

# How to Monitor BPM with Solution Manager



## Applies to:

SAP Solution Manager 7.1 SP04 or higher release with Content Version 7 or higher imported.

In case of central System Landscape Directory (SLD) usage, you need one of the following versions:

- SAP NetWeaver 7.0 SP06 patch 5 or higher; SAP NetWeaver Composition Environment 7.1 SP09 or higher; SAP NetWeaver Process Integration 7.1 SP09 or higher; SAP NetWeaver Composition Environment 7.1 including EHP1 all SPs; SAP NetWeaver Process Integration 7.1 including EHP1 all SPs; SAP NetWeaver Composition Environment 7.2 all SPs; SAP NetWeaver 7.3 all SPs

The monitored BPM system must be:

- SAP NetWeaver Composition Environment 7.2 SP04 patch 16 or higher; SAP NetWeaver Composition Environment 7.2 SP05 patch 5 or higher; SAP NetWeaver Composition Environment 7.2 SP06 patch 1 or higher; SAP NetWeaver Composition Environment 7.2 SP07 patch 0 or higher; SAP NetWeaver 7.3 SP05 patch 1 or higher; SAP NetWeaver 7.3 SP07 patch 0 or higher; SAP NetWeaver 7.3 including EHP1, SP03 patch 0 or higher

Diagnostics agent should be 7.3 SP02 or higher.

## Summary

With the help of the tools that SAP Solution Manager provides, it is possible to monitor a SAP NetWeaver BPM system's availability, performance, status of BPM process instances and much more. The purpose of this document is to give a step by step guide which will help to set up monitoring of SAP NetWeaver BPM systems using SAP Solution Manager. This article covers all the configurations that need to be performed on the SAP Solution Manager and SAP NetWeaver BPM systems.

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**Created on:** 24 September 2012

## Author Bio



Svetoslav Halachev has been working for SAP Labs Bulgaria since 2010. Since that time he has been working on several projects which purpose is developing various customer scenarios using SAP NetWeaver BPM.

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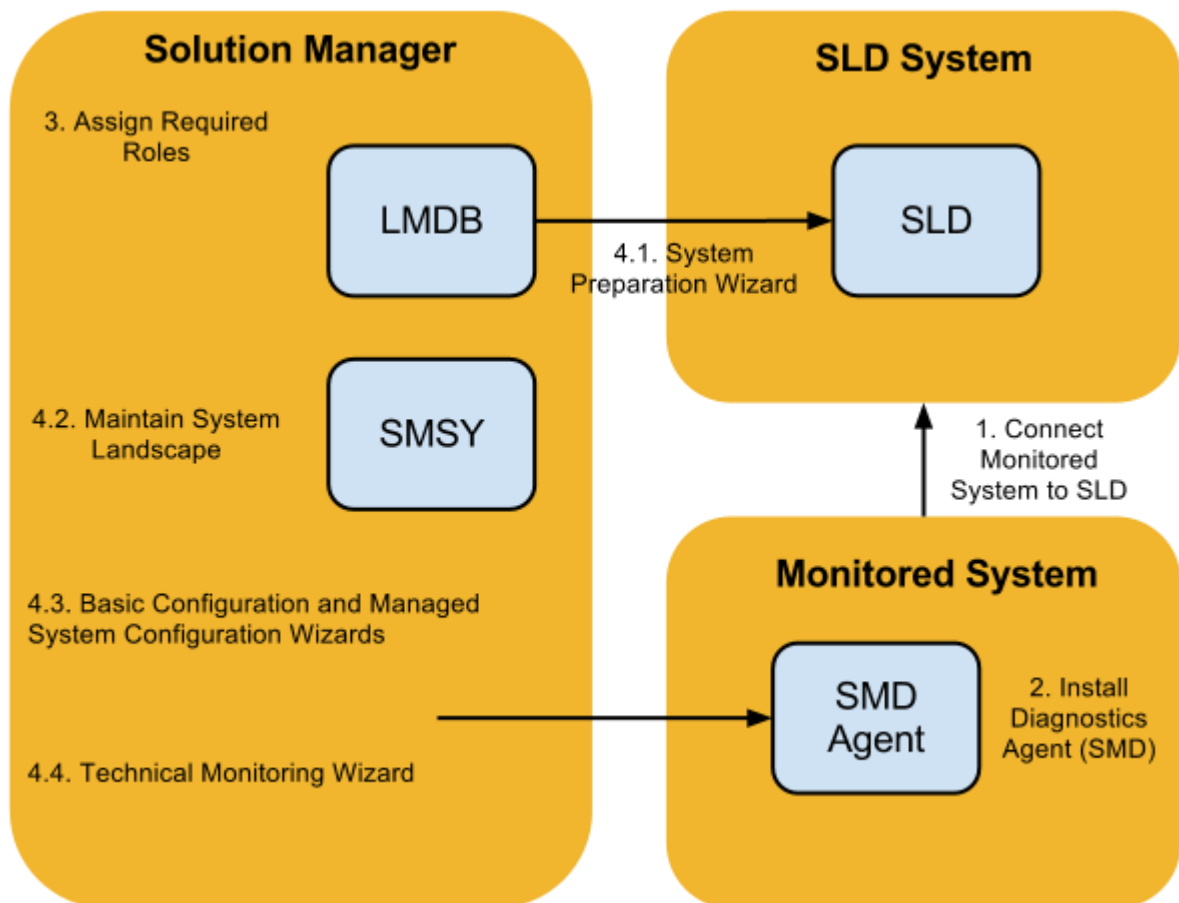
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## Overview

