system.jobs.SendMail.execute(SendMail.java:151)
at com.redwood.scheduler.systemjobservice.impl.JobWorker.doWork(JobWorker.java:253)
at com.redwood.scheduler.infrastructure.workqueue.Worker.run(Worker.java:76)
at java.lang.Thread.run(Thread.java:722)
```

### Resolution

Since this error indicates that the timeout has been exceeded, you might have to adapt the JavaMail timeout. If your SMTP server was available and sent the email, you might want to consider increasing the SMTP connection (mail.smtp.connectiontimeout) and mail send (mail.smtp.timeout) timeouts. If your SMTP server was not available and the process was waiting too long before it reached status *Error*, you can decrease the timeout.

Create or adapt the following registry keys:

- `/configuration/mail/Properties/mail.smtp.timeout`

- `/configuration/mail/Properties/mail.smtp.connectiontimeout`

Note that the value is in milliseconds.

### See Also

Package com.sun.mail.smtp [http://javamail.java.net/nonav/docs/api/com/sun/mail/smtp/package-summary.html]

---

# Chapter 8. Common SAP-Related Errors

## Use

## Exception: 113: CPIC-CALL: SAP_CMACCPTP3 on convId:

### Platform

This error has been reported on SAP Inbound connection to AS ABAP 7.30 application servers.

### Specific Error Message

```
SAP Inbound connection "XXX" stopped unexpectedly.
Details:
Exception: 113: CPIC-CALL: SAP_CMACCPTP3 on convId:

LOCATION SAP-Gateway on host <hostname> / sapgw<instance id>
ERROR registration of tp <SAP inbound rfc destination> from host <SAP inbound host> not allowed
```

### Resolution

In you gateway profile, you have to allow connections to the SAP system. Inspect the value of the `gw/acl_mode` and `gw/reg_info` parameters; if the former is set to `1`, the latter has to point to a file which allows connections from external servers. See SAP Note 1843782 [http://service.sap.com/sap/support/notes/1843782] and Defining the reginfo File [http://help.sap.com/saphelp_nw04/helpdata/en/1a/4723f86bfb40129db2f7ec3cb1f4f1/content.htm] for more information.

> ℹ️ **Note**
>
> It is not recommended to change `gw/acl_mode` if it is set to `1` and register the appropriate external program in `gw/reg_info` instead.

### Example

In the following example, the `gw/acl_mode` is set to `1`, so `gw/reg_info` points to a file with the contents below; in **SM59** the name of your RFC connection is `CPSECCMLS`, `10.0.0.5` is the IP of the SAProuter client and `10.1.2.9` is the IP of the central SAP BPA server.

```
TP=CPSECCMLS HOST=10.0.0.5,10.1.2.9
```

# Exception: 102: SAP_CMINIT3 : rc=20 > Connect to SAP gateway failed

## Platform

Reported on systems with many connections to SAP systems.

## Specific Error Message

Note that this problems affects process servers connecting to SAP systems and thus may affect processes as well. An alternate warning is printed for a process at the end.

```
ERROR 2012-10-30 13:31:23,740 Europe/Berlin [Redwood SAPService Job Worker (RSI.T09_SAP_P20121) worker 4] com \
.redwood.scheduler.connector.sap.rfc.connection.xmi.AbstractXmiConnectionPool - Exception while connecting to \
 SAP system
Exception: 102: SAP_CMINIT3 : rc=20 > Connect to SAP gateway failed
Connect_PM  GWHOST=pr1.masalan.com, GWSERV=sapgw.masalan.com, SYSNR=00

LOCATION    CPIC (TCP/IP) on local host
ERROR       max no of 100 conversations exceeded
TIME        Tue Oct 30 13:31:13 201
RELEASE     640
COMPONENT   CPIC (TCP/IP)
VERSION     3
RC          466
MODULE      r3cpic.c
LINE        9706
COUNTER     275

 at com.redwood.scheduler.connector.sap.rfc.connection.RemoteFunctionCall.perform(RemoteFunctionCall.java:250 \
)
 at com.redwood.scheduler.connector.sap.rfc.connection.AbstractRfcConnection.perform(AbstractRfcConnection.ja \
va:475)
 at com.redwood.scheduler.connector.sap.rfc.connection.AbstractRfcConnection.doConnect(AbstractRfcConnection. \
java:447)
 at com.redwood.scheduler.connector.sap.rfc.connection.xmi.AbstractXmiConnection.connect(AbstractXmiConnectio \
n.java:64)
 at com.redwood.scheduler.connector.sap.rfc.connection.xmi.AbstractXmiConnectionPool.borrowConnection(Abstrac \
tXmiConnectionPool.java:188)
 at com.redwood.scheduler.connector.sap.rfc.command.AbstractXbpCommand.doExecute(AbstractXbpCommand.java:81)

 at com.redwood.scheduler.connector.sap.rfc.command.AbstractCommand.execute(AbstractCommand.java:59)

 at com.redwood.scheduler.connector.sap.rfc.service.operation.RunJobOperation.doWork(RunJobOperation.java:103 \
)
 at com.redwood.scheduler.connector.sap.rfc.service.SapJobWork.doWork(SapJobWork.java:38)

 at com.redwood.scheduler.infrastructure.workqueue.Worker.run(Worker.java:75)

 at java.lang.Thread.run(Unknown Source)

Caused by: com.sap.mw.jco.JCO$Exception: (102) RFC_ERROR_COMMUNICATION: SAP_CMINIT3 : rc=20 > Connect to SAP  \
gateway failedConnect_PM  GWHOST=pr1.masalan.com, GWSERV=sapgw.masalan.com, SYSNR=00

LOCATION    CPIC (TCP/IP) on local host
ERROR       max no of 100 conversations exceeded
TIME        Tue Oct 30 13:31:13 201
RELEASE     640
COMPONENT   CPIC (TCP/IP)
VERSION     3
RC          466
MODULE      r3cpic.c
LINE        9706
COUNTER     275

 at com.sap.mw.jco.rfc.MiddlewareRFC$Client.nativeConnect(Native Method)

 at com.sap.mw.jco.rfc.MiddlewareRFC$Client.connect(MiddlewareRFC.java:1125)
```

```
 at com.sap.mw.jco.JCO$Client.connect(JCO.java:3272)

 at com.redwood.scheduler.connector.sap.rfc.jco2.connection.ClientConnectionFactoryImpl.createJCoClient(Clien \
tConnectionFactoryImpl.java:125)
 at com.redwood.scheduler.connector.sap.rfc.jco2.connection.ClientConnectionFactoryImpl.connect(ClientConnect \
ionFactoryImpl.java:45)
 at com.redwood.scheduler.connector.sap.rfc.jco2.connection.RfcRepositoryImpl.connect(RfcRepositoryImpl.java: \
119)
 at com.redwood.scheduler.connector.sap.rfc.connection.AbstractRfcConnection$5.doPerform(AbstractRfcConnectio \
n.java:452)
 at com.redwood.scheduler.connector.sap.rfc.connection.RemoteFunctionCall.perform(RemoteFunctionCall.java:147 \
)
 ... 10 more

WARN  2012-10-30 13:31:23,743 Europe/Berlin [Redwood SAPService Job Worker (RSI.T09_SAP_P20121) worker 4] com \
.redwood.scheduler.connector.sap.rfc.command.AbstractCommand - Transient communication error while executing  \
job 123456
Exception: 102: SAP_CMINIT3 : rc=20 > Connect to SAP gateway failed
Connect_PM  GWHOST=pr1.masalan.com, GWSERV=sapgw.masalan.com, SYSNR=00
```

# Resolution

This problem occurs when you run out of RFC connections. The RFC library in SAP NetWeaver is limited to 100 concurrent RFC connections by default, this can be changed by setting the `CPIC_MAX_CONV` environment variable, please see the SAP documentation for more information, also see SAP Note 314530 [http://service.sap.com/sap/-support/notes/314530] and SAP Note 316877 [http://service.sap.com/sap/support/notes/316877]. On the SAP BPA side you should specify the `CPIC_MAX_CONV` environment variable with a value of `3000` as well. Note that on Redwood Platform running on Windows as a service you must specify this environment variable system-wide or for the user that runs SAP BPA.

# Error: E XM 034 Internal problem

## Platform

Reported with different SAP releases when scheduling an ABAP with any of the *SAP_AbapRun* process definition. Note that the name of the function (BAPI_XBP_JOB...) can vary.

## Specific Error Messages

```
BAPI exception while calling BAPI_XBP_JOB_ADD_ABAP_STEP: E XM 034 Internal problem (function BAPI_XBP_JOB_ADD \
_ABAP_STEP) BAPI_XBP_JOB_ADD_ABAP_STEP, , ,  BAPI exception while calling BAPI_XBP_JOB_CLOSE: E XM 034 Internal problem (func
_XBP_JOB_CLOSE, , ,
```

## 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 the following (example for BAPI_XBP_JOB_ADD_ABAP_STEP)

```
EFN|BP_JOB_EDITOR: Job <process_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, <Process_name> is the name of the job, <n> is the step number, <reason> should provide you with enough information to find a resolution.

# Error: E XM 251 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 [http://service.sap.com/sap/support/notes/198411] for more information.

# Error: ABAP/4 processor: TSV_TNEW_OC-CURS_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 into interface XBP

## Platform

This error can occur on any SAP Basis 3.1i 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 into interface XBP,
msgv1=XBP, msgv2=, msgv3=, msgv4=
```

## Resolution

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

- Ensure the REDWOOD role has all the required privileges.

- Ensure 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 \
```

```
ava:513)    at
com.redwood.scheduler.connector.sap.rfc.connection.AbstractRfcConnection$4.doPerform(AbstractRfcConnection.ja \
va:289)    at
com.redwood.scheduler.connector.sap.rfc.connection.RemoteFunctionCall.perform(RemoteFunctionCall.java:130)
    at
com.redwood.scheduler.connector.sap.rfc.connection.AbstractRfcConnection.perform(AbstractRfcConnection.java:4 \
45)    at
com.redwood.scheduler.connector.sap.rfc.connection.AbstractRfcConnection.execute(AbstractRfcConnection.java:2 \
82)    at
com.redwood.scheduler.connector.sap.rfc.jco2.connection.impl.SapFunctionModuleWrapper.execute(SapFunctionModu \
leWrapper.java:194)    at
com.redwood.scheduler.connector.sap.rfc.jco.AbstractSapFunctionModule.execute(AbstractSapFunctionModule.java: \
107)    at
com.redwood.scheduler.connector.sap.rfc.command.impl.MassActivityImportCommand.doExecute(MassActivityImportCo \
mmand.java:354)    at
com.redwood.scheduler.connector.sap.rfc.command.impl.AbstractMassActivitiyCommand.execute(AbstractMassActivit \
iyCommand.java:56)    at
com.redwood.scheduler.connector.sap.rfc.command.AbstractXbpCommand.doExecute(AbstractXbpCommand.java:123)
    at
com.redwood.scheduler.connector.sap.rfc.command.AbstractCommand.execute(AbstractCommand.java:56)
    at
com.redwood.scheduler.connector.sap.rfc.service.SapJobWork.doWork(SapJobWork.java:106)
    at
com.redwood.scheduler.infrastructure.workqueue.Worker.run(Worker.java:59)
    at java.lang.Thread.run(Unknown Source)
Caused by: com.sap.mw.jco.JCO$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 \
ava:487)    ... 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.

# SAP BPA not Listed as Available Package in JSPM

## Platform

This error occurs on SAP NetWeaver 7.30.

## Specific Error Message

The following error can be seen in
`/usr/sap/BPA/J<nn>/j2ee/JSPM/log/log_2011_08_26_04_29_12/SCAN_INBOX_01.LOG`:

```
---------------------------------------------------------
Aug 26, 2011 4:30:53 AM [Warning]: Delivery unit with version 8.00.33.27
located in /usr/sap/trans/EPS/in/ETPRJSCHEDULER33P_27-20007176.SCA is
not a valid update for component sap.com/ETPRJSCHEDULER with version
7.30.3.0.
```

# Resolution

Select *Business Packages (advanced users only)* from within JSPM, the package should be displayed for deployment.

In some cases, this is not enough and you need to adjust the JSPM configuration (`jspm_config.txt`) temporarily as follows:

```
/jspm/deployVersionRule=updateSameAndLower
/jspm/deployVersionRule=updateAll
/jspm/forceMode=true
```

# Chapter 9. Common SAP BAE Errors

## Use

The following is a list of SAP BAE error codes you might get.

## 0 - OK

## 1 - Cannot retrieve the file at the moment; please retry later

Transient error while reading a job file. Have a look into the default trace to see more details. Function module: EXT_SDL_JOB_OUTPUT_GET

## 65 - User is not authorized

The user that is trying to log into BPA through BAE does not have the BusinessAutomationEnabler authorization on the SAP System (M32 or older) or SAP BAE Connector (M33 or newer). Function module: EXT_SDL_LOGON

## 66 - Invalid partition

The provided partition name is not valid - either the partition does not exist, or the user does not have the authorizations to access it

## 67 - Invalid isolation group

The user that is trying to log into BPA through BAE provided an invalid isolation group. Function module: EXT_SDL_LOGON

## 69 - Job restart is prohibited

Restarting the job is prohibited. Normally this happens if a maintenance or restricted SAP job is restarted. Function module: EXT_SDL_JOB_SCHEDULE

## 70 - Cannot modify job

It is not possible to modify a scheduled job because its status does not allow this anymore. Function module: EXT_SDL_JOB_SCHEDULE

## 71 - Invalid SAP system name

The provided SAP system name is not valid - either the SAP system does not exist or the user does not have the authorizations to access it. Function module: EXT_SDL_GET_SAP_SYSTEM_DETAILS

## 72 - Unsupported start option

The provided start option is not valid. Normally, this is a bug in the application that is using BAE. Function module: EXT_SDL_GET_START_OPT_VALUES

# 73 - Cannot delete event definition

It is not possible to delete an event definition. Function module: EXT_SDL_DELETE_EVENT_DEF

# 74 - Cannot retrieve file

The job file could not be retrieved. The default trace contains more information about the root cause. Function module: EXT_SDL_JOB_OUTPUT_GET

# 75 - File is empty

The job file is empty. The SAP application is expected to properly handle this error message, e.g. by not showing the file in its UI. Function module: EXT_SDL_JOB_OUTPUT_GET

# 76 - Invalid doc ID

The job file could not be retrieved because the SAP application used an invalid document Id. Function module: EXT_SDL_JOB_OUTPUT_GET

# 77 - Invalid application ID

The provided application Id is not valid - either the application does not exist, or the user does not have the authorizations to access it

# 78 - Invalid application name

The provided application name is not valid - either the application does not exist, or the user does not have the authorizations to access it

# 79 - Invalid job definition parameter

The provided job definition parameter name is not valid. Function module: EXT_SDL_GET_JOB_DEF_PAR_VALUES

# 80 - Invalid job filter

The provide job filter name not valid - either the filter does not exist, or the user does not have the authorization to access it. Function module: EXT_SDL_GET_JOBS

# 81 - Queue does not exist

The provide queue name not valid - either the queue does not exist, or the user does not have the authorization to access it. Function module: EXT_SDL_JOB_SCHEDULE

# 82 - Unsupported start type

The provided start type is not valid. Normally, this is a bug in the application that is using BAE.

# 83 - Unsupported schedule mode

The provided schedule mode (start, restart, modify, etc.) is not valid. Normally, this is a bug in the application that is using BAE. Function module: EXT_SDL_JOB_SCHEDULE

# 84 - Cannot schedule job

The job could not be scheduled. Have a look into the default trace to see more details. Function module: EXT_SDL_JOB_SCHEDULE

# 85 - Invalid job definition

The provided job definition name is notvalid - either the job definition does not exist, or the user does not have the authorization to access it.

# 86 - Invalid event control mode

The provided event control mode (raise, clear) is not. Normally, this is a bug in the application that is using BAE. Function module: EXT_SDL_EVENT_CONTROL

# 87 - Invalid event definition

The provided event definition name is not valid - either the event definition does not exist, or the user does not have the authorization to access it.

# 88 - Invalid user

Something is wrong with the user that is logging in into BPA. Have a look into the default trace to see more details.

# 89 - Job definition does not exist

The provided job definition name is not valid - either the job definition does not exist, or the user does not have the authorization to access it. Function module: EXT_SDL_JOB_SCHEDULE

# 91 - An error was encountered while evaluating a default parameter value

There was an error while evaluating the default value of a parameter. Function module: EXT_SDL_JOB_SCHEDULE

# 92 - Invalid job ID

The provided job id is not valid - either the job does not exist, or the user does not have the authorization to access it.

# 94 - Error while persisting objects

There was an error while persisting objects. Have a look into the default trace to see more details.

# 95 - General error

Unexpected error condition. Have a look into the default trace to see more details.

# 96 - Session expired

The session from the SAP application to BPA has expired. The SAP application is expected to properly handle this error message, e.g. by logging back in into BPA.

# 97 - Invalid session id

The session id provided by the SAP application is not valid. Normally, this is a bug in the application that is using BAE.

# 98 - Invalid ident

The identification id provided by the SAP application is not valid. Normally, this is a bug in the application that is using BAE.

# 99 - Not supported

The function module called by the SAP application is not supported. Normally, this is a bug in the application that is using BAE.

# Chapter 10. Common SAP NetWeaver Use

The following chapter covers SAP NetWeaver-related issues that occur with SAP BPA.

# Access Denied HTTP 403

## Platform

Reported with different SAP NetWeaver releases starting with 7.20.

## Specific Error Message

This error message is encountered when you edit a process definition from the XML tag and ICM is configured to disallow `<script>` tags in form requests.

```
403 Access denied
You do not have the permissions to access this resource
Error: -13
Version: 7300
Component: HTTP_FILTER
Date/Time: Fri Nov 1 14:46:21 2013
Module: http_auth_mt.c
Line: 598
Server: masalan_PR1_30
Error Tag: {00064059}
Detail: Content filter matched: Permission denied
2001-2009, SAP AG
```

## Resolution

Contact your SAP Basis Administrator to relax the ICM rules somewhat to allow editing process definitions from the XML tab.

The profile is usually located in `[drive:]/usr/sap/<SAPSID>/SYS/profile/DEFAULT.PFL`, the file to edit can be found in the profile. Search for a line like the following:

```
icm/HTTP/mod_0 = PREFIX=/,FILE=$(DIR_GLOBAL)/security/data/icm_filter_rules.txt
```

In this case, the file to edit is the following:

```
[drive:]/usr/sap/SAPSID/SYS/global/security/data/icm_filter_rules.txt
```

# Insufficient Shared Memory Monitoring Slots

## Platform

Reported with different SAP NetWeaver releases starting with 7.30.

# Specific Error Message

```
#2.#2015 07 22 14:44:08:644#+00#Warning#com.sap.engine.core.thread.ShmThreadLoggerImpl#
#BC-JAS-COR#kernel.sda#C0008F166843804F00000000000037BE##redwood.com/scheduler-ear#com.sap.engine.core.thread \
.ShmThreadLoggerImpl#deploy_service#0##6D7C74DA212C11E3A2B400000168884A##6d7c74da212c11e3a2b400000168884a#0#T \
hread[Redwood monitoring for SAP instance SS_PR1.30 worker 1,5,Redwood monitoring for SAP instance SS_PR1.30  \
workers]#Plain## The predefined size of the shared memory monitoring slots for the thread system is reached: size[400], used[
00], type[thread table]. Every thread started from now on will be fully functional but will not be visible in \
 the MMC thread monitoring. You need to reconfigure the shared memory monitoring slots for threads.#
```

or

```
F [Thr 139642] Wed Mar 21 08:31:56 2012
F  [Thr 139642] *** WARNING => SfAllocShmThread(): table full (s=400).
[jsfxxshm_mt. 3817]
F  [Thr 139642] *** WARNING => ShmThread_new: Cannot alloc thread (rc = 2 out of memory). [sfxxjshm_mt. 618]
```

# Resolution

You increase the number of shared memory monitoring slots to 2000 as recommended by SAP; see SAP Note 1748779 [http://service.sap.com/sap/support/notes/1748779].

> **ⓘ Note**
>
> This is just a warning and simply means that a number of threads will not be displayed in MMC thread monitoring. This does not affect processing of jobs.

# Chapter 11. Common Platform-Related Errors

## Use

This topic covers some of the errors reported by customers and their solutions.

## OS initialization failed

### Symptoms

Your platform agent does not startup properly on the remote UNIX system; in SAP BPA, the process server associated with the remote UNIX system remains in status connecting. Restarting the platform agent on the remote UNIX server *appears* to solve the issue in some cases, although the same behavior occurs again when the UNIX server is restarted.

### Platform

This can happen on any UNIX/VMS platform.

### Specific Error Message

This error message is displayed after debugging has been enabled:

```
/opt/redwood/agent/9_0_12_1/bin/network-processor: OS initialization failed
debug  2015-11-20 09:48:27 CET [6706-platform-agent] Wait result = 5
error  2015-11-20 09:48:27 CET [6706-platform-agent] Scheduler network-processor instance 'prod' died with ex \
itcode 5, trying to restart in 10 seconds...debug  2015-11-20 09:48:37 CET [6706-platform-agent] Creating pidDir: /opt/redwoo
debug  2015-11-20 09:48:37 CET [6706-platform-agent] Writing Parent PID to /opt/redwood/agent/etc/pid/prod/pr \
od.ppidinfo   2015-11-20 09:48:37 CET [6706-platform-agent] Starting network-processor instance 'prod'
debug  2015-11-20 09:48:37 CET [6706-platform-agent] /opt/redwood/agent/0_33_92/bin/network-processor -p /opt \
/redwood/agent/etc/pid/prod/prod.pid -i prod -n /opt/redwood/agent/net -l
```

### Resolution

The environment for the platform agent is not correct; the platform agent does not have the correct character set in its environment and the correct character set cannot be guessed. The platform agent needs a character set that can be converted to UTF-8 using `I18N` tools. Ensure `LC_ALL` or, if it is not set, the `LANG` or `LC_CTYPE` environment variable is set to a compatible value for the agent process.

On Linux, ISO-8859-15, en_US.UTF-8, or de_DE.UTF-8 are compatible, for example. Note that `LC_ALL` takes precedence over `LANG` as well as all other `LC_*` variables.

# opsys.socket - Connecting socket to localhost port 10180 failed: No connection

## Symptoms

You are trying to retrieve a file with `jgetfile` and receive this error.

## Platform

This can happen on all platforms which support `jgetfile`.

## Specific Error Message

The following error messages can be seen in the terminal or log:

```
error 2010-11-10 08:52:27,124 W? Europe Standard Time [1696-jgetfile tid=0] opsys.socket - Connecting socket  \
to localhost port 10180 failed: No connection could be made because the target machine actively refused it.
error 2010-11-10 08:52:27,124 W? Europe Standard Time [1696-jgetfile tid=0] http.http - Unable to connect to  \
localhost:10180 fatal 2010-11-10 08:52:27,124 W? Europe Standard Time [1696-jgetfile tid=0] jgetfile.main - Unable to process
 request
```

## Resolution

Ensure the hostname in the registry key `/configuration/ContextURL` is the FQDN of the central SAP BPA server and not `localhost` or `127.0.0.1`.

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

## Symptoms

SAP BPA 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 `33`.

- `<n>` - patch-level, for example `12`.

- `<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 BPA, 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 \
ion "M<m>.<n-1>". AbortingService "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/ \
redwood/agent/etc/startup/default/version': Permission denied error 2010-11-10 13:05:23,739 CET [30968-http-request #7 tid=41
on file /opt/redwood/agent/etc/startup/default/version
```

```
$ 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
$ chmod +x solaris-sparc.bin
$ ./solaris-sparc.bin
```

# 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 process.

## 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, pdksh` or any `ksh88` or `ksh93` compatible shell.

# Chapter 12. Common OracleJob Errors

## Use

This topic lists typical errors that are due to misconfiguration.

