



# Stonebranch Solutions

CM Interface for Indesca for SAP  
cm-interface-indesca-sap

STnebranch

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# Introduction

The CM Interface for Indesca for SAP (USAP-CM) serves the purpose of providing functionality that is not possible using the certified SAP XBP interface alone.

USAP-CM offers an external interface to MHP's Communication Management for SAP (CM). Specifically, this provides the ability to work with CM Communications and CM Report jobs.

Communication Management is a licensed product from MHP. Please contact your MHP representative for information on the required CM prerequisites for the USAP CM Interface.

Note: This functionality is specific to Indesca's Universal Connector component.

# CM Communications

CM communications are capable of controlling complex job nets, including communications between SAP systems and non-SAP systems.

With USAP-CM, you can start and monitor CM communications that have been defined within the SAP system and return spooled output, joblog, and communication log upon completion. USAP-CM also has the ability to restart terminated CM communications. Restarts can be performed from the point of failure or, skipping the failed component.

CM communications are defined in the SAP system using the MHP Communication Management application. The structures that determine the processing steps that are carried out by a CM communication cannot be created or altered by USAP-CM.

However, many attributes that affect the characteristics of a communication can be set using USAP-CM. These characteristics include an identification string (CM OPC Token), output control (spoolists and logs), printing and archiving options, and the start mode of a CM communication.

The user definable attributes that are used to control a CM Communication are specified in job definition files. This document refers to the collection of attributes as a CM Communication Job Definition.

If changes are required to CM communication attributes, the CM communication is started using the SUBMIT command referencing an appropriate job definition file

If no changes are required to the CM communication attributes defined in the SAP system, a CM communication can be started with the START command and a job definition file would not be required. In this case, a CM Communication Id and CM OPC Token could be specified on the Universal Connector command line.

## Universal Connector Command Groups

The following Universal Connector command groups can be used with CM report jobs: SUBMIT, START, RUN, and WAIT:

A Communication ID is used to reference CM Communications stored in an SAP system. The Communication ID can be specified in a job definition file (keyword `CM_COMMUNICATION_ID`) and on the command line (parameter `-cmid`).

A user-defined text string is used to prefix SAP jobs created to process a CM Communication. This text string can be specified in the job definition (keyword `CM_OPC_TOKEN`) and on the command line (parameter `-cmopctoken`).

The CM Communication start mode can be specified in the job definition file (keyword `CM_MODE`) and on the command line (parameter `-cmmode`).

If parameters `-cmid`, `-cmopctoken`, or `-cmmode` are specified on the command line, their values override any that may have been defined in the job definition file.

## Exit Codes For CM Communications

The exit code of Universal Connector depends on whether or not the -wait option is used to wait for CM Communication completion. If waiting for CM Communication completion, the exit code represents the CM return code for the CM communication's status upon completion.

The following table identifies the exit codes that indicate the CM communication status.

Exit Code	Job Status
0	CM communication completed successfully.
1 – 11	Warnings and error messages generated by the processed communication components.
12	Error occurred attempting to process a communication component.
> 200	Error in Universal Connector processing (see the Universal Connector exit codes table, below).

If Universal Connector is not waiting for CM communication completion, the exit code indicates the success of the requested actions.

The following table identifies the Universal Connector exit codes.

Exit Code	Description
0	Successfully completed all requested actions.
201	Error occurred processing the requested actions. Messages are printed providing details about the error.
210	Error with product configuration options or command line options.
211	Error occurred in the initialization phase of message processing. It is possible that the error prohibited messages from printing.

## Sample Command Lines For Working With CM Communications

---

```
usap -user userid -pwd password -submit filename -wait
```

This example would submit communication attributes defined in filename, start, and wait for the CM communication to complete. The value for the CM OPC token is provided in the job definition file filename.

```
usap -user userid -pwd password -submit filename  
-cmopctoken 12345678 -wait
```

This example would perform the same actions as the previous command line; submit, start, and wait for the CM communication defined in job definition file filename. The value specified on the command line for -cmopctoken will override any value that may have been supplied in the job definition file.

```
usap -user userid -pwd password -run filename -cmopctoken 12345678
```

The above example would perform the same actions as the previous command line; submit, start, and wait for the CM communication defined in job definition file filename. The value specified on the command line for -cmopctoken will override any value that may have been supplied in the job definition file. This command line takes advantage of the RUN shortcut command.

```
usap -user userid -pwd password -run -cmopctoken 12345678  
-cmid COM1 -cmmode N
```

The above example uses the RUN shortcut command to start, and wait for the CM communication identified by parameter -cmid. No attributes of the communication are changed and, therefore, no job definition file was needed.

## CM Report Jobs

CM report jobs are SAP jobs that run a single ABAP report. USAP-CM submits and starts CM report jobs on the SAP system using CM function modules within SAP.

CM report jobs offer several advantages over standard SAP jobs defined using XBP. They allow control of job attributes that are not available through XBP. These attributes include job class, variable variant parameters, and certain print and archiving parameters.