The main steps to set up monitoring of SAP NetWeaver BPM systems using SAP Solution Manager are.

1. Connect Monitored Systems to System Landscape Directory
2. Install Diagnostics Agent
3. Assign Required Roles
4. Configure Solution Manager
  - 4.1. System Preparation
  - 4.2. Maintain System Landscape
  - 4.3. Basic Configuration and Managed Systems Configuration
  - 4.4. Technical Monitoring

The diagram below represents the order of the necessary steps and their distribution between components.



## 1. Connect Monitored Systems to SLD

In order to monitor your system, the solution manager should know your system landscape. This can be done by registering your system into an existing SLD. This way the information for the monitored system's landscape can be synched directly to solution manager.

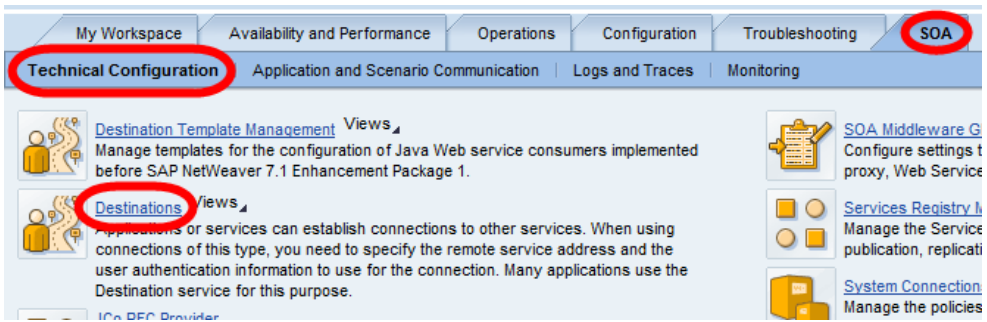
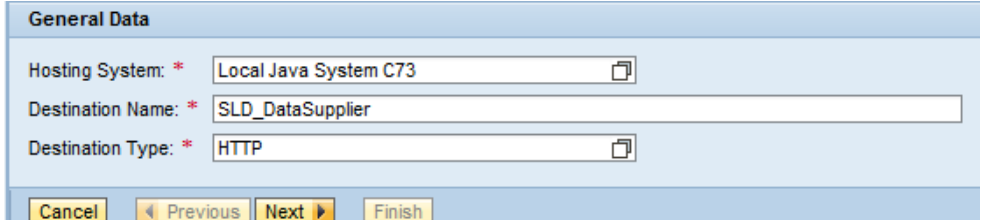
### 1.1. Choose Your System Landscape Directory System

