



PANDORAFMS
E N T E R P R I S E

Installation guide for SAP plugin



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INTRODUCTION

The Pandora FMS plug-in of Deset has been certified by SAP as SAP Certified Integration with SAP Net Weaver..

SAP gave the certification to Deset after having successfully passed a very strict audit process that evaluated the product. This certification recognizes that the Pandora FMS plug-in software is perfectly aligned with the quality requirements, compliance with standards and SAP security on integrating their solutions with SAP Net Weaver.

This is possible thanks to the power and flexibility of the Pandora FMS architecture and the "plug-in server" remote modules. No installation in the SAP server required.

It's a Java app which needs the "SAP JCO" connectivity libraries.

Because of its non intrusive satellite agent design, nothing will be installed in the SAP environments, no program will be loaded, and nothing must be configured. You will need only a SAP logon user with the necessary permissions for RFC remote executions.

Additionally, this provides the support of the SAP R/3 environments in all their Operative System platforms. There are 2 SAP plug-in installation architectures:

1) SAP Plug-in installed inside of the Pandora server:



This is an advanced performing mode that, by its complexity, requires specific support. We don't recommend it if you can use the agent based method. Plug-in mode was used till 5.1 version of Pandora FMS, but its use is not recommended, however is completely operative and supported. In the old documentation you can still find references to this performing mode, being invalid since Pandora FMS 5.1 version.



1) SAP Plug-in installed on a Windows Server (rather than inside Pandora Server):



Advantages: It simplifies the agent installation compared to the previous architecture (SAP plug-in installed inside the Pandora server), because instead of making installation actions of libraries and give permissions to the plug-in, you only need to use a single binary .EXE installer with the Windows agent, and 5 minutes later the monitoring will start.

**** This document refers only to the installation in the second architecture: Agent for Windows, and sends the data obtained to a Pandora server.**

Pre-requirements

1) Having Pandora FMS installed in any version: For a POC environment (Concept Test) the Pandora FMS Open source version is supported without a Pandora SAP Agent for Windows (30 days). After 30 days of temporal usage license it's required a Pandora FMS SAP license, that includes Pandora FMS Enterprise and professional support.

2) A Windows system that will act as a server.

3) In Windows System: Have Java JVM 1.4 or higher installed in the system where the Agent for Windows is going to be executed. .

Important: In Windows system of 32 bits (for example Windows XP) you must first install the libraries vcredist_x86.exe. Can be obtained at the following link:

http://www.deset.es/download/express/vcredist_x86.exe

4) The conditions of the SAP servers to be monitored: Require to the administrator of SAP systems to create a user login access for each SAP server to monitor . This user must be of type "B-System" (System) in versions SAP ECC, or of type "C- Communication / CPI-C/RFC" in earlier versions of SAP.

This type of user preclude use by others from SAPGUI, and the type "System" has the advantage of not expire their passwords (which would force to change it also in the configuration of Pandora FMS). Profile ´s authorization permission of these users are indicated at the end of this document, on the annex.

It is not necessary to meet any requirement additional. All versions of SAP are supported with stack ABAP, and not need patch level up, neither installing additional software (or



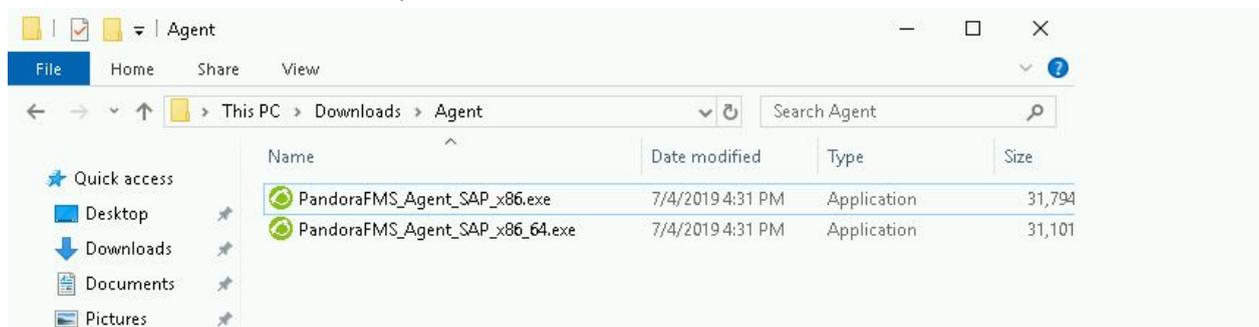
transport orders, or scripts).

INSTALLATION

Execute the installer

1) Pandora FMS client setup steps

To install the agent for windows, the first thing we do is download the executable from the web. Once we downloaded it, we do double click on it.