## ORA-20800: JCS-02006: user <user> does not exist within database <database>

### Symptoms

The OracleJob job reaches status *Error* and the job has a *Remote ID*.

### Specific Error Message

```
ORA-20800: JCS-02006: user masalan does not exist within database masalan
ORA-06512: at  "CRIMSON.JCS_INTERNAL", ligne 1528
ORA-06512: at  "CRIMSON.JCS_INTERNAL", ligne 600
ORA-06512: at  "CRIMSON.JCS_EMU_MSG", ligne 643
ORA-06512: at  "CRIMSON.JCS_EMU_MSG", ligne 209
ORA-06512: at  "CRIMSON.JCS_EMU_MSG", ligne 113
ORA-06512: at  "CRIMSON.JCS_INTERNAL", ligne 465
ORA-06512: at  "CRIMSON.JCS", ligne 117
ORA-06512: at  line 2

at oracle.jdbc.driver.SQLStateMapping.newSQLException(SQLStateMapping.java:70)
 at oracle.jdbc.driver.DatabaseError.newSQLException(DatabaseError.java:133)
 at oracle.jdbc.driver.DatabaseError.throwSqlException(DatabaseError.java:206)
 at oracle.jdbc.driver.T4CTTIoer.processError(T4CTTIoer.java:455)
 at oracle.jdbc.driver.T4CTTIoer.processError(T4CTTIoer.java:413)
 at oracle.jdbc.driver.T4C8Oall.receive(T4C8Oall.java:1034)
 at oracle.jdbc.driver.T4CCallableStatement.doOall8(T4CCallableStatement.java:191)
 at oracle.jdbc.driver.T4CCallableStatement.executeForRows(T4CCallableStatement.java:950)
 at oracle.jdbc.driver.OracleStatement.doExecuteWithTimeout(OracleStatement.java:1222)
 at oracle.jdbc.driver.OraclePreparedStatement.executeInternal(OraclePreparedStatement.java:3387)
 at oracle.jdbc.driver.OraclePreparedStatement.execute(OraclePreparedStatement.java:3488)
 at oracle.jdbc.driver.OracleCallableStatement.execute(OracleCallableStatement.java:3857)
 at oracle.jdbc.driver.OraclePreparedStatementWrapper.execute(OraclePreparedStatementWrapper.java:1374)
 at com.redwood.scheduler.oraclejob.service.OracleJob.finalizeJob(OracleJob.java:500)
 at com.redwood.scheduler.oraclejob.service.OracleJob.execute(OracleJob.java:391)
 at com.redwood.scheduler.systemjobservice.impl.JobWorker.doWork(JobWorker.java:245)
 at com.redwood.scheduler.infrastructure.workqueue.Worker.run(Worker.java:74)
 at java.lang.Thread.run(Thread.java:662)
```

### Resolution

Add a SAP BPA user matching the name of the Oracle user specified in the *Run As User* field, grant that user the `scheduler-user` role, and import the user. Note that the name must match the Oracle user (case-sensitive).

# ORA-01017: invalid username/password; logon denied

## Symptoms

The OracleJob job reaches status *Error* and the job has no *Remote ID*.

## Platform

This error can occur in SAP BPA M33.40 or higher.

## Specific Error Message

```
-- JOB RUN STACK TRACE --
java.sql.SQLException: ORA-01017: invalid username/password; logon denied

 at oracle.jdbc.driver.SQLStateMapping.newSQLException(SQLStateMapping.java:70)
 at oracle.jdbc.driver.DatabaseError.newSQLException(DatabaseError.java:133)
 at oracle.jdbc.driver.DatabaseError.throwSqlException(DatabaseError.java:206)
 at oracle.jdbc.driver.T4CTTIoer.processError(T4CTTIoer.java:455)
 at oracle.jdbc.driver.T4CTTIoer.processError(T4CTTIoer.java:406)
 at oracle.jdbc.driver.T4CTTIoer.processError(T4CTTIoer.java:399)
 at oracle.jdbc.driver.T4CTTIoauthenticate.receiveOauth(T4CTTIoauthenticate.java:799)
 at oracle.jdbc.driver.T4CConnection.logon(T4CConnection.java:368)
 at oracle.jdbc.driver.PhysicalConnection.<init>(PhysicalConnection.java:508)
 at oracle.jdbc.driver.T4CConnection.<init>(T4CConnection.java:203)
 at oracle.jdbc.driver.T4CDriverExtension.getConnection(T4CDriverExtension.java:33)
 at oracle.jdbc.driver.OracleDriver.connect(OracleDriver.java:510)
 at com.redwood.scheduler.oraclejob.impl.OracleJobHelper.getConnection(OracleJobHelper.java:488)
 at com.redwood.scheduler.oraclejob.service.OracleJob.getConnection(OracleJob.java:547)
 at com.redwood.scheduler.oraclejob.service.OracleJob.execute(OracleJob.java:378)
 at com.redwood.scheduler.systemjobservice.impl.JobWorker.doWork(JobWorker.java:245)
 at com.redwood.scheduler.infrastructure.workqueue.Worker.run(Worker.java:74)
 at java.lang.Thread.run(Thread.java:662)
```

## Resolution

The process definition does not have a *Run As User* set; this should be set to the credential. Note that the name must match the Oracle user (case-sensitive).

# JCS-132004: JDBC credential for user <user>@System_Oracle not found.

## Symptoms

The OracleJob job reaches status *Error* and the job has no *Remote ID*.

## Platform

This error can occur in SAP BPA M33.40 or higher.

# Specific Error Message

```
-- JOB RUN STACK TRACE --
JCS-132004: JDBC credential for user MASALAN@System_Oracle not found.
 at com.redwood.scheduler.jdbc.service.impl.JDBCCredentialHelper.getCredential(JDBCCredentialHelper.java:604)
 at com.redwood.scheduler.jdbc.service.impl.JDBCCredentialHelper.determineRunAsUserCredentials(JDBCCredential \
Helper.java:460) at com.redwood.scheduler.oraclejob.service.OracleJob.execute(OracleJob.java:366)
 at com.redwood.scheduler.systemjobservice.impl.JobWorker.doWork(JobWorker.java:245)
 at com.redwood.scheduler.infrastructure.workqueue.Worker.run(Worker.java:74)
 at java.lang.Thread.run(Thread.java:662)
```

# Resolution

Create a credential that matches the user in the Oracle database with the *EndPoint* `System_Oracle`.

# Chapter 13. 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 SAP BPA 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:

---

- 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. This object is used to transform the output and log files into a format that can be copied across to SAP BPA.

# Chapter 14. 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 ( see the Administration Guide ) procedure for more information.

> ℹ️ **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, SDIFRUNTIME, 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 BPA 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 ( see the Administration Guide ) in order to be able to import SAP calendars.

The following table illustrates the various combinations and the requirements:

| | Without transports and XBP 2.0 or earlier | Without transports and XBP 3.0 | With transports |
|---|---|---|---|
| Run InfoPackages<br>table `RSMONRQTAB` | o | o | o |
| Import InfoPackage Groups<br>table `RSPAKPOS` | x | x | x |
| Import SAP Calendars<br>tables `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_PROD - Auth. for external management interfaces (XMI)

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

> ℹ **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 BPA.

# 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 (BW)

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 ensure 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 |

ℹ **Note**

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

# Required Authorizations for FCA

## S_RFC (Authorization Check for RFC Access)

| Name | Required Authorizations |
|---|---|
| Activity | 16 |
| Name of RFC to be protected | /JCS/*, BATG, FRFC, OCSB, RFC1, SALX, SCCA, SDIFRUNTIME, SDTX, SG00, SRFC, SVAR_RFC, SXBP, SXBP_EXT, SXBP_VAR, SXMI, SYST |
| Type of RFC to be protected | FUGR |
| Name of RFC to be protected | BAPI_CCODE_GET_FIRSTDAY_PERIOD, BAPI_CCODE_GET_LASTDAY_FYEAR, BAPI_COAREA_GETPERIOD-LIMITS, BAPI_COAREA_GET_RELATED_CCODES, BAPI_COMPA-NYCODE_GETDETAIL, BAPI_COMPANYCODE_GETLIST, BAPI_COMPANYCODE_GET_PERIOD, BAPI_CON-TROLLINGAREA_GETDETAIL, BAPI_CONTROLLINGAREA_GETLIST, FUNCTION_EXISTS, SPERS_GET_TABLE_ENTRIES, TH_SERVER_LIST, |
| Type of RFC to be protected | FUNC |

## S_ADMI_FCD (System Authorizations)

| Name | Required Authorizations |
|---|---|
| System Administrator functions | SP01, SP0R, SPAD |

## S_BTCH_ADM (Background Administrator)

| Name | Required Authorizations |
|---|---|
| Background administrator ID | Y |

## S_BTCH_JOB (Operations on Background Jobs)

| Name | Required Authorizations |
|---|---|
| Job Operations | PLAN, DELE, LIST, RELE, SHOW, PROT,MODI |
| Summary of jobs for a group | * |

## S_BTCH_NAM (Background User Name)

| Name | Required Authorizations |
|---|---|
| Background User Name for Authorization | <name of RFC User>, * |

## S_RZL_NAM (CCMS: System Administration)

| Name | Required Authorizations |
|---|---|
| Activity | 1 |

## S_PROGRAM - ABAP: Program run checks

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

| Authorization Group ABAP Program | * |
|---|---|
| User action ABAP Program | BTCSubmit |

# S_SPO_ACT - Spool: Actions

| Name | Required Authorizations |
|---|---|
| Authorization field for spool | BASE,DISP,ATTR,PRNT,REPR,DELE,USER,SEND,DOWN |
| Value for authorization check | * |

# S_SPO_DEV - Spool: Device Authorizations

| Name | Required Authorizations |
|---|---|
| Long Device Names | * |

# S_TABU_DIS - Table Maintainence

| Name | Required Authorizations |
|---|---|
| Activity | 3 |
| Authorization Group | * |

# S_OC_DOC

| Name | Required Authorizations |
|---|---|
| Activity | 24,RS |

# S_ROLE

| Name | Required Authorizations |
|---|---|
| Activity | ADMINISTRATOR |

# S_OC_SEND - Authorization Object for Sending

| Name | Required Authorizations |
|---|---|
| Valid Comunication Methods | * |
| Range of number of recipients allowed per send operation | * |

# S_XMI_LOG

| Name | Required Authorizations |
|---|---|
| Access method for XMI log | SELECT,REORG |

# S_XMI_PROD

| Name | Required Authorizations |
|---|---|
| XMI logging | * |
| Product | * |

| Interface ID | * |
|---|---|

## S_DEVELOP (ABAP Workbench)

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

## F_BKPF_KOA (Accounting Document: Authorization)

| Name | Required Authorizations |
|---|---|
| Activity | Display |
| Account Type | Customers |

# Default SAP Process Definitions

## Use

SAP-specific process definitions can be recognized by their prefix `SAP_` and their process chain definition type which is `SAPR3` for most, the only exceptions are for Java Scheduler process definitions that have the `JXBP` process chain 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 process chains, so both are listed here.

## Disabling Process Description Updates

Over the life-cycle of the process, the description is updated. You can disable this feature for all or only built-in SAP processes. You set the process server parameter `SAP_JobDescriptionPolicy` on the process server of the SAP system, the parameter accepts the following values:

- `All` (A) - automatic description change is active for all SAP process definitions

- `StandardOnly` (S) - automatic description change is active only for processes of process definitions listed in this topic

- `None` (N)- description updates are disabled for all SAP processes

## SAP Process Definitions

The following SAP process definitions are available:

- SAP_AbapRun - Run ABAP Report

- SAP_AbapRunPrint - Run an ABAP report with print parameters

- SAP_AbapRunPrintExt - Run an ABAP report with print parameters and spool list recipient

- [SAP_ACC_Controller](#) - Control SAP application services through the ACC-CCI interface

- [SAP_BObj_DataServicesJobRun](#) - Runs a DataServices job

- [SAP_BObj_GenerateReportDefinition](#) - Generates a process definition of an SAP BusinessObjects report in the scheduler repository

- [SAP_BObj_ImportReportDefinitions](#) - Imports SAP BusinessObjects reports into the scheduler repository

- [SAP_BObj_ReportRun](#) - Runs an SAP BusinessObjects Crystal Reports or Web Intelligence report

- [SAP_BObj_TriggerEvent](#) - Triggers an event in the SAP BusinessObjects system

- [SAP_BW_GenerateInfoPackageGroup](#) - Generate a process chain definition for an SAP BW InfoPackage group

- [SAP_BW_GenerateJobDefinition](#) - Generates the definition of a single BW process chain job in the scheduler repository

- [SAP_BW_ImportInfoPackageGroups](#) - Import InfoPackage groups

- [SAP_BW_ImportInfoPackages](#) - Import InfoPackages

- [SAP_BW_ImportProcessChainDefinition](#) - Import process chain definition

- [SAP_BW_ImportProcessChains](#) - Import Process Chains

- [SAP_BW_InfopackageRun](#) - Runs an SAP BW InfoPackage

- [SAP_BW_MaintainProcessChainDefinition](#) - Maintains the definition of an SAP BW process chain

- [SAP_BW_Process](#) - Represents a process of an SAP BW process chain

- [SAP_BW_ProcessChain](#) - Represents an SAP BW process chain

- [SAP_BW_ProcessChainRun](#) - Runs an SAP BW process chain

- [SAP_BW_RestartProcess](#) - Restart a process of an SAP BW process chain

- [SAP_BW_RestartProcessChain](#) - Restarts an SAP BW process chain

- [SAP_CcmsJob](#) - Monitored SAP batch job

- [SAP_CcmsJobCheckStatus](#) - Reconcile the status of an SAP batch job according to the DB with the actual status

- [SAP_CcmsJobGetApplicationLog](#) - Get an application log of an SAP batch job

- [SAP_CcmsJobGetApplicationLogHandles](#) - Get the list of application log handles of an SAP batch job

- [SAP_CcmsJobGetLog](#) - Get the job log of an SAP batch job

- [SAP_CcmsJobGetSpoollist](#) - Get a spool list of an SAP batch job

- [SAP_CcmsJobGetStatistics](#) - Get the runtime statistics of an SAP batch job

- [SAP_CcmsJobGetStatus](#) - Get the status of an SAP batch job

- [SAP_CcmsJobModifyHeader](#) - Modifies the header data of an SAP batch job

- [SAP_ClosingCockpit_AbapRun](#) - Run an ABAP report from SAP Closing Cockpit

- [SAP_ClosingCockpit_ManualTask](#) - Manual task in SAP Closing Cockpit

- [SAP_CopyVariant](#) - Copy a variant of an ABAP program

- [SAP_DeleteCcmsMonitors](#) - Removes an SAP CCMS monitor from observation

- [SAP_DeleteVariant](#) - Delete a variant of an ABAP program

- [SAP_ExportRFCFunctionModuleInterface](#) - Export the definition of a RFC function module

- [SAP_ExternalCommandRun](#) - Run an external command

- [SAP_ExternalProgramRun](#) - Run an external program

- [SAP_GenerateCcmsJobDefinition](#) - Generates the definition of a single SAP batch job in the scheduler repository

- [SAP_GetBatchResources](#) - Retrieves information about available application servers and batch work processes

- [SAP_GetEventHistory](#) - Retrieves the batch event history

- [SAP_GetInstalledComponents](#) - Retrieves the list of installed components

- SAP_GetSyslog ( see the Administration Guide ) - Retrieves the SAP syslog

- [SAP_GetXmiLog](#) - Retrieves XMI Log

- [SAP_ImportAbapParameterDefinition](#) - Import the parameter definition an ABAP program

- [SAP_ImportAbapPrograms](#) - Import ABAP Programs

- [SAP_ImportApplicationServers](#) - Import SAP application servers

- [SAP_ImportArchiveObjects](#) - Import archive objects and document types

- [SAP_ImportBatchEvents](#) - Import SAP batch events

- [SAP_ImportCalendars](#) - Import SAP Calendars

- [SAP_ImportCcmsJobs](#) - Imports SAP batch process definitions

- [SAP_ImportCcmsMonitors](#) - Adds a CCMS monitor to the list of observed monitors

- [SAP_ImportExternalCommands](#) - Import external commands

- [SAP_ImportOutputDevices](#) - Import output devices and formats

- [SAP_ImportRecipients](#) - Import the definition of the SAP recipients

- [SAP_ImportVariantDefinition](#) - Import the definition of a variant of an ABAP program

- [SAP_ImportVariants](#) - Import variants of ABAP programs

- [SAP_Info](#) - Retrieves details of an SAP system

- [SAP_InterceptedJob](#) - Intercepted SAP batch job

- SAP_JXBP_GenerateJobDefinition - Generates the definition of a single SAP J2EE process definition in the scheduler repository

- SAP_JXBP_ImportJobDefinitions - Imports the definitions of SAP J2EE jobs so that they can be started later from within the scheduler

- SAP_MaintainXbpOptions - Maintain XBP Options

- SAP_MA_CopyParameters - Copy mass activity parameters

- SAP_MA_CreateParameters - Create a new mass activity parameter record

- SAP_MA_DeleteDunningProposal - Delete the dunning proposal of a new mass activity

- SAP_MA_ImportMassActivities - Import SAP mass activity definitions

- SAP_MA_ImportMassActivity - Import an SAP mass activity definition

- SAP_MA_MassActivityRun - Create a parameter record and start a mass activity run

- SAP_MA_MassActivityTemplateRun - Start a mass activity run using an existing parameter record

- SAP_MA_ResumeMassActivity - Resume processing of an interrupted SAP mass activity run

- SAP_MA_ShowMassActivity - Show SAP mass activity definition

- SAP_MA_StopMassActivity - Stop an SAP mass activity run

- SAP_PI_GetChannelStatus - Retrieves the current status of an SAP XI/PI channel

- SAP_PI_ImportChannels - Imports SAP XI/PI channels

- SAP_PI_StartChannel - Starts an SAP XI/PI channel

- SAP_PI_StopChannel - Stops an SAP XI/PI channel

- SAP_RaiseEvent - Raises a batch event in the SAP system

- SAP_ReleaseInterceptedJobs - Releases intercepted SAP jobs

- SAP_ReloadApplicationLinks - Reload SAP application link definitions

- SAP_RunTemplateJob - Copy and run an SAP batch job

- SAP_SetXmiAuditLevel - Sets XMI Log Level

- SAP_SolutionManager_AbapRun - Run an ABAP report from SAP Solution Manager

- SAP_StoreVariant - Store a variant of an ABAP program

- SAP_SwitchOperationMode - Switches the operation mode in the SAP system

- SAP_SynchronizeEventHistoryCriteria - Synchronizes the event history criteria with the SAP system

- SAP_SynchronizeInterceptionCriteria - Synchronizes the SAP interception criteria with job control rules

- SAP_SynchronizeTerminatedCcmsJobs - Checks the status of all terminated SAP jobs

# SAP_AbapRun

## Use

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

This process 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 Expres-sion | 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 | 1-8 days 9 (Do not Delete) |
| 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 De-fault) 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 |
| SHOWAPPLLOG | Retrieve Application Logs?(*) | 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

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

## Waiting for SAP Events

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 process definition and modify the duplicate.

## Retrieving Spool Output as PDF

By duplicating the *AbapRun* process definitions and changing the default output format for the process definition to PDF, you can force the SAP system to convert the Spool to PDF. This way, you can see colors, if there are any. This should work if you can retrieve the spool as PDF from within SAPGui.

## Additional Print Parameters

The additional print parameters can be generated when importing CCMS jobs by setting the parameter *Generate Extra Print Parameters?* (`EXTENDED_PRINT_PARAMETERS`) to `Yes`.

It is also possible to duplicate any of the *AbapRun* process definitions and add the parameters there. The following parameters are recognized:

• `EMAIL_ADDRESS` - The email address for the mail printer

• `PAGE_FROM` / `PAGE_TO` - page range, numeric values

- `DRAFT_MODE` - draft mode. Valid values: Y (Yes) and N (No)

- `PAGE_ORIENTATION` - page orientation. Valid values: L (Landscape) and P (Portrait)

> ### ℹ **Note**
>
> Due to the limited size of the field in SAP, the max length of the email address is limited to 50 characters.

> ### ℹ **Note**
>
> According to SAP Note 513352 [http://service.sap.com/sap/support/notes/513352], printing with access method "M" (email printer) will not be developed further.

## Retrieving Part of the Job Log

You can retrieve part of the job log by duplicating one of the *AbapRun* process definitions and specifying one of the following parameters:

- `JOBLOG_FIRST_LINES` - retrieve the first <n> lines of the job log

- `JOBLOG_LAST_LINES` - retrieve the last <n> lines of the job log

When filled with a value > 0, only the given number of lines either from the beginning or from the end of the joblog is retrieved.

## Temporary Variants

By duplicating the AbapRun process definitions and adding job parameters, you can make use of temporary variants. A temporary variant is created for the job and deleted once the job has finished.

You specify the values and select options by creating job parameters with names matching the technical name of the parameter or select option and setting *Create Temporary Variant?* or `TEMPORARY_VARIANT` to *Y*. You can use the *SAP Object Editor* to inspect previously imported variants for the specific names, see Creating and Modifying Variants in SAP BPA ( see the Administration Guide ) for more information.

## More Information

Handling ABAP programs ( see the Administration Guide )

# SAP_AbapRunPrint

## Use

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

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

This process 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 ( see the Administration Guide ) 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 |
| EMAIL_ADDRESS | E-Mail address (only for mail printer) | | | |
| 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 | 1-8 days<br>9 (Do not Delete) |
| 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)<br>2 (Archive only)<br>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_PRREL | Release print job? | String | N | Y, N |

| PRINT_PRSAP | SAP cover page? | String | D (System Default) | D (System Default)<br>Y (Print)<br>N (Do not print) |
|---|---|---|---|---|
| PRINT_PRTXT | Cover sheet title | String | | |
| PRINT_PRUNX | OS cover sheet? | String | D (System Default) | D (System Default)<br>Y (Print)<br>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 |
| SHOWAPPLLOG | Retrieve Application Logs?(*) | 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

# Waiting for SAP Events

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 process definition and modify the duplicate.

# Retrieving Spool Output as PDF

By duplicating the *AbapRun* process definitions and changing the default output format for the process definition to PDF, you can force the SAP system to convert the Spool to PDF. This way, you can see colors, if there are any. This should work if you can retrieve the spool as PDF from within SAPGui.

# Additional Print Parameters

The additional print parameters can be generated when importing CCMS jobs by setting the parameter *Generate Extra Print Parameters?* (EXTENDED_PRINT_PARAMETERS) to Yes.