CM report jobs have some unique behaviors and characteristics that differ from standard XBP jobs defined and started with Universal Connector. These include the following:

- CM jobs require a unique token. This unique token can be specified in the CM report job definition file with keyword `CM_OPC_TOKEN` and on the command line with parameter `-cmopctoken`. If the token is defined in both the job definition file and the command line, the command line value will override the value specified in the job definition file.
- When a CM report job is defined to an SAP system, a job will be created with a jobname that has been generated with the following pattern: `CM_OPC_TOKEN-CM_REPORT`. That is to say that the job name will be the ABAP report name that is being run, prefixed with the value supplied for the `CM_OPC_TOKEN` parameter, and the two values being separated by a dash (-).
- When a CM report job is submitted to the SAP system, a new job is created and started. It is, therefore, not possible to schedule a CM report job without starting it.
- If the `WAIT` command is used when submitting a CM report job, the `CM_OPC_TOKEN/CM_REPORT` combination must produce a unique jobname in the SAP system. Before performing the `WAIT` operation, Universal Connector will query the SAP system for the newly generated job name. If multiple jobs are found with the same jobname, Universal Connector reports this condition and ends with an error code.

The following Universal Connector command groups can be used with CM report jobs: `SUBMIT`, `RUN`, and `WAIT`.

CM report jobs are defined using a USAP-CM CM Report job definition file. A CM Report job definition file contains statements that describe a CM Report job. These statements are used by the `SUBMIT` and `RUN` commands to define and start a CM Report job on an SAP system.

## Exit Codes For CM Report jobs

The exit code processing for CM Report jobs is the same as for Standard Universal Connector jobs.



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## Sample Command Lines For Working With CM Report Jobs

---

```
usap -user userid -pwd password -submit filename  
-cmopctoken 12345678 -wait
```

This example would submit, start, and wait for the CM Report job defined in job definition file filename. The value specified on the command line for -cmopctoken will override any value that may have been supplied in the job definition file.

```
usap -user userid -pwd password -run filename -cmopctoken 12345678
```

This example would perform the same actions as the previous command line; submit, start, and wait for the CM report job defined in job definition file filename. The value specified on the command line for -cmopctoken will override any value that may have been supplied in the job definition file. This command line takes advantage of the RUN shortcut command.

```
usap -user userid -pwd password -run filename
```

This example uses the RUN shortcut command to submit, start, and wait for the CM report job defined in job definition file filename. The cmopctoken value is specified in the job definition file.

## Auto CM Option

New keywords have been added to the standard Universal Connector job definition. These keywords are used to specify job parameters that are not supported by XBP 1.0. The use of these keywords requires a license for the CM Interface.

If one or more of these new (non-XBP) keywords are specified in a job definition file, Universal Connector can automatically use the CM interface to submit and start the job. The resulting job will be generated using the same CM function modules used for the CM Report jobs described in the previous section. As a result, the job will have the same unique characteristics of those CM Report jobs.

The Auto CM option is used to turn on and off the automatic use of the CM interface for standard Universal Connector jobs. The Auto CM option can be specified in the Universal Connector configuration file (keyword `auto_cm`) or on the command line (option `-autocm`). Both parameters accept a value of yes or no.

# CM Report Job Definition File Syntax

CM Report jobs are SAP jobs that run a single ABAP report. USAPX submits and starts CM report jobs on the SAP system using CM function modules within SAP. CM report jobs offer several advantages over standard SAP jobs defined using XBP (standard USAP jobs). CM report jobs allow control of job attributes that are not available through XBP. These attributes include job class and certain print and archiving parameters.

A CM report job is defined in a single statement. The statement is made up of keyword = value assignments and is terminated with a semi-colon (;).

The following table lists the keywords available for a CM report job statement, the maximum length of the associated values, whether or not they are required, and any restricted value sets. The first keyword in the table is the keyword required to start the statement.

Keyword	Length	Required	Restricted Values / Description
CM_REPORT	8	Yes	Name of the SAP ABAP report to be started.
CM_OPC_TOKEN	15	Yes	Unique character string that is used to prefix the job created for the processing of the CM report job.
CM_CLASS	1	No	A, B, C
CM_USER	12	No	User that will be used for the authorization check.
CM_VARIANT	14	No	Name of the variant that will be used for processing the ABAP report.
CM_USERPARAM	250	No	String of variable variant parameters and their associated values; param1=value1;param2=value2;param3=value3; param4=value4...
<b>The following keywords represent SAP printing parameters.</b>			
PDEST	4	No	Output Device
PRCOP	3	No	Number of Copies
PLIST	12	No	Spool Request Name
PRTXT	68	No	Spoolist Title
PRIMM	1	No	Print Immediately: 'X' = Output. ' ' = Do not output.