We choose the language. After that we click on the button " next".



After installation, it will request the data to create different monitoring systems. The first one will be the name or IP of our Pandora server, and the number of the license. If we do not have any leave the field BLANK, with which we will enter in "Temporary License" it will allow us to use the agent for 30 days to evaluate it, and once this period ended, contact info@deset.es to acquire the definitive license.



Pandora FMS Agent for Windows Configuration
Set up pandora_agent.conf file

Write here the IP address or FQN of your Pandora FMS server

Pandora FMS Server address:

Enter the group name for this agent. This group must exist in the Pandora FMS server at destination

Agent group (must exist)

SAP licence:

PandoraFMS v7.0

< Back Next > Cancel

Then we activate the different SAP systems that we want to monitor. For this, we have the following data:

- **Pandora Agent.** Pandora´s agent name. It is the SID of the SAP system, and this is the name that will represent the SAP system to monitor the web console (** Important: it should contain spaces in blanks or the connection will fail).
- **Hostname:** name or IP where our SAP system is.
- **Client:** Work client (Example: 200).
- **Nº of system:** NR (Example: 00).
- **User:** Log in´s user in this SAP system. With the necessary permissions, see annex. Important: SAP systems 4.6C or lower, must be uppercase, or otherwise we will obtain authorization error.
- **Password:** Password of the previous user, for the access to SAP. Important: SAP systems 4.6C or lower, must be uppercase, or otherwise we will obtain authorization error..

NOTE: If we want to active more systems on the installation, we will click on add systems and we will get all this data for each new SAP system to be monitored.



Pandora FMS Agent SAP_version Setup

Pandora FMS Agent for Windows Configuration
SAP set up

These values will be written to the pandora_agent.conf file in the Pandora FMS Agent folder. Please change them to your own data and press the button Add Systems, if you want add new systems, change them and press button again

Pandora agent:

Hostname SAP:

Mandante sistema SAP: NÂ° sistema SAP:

SAP User: Password SAP:

PandoraFMS v7.0

At the end we will press Next and it will ask us if we want to start the service by answering yes to connect to Pandora Server and active SAP systems.

2) New systems configurations, changes monitors, etc.

Since the Pandora web console on the server, we will be able to edit the threshold parameters of each monitor. We will be able also create alerts and templates on each monitor, assigning the email of the person who will receive alerts.

To add new systems and new monitors, we should do it by editing the file .conf in the Windows server where we just installed the Agent for Windows.

In the version with License acquired, having the Enterprise version of Pandora FMS server, we will have the remote_config mode where we can do the editing of the .conf file in an easier way and from the web console.

In the folder where we had installed the client, we will find a .conf file with the name we gave to the Pandora FMS agents.



Name	Date modified	Type	Si
collections	7/4/2019 2:10 PM	File folder	
help	7/4/2019 2:10 PM	File folder	
key	7/4/2019 2:10 PM	File folder	
scripts	7/4/2019 2:10 PM	File folder	
temp	7/4/2019 4:38 PM	File folder	
util	7/4/2019 2:10 PM	File folder	
Agent.conf	7/4/2019 2:11 PM	CONF File	
Deset_SAP_Plugin.jar	7/4/2019 4:36 PM	Executable Jar File	
libcurl.dll	11/5/2018 5:35 PM	Application extens...	
libeay32.dll	11/5/2018 5:35 PM	Application extens...	
libodbc++ .dll	11/5/2018 5:35 PM	Application extens...	
LICENSE.txt	2/16/2017 2:33 PM	Text Document	
pandora.ico	2/16/2017 2:33 PM	Icon	
pandora_agent.conf	7/4/2019 2:11 PM	CONF File	
pandora_agent.conf.new	7/4/2019 4:38 PM	NEW File	
pandora_agent.log	7/4/2019 4:36 PM	Text Document	
PandoraAgent.exe	6/27/2019 4:19 PM	Application	
PandoraFMS_Agent	7/4/2019 4:36 PM	Internet Shortcut	
plugin_definition.ini	1/30/2015 11:26 PM	Configuration sett...	
README.txt	2/16/2017 2:33 PM	Text Document	
sapjco3.dll	11/5/2018 5:35 PM	Application extens...	
sapjco3.jar	11/5/2018 5:35 PM	Executable Jar File	
testconexion.bat	11/5/2018 5:35 PM	Windows Batch File	
uninst.exe	7/4/2019 4:36 PM	Application	

In case we want to add new monitors to this systems we will do it from there.