It is also possible to duplicate any of the *AbapRun* process definitions and add the parameters there. The following parameters are recognized:

- `EMAIL_ADDRESS` - The email address for the mail printer

- `PAGE_FROM` / `PAGE_TO` - page range, numeric values

- `DRAFT_MODE` - draft mode. Valid values: Y (Yes) and N (No)

- `PAGE_ORIENTATION` - page orientation. Valid values: L (Landscape) and P (Portrait)

> ℹ **Note**
>
> Due to the limited size of the field in SAP, the max length of the email address is limited to 50 characters.

> ℹ **Note**
>
> According to SAP Note 513352 [http://service.sap.com/sap/support/notes/513352], printing with access method "M" (email printer) will not be developed further.

## Retrieving Part of the Job Log

You can retrieve part of the job log by duplicating one of the *AbapRun* process definitions and specifying one of the following parameters:

- `JOBLOG_FIRST_LINES` - retrieve the first <n> lines of the job log

- `JOBLOG_LAST_LINES` - retrieve the last <n> lines of the job log

When filled with a value > 0, only the given number of lines either from the beginning or from the end of the joblog is retrieved.

## Temporary Variants

By duplicating the AbapRun process definitions and adding job parameters, you can make use of temporary variants. A temporary variant is created for the job and deleted once the job has finished.

You specify the values and select options by creating job parameters with names matching the technical name of the parameter or select option and setting *Create Temporary Variant?* or `TEMPORARY_VARIANT` to *Y*. You can use the *SAP Object Editor* to inspect previously imported variants for the specific names, see Creating and Modifying Variants in SAP BPA ( see the Administration Guide ) for more information.

## More Information

Handling ABAP programs ( see the Administration Guide )

# SAP_AbapRunPrintExt

## Use

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

This process 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 process 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 ( see the Administration Guide ) 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 | |
| EMAIL_ADDRESS | E-Mail address (only for mail printer) | | | |
| 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 | 1-8 days 9 (Do not Delete) |
| 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) A (External User) |
| 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

# Waiting for SAP Events

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 process definition and modify the duplicate.

# Retrieving Spool Output as PDF

By duplicating the *AbapRun* process definitions and changing the default output format for the process definition to PDF, you can force the SAP system to convert the Spool to PDF. This way, you can see colors, if there are any. This should work if you can retrieve the spool as PDF from within SAPGui.

# Additional Print Parameters

The additional print parameters can be generated when importing CCMS jobs by setting the parameter *Generate Extra Print Parameters?* (EXTENDED_PRINT_PARAMETERS) to Yes.

It is also possible to duplicate any of the *AbapRun* process definitions and add the parameters there. The following parameters are recognized:

- EMAIL_ADDRESS - The email address for the mail printer

- PAGE_FROM / PAGE_TO - page range, numeric values

- DRAFT_MODE - draft mode. Valid values: Y (Yes) and N (No)

- PAGE_ORIENTATION - page orientation. Valid values: L (Landscape) and P (Portrait)

> ## ⓘ Note
>
> Due to the limited size of the field in SAP, the max length of the email address is limited to 50 characters.

> ## ⓘ Note
>
> According to SAP Note 513352 [http://service.sap.com/sap/support/notes/513352], printing with access method "M" (email printer) will not be developed further.

# Retrieving Part of the Job Log

You can retrieve part of the job log by duplicating one of the *AbapRun* process definitions and specifying one of the following parameters:

- JOBLOG_FIRST_LINES - retrieve the first <n> lines of the job log

- JOBLOG_LAST_LINES - retrieve the last <n> lines of the job log

When filled with a value > 0, only the given number of lines either from the beginning or from the end of the joblog is retrieved.

## Temporary Variants

By duplicating the AbapRun process definitions and adding job parameters, you can make use of temporary variants. A temporary variant is created for the job and deleted once the job has finished.

You specify the values and select options by creating job parameters with names matching the technical name of the parameter or select option and setting *Create Temporary Variant?* or `TEMPORARY_VARIANT` to *Y*. You can use the *SAP Object Editor* to inspect previously imported variants for the specific names, see Creating and Modifying Variants in SAP BPA ( see the Administration Guide ) for more information.

## More Information

Handling ABAP programs ( see the Administration Guide )

# SAP_ACC_Controller

## Use

This process definition allows you to control (for example start and stop) SAP application services via Adaptive Computing Controller - Controller Command Interface (ACC-CCI).

## Parameters

| Parameter | Description | Direction | Data Type | Default Value | Values |
|---|---|---|---|---|---|
| Url | URL of the ACC-CCI interface | In | String | | |
| Username | User name | In | String | | |
| Password | Password | In | String | | |
| Command | ACC-CCI Command | In | String | | |
| ServiceId | Service Id | In | String | | |
| Hostname | Hostname | In | String | | |
| ForceSmallServer | Force start on small server? | In | String | false | true, false |
| ReplyLog | Get reply log | In | String | true | true, false |

## More Information

• Controlling SAP Adapting Computing Environments with SAP BPA ( see the Administration Guide )

# SAP_BObj_DataServicesJobRun

## Use

Runs a DataServices job.

## Parameters

| Parameter | Description | Direction | Data Type | Default Value | Values |
|---|---|---|---|---|---|

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| SAP_SYSTEMS | SAP System | In | String | | |
|---|---|---|---|---|---|
| DS_REPO_NAME | Repository name | In | String | | |
| DS_JOB_NAME | Job name | In | String | | |
| DS_JOB_SERVER | Job server | In | String | | |
| DS_JOB_SERVER_GROUP | Job server group | In | String | | |

# SAP_BObj_GenerateReportDefinition

## Use

Generates a process definition of an SAP BusinessObjects report in the scheduler repository.

## Parameters

| Parameter | Description | Direction | Data Type | Default Value | Values |
|---|---|---|---|---|---|
| SAP_SYSTEMS | SAP System | In | String | | |
| REPORT_PATH | Report path | In | String | | |
| REPORT_CUID | Report CUID | In | String | | |
| OVERWRITE | Overwrite Existing Job Definitions? | In | String | Y | Y, N |
| JOBDEF_NAME | Name of Generated Job Definition | In | String | | |
| APPLICATION | Application | In | String | | |
| PARTITION | Partition | In | String | | |
| GENERATE_DESTINATION_PARAMS | Generate destination parameters? | String | | | |

# SAP_BObj_ImportReportDefinitions

## Use

Imports SAP BusinessObjects reports into the scheduler repository.

## Parameters

| Parameter | Description | Direction | Data Type | Default Value | Values |
|---|---|---|---|---|---|
| SAP_SYSTEMS | SAP System | In | String | | |
| REPORT_PATH | Report path | In | String | | |
| JOBDEF_NAME | Name of Generated Job Definition | In | String | | |
| JOBNAME_GENERATION | Use name as | In | String | F | |
| OVERWRITE | Overwrite Existing Job Definitions? | In | String | Y | |
| APPLICATION | Application | In | String | | |

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| PARTITION | Partition | In | String | | |
|---|---|---|---|---|---|
| TEST_RUN | Test run? | In | String | Y | |
| GENERATE_DESTINA-TION_PARAMS | Generate destination paramet-ers? | | | | |

The *Report path* (`REPORT_PATH`) parameter accepts the path to the report within BusinessObjects (for example `Feature Samples/Drilldown`); note that this is the path in the user interface, not the path on the file system. You may use wildcards, however, no more than 200 reports will be imported; this is a limitation of the BusinessObjects API. Also, `/**/*/` is added to the end of the report folder if you omit it; `/**/` means sub-folders. You may specify the `SI_KIND` in the value as such `//InfoObjects/Root Folder/**/*[SI_KIND='Webi']` or `//InfoObjects/Root Folder/**/*[SI_KIND='CrystalReport']`.

# SAP_BObj_ReportRun

## Use

Start SAP BusinessObjects reports from within SAP BPA.

## Parameters

| Parameter | Description | Direction | Data Type |
|---|---|---|---|
| SAP_SYSTEMS | SAP System | In | String |
| REPORT_PATH | Report path | In | String |
| REPORT_CUID | Report CUID | In Out | String |
| REPORT_ID | Report Id | Out | String |
| REPORT_KIND | Report Kind | Out | String |

# SAP_BObj_TriggerEvent

## Use

Triggers an event of type *Custom* in the SAP BusinessObjects system. Note that events of type *File* or *Schedule* are used by SAP BusinessObjects and cannot be triggered.

## Parameters

| Parameter | Description | Direction | Data Type |
|---|---|---|---|
| SAP_SYSTEMS | SAP System | In | String |
| EVENT_ID | Event | In | String |

# 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 process definition | In | String | |
| OVERWRITE | Overwrite existing process definitions? | In | String | Y |
| PARTITION | Partition | In | String | |
| APPLICATION | Application | In | String | |
| SHOWLOG | Retrieve job log?(*) | In | String | Y |

# SAP_BW_GenerateJobDefinition

## Use

Generates the definition of a single BW process chain job in the scheduler repository. Submit this process definition to start the BW process chain from within SAP BPA.

## Parameters

| Parameter | Description | Direction | Data Type | Default Value | Values |
|---|---|---|---|---|---|
| SAP_SYSTEMS | SAP System | In | String | | |
| PCHAIN_NAME | Technical Name of SAP BW Process Chain | In | String | | |
| OVERWRITE | Overwrite Existing Job Definitions? | In | String | N | Y, N |
| JOBDEF_NAME | Name of Generated Job Definition | In | String | | |
| APPLICATION | Application | In | String | | |
| PARTITION | Partition | In | String | | |
| CHAIN_RESTARTABLE | Make Processes Restartable If Errors Occur? | In | String | F | F (Failed) A (All) N (Not restartable) |
| SYNCHRONOUS | Synchronous Run? | In | String | N | Y, N |
| SIMULATE | Simulate Run? | In | String | N | Y, N |
| NOPLAN | No Plan? | 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 | Y | Y, N |
|---|---|---|---|---|---|

# 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 |
|---|---|---|---|---|
| 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 | Data source 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

Running Process Chains ( see the Administration Guide )

# SAP_BW_ImportProcessChains

## Use

Import process chains.

## Parameters

| Name | Description | Direction | Data Type | Default Expres-sion |
|---|---|---|---|---|
| SAP_SYSTEMS | SAP System | InOut | String | |
| PCHAIN_NAME | Technical Name of SAP BW Process Chain | In | String | |
| PCHAIN_TEXT | Description of SAP BW Process Chain | In | String | |
| MAX_COUNT | Maximum Count | In | Number | |
| IMPORT_CHAIN_DEFINI-TION | Import Process Chain Definition? | In | String | N |
| CREATE_JOBDEFS | Create a Job Definition? | In | String | N |
| DROP_OLD_SELECTION | Drop Old Matching Values? | In | String | Y |
| TEST_RUN | Test run? | In | String | N |
| NAME | Name of Generated Job Definition | In | String | |
| JOBNAME_GENERATION | Use name as | In | String | |
| APPLICATION | Application | In | String | |
| PARTITION | Partition | In | String | |
| OVERWRITE | Overwrite Existing Job Definitions? | In | String | Y |
| CHAIN_RESTARTABLE | Make Processes Restartable If Errors Occur? | In | String | Fail |
| 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 |
| SHOWSPOOL | Retrieve Spool Lists? | In | String | Y |
| SHOWAPPLLOG | Retrieve Application Logs? | In | String | N |
| IGNORE_APPL_RC | Ignore Application Return Code? | In | String | Y |

## More Information

Running Process Chains ( see the Administration Guide )

# SAP_BW_InfopackageRun

## Use

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

## Parameters

| Name | Description | Data Type | Direction | Default Expression | Values |
|------|-------------|-----------|-----------|--------------------|--------|
| 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?(*) | String | Y | Y, N | |
| SHOWSPOOL | Retrieve spool list?(*) | String | Y | Y, N | |
| SHOWAPPLLOG | Retrieve Application Logs?(*) | Y | Y, N | | |

# 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_VARI-ANT | Variant (name) of the SAP BW process to restart on error | In | String | | |

# SAP_BW_Process

## Use

This process 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 | Values |
|---|---|---|---|---|
| ID | SAP BW process id | String | | |
| JOBCOUNT | 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 | Y, N |
| SHOWSPOOL | Retrieve spool list?(*) | String | Y | Y, N |
| SHOWAPPLLOG | Retrieve Application Logs?(*) | Y | Y, N | |
| TYPE | SAP BW process type | String | | |

# SAP_BW_ProcessChain

## Use

This process 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 | Values |
|---|---|---|---|---|---|
| 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?(*) | String | Y | Y, N | |
| SHOWSPOOL | Retrieve spool list?(*) | String | Y | Y, N | |
| SHOWAPPLLOG | Retrieve Application Logs?(*) | Y | Y, N | | |

# 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 ( see the Administration Guide ).

## 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_UN-CHECKED | 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 ( see the Administration Guide )

# SAP_BW_RestartProcessChain

## 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 ( see the Administration Guide ).

## 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_UN-CHECKED | Restart unchecked | In | String | Y |

# SAP_BW_ProcessChainRun

## Use

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

## Parameters

| Name | Description | Data Type | Default Expression | Default List of Values |
|------|-------------|-----------|--------------------|------------------------|
| CHAIN_RESTART-ABLE | 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 |
| SHOWSPOOL | Retrieve spool list?(*) | String | Y | Y, N |
| SHOWAPPLLOG | Retrieve Application Logs?(*) | Y | Y, N | |
| SIMULATE | Simulate run? | String | N | Y, N |
| SYNCHRONOUS | Synchronous run? | String | N | Y, N |

# SAP_CcmsJob

## Use

This process definition represents an SAP batch process that is monitored by SAP BPA 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 | Values |
|------|-------------|-----------|--------------------|--------|
| | | | | |

| | | | | |
|---|---|---|---|---|
| CLIENT | SAP client | String | | |
| DELETE_JOB | Delete job when finished? | String | N | |
| JOBCOUNT | SAP job count | String | | |
| JOBNAME | SAP job name | String | | |
| SAP_USER_NAME | SAP user name | String | | |
| SHOWLOG | Retrieve job log?(*) | String | Y | Y, N |
| SHOWSPOOL | Retrieve spool list?(*) | String | Y | Y, N |
| SHOWAPPLLOG | Retrieve Application Logs?(*) | Y | Y, N | |

# 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 |
| JOBCOUNT | SAP job count | In | String |
| JOBCOUNT_1 | SAP job count 1 | In | String |
| JOBCOUNT_10 | SAP job count 10 | In | String |
| JOBCOUNT_2 | SAP job count 2 | In | String |
| JOBCOUNT_3 | SAP job count 3 | In | String |
| JOBCOUNT_4 | SAP job count 4 | In | String |
| JOBCOUNT_5 | SAP job count 5 | In | String |
| JOBCOUNT_6 | SAP job count 6 | In | String |
| JOBCOUNT_7 | SAP job count 7 | In | String |
| JOBCOUNT_8 | SAP job count 8 | In | String |
| JOBCOUNT_9 | SAP job count 9 | In | String |
| JOBNAME | SAP job name | In | String |
| JOBNAME_1 | SAP job name 1 | In | String |
| JOBNAME_10 | SAP job name 10 | In | String |
| JOBNAME_2 | SAP job name 2 | In | String |
| JOBNAME_3 | SAP job name 3 | In | String |
| JOBNAME_4 | SAP job name 4 | In | String |
| JOBNAME_5 | SAP job name 5 | In | String |
| JOBNAME_6 | SAP job name 6 | In | String |
| JOBNAME_7 | SAP job name 7 | In | String |
| JOBNAME_8 | SAP job name 8 | In | String |
| JOBNAME_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 |
| JOBCOUNT | SAP job count | In | String | |
| JOBNAME | SAP job name | In | String | |
| JOB_ID | Job id | In | Number | |
| SAP_SYSTEMS | SAP System | In | String | |

# SAP_CcmsJobGetSpoollist

## 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 |
| JOBCOUNT | SAP job count | In | String | |
| JOBNAME | 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 |
| JOBNAME | SAP job name | In | String |
| JOBCOUNT | 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 | |
| JOBCOUNT | SAP job count | In | String | |
| JOBNAME | 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 |
| JOBNAME | SAP job name | In | String |
| JOBCOUNT | 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 | 1-8 days 9 (Do not Delete) |
| 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_PRREC | 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) 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_ESTIM-ATED_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 ( see the Administration Guide )

# 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 BPA 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_PRO-GRAM_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 ( see the Administration Guide )

# SAP_DeleteCcmsMonitors

## Use

This process definition is used to delete CCMS monitors from the alert tree of SAP BPA 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 |

## More Information

Integrating CCMS Monitors ( see the Administration Guide )

# 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 ( see the Administration Guide )

# SAP_ExportRFCFunctionModuleInterface

## Use

You use this process definition to export an RFC function module

## Parameters

| Name | Description | Direction | Data Type | Default Expression |
|---|---|---|---|---|
| SAP_SYSTEMS | SAP System | In | String | |
| FUNCTION_MODULE | Function Module Name | In | String | |

# SAP_ExternalCommandRun

## Use

This process definition is used to run external commands in SAP. This process 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 |

## Waiting for SAP Events

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 process definition and modify the duplicate.

# Retrieving Spool Output as PDF

By duplicating the *AbapRun* process definitions and changing the default output format for the process definition to PDF, you can force the SAP system to convert the Spool to PDF. This way, you can see colors, if there are any. This should work if you can retrieve the spool as PDF from within SAPGui.

# Additional Print Parameters

The additional print parameters can be generated when importing CCMS jobs by setting the parameter *Generate Extra Print Parameters?* (EXTENDED_PRINT_PARAMETERS) to Yes.

It is also possible to duplicate any of the *AbapRun* process definitions and add the parameters there. The following parameters are recognized:

- EMAIL_ADDRESS - The email address for the mail printer

- PAGE_FROM / PAGE_TO - page range, numeric values

- DRAFT_MODE - draft mode. Valid values: Y (Yes) and N (No)

- PAGE_ORIENTATION - page orientation. Valid values: L (Landscape) and P (Portrait)

> ℹ️ **Note**
>
> Due to the limited size of the field in SAP, the max length of the email address is limited to 50 characters.

> ℹ️ **Note**
>
> According to SAP Note 513352 [http://service.sap.com/sap/support/notes/513352], printing with access method "M" (email printer) will not be developed further.

# Retrieving Part of the Job Log

You can retrieve part of the job log by duplicating one of the *AbapRun* process definitions and specifying one of the following parameters:

- JOBLOG_FIRST_LINES - retrieve the first <n> lines of the job log

- JOBLOG_LAST_LINES - retrieve the last <n> lines of the job log

When filled with a value > 0, only the given number of lines either from the beginning or from the end of the joblog is retrieved.

# Temporary Variants

By duplicating the AbapRun process definitions and adding job parameters, you can make use of temporary variants. A temporary variant is created for the job and deleted once the job has finished.

You specify the values and select options by creating job parameters with names matching the technical name of the parameter or select option and setting *Create Temporary Variant?* or TEMPORARY_VARIANT to *Y*. You can

use the *SAP Object Editor* to inspect previously imported variants for the specific names, see Creating and Modifying Variants in SAP BPA ( see the Administration Guide ) for more information.

# SAP_ExternalProgramRun

## Use

This process 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 |
| JOBCOUNT | 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 |

## Waiting for SAP Events

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 process definition and modify the duplicate.

# Retrieving Spool Output as PDF

By duplicating the *AbapRun* process definitions and changing the default output format for the process definition to PDF, you can force the SAP system to convert the Spool to PDF. This way, you can see colors, if there are any. This should work if you can retrieve the spool as PDF from within SAPGui.

# Additional Print Parameters

The additional print parameters can be generated when importing CCMS jobs by setting the parameter *Generate Extra Print Parameters?* (EXTENDED_PRINT_PARAMETERS) to Yes.

It is also possible to duplicate any of the *AbapRun* process definitions and add the parameters there. The following parameters are recognized:

- EMAIL_ADDRESS - The email address for the mail printer

- PAGE_FROM / PAGE_TO - page range, numeric values

- DRAFT_MODE - draft mode. Valid values: Y (Yes) and N (No)

- PAGE_ORIENTATION - page orientation. Valid values: L (Landscape) and P (Portrait)

## 🛈 Note

Due to the limited size of the field in SAP, the max length of the email address is limited to 50 characters.

## 🛈 Note

According to SAP Note 513352 [http://service.sap.com/sap/support/notes/513352], printing with access method "M" (email printer) will not be developed further.

# Retrieving Part of the Job Log

You can retrieve part of the job log by duplicating one of the *AbapRun* process definitions and specifying one of the following parameters:

- JOBLOG_FIRST_LINES - retrieve the first <n> lines of the job log

- JOBLOG_LAST_LINES - retrieve the last <n> lines of the job log

When filled with a value > 0, only the given number of lines either from the beginning or from the end of the joblog is retrieved.

# Temporary Variants

By duplicating the AbapRun process definitions and adding job parameters, you can make use of temporary variants. A temporary variant is created for the job and deleted once the job has finished.

You specify the values and select options by creating job parameters with names matching the technical name of the parameter or select option and setting *Create Temporary Variant?* or TEMPORARY_VARIANT to *Y*. You can use the *SAP Object Editor* to inspect previously imported variants for the specific names, see Creating and Modifying Variants in SAP BPA ( see the Administration Guide ) for more information.

# SAP_GenerateCcmsJobDefinition

## Use

This process definition is used to generate a process definition in SAP BPA based on the process 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 | Values |
|------|-------------|-----------|-----------|--------------------|--------|
| 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 process definitions for this client only? | In | String | N | |
| CREATE_JOB-DEFS_FOR_STEPS | Create a process 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 process definition | In | String | | |
| JOBNAME | SAP job name | In | String | | |
| OVERWRITE | Overwrite existing process 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?(*) | String | Y | Y, N | |
| SHOWSPOOL | Retrieve spool list?(*) | String | Y | Y, N | |
| SHOWAPPLLOG | Retrieve Application Logs?(*) | Y | Y, N | | |

# SAP_GetBatchResources

## Use

This process 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 process 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 process 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_GetSysLog

## Use

Retrieves the system log.

## Parameters

| Name | Description | Direction | Data Type |
|---|---|---|---|
| SAP_SYSTEMS | SAP System | In | String |
| FROM_TIMESTAMP | Starting from | In | Date Time Zone |
| TO_TIMESTAMP | Up to | In | Date Time Zone |
| TARGET_SERVER | SAP Target Server Name | 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 ( see the Administration Guide )

# 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 |

## More Information

Importing ABAP Programs ( see the Administration Guide )

# SAP_ImportApplicationServers

## Use

This is an internal process definition to retrieve the list of application servers in an SAP instance and is mainly used for load balancing. This process 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.