Keyword	Length	Required	Restricted Values / Description
PRREL	1	No	Delete After Print: 'X' = Delete after output. ' ' = Do not delete after output.
PRNEW	1	No	New Spool Request: 'X' = Create a new spoolist for each spoolist generated as a result of processing the CM communication. ' ' = Append all spoolists generated as a result of processing the CM communication.
Keyword	Length	Required	Restricted Values
PEXPI	1	No	Retention Period
LINCT	10	No	Lines per page
LINSZ	10	No	Columns per page
PAART	16	No	Print format
PRBIG	1	No	Selection Cover Sheet
PRSAP	1	No	SAP Cover Sheet
PRREC	12	No	Recipient
PRABT	12	No	Department
PRBER	12	No	Authorization
PRDSN	6	No	Spool Data Set
PTYPE	12	No	Spool Request Type
ARMOD	1	No	Archiving Mode: '1' = only print the document. '2' = only archive the document. '3' = both print and archive the document.
FOOTL	1	No	Footer
<b>The following keywords represent SAP archiving parameters.</b>			
SAP_OBJECT	10	No	Object Type
AR_OBJECT	10	No	Document Type
INFO	3	No	Info Field

Keyword	Length	Required	Restricted Values / Description
ARCHIV_ID	2	No	Target Storage System
DOC_TYPE	20	No	Document Class
RPC_HOST	32	No	RPC Host
RPC_SERVIC	32	No	RPC Service / RFC Destination
AR_INTERFACE	14	No	Communication Component
MANDANT	3	No	Client
REPORT	40	No	Report Name
ARCTEXT	40	No	Text Information
DATUM	8	No	Archiving Date
ARCUSER	12	No	Data Element for User
PRINTER	4	No	Target Printer
FORMULAR	16	No	Output Format
ARCHIVPATH	70	No	Standard Archive Path
PROTOKOLL	8	No	Storage Connection Protocol
VERSION	4	No	Version Number

# CM Communication Job Definition File Syntax

A CM communication is defined in a single statement. The statement is made up of keyword = value assignments and is terminated with a semi-colon (;).

The following tables list the keywords available for a CM Communication statement, the maximum length of the associated values, whether or not they are required, and any restricted value sets. The first keyword in the table is the keyword required to start the statement.

The following table identifies the keywords for a CM Communication statement.

Keyword	Length	Required	Restricted Values / Description
CM_COMMUNICATION_ID	12	Yes	Name of CM communication to be started.
CM_OPC_TOKEN	15	Yes	Unique character string that is used to prefix jobs created during the processing of a CM communication.
CM_MODE	1	No	Starting mode for CM communication: -N = Normal (Start with the 1. Component). -R = Restart (with the last incorrect component). -S = Skip (Start after the last incorrect component). -T = All run time information delete. Default = -N.
CM_SPEC	1	No	A value of 'V' will prevent the CM communication processing jobs from being prefixed with the CM_OPC_TOKEN value. Therefore, the CM communication processing jobs will be created using only the CM_COMMUNICATION_ID value.
CM_USER	12	No	User that will be used for the authorization check.
CM_JOBLOG	1	No	Controls the return of the SAP joblog for processed communication components: 0 = no information. 1 = only in the event of an error. 2 = always. Default = 1.
CM_SPOOL	1	No	Controls the return of the SAP spoolist for processed communication components: 0 = no information. 1 = only in the event of an error. 2 = always. Default = 1.

Keyword	Length	Required	Restricted Values / Description
<b>The following keywords represent SAP printing parameters.</b>			
PDEST		No	Output Device
PRCOP		No	Number of Copies
PLIST		No	Spool Request Name
PRTXT		No	Spoolist Title
PRIMM		No	Print Immediately: 'X' = Output. ' ' = Do not output.
PRREL		No	Delete After Print: 'X' = Delete after output. ' ' = Do not delete after output.
PRNEW		No	New Spool Request: 'X' = Create a new spoolist for each spoolist generated as a result of processing the CM communication. ' ' = Append all spoolists generated as a result of processing the CM communication.
PEXPI		No	Retention Period
LINCT		No	Lines per page
LINSZ		No	Columns per page
PAART		No	Print format
PRBIG		No	Selection Cover Sheet
PRSAP		No	SAP Cover Sheet
PRREC		No	Recipient
PRABT		No	Department
PRBER		No	Authorization
PRDSN		No	Spool Data Set
PTYPE		No	Spool Request Type

Keyword	Length	Required	Restricted Values / Description
ARMOD		No	Archiving Mode: '1' = only print the document. '2' = only archive the document. '3' = both print and archive the document.
FOOTL		No	Footer
<b>The following keywords represent SAP archiving parameters.</b>			
SAP_OBJECT		No	Object Type
AR_OBJECT		No	Document Type
INFO		No	Info Field
ARCHIV_ID		No	Target Storage System
Keyword	Length	Required	Description / Restricted Values
DOC_TYPE		No	Document Class
RPC_HOST		No	RPC Host
RPC_SERVIC		No	RPC Service / RFC Destination
AR_INTERFACE		No	Communication Component
MANDANT		No	Client
REPORT		No	Report Name
ARCTEXT		No	Text Information
DATUM		No	Archiving Date
ARCUSER		No	Data Element for User
PRINTER		No	Target Printer
FORMULAR		No	Output Format
ARCHIVPATH		No	Standard Archive Path
PROTOKOLL		No	Storage Connection Protocol
VERSION		No	Version Number







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