To register new systems, first we have to stop the service. And after, we only have to copy the file and we will put the name that we want for that agent, we will edit the file and we will replace, the IP or hostname, client, SAP client, user and password for the one of the new system. After we will edit pandora_agent.conf and we will add at the end a new line, after the line with the name of our agents.

```
broker_agent PANDORA_SAP_XYD  
broker_agent New_agent
```

We will start again the service and we see ,in our Pandora server, the new system will be registered automatically.

If we want to change the temporary license for the permanent, we only have to stop the service and in the name_agent.conf file, we will replace the old license for the new license



(looking for parameters -li). Then we will start the service and the new license will be installed.

3) SAP monitoring modules

By default we have 10 modules active:

They are modules for daily routine checking of SAP systems, and that must serve as a basis for defining other modules, the way to set it up is make a call to the plug-in varying the type of module (parameter -m), with the following syntax:

PARAMETERS COMMAND LINE SAP PLUGIN

Field	Value
Plugin parameters	<p>-o <hostname_sap> -c <mand> -s <sn> -m <num. monitor> -i <SID></p> <p>-o : indicate hostname of the SAP instance that we want to monitor</p> <p>-c : indicate the client number of the SAP system</p> <p>-s : indicate the System Number SAP instance to monitor</p> <p>-i : indicate the SID of the SAP system</p> <p>-m : ID monitoring point to consult the SAP system. See the monitors table to indicate the -m parameter the values supported</p>

The list of modules and their meaning can be found in the final annex of this documentation.

4) Installing the license

We edit pandora_agent.conf file, and in all the places where -li parameter is found, we will write the number of the license, leaving -li <license number> to store the license.



Annex: Task of post-configuration

1) Check the good working of the plugin

Access the shell and execute the following command from the directory where you installed the plugin:

```
cd <windows agent directory>  
java -classpath <windows agent directory>/Deset_SAP_Plugin.jar Deset_SAP_Plugin -m 160 -t <ip>
```

If the license is correct or we are using an evaluation licence between the 30 days of evaluation, you will get a message like this:

```
C:\Program Files\pandora_agent>java -classpath "C:\Program Files\pandora_agent\Deset_SAP_Plugin.jar"  
Deset_SAP_Plugin -m 160 -t 172.20.33.44  
<module>  
<name><![CDATA[SAP-001: SAP AgentLive]]></name>  
<type><![CDATA[generic_proc]]></type>  
<description><![CDATA[SAP Agentlive: 0 - OK, 1 -ERROR]]></description>  
<data><![CDATA[1]]></data>  
<min_critical>1</min_critical>  
</module>
```

If the licence is outdated and is no valid anymore, the output will be like this:

```
C:\Program Files\pandora_agent>java -classpath "C:\Program Files\pandora_agent\Deset_SAP_Plugin.jar"  
Deset_SAP_Plugin -m 160 -t 172.20.33.44  
-1  
***License Expired ***  
Expiration Date:20151119  
Please contact with Deset www.deset.es, or email to info@deset.es
```

2) Check the libraries JCO

To verify, we execute via command line the monitor " System information" (monitor number 120). We execute the following line:

```
java -classpath < windows agent directory >/Deset_SAP_Plugin.jar Deset_SAP_Plugin -u <user_SAP> -p  
<password_user_SAP> -m 120 -s <System_Number_Instance_SAP> -t <Ip_Instance_SAP > -c <client_Instance_SAP >
```



3) Check access between the Pandora server and the SAP system to monitoring.

You should check if you can access via network to the server and to ports 3300 (SAP protocol RFC). The port will be 33NN where NN is the SAP System Number (Number of the instance of SAP).

You can do telnet to IP_Server_SAP 3300 to check the connectivity.

4) Customization of the module names.

If we have two modules with the same parameter -m in their configuration but with different parameters pa1 or pa2 we must add an additional parameter to the configuration of this module (-tx <Custom_Name>) so that two independent modules are created and we can differentiate them. Example:

Module SAP-001: System SAP up

```
module_plugin java -classpath <windows agent directory>/Deset_SAP_Plugin.jar Deset_SAP_Plugin -u <user_SAP> -p <password_user_SAP> -m 160 -s <System_Number_Instance_SAP> -t <Ip_Instance_SAP > -c <mandante_Instance_SAP > -in 31
```

With custom name SAP-001: System SAP up-test

```
module_plugin java -classpath <directorio agente windows>/Deset_SAP_Plugin.jar Deset_SAP_Plugin -u <usuario_SAP> -p <password_usuario_SAP> -m 160 -s <System_Number_Instance_SAP> -t <Ip_Instance_SAP > -c <mandante_Instance_SAP > -in 31 -tx test
```

4) Encryption passwords.

The SAP plugin allows us to use it with encrypted passwords.