> **ℹ Note**
>
> This process 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 ( see the Administration Guide )

# SAP_ImportBatchEvents

## Use

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

> **ℹ 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 ( see the Administration Guide )

# 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 ( see the Administration Guide )

# 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 ( see the Administration Guide )

# SAP_ImportCcmsJobs

## Use

This process definition is used to import CCMS jobs into SAP BPA. These CCMS jobs can then be scheduled to run through SAP BPA allowing you to use the advanced scheduling features of SAP BPA. The job name and job count parameters may contain wildcard characters. In this case all matching jobs will be imported. This process

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 | Direc-tion | Data Type | Default Expres-sion | 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_GENERA-TION | When multiple jobs match | In | String | P | P (Prefix job name) F (Fail) |
| OVERWRITE | Overwrite Existing Job Defini-tions? | In | String | Y | Y, N |
| OVERWRITE_LAN-GUAGE | Force Step Language | In | String | | |
| OVERWRITE_USER | Force Step User | In | String | | |
| APPLICATION | Application | In | String | | |
| CREATE_JOB-DEFS_FOR_STEPS | Create a Job Definition for Each Step? | In | String | N | N (Never) A (ABAP) S (Step) |
| EXTEN-DED_PRINT_PARAMET-ERS | Generate Extra Print Paramet-ers? | 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 |

Note that the JOB_STATUSES parameter takes a string of CCMS job statuses; the following statuses are valid:

- Canceled - The job finished with error, or has been killed.

- Finished - The job finished successfully.

- Intercepted - The job has been intercepted.

- Ready - The job has been picked up by a batch work process but not started yet.

- Released - The job has been scheduled and is now waiting for execution according to its start conditions.

- ReleaseSuspended - The job has been suspended because an upgrade of the SAP batch system is currently running.

- Running - The job is currently running.

- Scheduled - The job is created with no start condition.

For example, to match all jobs that have a final state, you specify the following:

```
Finished, Canceled
```

## More Information

Importing SAP CCMS Jobs ( see the Administration Guide )

# SAP_ImportCcmsMonitors

## Use

This process 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.

> ℹ️ **Note**
>
> This process definition requires XBP 2.0 enabled ( see the Administration Guide ) 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 ( see the Administration Guide )

# SAP_ImportRecipients

## Use

This process 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

- Handling Variants ( see the Administration Guide )

- Importing Variants ( see the Administration Guide )

- Importing Variant Definitions ( see the Administration Guide )

# 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 ( see the Administration Guide )

- Importing Variants ( see the Administration Guide )

- Importing Variant Definitions ( see the Administration Guide )

# SAP_Info

## Use

This process 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

> ### ℹ Note
>
> This process definition is deprecated in favor of *SAP_CcmsJob*.

This process definition used to represent an SAP batch process that was intercepted in the SAP System. It has 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 |
| 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 |

# SAP_JXBP_GenerateJobDefinition

## Use

This process definition is used to generate JXBP process definitions inside SAP BPA 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 process definition | In | String | |
| JOBNAME | SAP job name | In | String | |
| OVERWRITE | Overwrite existing process 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 ( see the Administration Guide )

# SAP_JXBP_ImportJobDefinitions

## Use

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

## Parameters

| Name | Description | Direction | Data Type | Default Expression |
|------|-------------|-----------|-----------|--------------------|
| APPLICATION | Application | In | String | |
| JOBDEF_NAME | Name for the generated process definition | In | String | |
| JOBNAME | J2EE process definition | In | String | |
| OVERWRITE | Overwrite existing process definitions? | In | String | N |
| SAP_SYSTEMS | SAP System | In | String | |
| SYSTEM_SPECIFIC | System specific? | In | String | N |

## More Information

Importing Java Job Definitions ( see the Administration Guide )

# SAP_MA_CopyParameters

## Use

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

This process 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 |

If `MASS_ACTIVITY_DATE_SHIFT` is left blank, dates will be automatically shifted the number of days between source and target date ID's, when you set it to `0`, then no date shift is performed.

# SAP_MA_CreateParameters

## Use

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

This process 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_PARAMET-ER_SET | Mass activity parameter set | In | String |
| MASS_ACTIVITY_TAR-GET_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 process 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 process 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 ( see the Administration Guide )

# SAP_MA_ImportMassActivity

## Use

This job imports an SAP mass activity definition.

This process 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 ( see the Administration Guide )

# SAP_MA_MassActivityRun

## Use

This job creates a parameter record and starts a mass activity run. The entire parameter set must be specified in SAP BPA, if you do not wish to do this, you can use *SAP_MA_CopyParameters* followed by *SAP_MA_MassActivityTemplateRun*.

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

## Parameters

| Name | Description | Direction | Data Type |
|---|---|---|---|
| SAP_SYSTEMS | SAP System | In | String |

Reference

| CLIENT | SAP client | In/Out | String |
| SAP_USER_NAME | SAP user name | In | String |
| MASS_ACTIVITY | Mass activity | In | String |
| MASS_ACTIVITY_PARAMET-ER_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 |
| SHOWLOG | Retrieve job log?(*) | String | Y |
| SHOWSPOOL | Retrieve spool list?(*) | String | Y |
| SHOWAPPLLOG | Retrieve Application Logs?(*) | Y | Y, N |

## More Information

Importing and Running Mass Activities ( see the Administration Guide )

# SAP_MA_MassActivityTemplateRun

## Use

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

This process 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 |
| SAP_USER_NAME | SAP user name | In | String |
| MASS_ACTIVITY | Mass activity | In | String |
| MASS_ACTIVITY_DATE_ID | Date ID | In | Date Time Zone |
| MASS_ACTIVITY_ID | Identification | In | String |
| SHOWLOG | Retrieve job log?(*) | String | Y |
| SHOWSPOOL | Retrieve spool list?(*) | String | Y |
| SHOWAPPLLOG | Retrieve Application Logs?(*) | Y | Y, N |

## More Information

Importing and Running Mass Activities ( see the Administration Guide )

# SAP_MA_ResumeMassActivity

## Use

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

This process 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 ( see the Administration Guide )

# SAP_MA_ShowMassActivity

## Use

This job shows the definition of an SAP mass activity.

This process 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 process 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_AC-TION | Interception action | In | String | R (Show) | R (Show) (Enable) 3 (Enable with XBP 3.0 features) C (Disable) |
| PARENTCHILD_AC-TION | Parent/Child action | In | String | R (Show) | R (Show) S (Enable) C (Disable) |
| INTERCEPTION_OP-TION | Interception enabled? | Out | String | | |
| PARENTCHILD_OP-TION | 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 ( see the Administration Guide )

- Enable XBP 2.0 or 3.0 Functionality ( see the Administration Guide )

- Enhanced SAP Interfaces with Redwood Transports ( see the Administration Guide )

# 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 BPA

## 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 ( see the Administration Guide )

# 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 process 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 process 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 process 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 process definition.

> ## ℹ Note
>
> Jobs with steps containing external programs or commands require Chargeable version of SAP BPA

## 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 process 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 | Direc-tion | Data Type | Default Expres-sion | Default List of Val-ues |
|---|---|---|---|---|---|
| SAP_SYSTEMS | SAP System | In | String | | |
| CLIENT | SAP client | In | String | | |
| JOBNAME | SAP job name | In | String | | |
| ABAP_PRO-GRAM_NAME | ABAP program | In | String | | |
| ABAP_VARI-ANT_NAME | ABAP variant | In | String | | |
| TEMPORARY_VARI-ANT | 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 | 1-8 days 9 (Do not Delete) |
| 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_PRREC | 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_OB-JECT | 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_FORWARD-ING | 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 ( see the Administration Guide )

# 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_PRO-GRAM_NAME | The variants ABAP program | String | | |
| ABAP_VARI-ANT_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<br>S (Skip) - the variant is skipped<br>R (Replace) - the variant is overwritten with the variant definition from SAP BPA<br>C (Change) - only different parameters are changed, deleted variant parameters will not be removed (recommended) |

# SAP_SwitchOperationMode

## Use

Switches the operation mode in the SAP system (ABAP stack). Requires Redwood transport files.

## Parameters

| Parameter | Description | Data Type |
|---|---|---|
| SAP_SYSTEMS | SAP System | In |
| OPERATION_MODE | Operation mode | In |

# SAP_SynchronizeEventHistoryCriteria

## Use

This process definition is used to synchronize batch event criteria in SAP. This process 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 process definition synchronizes interception criteria (job control rules) between SAP BPA and SAP. This process 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) <br> O (Overwrite) |
| SAP_SYSTEMS | SAP System | String | | |
| SYNC_DIRECTION | Synchronization direction | String | N | N (Show Only) <br> S (SAP -> Scheduler) <br> B (SAP <-> Scheduler) <br> 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 BPA.

- Scheduler -> SAP: all SAP BPA rules are transferred to SAP

and afterwards the SAP table contains the same rules as in SAP BPA.

- With Scheduler <-> SAP: all roles both from SAP BPA and SAP are

synchronized. That means the rules of SAP are going into the SAP BPA tables

and the rules of SAP BPA 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 BPA

and afterwards the SAP BPA table contain the same rules as in SAP.

## OVERWRITE

Append and Overwrite options only work for syn_direction SAP BPA -> SAP and

SAP BPA <-> 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 process definition synchronizes job states between SAP BPA and SAP. Normally, customers will schedule this process definition to run regularly, for example once per day.

## Parameters

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

*) The child jobs get the output parameters (for example `SHOWSPOOL`) set according to the following order:

---

1. from a matching job control rule

2. from the parent job

3. default expression of *SAP_CcmsJob*

# JCS Errors

## JCS Errors 101XXX (alert)

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

## JCS Errors 102XXX (api-impl)

| CODE | Description |
|---|---|
| JCS-102000, 102000 | An action has vetoed the transaction. |
| JCS-102001, 102001 | When a Job is to be automatically submitted by a JobDefinition-WaitEvent it must have a default Queue. |
| JCS-102002, 102002 | The action is now allowed for objects with automatic behavior. |
| JCS-102003, 102003 | The action is now allowed for objects with creator behavior. |
| JCS-102004, 102004 | The action is now allowed for objects with maintenance behavior. |
| JCS-102005, 102005 | The behavior of the object prevents the action from being performed. |
| JCS-102006, 102006 | The action is now allowed for objects with ordinary behavior. |
| JCS-102007, 102007 | The action is now allowed for objects with system behavior. |
| JCS-102008, 102008 | The action is now allowed for objects with undefined behavior. |
| JCS-102009, 102009 | Style attributes may not specify the a background image. |
| JCS-102010, 102010 | An error occurred trying to create a branched-copy for an object. |
| JCS-102011, 102011 | The path for a business key is unavailable. |
| JCS-102012, 102012 | Jobchain calls must refer to master job definitions if and only if they belong to a master job definition. |
| JCS-102013, 102013 | Jobchain calls cannot refer to template job definitions. |
| JCS-102014, 102014 | The isolation-group of a partition was changed. |
| JCS-102015, 102015 | The partition of Library Custom and NONE cannot be changed |
| JCS-102016, 102016 | It is not possible to delete a process server unless it is stopped. |
| JCS-102017, 102017 | Only jobs that are steps or calls can be enabled. |
| JCS-102018, 102018 | The Custom Library cannot be renamed. |
| JCS-102019, 102019 | The in-value of a parameter was changed on a job that has already started. |
| JCS-102020, 102020 | The out-value of a parameter was changed on a job that was already final. |

| JCS-102021, 102021 | Cannot modify the scheduled start time of a Job once it has already started or if it has already completed, or in an OnChange trigger or action. |
|---|---|
| JCS-102022, 102022 | Submit frames cannot be changed for maintenance jobs. |
| JCS-102023, 102023 | Cannot modify a built-in role. |
| JCS-102024, 102024 | Only system objects can use system job locks. |
| JCS-102025, 102025 | Cannot prepare a non-current job definition. |
| JCS-102026, 102026 | Cannot prepare a template job definition. |
| JCS-102027, 102027 | The requested action cannot be executed on an object that has not been persisted. |
| JCS-102028, 102028 | Cannot submit a job prepared from a non-current job definition. |
| JCS-102029, 102029 | The job's parent was modified; this is not allowed. |
| JCS-102030, 102030 | Job chain steps cannot be restarted. |
| JCS-102031, 102031 | System maintenance jobs cannot be restarted. |
| JCS-102032, 102032 | Restricted SAP jobs cannot be restarted. |
| JCS-102033, 102033 | Job chain steps cannot be resubmitted. |
| JCS-102034, 102034 | System maintenance jobs cannot be resubmitted. |
| JCS-102035, 102035 | Restricted SAP jobs cannot be resubmitted. |
| JCS-102036, 102036 | The Template property cannot be reverted. |
| JCS-102037, 102037 | A job definition that is already used as jobchain call cannot be made a template. |
| JCS-102038, 102038 | Calendar type time windows define whole days, so times cannot be set. |
| JCS-102039, 102039 | Calendar type time windows define whole days, so time zones cannot be set. |
| JCS-102040, 102040 | Cannot use the scheduler session when it is in the detached state. |
| JCS-102041, 102041 | The database control connection could not be initialized. |
| JCS-102042, 102042 | Creator-grants can only be created at the same time as the object to which they apply. |
| JCS-102043, 102043 | An object refers to another object that is in a different isolation group. |
| JCS-102044, 102044 | Day shift attributes are only allowed for Calendar type time windows. |
| JCS-102045, 102045 | The 'StartAtValue' attribute for a job is not allowed. |
| JCS-102046, 102046 | An invalid attribute descriptor encountered. |
| JCS-102047, 102047 | Error setting up Document parser. |
| JCS-102048, 102048 | Document parser is not aware of namespaces. |
| JCS-102049, 102049 | Document parser cannot validate. |
| JCS-102050, 102050 | Duplicate ABAP client number combination. |
| JCS-102051, 102051 | An "early" timeout has occurred before an operation completed successfully. |
| JCS-102052, 102052 | No RFC connect string given. |
| JCS-102053, 102053 | No J2EE connect string given. |
| JCS-102054, 102054 | Too many XBP clients have been defined. |
| JCS-102055, 102055 | Too many J2EE clients of a given type have been defined. |

| JCS-102056, 102056 | Too many SAP systems have been defined. |
|---|---|
| JCS-102057, 102057 | A forbidden external entity reference has been used. |
| JCS-102058, 102058 | An element or attribute was encountered that belongs to a forbidden namespace. |
| JCS-102059, 102059 | A forbidden processing instruction has been used.. |
| JCS-102060, 102060 | A job-definition has a forbidden related object. |
| JCS-102061, 102061 | An URI was encountered that uses a scheme which is not allowed. |
| JCS-102062, 102062 | An attempt has been made to set a field that must be null. |
| JCS-102063, 102063 | A security grant has been made by a subject that is not a user. |
| JCS-102064, 102064 | A loop has been detected in a series of objects that must form a hierarchy without any loops. |
| JCS-102065, 102065 | Inconsistent object types for matches/overrides of an ImportRule. |
| JCS-102066, 102066 | A status handler attached to a job chain has an action of IgnoreJob-ChainDefault. |
| JCS-102067, 102067 | The branch timestamp must be set if (and only if) the object is not the master. |
| JCS-102068, 102068 | Users are not allowed to set the RaiserObject or ClearerObject to something other than the current user or a job. |
| JCS-102069, 102069 | An event can only be deleted when it is has been cleared. |
| JCS-102070, 102070 | The expression cannot be compiled. |
| JCS-102071, 102071 | Array Parameter default expressions cannot be specified as a constant, they must use the Array.toXXX methods. |
| JCS-102072, 102072 | The hold on submit expression is invalid. |
| JCS-102073, 102073 | The device ID is not valid. |
| JCS-102074, 102074 | The time window status specified requires a time window and a time zone. |
| JCS-102075, 102075 | The time window status specified requires no time window or time zone. |
| JCS-102076, 102076 | The specified operation is illegal. |
| JCS-102077, 102077 | The specified operation is illegal. |
| JCS-102078, 102078 | Transaction vetoed due to violated license conditions. |
| JCS-102079, 102079 | An operation was underway when the thread was interrupted. |
| JCS-102080, 102080 | JobDefinitionKeepType is specified and JobDefinitionKeepUnits is not set to job. |
| JCS-102081, 102081 | The queue expression is invalid. |
| JCS-102082, 102082 | The priority expression is invalid. |
| JCS-102083, 102083 | Root exception caused by an invalid master object reference. |
| JCS-102084, 102084 | An invalid persistence phase was specified. |
| JCS-102085, 102085 | Invalid return-code mapping expression. |
| JCS-102086, 102086 | The state transition that is trying to be done is not allowed for the current state |
| JCS-102087, 102087 | Base class for all exceptions relating to invalid status handlers. |
| JCS-102088, 102088 | Translation key is invalid. |

| JCS-102089, 102089 | Base class for exceptions indicating that XHTML doesn't meet our restrictions. |
|---|---|
| JCS-102090, 102090 | A global object refers to another object that is isolated. |
| JCS-102091, 102091 | An object refers to another object that is not allowed due to isolation. |
| JCS-102092, 102092 | Job-files can only be associated with a service if the service supports job-files. |
| JCS-102093, 102093 | A job cannot be modified when it has reached a final state. |
| JCS-102094, 102094 | A job finished with an unexpected final status. |
| JCS-102095, 102095 | The job is not part of a recurrence group. |
| JCS-102096, 102096 | There is no SAP system for this process server. |
| JCS-102097, 102097 | Transaction vetoed due to a licensing problem. |
| JCS-102098, 102098 | The logon subject was not a user. |
| JCS-102099, 102099 | The value provided for the client number was malformed. |
| JCS-102100, 102100 | The value provided for the J2EE user name is malformed. |
| JCS-102101, 102101 | A malformed URI was encountered in an attribute where an URI was expected. |
| JCS-102102, 102102 | The process definition to be called on error is invalid. |
| JCS-102103, 102103 | A mandatory field is not set. |
| JCS-102104, 102104 | A mandatory job parameter was not set. |
| JCS-102105, 102105 | Master objects must have themself as master. |
| JCS-102106, 102106 | Minimum value must be smaller then maximum value. |
| JCS-102107, 102107 | Jobfile component could not be located. All jobfile content is retrieved via this component. |
| JCS-102108, 102108 | Specified isolation-group is missing. |
| JCS-102109, 102109 | A related object for this type of job definition is missing. |
| JCS-102110, 102110 | A reserved job-definition parameter is required but missing. |
| JCS-102111, 102111 | Specified user is missing. |
| JCS-102112, 102112 | License does not allow model modification. |
| JCS-102113, 102113 | Monitored object is not defined by a business key. |
| JCS-102114, 102114 | Referenced time window must be a Calendar since this time window is a Calendar. |
| JCS-102115, 102115 | A job can only be deleted when it is in a final state. |
| JCS-102116, 102116 | Non-master objects must refer to the current master. |
| JCS-102117, 102117 | No default ABAP client has been defined for the SAP system. |
| JCS-102118, 102118 | An attempt was made to update an object, and the corresponding row could not be found in the database. |
| JCS-102119, 102119 | An attempt has been made to change a non-modifiable field. |
| JCS-102120, 102120 | An attempt has been made to change a non-modifiable object. |
| JCS-102121, 102121 | An attempt was made to link a new object in a one to one relationship, but the relationship was already filled. |
| JCS-102122, 102122 | Setting the field of an object would introduce an object cycle. |
| JCS-102123, 102123 | Olson name of timezone does not match the name. |

| | |
|---|---|
| JCS-102124, 102124 | The reply to an OperatorMessage was not allowed. |
| JCS-102125, 102125 | The ReplyExpression attribute is not a valid regular expression. |
| JCS-102126, 102126 | Replies are not allowed for this OperatorMessage. |
| JCS-102127, 102127 | The reply to an OperatorMessage is not formatted correctly. |
| JCS-102128, 102128 | The reply to an OperatorMessage can only be set once. |
| JCS-102129, 102129 | 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-102130, 102130 | Baseclass for parameter mapping exceptions |
| JCS-102131, 102131 | The target parameter of a JobChainCallOutReferenceParameter must be on the master job chain |
| JCS-102132, 102132 | Parameter types of the parameter mapping do not match |
| JCS-102133, 102133 | Parameter direction of the parameter mapping is incorrect |
| JCS-102134, 102134 | Order of mapped parameter calls is incorrect |
| JCS-102135, 102135 | An attempt is being made to change the partition of an object. |
| JCS-102136, 102136 | The parameters are not valid for the period function. |
| JCS-102137, 102137 | Grant is for a type of object that has no defined privileges. |
| JCS-102138, 102138 | Privilege subjects cannot be associated with a specific isolation group. |
| JCS-102139, 102139 | Job files must have both a process server and a service, or neither. This exception is thrown when a job file has one and not the other. |
| JCS-102140, 102140 | An exception related to recurrence actions on a job. |
| JCS-102141, 102141 | An attempt has been made to set both a Submit Frame and a Recurrence pattern on this Job. |
| JCS-102142, 102142 | The value of the registry entry must match the session user. |
| JCS-102143, 102143 | Operation cannot be performed as an associated object is not accessible. |
| JCS-102144, 102144 | Problem with related objects of the job definition. |
| JCS-102145, 102145 | A relative URI was encountered; these are not allowed. |
| JCS-102146, 102146 | Problem with a reserved job-definition parameter. |
| JCS-102147, 102147 | A parameter definition has a reserved name. |
| JCS-102148, 102148 | A parameter definition has a reserved name. |
| JCS-102149, 102149 | A reserved job-definition parameter has the wrong type. |
| JCS-102150, 102150 | Role-grants cannot be modified; they must be deleted and recreated. |
| JCS-102151, 102151 | Grantor does not have the role with grantable rights. |
| JCS-102152, 102152 | The related ImportRuleDefinition must support matching. |
| JCS-102153, 102153 | The related ImportRuleDefinition must support overriding. |
| JCS-102154, 102154 | Base class for exceptions relating to the isolation of SAP systems. |
| JCS-102155, 102155 | Isolation of an isolated SAP system would be violated. |
| JCS-102156, 102156 | SAP system should be isolated but is not. |
| JCS-102157, 102157 | An attempt was made to change the scheduling settings on a job that has a recurrence pattern. |
| JCS-102158, 102158 | The scheduling parameter evaluated to a queue that does not exist. |
| JCS-102159, 102159 | The routing parameter evaluated to a process server that does not exist. |