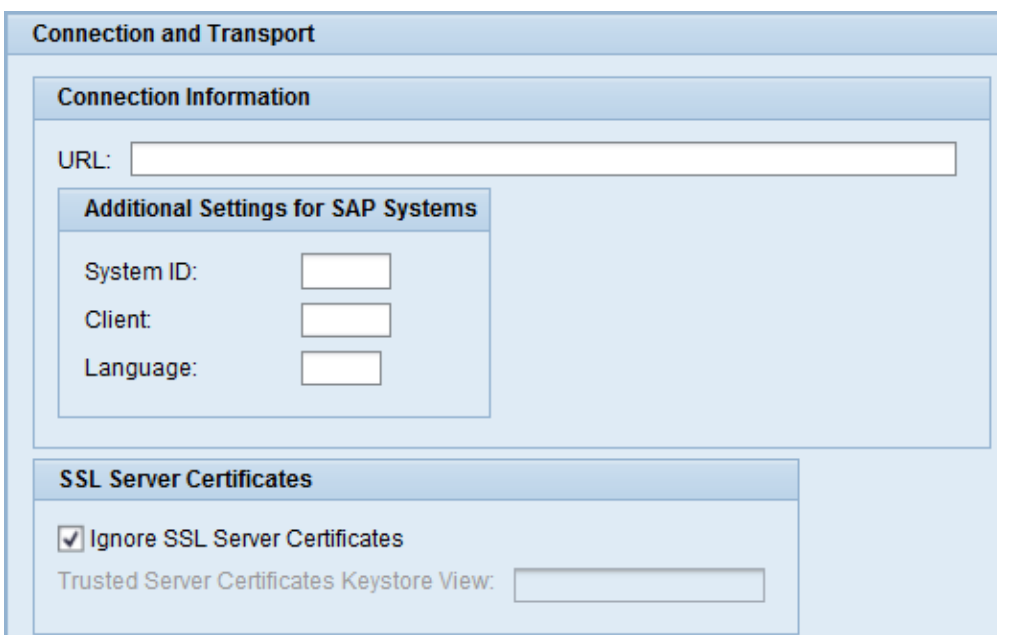
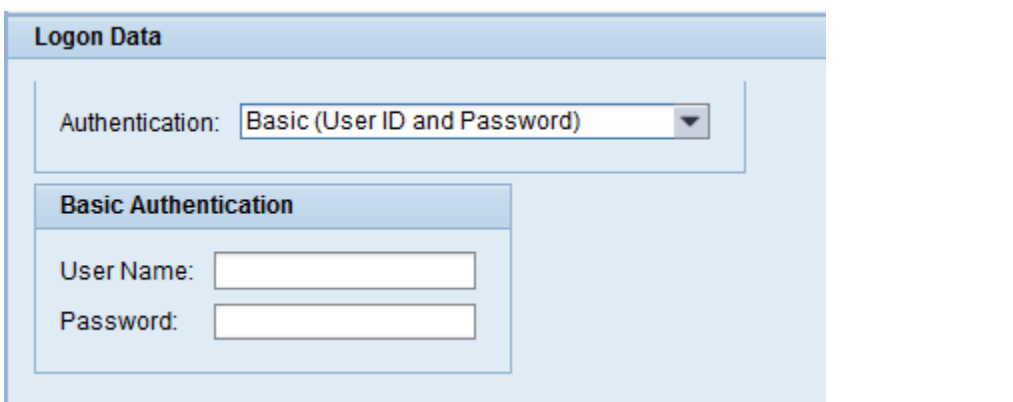
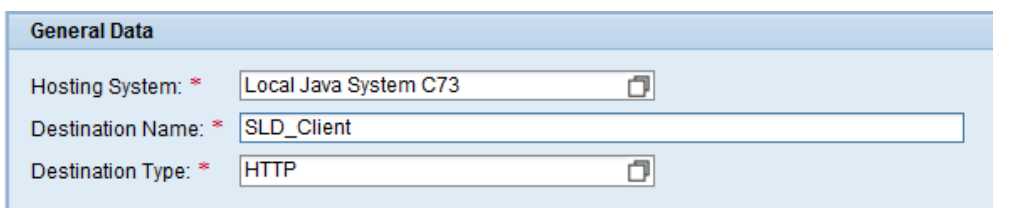
There are two approaches that you can follow here. Based on your current system landscape you can use:

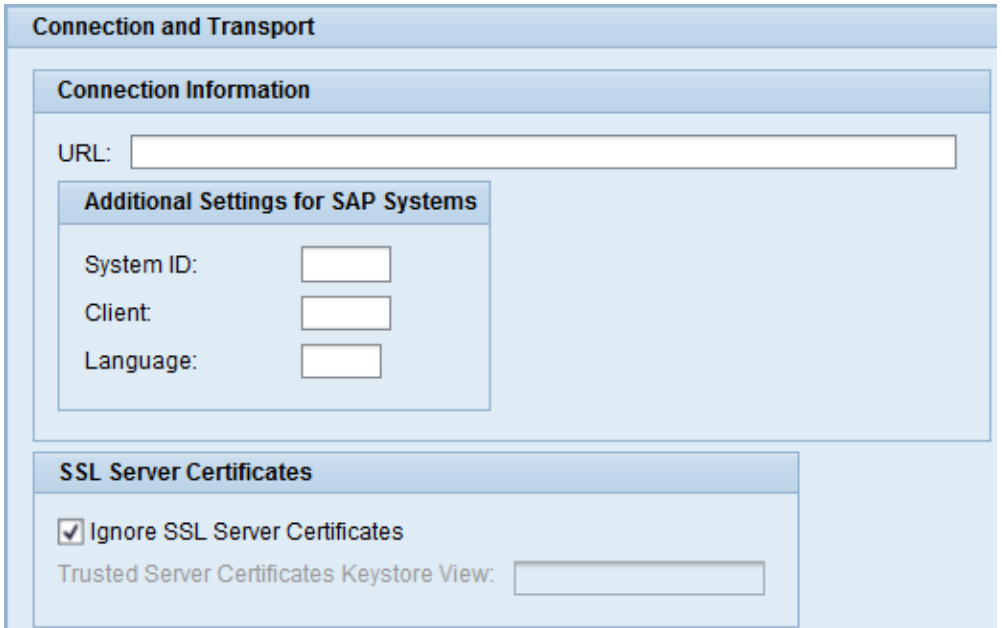
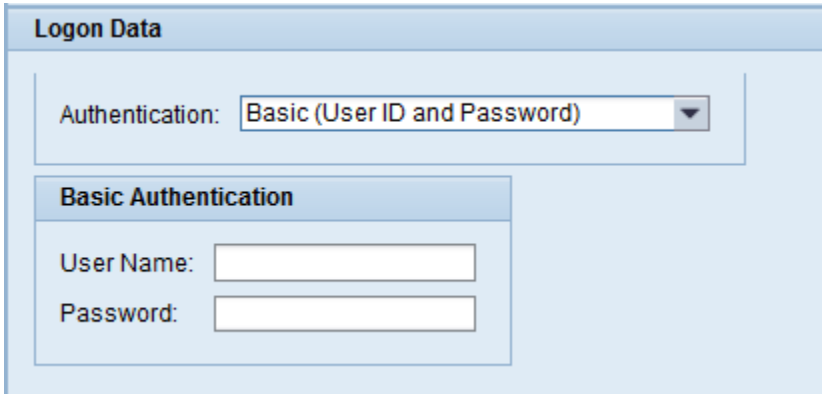