Suppose that the SAP login user is called USERSAP and the password is 123456.

First we execute the plugin by command line indicating the parameter -encrypt with the password in clear to obtain the encrypted password:

```
C:\Program Files\pandora_agent\util>java -classpath "C:\Program Files (x86)\pandora_agent\Deset_SAP_Plugin.jar" Deset_SAP_Plugin -encrypt 123456  
Contraseña encriptada: 1s3494e495449414c4f0e
```

Once obtained the password we must edit the password in all the executions of the plugin inside the agent configuration file. So we will change -p 123456 for -pencrypt 1s3494e495449414c4f0e



```
C:\Program Files (x86)\pandora_agent\util>java -classpath "C:\Program Files  
(x86)\pandora_agent\Deset_SAP_Plugin.jar" Deset_SAP_Plugin -m 161 -u USERSAP -pencryp 1s3494e495449414c4f0e  
-s 00 -t 192.168.1.201 -c 001
```

Annex: Troubleshooting

* Error: Text on "version error minor 49"

Exception in thread "main" java.lang.UnsupportedClassVersionError: Deset_SAP_Plugin
(Unsupported major.minor version 49.0)

```
at java.lang.ClassLoader.defineClass0(Native Method)  
at java.lang.ClassLoader.defineClass(Unknown Source)  
at java.security.SecureClassLoader.defineClass(Unknown Source) at  
java.net.URLClassLoader.defineClass(Unknown Source)  
at java.net.URLClassLoader.access$100(Unknown Source)  
at java.net.URLClassLoader$1.run(Unknown Source)  
at java.security.AccessController.doPrivileged(Native Method)  
at java.net.URLClassLoader.findClass(Unknown Source)  
at java.lang.ClassLoader.loadClass(Unknown Source)  
at sun.misc.Launcher$AppClassLoader.loadClass(Unknown Source) at  
java.lang.ClassLoader.loadClass(Unknown Source)  
at java.lang.ClassLoader.loadClassInternal(Unknown Source)
```

It means that we are using java jre 1.4 . We should install

```
>java -version
```

```
java version "1.5.0_20"
```

```
Java(TM) 2 Runtime Environment, Standard Edition (build 1.5.0_20-b02) Java HotSpot(TM)  
Client VM (build 1.5.0_20-b02, mixed mode, sharing).
```

File jre-1_5_0_20-windows-i586-p.exe de 17 Mb

* Error: Exception in thread "main" java.lang.NoClassDefFoundError: com/sap/conn/jco/JCoXception

It means that you should copy the sapjco3.jar file to c:\program files\java\
jre1.5.0_20\lib\ext



*** rror: Java.lang.ExceptionInInitializerError: Error getting the version of the nativelylayer:java.lang.UnsatisfiedLinkError:com.sap.conn.rfc.driver.CpicDriver.NativeCpicGetVersion**

It means we have installed a wrong version of the SAP JCO 3.0. We may have used the version for 64 bits CPU in a Linux system of Pandora with 32 bits CPU. You can check which CPU you have with the command `uname -a`
The solution is to install the appropriate version of JCO (32 bits).

*** Error: (only in Windows systems)**

```
java.lang.UnsatisfiedLinkError: no sapjco3 in java.library.path at
java.lang.ClassLoader.loadLibrary(Unknown Source) at
java.lang.Runtime.loadLibrary0(Unknown Source)at
t java.lang.System.loadLibrary(Unknown Source)
at com.sap.conn.jco.rt.DefaultJCoRuntime.loadLibrary(DefaultJCoRuntime.java:425)
at com.sap.conn.jco.rt.DefaultJCoRuntime.registerNativeMethods(DefaultJCoRuntime.java:293
```

It means that in the route path the `sapjco3.dll` file is missing

*** Problems in the SAP side.**

Problems connecting to the performance monitoring (CCMS).

Solution: Access to the transaction RZ15 to see the log CCMS (BC -XMI). You should see each connection of Pandora FMS monitors in intervals of 5 minutes. If no trace, we will look the error log of the connection of RFC to validate if the information of user/password/permissions/firewall/connectivity are correct. The trace is in: `<windows agent directory >/util/dev_jco_rfc.trc`

***Problems in the Pandora FMS side**

First you have to check the correct execution of the Plugin, you have to access to the Pandora log: `< windows agent directory >/pandora_agentg.log`. Here you can see all the errors of connectivity to the SAP (trace RFC)server and of all the wrong execution of the plugin.

Example error: Caused by: `com.sap.conn.rfc.exceptions.RfcGetException: You are not authorized to logon to the target system (error code 2)`.