| | |
|---|---|
| JCS-102160, 102160 | The routing parameter evaluated to a process server that does not have any queues. |
| JCS-102161, 102161 | An error was encountered while evaluating and/or applying a scheduling parameter. |
| JCS-102162, 102162 | An error was encountered while evaluating a scheduling parameter. |
| JCS-102163, 102163 | Internal error obtaining script engine for expression. |
| JCS-102164, 102164 | An attempt was made to call setDirect on a sealed object. |
| JCS-102165, 102165 | Custom non-rank privileges require advanced-security. |
| JCS-102166, 102166 | Base-class for exceptions relating to security grants. |
| JCS-102167, 102167 | Grant created at a level that is not appropriate for the given level. |
| JCS-102168, 102168 | Base-class for exceptions relating to security privilege grants. |
| JCS-102169, 102169 | Grantor does not have rights to modify the specified privilege. |
| JCS-102170, 102170 | Grantor cannot grant this privilege to the grantee as it is not grantable. |
| JCS-102171, 102171 | Grantor cannot revoke this privilege because the grantor do not have the correct rights. |
| JCS-102172, 102172 | The next value in the sequence could not be retrieved for some reason. |
| JCS-102173, 102173 | Sequence could not be created and/or initialized for some reason. |
| JCS-102174, 102174 | Root class for runtime exceptions related to sequences. |
| JCS-102175, 102175 | The ProcessServerService that is being deleted is needed by the ProcessServer to handle a JobDefinitionType that is still defined for the ProcessServer. |
| JCS-102176, 102176 | Process server services can only be added or deleted when the process server is not running. |
| JCS-102177, 102177 | Operation could not be performed because an object is no longer current. |
| JCS-102178, 102178 | A status handler has an attribute that is forbidden for the given handler action. |
| JCS-102179, 102179 | A status handler is missing a required attribute for the given handler action. |
| JCS-102180, 102180 | The string provided for the given field is too long. |
| JCS-102181, 102181 | A security grant has been given to a subject that cannot receive grants. |
| JCS-102182, 102182 | A timeout expired before an operation completed successfully. |
| JCS-102183, 102183 | Too many default ABAP clients have been defined for the SAP system. |
| JCS-102184, 102184 | Job must be assigned to a process-server. |
| JCS-102185, 102185 | More than one object shares the same sequence number. |
| JCS-102186, 102186 | Job cannot be restarted for some unknown reason. |
| JCS-102187, 102187 | Job cannot be resubmitted for some unknown reason. |
| JCS-102188, 102188 | Transaction vetoed due to a feature not being licensed. |
| JCS-102189, 102189 | Transaction vetoed due to neither of two features being licensed. |
| JCS-102190, 102190 | The value provided for the given field is not contained in the list of values for this field. |
| JCS-102191, 102191 | The value provided for the given field is too large. |
| JCS-102192, 102192 | The value provided for the given field is too small |
| JCS-102193, 102193 | A forbidden value field for this parameter has been set. |

| | |
|---|---|
| JCS-102194, 102194 | A forbidden value field for this parameter type has been set. |
| JCS-102195, 102195 | A forbidden value field for this parameter direction has been set. |
| JCS-102196, 102196 | Only chained jobs can be disabled. |
| JCS-102197, 102197 | Holding the job in its current status is forbidden. |
| JCS-102198, 102198 | Job chain steps cannot be killed. |
| JCS-102199, 102199 | Only executing jobs can be killed. |
| JCS-102200, 102200 | Olson name is not known to system. |
| JCS-102201, 102201 | Name of timezone matches another timezone's Olson name. |
| JCS-102202, 102202 | Mandatory job parameter is missing a parameter mapping. |
| JCS-102203, 102203 | Job actions are not licensed. |
| JCS-102204, 102204 | Invalid action source. |
| JCS-102205, 102205 | The behavior of the object prevents the action being performed. |
| JCS-102206, 102206 | The table must have a mandatory column called Key |
| JCS-102207, 102207 | The specified column for this table is not nullable |
| JCS-102208, 102208 | The specified column for this table is a number |
| JCS-102209, 102209 | The specified column for this table is a date |
| JCS-102210, 102210 | The specified column is not allowed for this table |
| JCS-102211, 102211 | Data is required for a simple constraint. |
| JCS-102212, 102212 | Renaming of the object is not permitted when attached to an SAP system. |
| JCS-102213, 102213 | A BeforeDefinitionChange Trigger has vetoed the transaction. |
| JCS-102214, 102214 | Compilation failed. |
| JCS-102215, 102215 | An unexpected compiler exception occured. |
| JCS-102216, 102216 | Match compilation failed. |
| JCS-102217, 102217 | Persist not allowed. |
| JCS-102218, 102218 | Two fields are set that conflict with each other. |
| JCS-102219, 102219 | The specified audit level is not allowed for this object type |
| JCS-102220, 102220 | ReportColumn Object Definition does not match the ObjectDefinition of the Report. |
| JCS-102221, 102221 | Invalid overdue action. Overdue action must be either a status or an event to raise. |
| JCS-102222, 102222 | Invalid RELEntryPoint, method cannot be resolved. |
| JCS-102223, 102223 | Simple constraints cannot be applied to this data type. |
| JCS-102224, 102224 | The Object Definition for the Audited object was not defined. |
| JCS-102225, 102225 | The System Process Server cannot be a Process Server resource. |
| JCS-102226, 102226 | Invalid method signature for RELEntryPoint. |
| JCS-102227, 102227 | Attribute on a time window element is out of bounds and does not match the special value for "last". |
| JCS-102228, 102228 | Isolation group creation prevented by license. |
| JCS-102229, 102229 | Maximum number of retries for branching the job definition was exceeded. |
| JCS-102230, 102230 | File component could not be located. All file content is retrieved via this component. |

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|---|---|
| JCS-102231, 102231 | The transaction has been vetoed because it contains a non-unique order value. |
| JCS-102232, 102232 | An isolated SAP system cannot be created in the GLOBAL partition. |
| JCS-102233, 102233 | An isolated SAP system cannot be created because two or more clients are defined for this SAP system. |
| JCS-102234, 102234 | An isolated SAP system cannot be created because non-standard services exist in the current configuration. |
| JCS-102235, 102235 | Processes may not have a submit frame. |
| JCS-102236, 102236 | Job chain calls may not have a recurrence. |
| JCS-102237, 102237 | Job chain calls may not have a recurrence. |
| JCS-102238, 102238 | An isolated SAP system cannot be created, another SAP system is already in this isolation group. |
| JCS-102239, 102239 | The value provided for the client interface version was malformed. |
| JCS-102240, 102240 | A Mandatory JobDefinitionParameter has not been defined. |
| JCS-102241, 102241 | The JobDefinitionParameter type does not match the type defined in the Report. |
| JCS-102242, 102242 | The field that the user tried to change is restricted. |
| JCS-102243, 102243 | The detail that the user tried to change is restricted. |
| JCS-102244, 102244 | Query Filter Simple constraints can only be applied to the String data type. |
| JCS-102245, 102245 | 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-102246, 102246 | Parse error in job control rule job class field. |
| JCS-102247, 102247 | When a Job is to be automatically submitted by a JobDefinition-WaitEvent, all mandatory parameters must have a default expression. |
| JCS-102248, 102248 | Submit frame attributes cannot be changed on a job that has been edited outside the submit frame. |
| JCS-102249, 102249 | A Mandatory JobDefinitionParameter has not been defined. |
| JCS-102250, 102250 | None of the SAP interfaces are configured. |
| JCS-102251, 102251 | An unexpected exception occured during listener execution. |
| JCS-102252, 102252 | A step or call can only be deleted when its parent is in a final state. |
| JCS-102253, 102253 | A step or call can only be deleted when its parent can be deleted. |
| JCS-102254, 102254 | Cannot delete built-in custom library. |
| JCS-102255, 102255 | A wrapped job can only de deleted if the corresponding wrapped job can be seen. |
| JCS-102256, 102256 | A wrapped job can only de deleted if the corresponding wrapped job can be deleted. |
| JCS-102257, 102257 | The parent navigation bar of the group and item must be the same |
| JCS-102258, 102258 | Archive data may not be modified in this manner. |
| JCS-102259, 102259 | Job cannot be resubmitted. |
| JCS-102260, 102260 | The job group defines too many jobs that must be presubmitted |
| JCS-102261, 102261 | The alert source has not defined a status it is valid for |
| JCS-102262, 102262 | Object type can never be persisted |

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|---|---|
| JCS-102263, 102263 | Job groups for maintenance jobs cannot be stopped. |
| JCS-102264, 102264 | Transaction vetoed due to violated custom license conditions. |
| JCS-102265, 102265 | Transaction vetoed due to a custom feature not being licensed. |
| JCS-102266, 102266 | An attempt was made to create a R2W Catalog or Alias that already exists. |
| JCS-102267, 102267 | Isolation of an isolated SAP BAE connector would be violated. |
| JCS-102268, 102268 | An isolated SAP system cannot be created, another SAP BAE connector is already in this isolation group. |
| JCS-102269, 102269 | Job Definition Parameters using the FILE datatype is not supported by the current JobDefinitionType. |
| JCS-102270, 102270 | The GotoStep expression of the User Message Response couldn't be evaluated. |
| JCS-102271, 102271 | An Escalation or Address must be defined for an Alert Source. |
| JCS-102272, 102272 | A Precondition must have an expression or a time window. |
| JCS-102273, 102273 | A wrapped job can only be modified if its job definition is clean, its default parameter values can be evaluated and the wrapping object has the isCreated status. |
| JCS-102274, 102274 | Cannot locate specified resource. |
| JCS-102275, 102275 | This exception is raised an error occurs when trying to generate an alert. |
| JCS-102276, 102276 | A pattern (RegEx/GLOB) is invalid. |
| JCS-102277, 102277 | A request was made for a file from a job, and the file with the required name did not exist. |
| JCS-102278, 102278 | A created Import Rule does not have rules specified |
| JCS-102279, 102279 | Target attribute on anchor tag can only be one of a limited set of values. |
| JCS-102280, 102280 | At least one TableDefinitionColumn must be defined for a TableDefiniton. |
| JCS-102281, 102281 | An existing TableDefinitionColumn can not become mandatory |
| JCS-102282, 102282 | A TableDefinitionColumn with the same ColumnName exists |
| JCS-102283, 102283 | A TableDefinitionColumn with the same DisplayOrder exists |
| JCS-102284, 102284 | A required TableDefinitionColumn can not be defined while any related table contains data |
| JCS-102285, 102285 | The JobDefinitionParameter.DefaultExpression evaluation failed. |
| JCS-102286, 102286 | An attempt was made to map a parameter onto an out parameter, however this is invalid. |
| JCS-102287, 102287 | SearchColumnName for can not be different then the SearchName derrived from the ColumnName |
| JCS-102288, 102288 | SearchKey for can not be different then the SearchName derrived from the Key |
| JCS-102289, 102289 | An exception thrown when a value of a specific field is invalid. |
| JCS-102290, 102290 | An exception thrown when a has zero elements. |
| JCS-102291, 102291 | The time window expression is invalid. |
| JCS-102292, 102292 | The start time expression is invalid. |
| JCS-102293, 102293 | The scheduling parameter evaluated to a time window that does not exist. |

| JCS-102294, 102294 | The scheduling parameter evaluated to a null DateTimeZone value. |
|---|---|
| JCS-102295, 102295 | The scheduling parameter with expression did not resolve to a DateTimeZone. |
| JCS-102296, 102296 | A Reaction Job Parameter must be optional or mandatory with a default value or runtime or an out parameter. |
| JCS-102297, 102297 | A field has an invalid value. |
| JCS-102298, 102298 | Application names can not start with a dollar sign followed by a digit as this is how we denote application path delimiters |
| JCS-102299, 102299 | Cannot see parent job of current job, a view privilege (or more) is required. |
| JCS-102300, 102300 | SchedulerSession is read only. Therefore no modifications are allowed. |
| JCS-102301, 102301 | Audit is not allowed for this object type |
| JCS-102302, 102302 | Array length is less than minimum length. |
| JCS-102303, 102303 | Array length is less than maximum length. |
| JCS-102304, 102304 | Null element in array is not allowed. |
| JCS-102305, 102305 | Duplicate values are not allowed inside array. |
| JCS-102306, 102306 | JobDefinitionType does not support array parameters. |
| JCS-102307, 102307 | JobDefinitionType does not support array parameters. |
| JCS-102308, 102308 | Minimum or maximum length field for array is invalid. |
| JCS-102309, 102309 | Maximum length for array parameter is less than minimum length. |
| JCS-102310, 102310 | Baseclass for parameter array mapping exceptions |
| JCS-102311, 102311 | Parameters mapped must both be array parameters, or non-array parameters. |
| JCS-102312, 102312 | Parameters mapped do not fit each other's array size. |
| JCS-102313, 102313 | The Job Definition Type cannot be attached to a Java Platform Agent. |
| JCS-102314, 102314 | Either JobId or JobDefinitionId must be set. |
| JCS-102315, 102315 | Report Job Definition Parameters must have a default expression defined. |
| JCS-102316, 102316 | Invalid rel function used for array parameter. |
| JCS-102317, 102317 | Error creating equivalent object for job definition |
| JCS-102318, 102318 | An attempt was made to modify a user message by a user that does not have the Business User privilege. |
| JCS-102319, 102319 | The selected process server does not have the PlatformAgentService enabled. |
| JCS-102320, 102320 | Attempt to modify value of the parameter cannot be performed as the associated job definition parameter is marked as being never editable. |
| JCS-102321, 102321 | Attempt to modify value of the parameter cannot be performed as the associated job definition parameter is marked as being editable only when null, and the value has already been set. |
| JCS-102322, 102322 | Out Parameters cannot be runtime. This exception will be thrown when this is set. |
| JCS-102323, 102323 | Invalid parameter direction used in parameter mapping. |
| JCS-102324, 102324 | Array expression contains an invalid number of parameters. |

| JCS-102325, 102325 | Exception will be thrown if the value for red threshold is less than or equal to the green threshold |
|---|---|
| JCS-102326, 102326 | JobWaitEvents cannot be added to job steps. |
| JCS-102327, 102327 | Parameter mapping maps to a jobchain call which is not waited for by the step, this is not allowed. |
| JCS-102328, 102328 | The process cannot be set to stepWaitingOnJob=false yet, because it has mappings to one or more of its parameters from another process or process chain definition. Please remove these mappings first. |
| JCS-102329, 102329 | The Job Definition does not have the correct ReactionJobType to be assigned to this field. |
| JCS-102330, 102330 | The parameter for a SQL query binding cannot be found. |
| JCS-102331, 102331 | The job failed to prepare successfully in the background. |
| JCS-102332, 102332 | It is not allowed to create JobWaitEvents for a master job. |
| JCS-102333, 102333 | It is not allowed to create JobRaiseEvents for a master job. |
| JCS-102334, 102334 | It is not allowed to create JobJobLock for a master job. |
| JCS-102335, 102335 | It is not allowed to create a JobNote for a master job. |
| JCS-102336, 102336 | The specified value cannot be deleted |
| JCS-102337, 102337 | The specified value for JobLock.MaxCount is invalid for the LockType |
| JCS-102338, 102338 | The RequiredCount for a JobLock cannot be changed when the job already has the lock or is finished. |
| JCS-102339, 102339 | If the lock type is Shared/Exclusive, the Lock can only allow two values. Shared and Exclusive. |
| JCS-102200, 102200 | An attempt was made to store an object in the database that would have violated uniqueness constraints. |
| JCS-102201, 102201 | An attempt was made to delete an object that is still in use by another object. |
| JCS-102260, 102260 | Wrapper for ForeignKeyViolationVetoWrapperExceptions. |

# JCS Errors 103XXX (api-int)

| CODE | Description |
|---|---|
| JCS-103000, 103000 | An action was performed on an object that is not possible. |
| JCS-103001, 103001 | This indicates that an error has occurred while trying to perform a query. |
| JCS-103002, 103002 | Cancellation of jobs that are jobchain steps is not allowed. |
| JCS-103003, 103003 | Jobs can only be canceled prior to execution. |
| JCS-103004, 103004 | A request was made for a file from a job, and the file with the required name did not exist. |
| JCS-103005, 103005 | Document data is invalid. |
| JCS-103006, 103006 | Root exception for reasons a job parameter is invalid. |
| JCS-103007, 103007 | A request was made for a file from a job, and the file with the required name did not exist. |
| JCS-103008, 103008 | A request was made for a job, however the job did not exist. |
| JCS-103009, 103009 | An exception occurred with a parameter. |

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|---|---|
| JCS-103010, 103010 | An error was encountered while retrieving a parameter mapping value. |
| JCS-103011, 103011 | A parameter was not found. |
| JCS-103012, 103012 | No value was specified for a required parameter. |
| JCS-103013, 103013 | No value was specified for a required parameter. |
| JCS-103014, 103014 | An invalid value was specified for a parameter. |
| JCS-103015, 103015 | The parameter contains invalid substitution variables. |
| JCS-103016, 103016 | Could not parse scriptlet. |
| JCS-103017, 103017 | Restarting this job is prohibited. |
| JCS-103018, 103018 | Resubmitting this job is prohibited. |
| JCS-103019, 103019 | Checker implementation expects key of a specific type. |
| JCS-103020, 103020 | You cannot delete your own isolation group. |
| JCS-103021, 103021 | The current user has no isolation group. |
| JCS-103022, 103022 | The scriptlet could not be executed. |
| JCS-103023, 103023 | An uncaught exception was encountered while executing a scriptlet. |
| JCS-103024, 103024 | An exception was encountered while setting up a scriptlet for execution. |
| JCS-103025, 103025 | Unsupported format mask character. |
| JCS-103026, 103026 | Invalid format string or value. |
| JCS-103027, 103027 | Fraction must be in a trailing position. |
| JCS-103028, 103028 | Preserve range character (*) must be used in a leading and/or trailing position. |
| JCS-103029, 103029 | Leading zero may only occur before optional digits. |
| JCS-103030, 103030 | Leading zero can only occur before optional digits. |
| JCS-103031, 103031 | Inconsistent group separators. |
| JCS-103032, 103032 | Inconsistent group sizes. |
| JCS-103033, 103033 | Invalid group separator. |
| JCS-103034, 103034 | Invalid group separator. |
| JCS-103035, 103035 | The user has tried to do something and does not have enough privileges. |
| JCS-103036, 103036 | The user has been designated as a super reader, and has tried to call persist. This is not allowed. |
| JCS-103037, 103037 | This exception occurs when specific instances are 'null' to perform checkXXX security checks and thus the missing privilege is unknown. |
| JCS-103038, 103038 | The user tried to create an object but does not have enough privileges. This is a specific exception to create a more accurate exception message for 'create'. |
| JCS-103039, 103039 | This exception is raised when a global privilege is required to perform an action, but it is not granted. |
| JCS-103040, 103040 | This exception is raised when a required role is missing. |
| JCS-103041, 103041 | Attribute on a time window element is out of bounds and does not match the special value for "last". |
| JCS-103042, 103042 | Process validated OK. |
| JCS-103043, 103043 | This exception is raised when a user tries to save an object in another partition, where either the object cannot be created in the new partition or the object cannot be removed from the old partition. |

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|---|---|
| JCS-103044, 103044 | The parameter in the mapping was not found on the job chain call job. |
| JCS-103045, 103045 | XML data is invalid. |

# JCS Errors 104XXX (api)

| CODE | Description |
|---|---|
| JCS-104000, 104000 | A communal scheduler session factory has not been published yet. |
| JCS-104001, 104001 | An exception was thrown while processing the callback. |
| JCS-104002, 104002 | Base class for exceptions relating to exporting objects. |
| JCS-104003, 104003 | Unable to search job file because of a permanent remote exception. |
| JCS-104004, 104004 | Search for job file failed. |
| JCS-104005, 104005 | Unable to search job file because of a remote exception. |
| JCS-104006, 104006 | Remote login failed. |
| JCS-104007, 104007 | Unable to list directory contents because of a permanent remote exception. |
| JCS-104008, 104008 | List directory contents failed. |
| JCS-104009, 104009 | Unable to list directory contents because of a remote exception. |
| JCS-104010, 104010 | The specified reply was invalid. |
| JCS-104011, 104011 | The user does not have access the requested job file content |
| JCS-104012, 104012 | We do not allow forecasting more than 5000 job groups. |
| JCS-104013, 104013 | Invalid format string. |
| JCS-104014, 104014 | The language is not available. |
| JCS-104015, 104015 | An invalid job file search or filter has been specified. |
| JCS-104016, 104016 | An invalid line range has been specified. |
| JCS-104017, 104017 | Unable to perform RFC action because of a permanent remote exception. |
| JCS-104018, 104018 | Unable to perform RFC action because of a transient remote exception. |
| JCS-104019, 104019 | Constraint violated while submitting a job. |
| JCS-104020, 104020 | The Object Search results have expired and cannot be retrieved. |
| JCS-104021, 104021 | The format of the date time zone is incorrect and could not be parsed. |

# JCS Errors 105XXX (as400)

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

# JCS Errors 106XXX (audit)

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

# JCS Errors 107XXX (cl-api)

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

# JCS Errors 108XXX (cl-impl)

| CODE | Description |
|---|---|
| JCS-108000, 108000 | Registration of a component was attempted after the component lifecycle started. |
| JCS-108001, 108001 | JNDI bindings failed. |
| JCS-108002, 108002 | No backend could retrieve the job-file; all backends reported a permanent failure. |
| JCS-108003, 108003 | No backend could retrieve the job-file, but at least one backend reported a transient failure. This indicates that the same request might succeed in the future. |
| JCS-108004, 108004 | An IO exception occurred accessing a local file. |
| JCS-108005, 108005 | An IO exception occurred accessing a job-file. |
| JCS-108006, 108006 | An IO exception occurred accessing a local file. |
| JCS-108007, 108007 | An IO exception occurred accessing a file. |
| JCS-108008, 108008 | No backend could retrieve the file; all backends reported a permanent failure. |
| JCS-108009, 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, 108010 | The Scheduler has not been configured and has no JNDI configuration. |

# JCS Errors 109XXX (cluster)

| CODE | Description |
|---|---|
| JCS-109000, 109000 | This exception is thrown when a JNDI lookup succeeds, but the object returned is not of the expected type. |
| JCS-109001, 109001 | Lookup of an object returned null. |
| JCS-109002, 109002 | Binding to the port for RedwoodMessaging failed because the port was already in use. |

# JCS Errors 110XXX (api-rt)

| CODE | Description |
|---|---|
| JCS-110000, 110000 | The requested member does not exist |
| JCS-110001, 110001 | The value could not be set, since it could not be cast to expected classtype |

# JCS Errors 110XXX (api-ssf)

| CODE | Description |
|---|---|
| JCS-110000, 110000 | Invalid value within array. |

# JCS Errors 110XXX (configuration)

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

# JCS Errors 111XXX (core)

| CODE | Description |
|---|---|
| JCS-111000, 111000 | Problem with service class. |
| JCS-111001, 111001 | Service class could not be located. |
| JCS-111002, 111002 | Service class could not be instantiated. |
| JCS-111003, 111003 | A running instance of the service could not be located. |

| JCS-111004, 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, 111005 | The handler service has received an invalid message type. |
| JCS-111006, 111006 | The Job Router does not know about an object that the Job is trying to route onto. |
| JCS-111007, 111007 | The process server has no services. |
| JCS-111008, 111008 | The recurrence pattern was changed on a job-group that has no modifiable jobs associated with it. |
| JCS-111009, 111009 | The recurrence does not define any jobs. |
| JCS-111010, 111010 | An attempt has been made to set both a Submit Frame and a Recurrence pattern on this Job. |
| JCS-111011, 111011 | The Job Router could not load a required related object from the database. |
| JCS-111012, 111012 | A RunAs or RemoteRunAs field contains a value that results in invalid credentials. |
| JCS-111013, 111013 | A RunAs or RemoteRunAs field may only contain two subjects under certain conditions. |
| JCS-111014, 111014 | A RunAs or RemoteRunAs field may not contain two subjects if the first subject has a particular modifier set. |
| JCS-111015, 111015 | A RemoteRunAs field may only be set for those job definition types and scheduler services that allow this. |
| JCS-111016, 111016 | No password found either via the Run As field or a Credential. |
| JCS-111017, 111017 | An unexpected situation occurred in the JobGroupUpdater. Processing is retried. |
| JCS-111018, 111018 | The Job Definition cannot be changed because registry setting for updating future jobs is set to Abort. |
| JCS-111019, 111019 | The endpoint is fixed. It cannot be overwritten. |
| JCS-111020, 111020 | {tryjobowner} or {forcejobowner} can only be used in a job context. |