This text shows that the user connection do not have enough permissions or the password is not entered correctly in Pandora FMS monitor (for example, if you do not write it in capitals).

* Data required for connection between Pandora FMS to SAP

Permissions of the SAP user of connection: The type of SAP user can be System or Communication, for each system to monitoring. The recommendation is a System user, but if the user that you created is type C (communication), you should check if the system has enabled the parameter login/password_max_idle_initial with a value different to 0. If this parameter has a different value than 0, what it do is lock the user who have the password initialized after the value specified in the parameter. We always recommended to the user do not leave the password initialized to avoid problems.

To create the user in the SAP system, you will need to have the following authorization objects.

Authorization objects "S_RFC":

Field ACTVT Activity, indicate "16 Execute"

Field RFC_TYPE Type of object RFC to protect, indicate "X FUGR" Group Functions

Field RFC_NAME Name of object RFC to protect , values indicate I*, R*, S*, O*, T*

Authorization object "S_TABU_DIS"

Field ACTVT, indicate "03 Visualize"

Field DICBERCLS, indicate *

Authorization object: S_XMI_LOG y S_XMI_PROD (with all its fields values *)

ANNEX: DETAIL OF MONITORS SAP PLUGIN

SAP data to monitor	-m	Type data	Interval	Firing alert
Maximum allowable quantity of memory	101	generic_data	300	-
Average response time SAPGUI	102	generic_data	300	1000
Logged users in the system	103	generic_data	300	10
IDOC Wrongs from yesterday	104	generic_data	43200	50
IDOC Corrects from yesterday	105	generic_data	43200	-
Oracle: Tablespace, List of all, more % used (inc.autoextend)	106	generic_data	300	-



Oracle: Tablespace. Amount of them exceeding the 95 % used (inc.autoextend)	107	generic_data	300	4
Oracle: Tablespace. Amount of them exceeding the 99 % used (inc.autoextend)	127	generic_data	300	2
Dumps from yesterday until today(texts and amount) (inc.autoextend)	108	generic_data	300	

Dumps from yesterday until today	109	generic_data	43200	10
Dumps from yesterday until today(texts and amount) (inc.autoextend) Mandatory parameter to add: -pa1 num_hours_before. Maximum 23 hours in the same day	148	generic_data_string	60 * hours	
Dumps from x hours ago until now. Mandatory parameter to add: -pa1 num_hours_before. Maximum 23 hours in the same day	149	generic_data	60 * hours	10
Entries blocking system (table list and Lock mode (share/exclusive))	110	generic_data_string	300	-
Entries blocking system (amount)	111	generic_data	300	3
Job canceled since yesterday (list)	112	generic_data_string	43200	
Job canceled since yesterday (amount)	113	generic_data	43200	5
Job canceled from x hours ago until now. (list) Mandatory parameter to add: -pa1 num_hours_before. Maximum 23 hours in the same day	142	generic_data_string	60* hours	
Job canceled from x hours ago until now. (amount) Mandatory parameter to add: -pa1 num_hours_before. Maximum 23 hours in the same day	143	generic_data	60 * hours	5
WP DIA wrong in the system	114	generic_data	300	1
WP DIA waiting (waiting/ available) in the instance	202	generic_data	300	Less than 1
WP BTC failing in the instance	115	generic_data	300	1
WP BTC waiting (waiting/available)in the instance	203	generic_data	300	Less than 1
WP UPD Failing in the instance	116	generic_data	300	1
WP UPD waiting (waiting/available)in the instance	204	generic_data	300	Less than 1
WP UP2 Failing in the instance	117	generic_data	300	1
WP SPO Failing in the instance	118	generic_data	300	1
WP ENQ Failing in the instance	119	generic_data	300	1
System SAP information	120	generic_data_string	43200	-



Batch input wrong since yesterday	121	generic_data	43200	1
MS SQL Server: Trans. Log current size	130	generic_data	300	Cust
MS SQL Server: Trans. Log free size available	131	generic_data	300	Cust
MS SQL Server: Trans. Log free rate available	132	generic_data	300	96
WP without active reset	150	generic_data	300	1
WP standing in the system	151	generic_data	300	1
System SAP up. Value 0 = SAP up Value 1 = SAP down	160	generic_data	300	1
System SAP up: connection error text SAPGUI	161	generic_data_st ring	300	-
RZ20 CCMS: Read average 15 minutes of Performance monitors CCMS Indicate parameter -pa1 with the TID separate by * (get the TID using the transaction SE37 function module SALR_MTE_GET_TID_BY_NAME and indicating the text obtained the button Properties of the RZ20) Optional: indicate parameter -pa2 with the value of the MTMCNAME, replacing spaces (if they have it) by character # Ex: -pa2 Transactional#RFC#and#Queued#RFC	180	generic_data	300	-
RZ20 CCMS: Read last value of the Monitor Performance CCMS numeric type Indicate parameter -pa1 with the TID separate by * (get the TID using the transaction SE37 function module SALR_MTE_GET_TID_BY_NAME NAME and indicating the text obtained the button Proprieties de la RZ20) Optional: indicate parameter -pa2 with the value of the MTMCNAME, replacing spaces (if they have it) by character # Ex: -pa2 Transactional#RFC#and#Queued#RFC	186	generic_data	300	-
RZ20 CCMS: Read last value of Monitor Performance CCMS numeric type Indicate parameter -pa1 with the name of Set Monitor separate by*, and with parameter -pa2 with branch MTE end and above, separate by * Get clicking in Properties in final branch. In the -pa2, use the character _ instead of space -m 187: returns the average of the past 15 minutes -m 179. returns the last value Ex: -m 187 -pa1 SAP_CCMS_Monitor_Templates*Entire_System* -pa2 Dialog*FrontEndNetTime Optional: indicate parameter -pa3 with the value of MTMCNAME, replacing spaces (if they have it) by character # Ex: -pa3 Transactional#RFC#and#Queued#RFC	187 Y 179	generic_data	300	-



<p>RZ20 CCMS: Read last value of Monitor CCMS type LOG (text string) Indicate the father + son of monitor (R3Syslog y BasisSystem) , separate by the character * , add like parameter -pa2 to a monitor -m 188 of Pandora SAP Plugin Ex: -m 188 -pa1 SAP_CCMS_Monitor_Templates*Entire_System* -pa2 R3Syslog*BasisSystem</p> <p>It will indicate the value of system log (equivalent to the transaction SM21)</p> <p>Optional: indicate parameter -pa3 with the value of MTMCNAME, replacing spaces (if they have it) by character # Ex: -pa3 Transactional#RFC#and#Queued#RFC</p>	188	generic_data_string	300	-
<p>RZ20 CCMS: Read last value of Monitor CCMS type LOG (text string) Indicate the father + son of monitor (R3Syslog y BasisSystem) , separate by the character * , add like parameter -pa2 to a monitor -m 188 of Pandora SAP Plugin Ex: -m 188 -pa1 SAP_CCMS_Monitor_Templates*Entire_System* -pa2 R3Syslog*BasisSystem</p> <p>It will indicate the value of system log (equivalent to the transaction SM21)</p> <p>Optional: indicate parameter -pa3 with the value of MTMCNAME, replacing spaces (if they have it) by character # Ex: -pa3 Transactional#RFC#and#Queued#RFC</p>	189	generic_data_string	300	-
<p>Returns the number of entries in the queues qRFC of INPUT. Equivalent to the information of the transaction SMQ2 Optional: indicate parameter -pa1 NAME_QUEUE_qRFC</p> <p>Suitable for alerts collapses/ delays in sending messages systems SAP XI/PI, BW, CRM , APO</p>	190	generic_data	300	-
<p>Returns the number of entries in the queues qRFC of INPUT. Equivalent to the information of the transaction SMQ2 Optional: indicate parameter -pa1 NAME_QUEUE_qRFC</p> <p>Suitable for alerts collapses/ delays in sending messages systems SAP XI/PI, BW, CRM , APO</p>	191	generic_data	300	-
<p>Returns wrong entries number ´s (SYSFAIL) delivery attempt tRFC. . Equivalent to the information of the transaction SM58 Optional: indicate parameter -pa1 NUM_OF_DAYS_SENIORITY_MESSAGES (if not indicate, it means unfiltered seniority, selecting all)</p> <p>Suitable for alerts collapses/ delays in sending messages systems SAP XI/PI, BW, CRM , APO</p>	192	generic_data	300	-
<p>Returns wrong entries number ´s (SYSFAIL) of the queue qRFC OUTPUT Equivalent to the information of the transaction SMQ1</p> <p>Suitable for alerts collapses/ delays in sending messages systems SAP XI/PI, BW, CRM , APO</p>	195	generic_data	300	-