# JCS Errors 112XXX (db-init)

| CODE | Description |
|---|---|
| JCS-112000, 112000 | The system can not run the system job because the user does not have the appropriate privileges. |
| JCS-112001, 112001 | The system_isolation_setuser job could not find the user in the database. |
| JCS-112002, 112002 | The system can not run the system_isolation_setuser job because the registry entry could not be found. |
| JCS-112003, 112003 | An application could not be located. |
| JCS-112004, 112004 | An export rule-set could not be located. |
| JCS-112005, 112005 | An input job-file could not be found. |
| JCS-112006, 112006 | An object that needs to be upgraded could not be found. |
| JCS-112007, 112007 | A system job definition could not be located. |
| JCS-112008, 112008 | Object or field definitions are not correctly initialized. |
| JCS-112009, 112009 | A field definition already exists but is a reference to the wrong type of object. |

| JCS-112010, 112010 | A field definition already exists but is of the wrong type. |
|---|---|
| JCS-112011, 112011 | A definition is required, but was marked for deletion. |
| JCS-112012, 112012 | This is a special exception, that will only be thrown by the db-init component, and only during the configure phase. |
| JCS-112013, 112013 | This exception indicates that one of the epoch initializers has failed. |
| JCS-112014, 112014 | Existing object definitions were found that should not be present. |
| JCS-112015, 112015 | Existing object field definitions were found that should not be present. |
| JCS-112016, 112016 | Job-definition has an invalid related object. |
| JCS-112017, 112017 | An import cannot complete due to unresolved references. |
| JCS-112018, 112018 | The wrong number of objects was found. |
| JCS-112019, 112019 | An invalid mode was specified for the upgrade job. |
| JCS-112020, 112020 | Not all job-files were cleanly deleted. |
| JCS-112021, 112021 | An import rule-set was specified that could not be located. |
| JCS-112022, 112022 | An object that needs to be upgraded could not be found. |
| JCS-112023, 112023 | Base exception class for all Schema Initialization exceptions. |
| JCS-112024, 112024 | The database schema could not be located in the database and the system is not configured to perform self initialization. |
| JCS-112025, 112025 | An exception occurred when trying to upgrade the database schema. |
| JCS-112026, 112026 | The Open SQL schema is out of date. The Schema Initialization component will never automatically update OpenSQL databases. |
| JCS-112027, 112027 | The database schema is out of date and the scheduler is not configured to self-upgrade. |
| JCS-112028, 112028 | An attempt was made to perform a field transfer on an object definition, only object field definitions can be transferred. |
| JCS-112029, 112029 | Automatic update of platform agent using a connection with encryption requires the server to be able to access a secure.zip containing new encryption routines of the same version as the native platform agents. |

# JCS Errors 113XXX (export)

| CODE | Description |
|---|---|
| JCS-113000, 113000 | A model reference cannot be read because it defines no business key. |
| JCS-113001, 113001 | Relation {0} on {1} refers to {5}, which defines no business key. |
| JCS-113002, 113002 | Reading is not supported by this object type. |
| JCS-113003, 113003 | Writing is not supported by this object type. |
| JCS-113004, 113004 | An unknown field was set for this type of object. |
| JCS-113005, 113005 | The parent field could not be set using the supplied business key. |
| JCS-113006, 113006 | The field could not be set using the supplied value. |
| JCS-113007, 113007 | The field could not be set using the supplied value. |
| JCS-113008, 113008 | A nested object of the given type is not known. |
| JCS-113009, 113009 | Business key not for expected type of object. |
| JCS-113010, 113010 | An object with the same business key is already registered. |
| JCS-113011, 113011 | Resolving a business key failed. |

| JCS-113012, 113012 | The object corresponding to this business key does not exist. |
|---|---|
| JCS-113013, 113013 | The object for this business-key cannot be resolved without first resolving other objects, but they in turn require this business-key. |
| JCS-113014, 113014 | An unknown error occurred during archival. |
| JCS-113015, 113015 | Export of object not supported. |
| JCS-113016, 113016 | Archiver requires a business key for the object. |
| JCS-113017, 113017 | Base class for exceptions relating to importing objects. |
| JCS-113018, 113018 | An exception occurred while trying to parse the import source. |
| JCS-113019, 113019 | An exception occurred while trying to parse the import source. |
| JCS-113020, 113020 | An exception occurred while trying to parse the import source. |
| JCS-113021, 113021 | An import was performed, but no object was defined in the process. |
| JCS-113022, 113022 | A written object does not have the business key it was declared to have. |
| JCS-113023, 113023 | The object being created does not match the type of its declared business key. |
| JCS-113024, 113024 | An object being created should replace an existing object, but the existing object could not be loaded. |
| JCS-113025, 113025 | An object is being replaced by the model writer, but has a different parent to the existing object. |
| JCS-113026, 113026 | An override was applied to an object of the wrong type. |
| JCS-113027, 113027 | An override was applied to a job definition that has no script. |
| JCS-113028, 113028 | An override was applied with a null value for a RuleDefinition that needs this value. |
| JCS-113029, 113029 | An parameter override was applied where a parameter with the supplied name could not be found on the object. |
| JCS-113030, 113030 | An import action failed to execute when run as part of the override clauses. |
| JCS-113031, 113031 | An object was used, but it needs to be defined in the same session. |
| JCS-113032, 113032 | Two parent objects maintain the same collection as nested objects but are not consistent. |
| JCS-113050, 113050 | Multiple keys could not be found during an import. |

# JCS Errors 114XXX (infrastructure)

| CODE | Description |
|---|---|
| JCS-114000, 114000 | Root exception for all exceptions where the request cannot be understood. |
| JCS-114001, 114001 | A portion of the URL is malformed and cannot be parsed. |
| JCS-114002, 114002 | The value of a component in the URL cannot be parsed. |
| JCS-114003, 114003 | Request is missing information. |
| JCS-114004, 114004 | Request is empty; did not contain any information. |
| JCS-114005, 114005 | A component was encountered that was not expected; either it's not allowed, or is a duplicate. |
| JCS-114006, 114006 | A character encoding was missing from the JVM. |

| | |
|---|---|
| JCS-114007, 114007 | Locating or reading the initial translation data failed. |
| JCS-114008, 114008 | Translation data for the given language could not be located. |
| JCS-114009, 114009 | Translation data for the given language could not be read. |
| JCS-114010, 114010 | An exception occurred during XML serialization. |
| JCS-114011, 114011 | Contents of SLIM file is invalid. |
| JCS-114012, 114012 | A specified key in a SLIM file is not allowed. |
| JCS-114013, 114013 | A zero-length (empty) SLIM key was encountered. |
| JCS-114014, 114014 | Translation text is invalid. |
| JCS-114015, 114015 | Incomplete escape-sequence encountered at the end of translation text. |
| JCS-114016, 114016 | Invalid escape-sequence encountered in translation text. |
| JCS-114017, 114017 | The JNDIComponent has not be initialized and JNDILookup's cannot be performed. |
| JCS-114018, 114018 | General secure-storage exception. |
| JCS-114019, 114019 | The repeater was aborted before the operation succeeded. |

# JCS Errors 115XXX (jobchainservice)

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

# JCS Errors 116XXX (jobservice)

| CODE | Description |
|---|---|
| JCS-116000, 116000 | A platform agent could not be initialized because it's already in use by another process-server. |
| JCS-116001, 116001 | The Job Runner could not be instantiated for some reason. |
| JCS-116002, 116002 | The Job Runner has had an error when executing the job. |
| JCS-116003, 116003 | An error occurred while processing the process server parameters while starting the service. |
| JCS-116004, 116004 | The Job Runner could not create an output file |
| JCS-116005, 116005 | An error occurred during auto update |
| JCS-116006, 116006 | The latest version of the installer for the platform could not be found. |
| JCS-116007, 116007 | The platform agent is not configured for, or does not support, auto update. |
| JCS-116008, 116008 | The platform agent update failed. |
| JCS-116009, 116009 | The platform agent restart failed. |
| JCS-116010, 116010 | The platform agent returned an HTTP response code indicating failure. |
| JCS-116011, 116011 | Failed to connect to platform agent; the network returned an error. |
| JCS-116012, 116012 | Failed to connect to platform agent; the network returned an error. The message is classified as transient. |
| JCS-116013, 116013 | The agent is of a release that is too old to support system checks. |

| | |
|---|---|
| JCS-116014, 116014 | The list of job definition types assigned to the process server do not match the capabilities of the agent. In particular, OpenVMS process servers must have at least the DCL JobDefinitionType assigned and z/OS platform agents must have the JCL and only the JCL JobDefinitionType assigned. |
| JCS-116015, 116015 | The system cannot find any job runner source script for the job definition type. This is an internal error. |
| JCS-116016, 116016 | The process server is not running in AgentInitiated configuration mode: the AgentInitiated parameter is not set to true. |

# JCS Errors 117XXX (mailservice-api)

| CODE | Description |
|---|---|
| JCS-117000, 117000 | Invalid parameter for mail job. |
| JCS-117001, 117001 | No mail server defined. |
| JCS-117002, 117002 | The attachment could not be found or attached to the mail. |

# JCS Errors 118XXX (security)

| CODE | Description |
|---|---|
| JCS-118000, 118000 | Cannot instantiate any HTTP authentication provider. |
| JCS-118001, 118001 | Security exception |
| JCS-118002, 118002 | Exception creating a user |
| JCS-118003, 118003 | Exception creating a user |
| JCS-118004, 118004 | Exception importing security |
| JCS-118005, 118005 | Exception importing a user |
| JCS-118006, 118006 | Exception creating a role |
| JCS-118007, 118007 | Exception creating a role |
| JCS-118008, 118008 | Exception importing a role |
| JCS-118009, 118009 | No such isolation group exception |
| JCS-118010, 118010 | Partition Level Security has been granted to a User without the appropriate View permissions to the Partition |
| JCS-118010, 118010 | Invalid SystemId |

# JCS Errors 119XXX (servlet)

| CODE | Description |
|---|---|
| JCS-119000, 119000 | Root exception for all reasons a job-file cannot be located. |
| JCS-119001, 119001 | There is no known job-file that has the given unique identifier. |
| JCS-119002, 119002 | There is no known log-file for a Trigger that has the given unique identifier. |
| JCS-119003, 119003 | There is no known Trigger that has the given unique identifier. |
| JCS-119004, 119004 | There is no known job that has the given identifier. |
| JCS-119005, 119005 | There is no job-file with the given file-number. |

| JCS-119006, 119006 | The specified object cannot be located. |
|---|---|
| JCS-119007, 119007 | A session could not be created because a user could not be associated with it. |
| JCS-119008, 119008 | There is no known Document that has the given unique identifier. |

# JCS Errors 120XXX (ui)

| CODE | Description |
|---|---|
| JCS-120000, 120000 | Base class for UIExceptions. |
| JCS-120001, 120001 | Base class for UIRuntimeExceptions. |
| JCS-120002, 120002 | Base class for concurrent update exceptions. |
| JCS-120003, 120003 | The requested object is no longer available, it has either been deleted or the security settings prevent viewing the object. |
| JCS-120004, 120004 | Illegal type of the requested object. |
| JCS-120005, 120005 | The linked object is no longer available, it has either been deleted or the security settings prevent viewing the object. |
| JCS-120006, 120006 | A mandatory field is not being set. |
| JCS-120007, 120007 | The object that needs to be updated has been modified by another user. |
| JCS-120008, 120008 | The object that needs to be acted upon does not have the named action. |
| JCS-120009, 120009 | The data could not be decoded to the desired type. |
| JCS-120010, 120010 | The SQL being validated contained an error. |
| JCS-120011, 120011 | A user could not be created with UME. |
| JCS-120012, 120012 | The source version of Solution Manager is not valid. |
| JCS-120013, 120013 | The host could not be detected. |
| JCS-120014, 120014 | The IntelliSearch is not supported for the ObjectDefinition. |
| JCS-120015, 120015 | Values for new password and password-check field aren't the same. |
| JCS-120016, 120016 | Unknown user. |
| JCS-120017, 120017 | Old and new password are the same. |
| JCS-120018, 120018 | Password is invalid. |
| JCS-120019, 120019 | Unknown host. |
| JCS-120020, 120020 | A mandatory selection of a type is not being made. |
| JCS-120021, 120021 | The requested object is not visible because the security settings prevent viewing the object. |
| JCS-120022, 120022 | A date range specified is not valid. |
| JCS-120023, 120023 | Object is not a child of another object. |
| JCS-120024, 120024 | In-parameter has no out-value. |
| JCS-120025, 120025 | Out-parameter has no in-value. |
| JCS-120026, 120026 | Parameters are not mappable. |
| JCS-120027, 120027 | ExtensionPoint is missing parameters for execution. |

# JCS Errors 121XXX (dblayer-sql)

| CODE | Description |
|---|---|
| JCS-121000, 121000 | Failed to upgrade the database. The upgrade operation is not supported. |

# JCS Errors 122XXX (agent-api)

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

# JCS Errors 122XXX (model)

| CODE | Description |
|---|---|
| JCS-122000, 122000 | A day has been entered that is out of the specified allowed range. |
| JCS-122001, 122001 | The dirty list on the session is not empty, therefore the requested operation cannot be completed |
| JCS-122002, 122002 | The database is in an inconsistent state, found a duplicate primary key. |
| JCS-122003, 122003 | Failure to retrieve the file content, likely permanent in nature. |
| JCS-122004, 122004 | Failure to retrieve the file content, likely transient in nature. |
| JCS-122005, 122005 | A user that has been marked as inactive cannot login. |
| JCS-122006, 122006 | Cannot create more objects than the license allows. |
| JCS-122007, 122007 | The value for the given key is not valid. |
| JCS-122008, 122008 | The name of the object is invalid |
| JCS-122009, 122009 | Operation requires that the Job has a parent, but it does not. |
| JCS-122010, 122010 | Failure to retrieve the job-file, likely permanent in nature. |
| JCS-122011, 122011 | Failure to retrieve the job-file, likely transient in nature. |
| JCS-122012, 122012 | License violation. |
| JCS-122013, 122013 | Failure to retrieve the directory content, likely permanent in nature. |
| JCS-122014, 122014 | Failure to retrieve the directory content, likely transient in nature; a retry may succeed. |
| JCS-122015, 122015 | Failure to perform the RFC action, likely permanent in nature. |
| JCS-122016, 122016 | Failure to perform the RFC action, likely transient in nature; a retry may succeed. |
| JCS-122017, 122017 | 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-122018, 122018 | 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-122019, 122019 | The object could not be created since it would violate the object constraints. |
| JCS-122020, 122020 | The object has been marked for deletion, no operations are allowed on the object anymore. |
| JCS-122021, 122021 | The object is already on the dirtylist in another subsession. |
| JCS-122022, 122022 | The object is not attached to a session, and cannot be used anymore. |
| JCS-122023, 122023 | The object used for assignment is not from the same session as the object it is being assigned to |
| JCS-122024, 122024 | An import override rule could not be applied to an object. |
| JCS-122025, 122025 | A Parameter was set, but using the wrong type of data. |
| JCS-122026, 122026 | An error was encountered while evaluating a default parameter value. |
| JCS-122027, 122027 | Cannot raise event; isPendingEventsAllowed is false and the event is already raised. |
| JCS-122028, 122028 | Internal error in a period function. |
| JCS-122029, 122029 | Period functions should implement the PeriodFunctionCalculator interface. |
| JCS-122030, 122030 | Unable to configure and/or retrieve a low level persistence factory. |
| JCS-122031, 122031 | Error during computing recurrence. |
| JCS-122032, 122032 | Error in the recurrence pattern. |
| JCS-122033, 122033 | An error was encountered while evaluating the return code mapping. |
| JCS-122034, 122034 | Baseclass for checked exceptions thrown by the API. |
| JCS-122035, 122035 | Unable to persist. |
| JCS-122036, 122036 | Invalid string literal. |
| JCS-122037, 122037 | The string passed in does not represent a valid ObjectType. |
| JCS-122038, 122038 | Invalid enumeration value. |
| JCS-122039, 122039 | The persist call did not update any rows in the database. |
| JCS-122040, 122040 | Unable to persist. |
| JCS-122041, 122041 | An exception occurred during the execution of a persistence layer method. |
| JCS-122042, 122042 | Baseclass for unchecked exceptions thrown by the API. |
| JCS-122043, 122043 | The scheduler API is currently unavailable. This is normally a temporary problem. |
| JCS-122044, 122044 | An error has occurred while trying to configure a Scheduler component. |
| JCS-122045, 122045 | An error was encountered while evaluating and/or applying a scheduling parameter. |
| JCS-122046, 122046 | An error was encountered while evaluating and/or applying a scheduling parameter. |
| JCS-122047, 122047 | An error occurred calculating the opening or closing of a time window. |
| JCS-122048, 122048 | Attribute on a time window element is out of bounds. |
| JCS-122049, 122049 | CalculateNextClose should only be called on an open time window. |
| JCS-122050, 122050 | Time window {0} cannot be called with a NULL opening time. |
| JCS-122051, 122051 | An attempt was made to use an unlicensed feature. |
| JCS-122052, 122052 | The object that was passed in is of an incorrect type. |

| JCS-122053, 122053 | The report generation failed. |
|---|---|
| JCS-122054, 122054 | ProcessServers can never have multiple browsable ProcessServerServices. |
| JCS-122055, 122055 | The URL for the requested purpose is not supported. |
| JCS-122056, 122056 | No valid credential could be found. |
| JCS-122057, 122057 | Thrown during the validation or execution of a Process Server Check |
| JCS-122058, 122058 | A Process Server Check failed to meet the defined threshold(s) |
| JCS-122059, 122059 | The attributes defined for a Process Server Check failed validation |
| JCS-122060, 122060 | An IO or other system exception occurred while executing a Process Server Check |
| JCS-122061, 122061 | An IO or other system exception occurred while performing a socket operation |
| JCS-122062, 122062 | An IO or other system exception occurred while performing a socket operation. The error is transient in nature and a retry may work. For example, the process server is down. |
| JCS-122063, 122063 | The report validation failed. |
| JCS-122064, 122064 | Indicates an exception that can be potentially fixed by trying again. |

# JCS Errors 123XXX (persistence)

| CODE | Description |
|---|---|
| JCS-123100, 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, 123101 | An error was encountered while trying to parse the SQL statement. |

# JCS Errors 124XXX (script-java)

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

| JCS-124012, 124012 | Line number mapping is not open. |
|---|---|
| JCS-124013, 124013 | Line number mapping failed with an end token that does not match the range description. |
| JCS-124014, 124014 | No class has been defined in the source |
| JCS-124015, 124015 | Source has not be correctly terminated. It must end with a }. |

# JCS Errors 125XXX (constraint)

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

# JCS Errors 126XXX (iphone)

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

# JCS Errors 127XXX (dynamicsax-service)

| CODE | Description |
|---|---|
| JCS-127000, 127000 | Service can't be started because the configuration contains errors. |
| JCS-127001, 127001 | Dynamics AX does not have a valid properties file definition. |

# JCS Errors 127XXX (rfcconnector)

| CODE | Description |
|---|---|
| JCS-127000, 127000 | Illegal client number. |

# JCS Errors 128XXX (extract-jco)

| CODE | Description |
|---|---|
| JCS-128000, 128000 | Invalid SAP JCo Version has been found. |
| JCS-128001, 128001 | The SAP JCo installer file cannot be found. |
| JCS-128002, 128002 | The SAP JCo classes could not be initialized. This is usually the result of a missing system library dependency. |
| JCS-128003, 128003 | A catch all for unexpected errors when discovering the SAP JCo Version. |
| JCS-128004, 128004 | Insufficient permissions to find/install SAP JCo |
| JCS-128005, 128005 | The SAP JCo files could not be installed. |
| JCS-128006, 128006 | SAP JCo is not supported on the platform. |

# JCS Errors 129XXX (jdbc-impl)

| CODE | Description |
| --- | --- |
| JCS-129000, 129000 | Configuration Exception. |
| JCS-129001, 129001 | JDBC parameter exception. |
| JCS-129002, 129002 | Could not find the ProcessServer with the provided name. |
| JCS-129003, 129003 | ProcessServer does not serve the JDBC service. |
| JCS-129004, 129004 | {0} credential for {3} user {1}@{2} not found. |
| JCS-129005, 129005 | Parameter {0} should not be editable. |
| JCS-129006, 129006 | Parameter {0} should have the value {1} or {2}. |
| JCS-129007, 129007 | Parameter {0} is defined as an array. However this is only allowed when the parameter {1} has the value {2}. |
| JCS-129008, 129008 | Parameter {0} is defined as (In/)Out DateTimeZone. However this is only allowed when the parameter {1} has the value {2}. |

# JCS Errors 130XXX (apns)

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

# JCS Errors 131XXX (oraohi-service)

| CODE | Description |
| --- | --- |
| JCS-131000, 131000 | Service can't be started because the configuration contains errors. |
| JCS-131001, 131001 | The cuurent job can't be processed by the OHI connector, because we have found an invalid remote id. |

# JCS Errors 132XXX (peoplesoft-service)

| CODE | Description |
| --- | --- |
| JCS-132000, 132000 | Service can't be started because the configuration contains errors. |
| JCS-132001, 132001 | PeopleSoft does not have a valid properties file definition. |
| JCS-132002, 132002 | PeopleSoft has found an error during passing the output file. |

# JCS Errors 133XXX (iphone-public)

| CODE | Description |
| --- | --- |
| JCS-133000, 133000 | An exception was raised while executing a client-supplied script. |

# JCS Errors 134XXX (r2w-comm)

| CODE | Description |
| --- | --- |
| JCS-134000, 134000 | Report2Web Communication exception. |
| JCS-134001, 134001 | No approval response has been received for the published files. |
| JCS-134002, 134002 | Failed to update Tab API URL configuration on the R2W Server |
| JCS-134003, 134003 | A unique credential cannot be determined from the username and endpoint provided. |
| JCS-134004, 134004 | Could not find the credential protocol with the given name |
| JCS-134005, 134005 | Could not find the R2WCatalog associated with the ProcessServer |
| JCS-134006, 134006 | Could not find the ProcessServer with the provided UniqueId |
| JCS-134007, 134007 | Failed to update Approval Callback URL configuration on the R2W Server |
| JCS-134008, 134008 | Could not find the credential with the given protocol, endpoint and virtual user |

# JCS Errors 135XXX (publish)

| CODE | Description |
| --- | --- |
| JCS-135000, 135000 | The destination folder is not an approvals folder and the file requires approval. |
| JCS-135001, 135001 | R2W and Cronacle Server times are not within acceptible operating differences. Synchronization of the server times is required. |

# JCS Errors 136XXX (oraclejob-impl)

| CODE | Description |
| --- | --- |
| JCS-136000, 136000 | Configuration Exception. |
| JCS-136001, 136001 | Service runs on the wrong Process Server. |
| JCS-136002, 136002 | Product should be installed in Oracle. |
| JCS-136003, 136003 | Unable to check if database is Oracle. |
| JCS-136004, 136004 | {0} credential for user {1}@{2} not found. |
| JCS-136005, 136005 | Run the {0}. |
| JCS-136006, 136006 | Runtime exception. |
| JCS-136007, 136007 | Object name is too long. |
| JCS-136008, 136008 | Cannot start the process server. The PL/SQL API needs to be upgraded. |
| JCS-136009, 136009 | Parameter has an invalid datatype |
| JCS-136010, 136010 | Unable to connect to database |
| JCS-136011, 136011 | Unable to create equivalent object. |
| JCS-136012, 136012 | Unable to load driver. Could not load the JDBC Driver from the classpath. |
| JCS-136013, 136013 | Unable to find driver. Could not locate the JDBC Driver from the classpath. |