Returns wrong entries number ´s (SYSFAIL) of the queue qRFC de ENTRADA Equivalent to the information of the transaction SMQ2 Suitable for alerts collapses/ delays in sending messages systems SAP XI/PI, BW, CRM , APO	196	generic_data	300	-
Returns the number of MINUTES that the OLDEST message takes in the queue without being processing qRFC of OUTPUT. Equivalent to the information of the transaction SMQ1 Optional: indicate parameter -pa1 NAME_QUEUE_qRFC Suitable for alerts collapses/ delays in sending messages systems SAP XI/PI, BW, CRM , APO	197	generic_data	300	-
Returns the number of MINUTES that the OLDEST message takes in the queue without being processing qRFC of INPUT. Equivalent to the information of the transaction SMQ2 Optional: indicate parameter -pa1 NAME_QUEUE_qRFC Suitable for alerts collapses/ delays in sending messages systems SAP XI/PI, BW, CRM , APO	198	generic_data	300	-
Dialog ResponseTime -pa1 010*0000001380*100*0000000079*0000000022*	180	generic_data	300	-
Dialog FrontendResponseTime -pa1 010*0000001425*100*0000000080*0000000023*	180	generic_data	300	-
Dialog QueueTime -pa1 010*0000001381*100*0000000081*0000000024*	180	generic_data	300	-
Dialog Load+GenTime -pa1 010*0000001407*100*0000000082*0000000025*	180	generic_data	300	-
Dialog DBRequestTime -pa1 010*0000001409*100*0000000083*0000000026*	180	generic_data	300	-



Monitoring points each system SAP Security – Checklist Standard v 20/10/09

z	-m	Data type	Interval	Firing alert	Resp.
Security Series: Retrieve parameter Profile Instance -pa1 = name parameter	1201	generic_dat a	43200	-	ADS
Security Series: Recover the historic of changes, amount of changes add/modify authorization profile, within X days prior to execution -pa1 =number of days seniority of the change. Ex: 1 -pa2 = authorization profile. Ex: SAP_ALL Ex: -m 1202 -pa1 1 -pa2 SAP_ALL Double action: you should prepare a alert to execute Java -m 1203, it is what it returns (using same parameters) for the audit report , fields (;):. User who made the modification , date, hour and letter of modification type. (C or M)	1202	generic_dat a_string	43200	-	ADS
Query to 1 Table. Returns: number of register found -pa1 = table name in UPPERCASE -pa2 = fields return, in UPPERCASE separate by * -pa3 = filter where, spaces by * and quotes ' by # . Replace < by / Replace > by \ Before each AND or OR, precede the character @ Do not put quotes, do not leave spaces in each field Indicate the name of fields in uppercase Ex: -m 1204 -pa1 USR02 -pa2 BNAME*ANAME*ERDAT -pa3 TRDAT*/*#DESET90DAYSAGO# Replacement macros allowed DESET0DAYSAGO DESET1DAYSAGO DESET2DAYSAGO DESET7DAYSAGO DESET30DAYSAGO DESET60DAYSAGO DESET90DAYSAGO DESET0HOURSAGO DESET1HOURSAGO DESET2HOURSAGO DESET3HOURSAGO DESET4HOURSAGO DESET5HOURSAGO DESET6HOURSAGO DESET10HOURSAGO DESET16HOURSAGO DESET1MINUTEAGO DESET5MINUTEAGO DESET10MINUTEAGO DESET30MINUTEAGO	1204	Generic_dat a	300	-	-



<p>Query to 1 Table. Returns: string data .Fields separated by ;. Each register separate by *</p> <p>-pa1 = table name in UPPERCASE -pa3 = fields return, in UPPERCASE separate by * -pa3 = where, spaces by * Before each AND or OR, precede the character @</p> <p>Parameters to format the OUTPUT table -separow _ -sapafie #</p>	1205	Generic_dat a_string	43200		
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Queries example

Jobs finished OK with a given name	-m 1205 -pa1 TBTCO -pa2 JOBNAME -pa3 JOBNAME*EQ*##ZJOB1##*@AND*STATUS*EQ*##F#
Jobs begin by the letter Z and canceled	-m 1205 -pa1 TBTCO -pa2 JOBNAME -pa3 JOBNAME*LIKE*##Z%##*@AND*STATUS*EQ*##A#
Jobs from yesterday until today, in Delay (waiting for a WP Batch)	-m 1205 -pa1 TBTCO -pa2 JOBNAME -pa3 JOBNAME*LIKE*##Z%##*@AND*SDLSTRDTD*GE*##DESET1DAYSAGO#@AND*STATUS*EQ*##S#
Jobs from yesterday until today, in Active, running more than 2 hours	-m 1205 -pa1 TBTCO -pa2 JOBNAME -pa3JOBNAME*LIKE*##Z%##*@AND*SDLSTRDTD*GE*##DESET1DAYSAGO#@AND*STATUS*EQ*##R##* @AND*SDLSTRTTM*GT* #DESET1HOURSAGO#
Fields on Jobs SDLSTRDTD SDLSTRTTM = Date and hour of the launch schedule of Job STRTDTE STRTTIME = START TIME IN ACTIVE ENDDATE ENDTIME = TIME TO END(OK OR NO)	Field STATUS A = CANCEL F = FINISHED R = ACTIVE S = RELEASED = Which has already reached its start time, but it IS waiting for a WP BATCH, thereby increasing the delay time.
Change detection opening of client	-m 1205 -pa1 T000 -pa2 MANDT*CCCORACTIV*CCNOCLIIND -pa3 MANDT*##050#



Monitoring points each system SAP BPM – Checklist Standard v 20/10/09

SAP data to monitor	-m	Data type	Interval	Firing alert	Resp.
<p>Query to 2 Table. -pa1 = table name -pa2 = fields, separate by * -pa3 = where, with the spaces by * and the quotes ' by # . Replace < by / Replace > by \ Do not put quotes, do not leave spaces in each field Indicate the name of fields in uppercase</p> <p>Returns: number of registers found Ex: -m 1210 -pa1 USR02 -pa2 BNAME*ANAME*ERDAT -pa3 TRDAT*/*#DESET90DAYSAGO# Replacement macros allowed DESET0DAYSAGO DESET1DAYSAGO DESET2DAYSAGO DESET7DAYSAGO DESET30DAYSAGO DESET60DAYSAGO DESET90DAYSAGO DESET0HOURSAGO DESET1HOURSAGO DESET2HOURSAGO DESET3HOURSAGO DESET4HOURSAGO DESET5HOURSAGO DESET6HOURSAGO DESET10HOURSAGO DESET16HOURSAGO DESET1MINUTEAGO DESET5MINUTEAGO DESET10MINUTEAGO DESET30MINUTEAGO</p>	1210	Generic_data	43200	-	-
<p>Ejemplo: -m 1210 -pa1 USR21 -pa2 BNAME*PERSNUMBER -pa4 1 -pb1 ADRP -pb2 PERSNUMBER*NAME_TEXT -pb4 0</p>					



Safety 's data to monitor	Parameter	Value min_critical , alert threshold
[SEC] Number of invalid login attempts until user	-m 1201 -pa1 login/fails_to_user_lock	Print value Report Audit, with timestamp. Not Relevant for alert
[SEC] Min. number of chars which differ between old and new password	-m 1201 -pa1 login/min_password_diff	Print value Report Audit, with timestamp.
[SEC] Min. number of digits in passwords	-m 1201 -pa1 login/min_password_digits	Print value Report Audit, with timestamp. Not Relevant for alert
[SEC] Minimum Password Length	-m 1201 -pa1 login/min_password_lng	Print value Report Audit, with timestamp. Not Relevant for alert
[SEC] Enable automatic unlock off locked user at midnight	-m 1201 -pa1 login/failed_user_auto_unlock	Imprimir valor en Report Auditoria, junto con timestamp. No relevante para alarma
[SEC] List of Words of the list of Passwords not allowed	-m 1205 -pa1 USR40 -pa2 BCODE	Print table of result Report Audit, with timestamp. .Not Relevant for alert
[SEC] List of users not login in the last 3 months (saving licenses SAP)	-m 1205 -pa1 USR02 -pa2 BNAME*TRDAT -pa3 TRDAT*/*#DESET90DAYSAGO#	Print table of result Report Audit, with timestamp. .Not Relevant for alert
[SEC] List of users who have never logged in the system (saving licenses SAP)	-m 1205 -pa1 USR02 -pa2 BNAME-pa3 TRDAT*-*#00000000#	Print table of result Report Audit, with timestamp. .Not Relevant for alert
[SEC] Recover the historical changes, the list of users changes add/modify a authorization profile, within X days before the execution. -pa1 =number of days antiquity change. Ex: 1 -pa2 = authorization profile . Ex: SAP_ALL Note: for the amount, use -m 1202 -pa1 7 -pa2 SAP_ALL	-m 1203 -pa1 7 -pa2 SAP_ALL	Print table of result Report Audit, with timestamp. .Not Relevant for alert TEST OK in VMW
[SEC] List of users who has currently the profile SAP_ALL, but who are not those in a white list of users sap who allow them to have SAP_ALL You should write this users in the file called "/tmp/desetmon1.txt" (separate by) Optional: indicate with parameter -pa2.filename other users admitted	-m 1206 -pa1 SAP_ALL -pa2 desetmon1.txt	Print table of result Report Audit, with timestamp. .Not Relevant for alert
[SEC] List of users who has currently the profile SAP_ALL	-m 1207 -pa1 SAP_ALL	Print table of result Report Audit, with timestamp. .Not Relevant for alert

Test Series: Return the value -pa1 = xxx	1900	generic_data o string	300	-	ADS
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