# JCS Errors 137XXX (api-plsql-impl)

| CODE | Description |
|---|---|
| JCS-137000, 137000 | PL/SQL API listener has been shutdown unexpectedly. |
| JCS-137001, 137001 | Unsupported version. |
| JCS-137002, 137002 | Pipe result was not zero. |
| JCS-137003, 137003 | Illegal frame type. |
| JCS-137004, 137004 | Unhandled parameter type. |
| JCS-137005, 137005 | No such package. |
| JCS-137006, 137006 | Message sequence out of order. |
| JCS-137007, 137007 | Not in autonomous transaction. |
| JCS-137008, 137008 | Missing signature. |

# JCS Errors 138XXX (api-plsql-install)

| CODE | Description |
|---|---|
| JCS-138000, 138000 | Unable to load resource. |
| JCS-138001, 138001 | Unknown command. |

# JCS Errors 139XXX (bobj-service)

| CODE | Description |
|---|---|
| JCS-139000, 139000 | An attempt was made to call the BOBJ report without the parameter being set. |
| JCS-139001, 139001 | The user/usergroup does not exist. |

# JCS Errors 139XXX (jdedwards-service)

| CODE | Description |
|---|---|
| JCS-139000, 139000 | Service can't be started because the configuration contains errors. |
| JCS-139001, 139001 | JD Edwards does not have a valid jdeinterop.ini definition. |

# JCS Errors 140XXX (oraapps-service)

| CODE | Description |
|---|---|
| JCS-140000, 140000 | Service can't be started because the configuration contains errors. |
| JCS-140001, 140001 | Invalid Oracle Applications request. |
| JCS-140002, 140002 | Invalid Oracle Applications program definition. |
| JCS-140003, 140003 | Oracle Applications does not have a valid platform agent definition. |
| JCS-140004, 140004 | Oracle Applications can not cancel the concurrent request that belongs to this job. |
| JCS-140005, 140005 | Cronacle can't logon to Oracle Applications. |

# JCS Errors 141XXX (oraapps)

| CODE | Description |
|---|---|
| JCS-141000, 141000 | Invalid Oracle Applications user definition. |
| JCS-141001, 141001 | Invalid Oracle Applications responsibility definition. |

# JCS Errors 142XXX (jdbc-pool)

| CODE | Description |
|---|---|
| JCS-142000, 142000 | Configuration Exception. |
| JCS-142001, 142001 | Runtime exception. |
| JCS-142002, 142002 | Unable to find driver library. |
| JCS-142003, 142003 | Unable to load driver. |
| JCS-142004, 142004 | Unable to find driver. |
| JCS-142005, 142005 | Driver not a suitable driver for URL |
| JCS-142006, 142006 | Unable to connect to database |
| JCS-142007, 142007 | Connection has already been closed |
| JCS-142008, 142008 | Connection has been abandoned too long, the connection has been detached |
| JCS-142009, 142009 | Maximum connect time expired. |
| JCS-142010, 142010 | Configuration exception. |
| JCS-142011, 142011 | Parameter is tried to be set to a value that is too low. |
| JCS-142012, 142012 | Value of configuration registry entry is not changed. Please do this manually in the registry. |

# Registry Keys

## Use

Registry keys can be set in the SAP BPA registry, which is available under *Configuration > Registry*.

> ℹ **Note**
>
> The SAP BPA registry has little to do with the Microsoft Windows registry, it is a central location for setting system-wide and user settings.

> ⚠ **Warning**
>
> Take special care when editing the registry as a typo can potentially cause havoc.

The registry is split-up in two hives:

- configuration - system-wide configuration settings are stored here

- user- user configuration settings are stored here

# Configuration Hive

## AccessiblePath

You can attach files to email messages, to prevent users from attaching arbitrary files to emails, you can specify the allowed directories under the following registry key:

```
/configuration/mail/AccessiblePath
```

The registry key does not exist by default and needs to be created. For example, `C:\temp` could be the value of the registry key `configuration/mail/AccessiblePath/temp`, note that the name `temp` of the registry key has no significance to SAP BPA, it is its value that will be used.

## action

You can configure the number of threads to be used to execute actions (also known as action workers), like job definition actions, for example. A change requires a restart of the web application. SAP recommends to only change the number of threads when you are instructed to do so from SAP Customer Support Services.

The number of threads is set to 100 by default, you may specify a value using the following registry key:

```
/configuration/requestQueueSize/action
```

## Aggregation

Monitor history data is stored for use in various monitoring tools, such as the *Scorecard*. You can disable this by specifying the following registry key with value `false`:

```
/configuration/aggregation/enabled
```

The following registry key should not be altered unless you know what you are doing; its value is maintained by System_Aggregate_History ( see the Administration Guide ) processes. Do not move backward in time! Note that it uses the server timezone, so make sure to keep that in mind when overriding. Format: `yyyy-MM-DD HH` (where HH = 0-23).

```
/configuration/aggregation/startTime
```

## aliases

You can set aliases to make the built-in web services available via a proxy. The key name should be the alias name of the web service and the value must be the actual hostname.

You create aliases under the following registry key:

```
/configuration/webservices/aliases
```

## AutoExtension

SAP BPA appends extensions automatically to text files and HTML files, which do not already have a `.txt` or `.html` extension.

You can disable this by specifying one of the following registry keys:

1. Registry key `/configuration/mail/AutoExtension/<Format_Partition>/<Format_Name>=false`

2. Registry key `/configuration/mail/AutoExtension=false`

Note that the settings are parsed in this order, the first setting found is used. If none are found, the default is `true`.

# attachmentError

You can control the behavior for missing attachments in Mail processes by setting the following registry key:

`/configuration/mail/attachmentError`

Possible values:

| Value | Description |
| --- | --- |
| error | mail process will be set to status *Errror* if an attachment is missing |
| OperatorMessage | an operator message and a log entry in the `stdout.log` file are created for each missing attachment, the process will continue processing (default behavior) |
| none | the `stdout.log` file of the mail process will mention the missing attachment, the process will ignore missing attachments |

# bindAddress

The address to which the communication port is bound. By default this is the System Host Name.

The bind address can be changed with the following registry entry

`/configuration/boot/cluster/<System Host Name>/<Cluster Instance Id>/<Cluster Node Id>/bindAddress`

Alternatively the bind address for all nodes in an instance can be changed with the following registry entry

`/configuration/boot/cluster/<System Host Name>/<Cluster Instance Id>/bindAddress`

If both these values are set the more specific (Instance + Node) value is used.

# CacheSize

The cache size to use for cached PL/SQL REL functions, default is `50`.

/configuration/REL/PLSQL/CacheSize

# check

SAP BPA can automatically check if a critical update has become available and warn you about it. This can be set in the following registry key:

`/configuration/update/check`

# checksum

Every time an `autoexec.car` file is imported, its checksum is stored in the following registry key:

`/configuration/boot/car/checksum`

This ensures that that car file is not re-imported.

# ContextURL

The context URL is used, among other things, to generate permalinks; make sure it is a fully qualified domain name.

This can be set with the following registry key:

```
/configuration/ContextURL
```

This registry key is set on the first administrator login. If it contains a value like `http://pr1.mas-alan.com:50180/scheduler` or `http://127.0.0.1:50180/scheduler` then its value needs to be changed to a hostname or IP address that can be used from other machines on the network.

# DefaultKeepStatus

Processes that reach one of statuses defined by the ScriptKeepStatus are excluded from the keep clause of the process definition. These processes are kept indefinitely as long as the `KeepExpiration` field on the process is not used. You can force deletion of a process by specifying a DateTimeZone in the past on the `KeepExpiration` field of the process; the process will be deleted as soon as `KeepExpiration` has been reached by the *System_ProcessKeepClauses* process regardless of any other settings.

This can be set with the following registry key:

```
/configuration/DefaultKeepStatus
```

If this registry key is not set, processes in all final statuses adhere to the keep clause. The registry key takes a succession of status codes, note that no spaces, commas or semi-colons should be used; the order is not relevant.

Status codes for final status

- `A` - Canceled

- `C` - Completed

- `E` - Error

- `K` - Killed

- `U` - Unknown

Example value: `KAUE`

# DefaultMaxCacheAge

The default maximum age of PL/SQL REL cache entries, default is 3600 seconds or 1 hour.

```
/configuration/REL/PLSQL/DefaultMaxCacheAge
```

# DefaultPreSubmit

The hard-coded default for the pre-submit count on the submit wizard is set to `10`.

This can be overridden by the registry key:

```
/configuration/jcs/recurrence/DefaultPreSubmit
```

At every system startup, an operator message is created if this key does not exist or is invalid.

The maximum value for this registry key is `5000`.

# Download

You redirect the download of software using the following registry key:

`/configuration/Download/RedirectSoftwareDownloadURL`

This is useful if you want to redirect users who wish to download platform agent or operator message monitor installers to a server in another geographical location. The value should be that of

The value should be a SAP BPA URL, for example `http://pr1.masalan.com:53000/scheduler`.

# error

When the import of an `autoexec.car` file fails, startup continues by default. You can force the central SAP BPA server to abort startup by specifying `abort` in the following registry key:

`/configuration/boot/car/error`

This registry key only accepts the value *abort*, any other value will be ignored.

# FailoverContextURL

The fail-over host for agent-initiated platform agents can be configured using the following registry key:

`/configuration/FailoverContextURL`

Note that this registry key takes the URL of the fail-over host using the `http[s]://<server>:<port>/<context>` syntax.

`http://fo-pr1.masalan.com:50100/scheduler`

# export

You customize the system.id that is sent with outbound promotion requests and used to match to *Source* systems in the remote system by specifying the following registry key:

`/configuration/export/name`

# import

You customize the promotion module using the following two registry keys:

- `/configuration/import/RunAsUser` - the subject to use for the import process, if this is not set, the owner of the *System_Import_Archive* will be used.

- `/configuration/import/LockDown` - if this is set to `true`, only specific source systems are allowed.

# instanceId

This is a unique identifier for the cluster. This allows you to have two clusters on the same host. By default this is set to `0`.

The id can be changed with the following registry entry

```
/configuration/boot/cluster/<System Host Name>/instanceId
```

# isolation_reader

In an isolated system, a special user can read everything, that is,has read access to all objects in the repository. All other privileges this user may have are ignored.

You set the user with the following registry key:

```
/configuration/isolation_reader
```

# javatoolkit

These registry keys allow you to set different java-specific settings such as the compliance-level of Java code.

`SourceVersion` and `TargetVersion`

By default, the source and target versions are set to Java 1.4. This can be overridden, when you want to use enumerations, which require Java 1.5 or higher, for example.

```
/configuration/javatoolkit/SourceVersion
/configuration/javatoolkit/TargetVersion
```

`allowSun`

Packages starting with `com.sun` and `sun` are not to be imported, by default; these packages can be used if you set the following registry key

```
/configuration/javatoolkit/importManager/allowSun
```

Values

- `true` - the use of the packages is allowed

- `false` - the use of the packages is disallowed

`disableRuntimeExec`

The `Runtime.getRuntime().exec()` methods can be disabled via the following registry key. Note that this allows you to run OS commands on the server hosting SAP BPA.

```
/configuration/javatoolkit/importManager/disableRuntimeExec
```

- `true` - the use of the methods is disallowed

- `false` - the use of the methods is sallowed

# jdbc

The following registry keys allow you to create connection pools for connections to JDBC databases:

- `/configuration/jdbc/pool/<name>/DriverLibraryName` - Name of the custom library that contains the driver jar file, required only if the driver is not on the `CLASSPATH`.

- `/configuration/jdbc/pool/<name>/DriverClassName` - The class name of the JDBC driver.

- `/configuration/jdbc/pool/<name>/url` - The URL for the JDBC connection.

- `<name>` the name in the above registry keys is a *logical* name, JDBC process severs have a *JDBCConnection-URL* parameter, this is used to lookup the set of registry keys.

Only one set of registry keys is allowed for each unique connect string URL. If multiple registry key sets pointing to the same URL exist, any of these will be used; this can create havoc.

# jobhistory

The scorecard will keep processes for 365 days, by default.

This setting can be set using the following registry key:

```
/configuration/history/jobhistory
```

The registry key should be set to the number of days of processes history you want the scorecard to take into account, note that this is independent of keep clauses. You should fill in a number (integer), filling in an invalid value will cause the scorecard to use all processes, even processes that have been deleted according to their keep clause. On heavy-used systems with many processes and/or operator messages, the table can grow very large. SAP recommends setting this registry to 365 days or less on very busy systems.

# JobChainMessageLocation

By default, several of the internal process chain components create JobNotes under different circumstances to store processing and/or error messages. You can overrule this to create OperatorMessages instead by specifying the following registry key and setting it to OperatorMessage.

```
/configuration/jcs/JobChainMessageLocation
```

Values:

- JobNote - the process chain engine creates JobNotes for messages (default)

- OperatorMessage - the process chain engine creates OperatorMessages for messages

# KeepDisabled

You can disable keep-clauses with the following registry key:

```
/configuration/KeepDisabled
```

# Language

The default language to use in the ui user has no language defined.

You set the default language with the following registry key:

```
/configuration/Language
```

# location

You specify the location of autoexec.car files with the following registry key:

```
/configuration/boot/car/location
```

The car files are imported at system startup if its checksum differs from that stored in `/configuration/boot/car/checksum`.

# lockTimeoutThreshold

`/configuration/jcs/clustering/lockTimeoutThreshold`

The value is in seconds. The default value is `300` seconds and will be used if this registry key is not set or its value is invalid.

# logging

The registry keys are read in the following order to configure process verbosity level by file:

1.  `/configuration/logging/Job/ByDefinition/<JobDefinition.Partition>/<Job-Definition.Name>/<JobFile.Name>.level=<level>` - verbosity level for a specific file of a process from a specific process definition

2.  `/configuration/logging/Job/ByType/<JobDefinitionType.Partition>/<JobDefin-itionType.Name>/<JobFile.Name>.level=<level>` - verbosity level for a specific file of all processes of the specified type

3.  `/configuration/logging/Job/ByJobFileName/<JobFile.Name>.level=<level>` - default verbosity level of a specific file

The registry keys are read in the following order to configure process verbosity level for actions (OnChange, PreRunning, or PostRunning):

1.  `/configuration/logging/JobDefinitionAction/<action>/<JobDefinition.Parti-tion>/<JobDefinition.Name>/Level=<level>` - action verbosity level for all processes of the specified process definition that have the action

2.  `/configuration/logging/JobDefinitionAction/<action>/<JobDefinitionType.Par-tition>/<JobDefinitionType.Name>/Level=<level>` - action verbosity level for all processes of the process chain definition type that have the action

3.  `/configuration/logging/JobDefinitionAction/<action>/Level=<level>` - action verbosity level for all processes that have the action

4.  `/configuration/logging/JobDefinitionAction/Level=<level>` - action verbosity level for all processes with any action

The following placeholders are used in the above two lists:

*   `<action>` - either `OnChange`, `PreRunning`, or `PostRunning`

*   `<JobDefinition.Name>` - the name of the process definition

*   `<JobDefinition.Partition>` - the partition of the process definition

*   `<JobDefinitionType.Name>` - the name of the process chain definition type

*   `<JobDefinitionType.Partition>` - the partition of the process chain definition type; `GLOBAL` for built-in process chain definition types

*   `<JobFile.Name>` - the name of the file, `stderr.log` for example

*   `<level>` - either `debug`, `info`, `warn`, `error`, or `fatal`

## MaximumPreSubmit

When you submit a process with a submit frame, you can specify how many processes are to be pre-submitted. The maximum number can be specified with the following registry key:

`/configuration/jcs/recurrence/MaximumPreSubmit`

> ℹ **Note**
>
> The system will veto any attempt to pre-submit 5000 processes, as this would have serious effects on performance.

## Mobile Access

You enable mobile access from the user interface. Once this has been done,a registry key is created at the following location:

`/configuration/mobile/enable`

> ℹ **Note**
>
> You should use the user interface to enable and disable mobile access.

## name

This is used for display purposes (for example within the output of the System_Info ( see the Administration Guide ) job) for identifying a cluster. By default it is CLUSTER.

The name can be changed with the following registry entry

`/configuration/boot/cluster/name`

## ObjectLevelSecurityDisabled

You can disable object-level security with the following registry key:

`/configuration/security/objects/Job/ObjectLevelSecurityDisabled`

> ℹ **Note**
>
> SAP strongly recommends not specifying this registry key, as objects will become visible/editable to users who would normally not see them, which can create havoc.

## password

When you use the SAP BPA operator message client on Microsoft Windows, you can set a password as opposed to having the users log in with their account.

The password can be set with the following registry key:

`/configuration/feed/feeds/operator_message/password`

## port

The port to which the communication is bound. By default this is determined from the Cluster Instance Id, and the Cluster Node Id via the following equation:

```
Port Number = 10000 + (1000 * Cluster Instance Id) + 70 + (Cluster Node Id)
```

On a default setup this will be 10071.

The port can be changed with the following registry entry

```
/configuration/boot/cluster/<System Host Name>/<Cluster Instance Id>/<Cluster
Node Id>/port
```

# ProcessServerParameters

You can override process server parameter default values globally by setting the following registry key:

```
/configuration/ProcessServerParameters/<name>
```

The `<name>` is the name of the process server parameter. Note that this registry key only affects default values; if you add the process server parameter to the process server, then that value will have precedence over the value of this registry key. Only the `scheduler-administrator` can create/edit these registry keys.

# Properties

The defaults for the `mail.smtp.timeout` and `mail.smtp.connectiontimeout` mail session properties are set to 10 seconds. You can override these and any other properties in the com.sun.mail.smtp package [http://-javamail.kenai.com/nonav/javadocs/index.html?com/sun/mail/smtp/package-summary.html] using the following registry key. Note that **special caution** must be taken when you set other properties; failure to understand a property correctly can cause issues if you override the default.

```
/configuration/mail/Properties
```

## role

When you have the Hosting Module and you set the `com.redwood.scheduler.security.customer-prefix` property, you can set the following registry key to prevent your customers from accessing troubleshooting tools inside SAP BPA. This registry key, when set to an existing role, also governs who can see the default navigation bar.

```
/configuration/support/role
```

# Release

The release registry key under the update node displays the current release of the software. The key can be found at this location:

```
/configuration/update/release
```

# RestartVersion

The RestartVersion registry key is used to control the behavior of *Request Restart* status handler operator messages. By default, the restart options displayed in the operator message ignore changes to process definition. You set this

registry key to `latestVersion` to use the latest version of the processes when you restart [part of] the process chain; provided you select one of the available restart options that uses this functionality.

`/configuration/jcs/jobchain/RestartVersion`

Possible values:

- `currentVersion` - changes to process definitions are ignored

- `latestVersion` - restart options include restarting with latest version of the process definitions

> ℹ️ **Note**
>
> Changes take effect immediately.

## retention

The `retention` registry keys are used to define your desired retention strategy and warn when your retention settings have been exceeded.

When the defaults have been met, the following registry key is created; this will cause a message to be displayed when you log in.

`/configuration/retention/configure`

The following registries are used to configure your warning levels (override the defaults):

- `/configuration/retention/warning/count` - the maximum number of processes; the default is `100000`

- `/configuration/retention/warning/delta` - the maximum daily delta of processes; the default is `10000`

- `/configuration/retention/warning/ratio` - the accepted percentage of process definitions without keep clause; the default is `80`

The warning is displayed if `80%` of non-system process definitions do not have a keep clause set and either the maximum number of processes has been reached (`100 000`) or the number of new processes over a period of 24 hours reaches `10 000`.

## Runtime

The number of threads you want to allocate for performing runtime expiration calculations can be set with the following registry key:

`/configuration/requestQueueSize/runtime`

The default value is `20`.

### Security

The security mode isdisplayed in the following registry key:

`/configuration/security`

> ℹ️ **Note**
>
> Only change this value if SAP support services ask you to do so.

## security

This registry key is not used.

```
/configuration/security
```

## selfupgrade

The following registry key specifies if SAP BPA can upgrade itself,for example, when a web application of a more recent version is deployed.

```
/configuration/selfupgrade
```

## Server

The mail server (SMTP server) to use for sending email is set with the following registry key:

```
/configuration/mail/Server
```

## Skip JCo for non-SAP Environments

SAP BPA automatically tries to load SAP JCo drivers used for connecting to the ABAP stack of SAP instances. If you have no SAP systems, you can set this registry key to `true`.

- `/configuration/jco/skip` - skip the loading of SAP drivers

## sessiontimeout

You specify the session timesout in minutes using the following registry key:

```
/configuration/sessiontimeout
```

## SQLServerCheck

This registry key is set during the database initialisation when mandatory configuration parameters are not set for SQL Server databases. The following SQL Server database connection parameters are mandatory:

- `responseBuffering=adaptive`

- `selectMethod=direct`

```
/configuration/SQLServerCheck
```

## ThreadPriority

The dispatcher thread priority is set to a default of 8. The priority can be changed by setting the registry key:

```
/configuration/jcs/dispatcher/ThreadPriority
```

Valid values range from `1` to `10`. Note that you must restart SAP BPA in order for this setting to become effective.

# type

This is the implementation that is used to perform all clustering operations. By default Redwood Messaging is used (Since M33.10, M28 still only has clustering support on SAP using SAP JMS Messaging). However in certain circumstances the implementation should be changed.

The implementation can be changed with the following registry entry

```
/configuration/boot/cluster/type
```

The possible values are (Note: these values are case-sensitive):

• RWM - Redwood Messaging, the default implementation

• SAP - SAP JMS Messaging

• Standalone - A non-clustered implementation designed as a Failsafe

# useLastExecutedStepStatus

Process Chains can reflect the status of the last step or that of the last executed step. When a process chain's last step reached status *Skipped*, *Disabled*, or *Ignored*, the process chain is set to *Completed*. You can also have the status reflect the last executed step, ignoring the three previous cases. The following registry key that governs the default behavior:

```
/configuration/jcs/jobchain/useLastExecutedStepStatus
```

The registry key should be set to either `true` or `false`.

# UploadedFilesPath

The default directory used for uploaded files is the *current working directory*, this directory might not be accessible to all nodes in a cluster. The registry key `/configuration/jcs/upload/UploadedFilesPath` has been introduced to specify the location where uploaded files are saved. This directory must be accessible to all nodes in the cluster.

# Visibility

The visibility key and child keys are used to specify who can see which tabs and links in object editors. You specify the levels in the `/configuration/ui/visibility/Levels` registry key; it must be set to a comma-separated list of roles. The roles must be entered in ascending order starting with the role that should have the most limitations and ending with the most privileged role. Note that this does not grant any additional privileges, it merely restricts the privileges a user has.

Note that these registry keys are generated using the System_CreateEditScreenEntries process definition ( see the Administration Guide ).

The following table lists the values

| Key | Value | Description |
|---|---|---|
| Levels | <Comma separated list of roles, treated as levels from lowest to highest> | |
| Tabs/<ObjectType>/<Tab-Name> | <Minimum level to see this tab> | <Filled in by process definition as the translation of for Object-Type/TabName> |

| Links/<ObjectType> | <Minimum level to see New…/Edit… links next to fields for this object type> | |
|---|---|---|

The following registry keys, as well as their children (not shown), will be generated by the System_CreateEditScreenEntries ( see the Administration Guide ) process definition

```
/configuration/ui/visibility/Levels
```

```
/configuration/ui/visibility/Links/<object_type>/<tab_name>
```

```
/configuration/ui/visibility/Tabs/<object_type>/<tab_name>
```

# Active Monitoring-Related Registry Keys

Active Monitoring-related registry keys are stored under the `configuration/Alerting` node. The following are available:

- `/configuration/Alerting/Message` - The default message for alert operator messages

- `/configuration/Alerting/Response` - The default Reply for alert operator messages

- `/configuration/Alerting/System_Alert_Send/ErrorOnNoMessage` - When this registry key is set to `true` and no matching operator message could be found, an exception will be thrown.

## Worker Queues

By default, a process server has `100` worker queues, which means that it can execute 100 concurrent processes (process running in parallel). You can set the maximum number of worker

queues using the registry:

```
/configuration/requestQueueSize/<process_server_partition>/<process_server>/<service>
```

You set the maximum workers for the ScriptService (RedwoodScript) to 20, for the ProcessServer named 'PS_TEST' which is in the GLOBAL partition as follows:

```
/configuration/requestQueueSize/GLOBAL/PS_TEST/ScriptService=20
```

# Archiving Server-Related Registry Keys

Archiving Server-Related registry keys are stored under the `/configuration/archiving/` node. The following are available:

- /configuration/archiving/<server> - the fully qualified domain name of the archiving server

- /configuration/Archiving/<server>/<RootDirectory> - the location of the root directory on the archiving server

## compressionlevel

To speed-up the archival of output you specify the ZipOutputStream compression-level (0-9) using the following registry key:

```
/configuration/Archiving/compressionLevel
```

# SAP-Related Registry Keys

## DefaultJobQueue

Override the parent process's queue using the following registry keys:

- `/configuration/sap/DefaultJobQueue` - default queue for all SAP systems when not specified in the job control rules.

- `/configuration/sap/<Partition>.<SAPSystem>/DefaultJobQueue` - default queue for SAP system `<Partition>.<SAPSystem>`.

The evaluation order is as follows:

1. Job control rules

2. Registry setting

3. Parent process's queue

## DefaultProcessServer

The following registry key can be used to specify the default process server for retrieving output from an SAP system.

`/configuration/sap/output/DefaultProcessServer`

## JobLogFormat

The following registry key specifies the fields of the SAP job log to retrieve. The order is fixed to `ENTERTIME`, `ENTERDATE`, `MSGID`, `MSGNO`, `MSGTYPE`, `TEXT` (The same order as in the SAP table).

Note that when you create this registry key it will be read by the process servers; a process server restart is required when you change the value, though.

- `/configuration/sap/JobLogFormat/joblog` - global setting for job logs on all SAP systems

- `/configuration/sap/<Partition>.<SAPSystem>/JobLogFormat/joblog` - for SAP system `<Partition>.<SAPSystem>`.

An example value of such an entry for registry key `/configuration/sap/JobLogFormat/joblog`:

`ENTERTIME, ENTERDATE, MSGID, MSGNO, MSGTYPE, TEXT`

| Field | Description |
|---|---|
| ENTERTIME | Job log entry time |
| ENTERDATE | Date of entry into job log |
| MSGID | Message Class |
| MSGNO | Message Number |
| MSGTYPE | Message Type |
| TEXT | Message text |

# KilledMessages

If this registry key is set, the specified codes in the log files of SAP jobs will force the job to `Killed`.

- `/configuration/sap/<partition>.<SAP system>/xbp/joblog/KilledMessages`

- `/configuration/sap/xbp/joblog/KilledMessages`

Default value: `00518, 00554, 00564, 00574, 00660, 00663, 00671, BT608`

The following table lists the default codes:

| Value | Reason |
|---|---|
| 00 | Message class 00 |
| 518 | Job cancelled |
| 554 | Job also cancelled due to process termination. See the system log |
| 564 | Job cancelled after system exception ERROR_MESSAGE |
| 574 | Job cancelled due to system shutdown |
| 660 | Session was deleted by system administrator |
| 663 | Work process re-started, session terminated |
| 671 | ABAP/4 processor: & |
| BT | Message class BT |
| 608 | Job status was manually set to `Canceled` |

See this site [http://sap-core.com/troubleshoot/bc/aba/sc/class_00] for a list of possible values and their meaning.

# IgnoreApplicationReturnCode

If this registry key is set to `true`, the application return code is ignored. By default, SAP BPA uses the application return code to determine the final status of the process. This setting affects all SAP process servers, if you do not want to set this for all process servers, consider the SAP_IgnoreApplicationReturnCode ( see the Administration Guide ) process server parameter.

- `/configuration/sap/xbp/IgnoreApplicationReturnCode` - all SAP systems are affected

- `/configuration/sap/<Partition>.<SAPSystem>/xbp/IgnoreApplicationReturnCode` - only the SAP instance for which this registry key is defined is affected; for SAP systems in the `GLOBAL` partition, leave the `<partition>.` out.

The settings are processed in this order, the first setting found has precedence:

1.  parameter `IGNORE_APPL_RC`, only valid for all processes of this process definition

2.  process server parameter `SAP_IgnoreApplicationReturnCode`, only valid for all processes that run on the process server

3.  registry key `/configuration/sap/<Partition>.<SAPSystem>/xbp/IgnoreApplication-ReturnCode`, only valid for the specified SAP system, for SAP systems in the `GLOBAL` partition, leave the `<partition>.` out.

4.  registry key `/configuration/sap/xbp/IgnoreApplicationReturnCode`, valid for all SAPR3 processes across all SAP systems

```
Examples
```

Registry key for SAP system *PR1* in partition `Global`

- `/configuration/sap/PR1/xbp/IgnoreApplicationReturnCode`

Registry key for SAP system *PR2* in partition `MSLN_PR2`

- `/configuration/sap/MSLN_PR2.PR2/xbp/IgnoreApplicationReturnCode`

## IgnoreError

You ignore specific transient BW error messages that occur while a BW job is active by specifying a comma-separated list of error codes in the `IgnoreError` registry key. As long as the process is active in SAP, these errors will not cause the SAP BPA process to reach status *Error*. When the BW job finishes with one of these errors, the process will reach status *Error* as usual.

By default, the following errors are ignored:

- `RSM2 010 - Request still running`

- `RSM2 047 - Data loaded successfully; activate the DataStore object`

So the default value of the registry key is `RSM2010, RSM2047`; these errors should always be ignored for active BW jobs.

The registry key path is as follows:

`/configuration/sap/<Partition>.<SAPSystem>/bw/log/IgnoreError`

## RestartMode

By default, monitored BW chains have the restart option set to `(F)ailed`, this can be overridden using the following registry keys:

- `/configuration/sap/<Partition>.<SAPSystem>/bw/restart/RestartMode`

- `/configuration/sap/bw/restart/RestartMode`

Allowed values:

- `N` - monitored BW chains are not restartable

- `F` - monitored BW chains are restartable, only failed processes are shown (default)

- `A` - monitored BW chains are restartable, all processes are shown

> ### ⓘ **Note**
>
> This applies only to monitored BW chains, so those that were started in BW. BW chains started in BPA have a parameter that defines the restart behavior.

# ReturnCodeOperatorMessages

When return code mapping is performed, operator messages are issued. If you do not want these messages, you can set the following registry key to `false`:

1. `/configuration/sap/<Partition>.<SAPSystem>/xbp/ReturnCodeOperatorMessages`

2. `configuration/sap/xbp/ReturnCodeOperatorMessages`

# SynchronizationMode

Normally the synchronization mode is automatically selected based on the availability of the transport files and the XBP version. However, sometimes there are situations where a particular method has advantages over the other, for example: XBP 2.0 synchronization confirms jobs that were seen by SAP BPA, while Redwood transports and XBP 3.0 do not do this.

If the values do not match the capabilities of the SAP system (for example, use of transports is set but no transports are installed) it will automatically select the next best synchronization mode among T, 3, 2 ...

- `/configuration/sap/xbp/synchronization/SynchronizationMode`

- `/configuration/sap/<Partition.SAPSystem>/xbp/synchronization/SynchronizationMode`

Allowed values:

- `T` - use transport files

- `0` - use XBP 0.1 synchronization

- `1` - use XBP 1.0 synchronization

- `2` - use XBP 2.0 synchronization

- `3` - use XBP 3.0 synchronization

Normally the synchronization mode is automatically selected based on the availability of the transport files and the XBP version. However, sometimes there are situations where a particular method has advantages over the other, for example: XBP 2.0 synchronization confirms jobs that were seen by SAP BPA, while Redwood transports and XBP 3.0 do not do this.

If the values do not match the capabilities of the SAP system (for example, use of transports is set but no transports are installed) it will automatically select the next best synchronization mode among T, 3, 2 ...

> ✅ **Tip**
>
> The value is used by the SAPR3 service as soon as it is detected, there is no need to restart the process server.

> ℹ️ **Note**
>
> When the process server parameter SAP_UseTransports ( see the Administration Guide ) is set to `false`, the transport files might not have been installed correctly. In this case, the use of transport files will not be possible regardless of the value of the registry key.

# ViewerURL

You specify the viewer URL for BusinessObjects Reports to be able to access them from within SAP BPA.

- `/configuration/sap/bobj/ViewerURL` - system-wide URL.

- `/configuration/sap/<Partition>.<BOBJ System>/bobj/ViewerURL` - BusinessObjects system-specific URL (Note that you do not specify the partition for BusinessObjects residing in the *GLOBAL* partition).

Example 1:

```
/configuration/sap/bobj/ViewerURL=${URL}/${KIND}s/viewrpt.cwr?id=${ID}
```

For a Crystal Report job executed on a BOBJ system with J2EE URL `http://bobj.masalan.com:8080` with the report id 1234 this would be automatically translated into:

```
http://bobj.masalan.com:8080/CrystalReports/viewrpt.cwr?id=1234
```

# Platform Agent-Related

## Agent Initiated Registry Keys

When this registry key is set, only agent-initiated platform agents can connect to SAP BPA. The value is a comma-separated list of roles that have access to agent-initiated platform agents.

```
/configuration/agentinstall/agentinitiatedonly
```

The default SharedSecret for agent initiated platform agents.

```
/configuration/agentinstall/key
```

## ApprovedSecureDownload

You create the following registry key to confirm your acceptance of the OpenSSL BSD license. Note that export restrictions apply to this library prohibiting its use in certain jurisdictions; by specifying this registry key, you confirm that the software may be used in your jurisdiction in accordance with national, US, and international law.

```
/configuration/Download/ApprovedSecureDownload
```

## SimultaneousUpdates

When the installation has a larger number of platform agents the system will serialize the process of sending the updated platform agent installer binaries, as these are quite large. The number of simultaneous updates is governed by the registry key:

```
/configuration/PlatformAgent/SimultaneousUpdates
```

## SimultaneousReconnections

When the connection has been interrupted between a platform agent and the central SAP BPA server, you can specify how many concurrent reconnection attempts are made with the following registry key:

```
/configuration/PlatformAgent/SimultaneousReconnections
```

> ℹ️ **Note**
>
> The default value is fine for most, if not all scenarios. Only change this value if SAP support services ask you to do so.

# Promotion Module-Related Registry Keys

## export

The following registry key holds the alias for a remote system object. The name of *Source* and *Both* remote systems must match either the last part of the system.id license key or the alias as defined in the following registry key:

```
/configuration/export/name
```

# User Hive

You usually use the options dialog to set registry keys in the `user` hive, the following key can to be set manually.

## ExpirationNotification

You can set when the license expiration warning starts warning about the approaching expiration. The default value is 28 days, the minimum is 7 days.

```
/user/<username>/ui/configuration/ExpirationNotification
```

## MessageOfTheDay

The MessageOfTheDay is used to inform users of down-times, maintenance windows and other important information. Once you have read the document, you can suppress it from appearing each time you log in. It will only re-appear once the document has been updated. By setting the following registry key to a high number, you can suppress it completely. The value is milliseconds since Jan 1 1970.

```
/user/<user>/behavior/MessageOfTheDay/suppress
```

# Common Logging Categories

## Use

The following list describes the most used categories for tracing with the System_DynamicTrace process definition:

- `action` - Actions and triggers

- `alert` - Alerting (Active Monitoring Module)

- `infrastructure.logging.PerformanceLogger` - performance tracing information

- `audit` - Auditing (Active Auditing Module)

- `cluster` - Cluster logging

- `connector` - ERP Connectors

- `core` - Core scheduler component

- `event` - Events

- `iphone` - iPhone interface

- `jobchain` - Process Chain

- `jobchainservice` - JobChainService

- `jobservice` - Generic jobservice, used by most components when running processes

- `mail` - Mail Module

- `monitor` - Monitor components

- `persistence` - Database persistence

- `persistence.impl.PersistenceLogger.sqlhl` - All high level SQL statements

- `persistence.impl.PersistenceLogger.sqlll` - All SQL statements as sent to the database

- `persistence.impl.PersistenceLogger.tdump` - transaction dumps of all transactions

- `persistence.impl.PersistenceLogger` - all previous three (high level and low level SQL as well as transaction dumps)

- `remote` - Remote API

- `script` - Redwood Expression Language

- `scriptjobservice` - Service for running scriptjobservice

- `security` - security

- `systemjobservice` - Systemjob service

- `ui` - User Interface

The following categories can be used in the client-side JavaScript logger (for development only):

- `javascript`

## ℹ Note

The JavaScript log is not produced by *System_DynamicTrace*.

The above logging categories can be used with the following log levels:

- `TRACE` - the TRACE level (JavaScript/user interface only) designates very detailed informational events that are used by SAP BPA development to troubleshoot user interface issues.

- `DEBUG` - the DEBUG Level designates detailed informational events that are most useful to debug an application.

- `ERROR` - the ERROR level designates error events that potentially allow the application to continue running.

- `FATAL` - the FATAL level designates very severe error events that potentially lead the application to abort.

- `INFO` - the INFO level designates informational messages that highlight the progress of the application.

- `WARN` - the WARN level designates potentially harmful situations.

## See Also

- Troubleshooting SAP BPA ( see the Administration Guide )

# Glossary

## 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.

### AdHocAlertSource

An object which defines an alert that can be fired by a process definition to notify operators. Functionality only available from Redwood Software.

### AlertEscalation

An object that defines escalation routes for alerts. When an operator does not respond to an alert in a timely fashion, alert escalations are used to notify other users, for example the manager of the operator who failed to address the issue in time. Functionality only available from Redwood Software.

### Application

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

### Applications API

Also known as BAE API. A proprietary API developed by Redwood Software BV together with SAP AG to allow connections from SAP AS ABAP to SAP BPA. In SAP BPA, BAE objects are named *SAP Inbound*.

### Audit Rule

An object that specifies which events, like a change to a process definition, are to be audited.

### Audit Trail

The log displaying audited events.

### AS/400 [IBM]

In SAP BPA 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

## BAE [SAP]

See Business Automation Enabler.

## 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.

## Business Automation Enabler [SAP]

Also known as BAE. It is an interface that allows SAP AS ABAP systems to connect and control SAP BPA. Business Automation Enabler is only available for SAP BPA customers.

# 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 BPA.

## Concurrent Manager [Oracle]

The concurrent manager manages your concurrent requests in the Oracle Applications suite. All concurrent programs that can be started from Oracle's web submit screen (for submitting concurrent programs) can also be scheduled by SAP BPA.

## Constraints

Constraints are conditions that IN values of process (definition) 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.

## Credential

An object used to store login information in a more secure and re-usable way.

## Credential Protocol

An object that defines a type of credential. Different credential protocols are available for operating systems and databases, for example.

## Crystal Reports [SAP]

SAP BusinessObjects can generate Crystal Reports which allow you to drill-down data; Crystal Reports can also be imported and scheduled by SAP BPA.

# D

## Document

An object used to store documentation on specific objects or processes. It can be used for other purposes as well, for example, to log changes made to process definitions, for example.

## Dashboard

The dashboard allows you to monitor one or more systems using graphs and dials.

## DataServices [SAP]

SAP BusinessObjects allows you to schedule DataServices, formally known as Data Integrator, which interface to third-party solutions. In SAP BusinessObjects, these can be exported to shell scripts, which can then be scheduled on platform agents.

# 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.

## EmailAlertGateway

An object used to forward alerts by email. Functionality only available from Redwood Software.

## Endpoint

An endpoint is a device that is connected as part of a computer network. In credentials, it refers to the system where authentication is done, which means it can be a server, a database or an SMTP server, for example.

## Event Definition

Jobs can wait for one or more events to happen before they start. SAP BPA has two types of events: events (raised by processes having specific 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 ( see the Administration Guide ).

## Event

An object that symbolises a raised event definition.

## ExportRuleSet

An object used to store a set of rules to be used when you want to automate the export of objects. Functionality only available from Redwood Software.

# F

## Format

A format can be assigned to a process definition. The format defines the type of output that the process 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

## Id

Th unique identifier of a

## ImportRuleSet

An object used to store sets of rules, or settings, to be used when objects are imported.

## 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 OEM version, isolation groups isolate SAP client/instance combinations from each other allowing you to interact with only one at any given time.

## J

## Job [Technical Name]

A job is a `job definition` that is submitted into queue. When users request the execution of a `process`, `process chain`, or `report`, a process server creates a record in the Job table, calculates the start time and sets the status to *Assigned*.

## Job Chain [Technical Name]

A job chain is a special job definition that has no command text and executes one or more job definitions (Process Chain processes) in parallel or sequentially. The process chain processes are grouped into steps. All process chain processes in one step are executed directly (parallel processing) and process server waits until all process chain processes get a final job status before proceeding with a next step (sequential processing). If you are familiar with SAP, a process chain is the equivalent of a multi-step job in SAP.

## 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 [Technical Name]

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. The following are user-friendly names of some types of job definitions: `process definition`, `process chain definition`, and `report definition`.

## Process Chain Definition Type [Technical Name]

An object that defines a type of job definition. Some job definitions do not need a *Source* field, for example, this is specified in the process chain definition type. The following are user-friendly names of some types of job definitions: `process definition`, `process chain definition`, and `report definition`.

## 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 BPA, which is SAP BPA specific and is the *unique* identifier of a job in an instance of SAP BPA.

## Job Id [Technical Name]

A unique identifier for a `job` (`process`, `process chain`, or `report`).

# Job Status [Technical Name]

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 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 ensure that specific process do not run concurrently. You can add a lock to a process definition to define which processes can and cannot run together. There are three types of locks, `Simple` (default, only one process is allowed to hold the lock), `Counted` (only `<n>` processes are allowed to hold the lock), and `SharedExclusive` (Locks have a *count* property, allowing one or more processes to run). When the *count* of a `SharedExclusive` lock is greater than `1`, multiple processes can *hold* one or more *counts*. A process that requires `n` *counts* can only get hold of the lock if n or more *counts* are available.

## Library

An object used to store RedwoodScript code so that it can be easily re-used in other objects.

## License

The license specifies which features are available to you in license keys.

# 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 BPA provides a number of ERP interfaces, utilities and systems tools in separate packages. These are called Modules. Your license specifies which modules are available to you. For each module, you have a *Module.<module_name>* entry; if this is set to `true`, then you are entitled to use the module.

## Monitor

An object which allows you to get information about the current state of a system, database or other application.

## MonitorAlertSource

An object used to fire alerts from monitors.

## 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.

## Note

Both SAP and Redwood use a note system to communicate important pieces of information to their customers. You can access SAP Notes at http://service.sap.com/notes and Redwood Notes at notes.redwood.com/<number> [http://:]

## Operator Message

An object used to inform users or operators about an event. For example, when a process server is unable to start.

## Oracle Applications [Oracle]

An ERP platform from Oracle; also known as Oracle EBS. You schedule Oracle Applications workload with SAP BPA

## Oracle EBS

See Oracle Applications.

## Oracle Health Insurance

An ERP platform specifically designed for the needs of health insurance companies. You schedule Oracle Health Insurance (OHI) workload with SAP BPA

## Oracle PeopleSoft

See PeopleSoft.

## OS/390 [IBM]

See z/OS.

## OS/400 [IBM]

See AS/400.

# P Q

## Partition

An object used to store and isolate objects.

## PeopleSoft

An ERP platform from Oracle. You schedule PeopleSoft workload with SAP BPA

## Period Function

A function used to calculate dates.

## 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 BPA proceeds with the step or process chain process; if the outcome evaluates to `null` or `false`, SAP BPA skips the step or process chain process and sets the status to `Skipped`.

A process is a `Process Definition` that is submitted into a queue. When users request the execution of a `process chain`, a process server creates a record in the Job table, calculates the start time and sets the status to *Assigned*.

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

Defines a task to be executed on a process server.

A process chain is an instance of a process chain definition.

A process chain definition defines a set of processes and their dependencies to be run in parallel or sequentially.

## Process Chain [SAP]

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.

A process chain definition is a special `JobDefinition` that has no command text and executes one or more `JobDefinitions` (Process Chain processes) in parallel or sequentially. The process chain processes are grouped into steps. All process chain processes in one step are executed directly (parallel processing) and process server

waits until all process chain processes get a final status before proceeding with a next step (sequential processing). If you are familiar with SAP, a process chain is the equivalent of a multi-step job in SAP.

## Process Server

Process servers are used to execute processes.

## Queue

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

## R

A reaction activity is a `process` with a specific set of parameters that is submitted into a queue in reaction to a specific circumstance.

## Recurrence

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

## Redwood Intelligence

Redwood Intelligence is an analytics package that helps you use both historical and real-time data to spot current or future bottlenecks in your process automation solution. Analyse and compare runtimes, peak periods, server usage historically, for example.

## Report

An object that stores the settings required to generate a specific summary of a situation or status. For example, reports are frequently used to generate a monthly summary of all processes that reached status *Error*.

## Rescheduling

Restarting any process that has a final status (such as `Completed`, `Error`, or `Canceled`) or changing the properties of a scheduled or queued process (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 process definitions, all processes for these process 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 BPA server, usually as *central SAP BPA server*.

## Scheduling Parameters

A process definition can have a default queue and a priority, for example. These scheduling parameters define how the process server handles processes after they are submitted.

## Submit Frame

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

# T

## Table

An object used to store values; much like a table in a database or a spreadsheet in Microsoft Excel.

## Table Definition

An object used to describe a table; like the columns of a table, for example.

## Time Window

A time window defines a time zone in which the process is allowed to be executed. A process calendar that defines the period of time during which a process 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.

## Trigger

A trigger allows you to specify which actions to perform on an object at specific times, such as when an object is changed. Triggers are frequently used to enforce policies, for example every object that can must have the *Application* field set.

# U V W

## Web Intelligence [SAP]

SAP BusinessObjects has a type of report named Web Intelligence, allows you to generate dynamic reports, which can be scheduled by SAP BPA.

# 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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