- Central SLD
- SAP Solution Manager Local SLD  
This option has a drawback that if your Solution Manager goes in maintenance, then your SLD will be in maintenance as well

### 1.2. Register the SAP NetWeaver BPM System to the System Landscape Directory

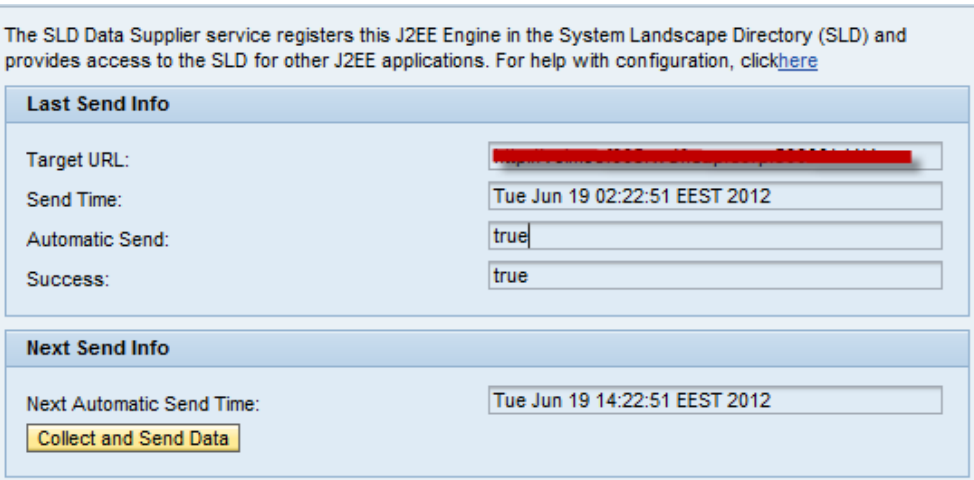
Once you have identified which SLD system to use, you need to set up your BPM system to send data about itself to the SLD. In order to do this you must login to your SAP NetWeaver Administrator (<http://<host>:port/nwa>). You need to login with a user that has data supplier permissions. The user must have the user role SAP\_SLD\_DATA\_SUPPLIER on the target SLD Server.

<p>1. Go to SOA &gt; <i>Technical Configuration</i> &gt; <i>Destinations</i></p>	 <p>The screenshot shows the SAP NetWeaver Administrator interface. The top navigation bar includes 'My Workspace', 'Availability and Performance', 'Operations', 'Configuration', 'Troubleshooting', and 'SOA'. The 'SOA' tab is selected and highlighted with a red circle. Below the navigation bar, the 'Technical Configuration' menu item is highlighted with a red circle. Underneath, the 'Destinations' menu item is also highlighted with a red circle. The main content area shows the 'Destinations' configuration page with a description: 'Applications or services can establish connections to other services. When using connections of this type, you need to specify the remote service address and the user authentication information to use for the connection. Many applications use the Destination service for this purpose.'</p>
<p>2. Create a destination called <b>SLD_DataSupplier</b> of type HTTP.</p>	 <p>The screenshot shows the 'General Data' configuration form for a destination. The fields are:     <ul style="list-style-type: none"> <li>Hosting System: * Local Java System C73</li> <li>Destination Name: * SLD_DataSupplier</li> <li>Destination Type: * HTTP</li> </ul>     At the bottom of the form, there are buttons for 'Cancel', 'Previous', 'Next', and 'Finish'.   </p>

<p>3. Enter the SLD URL (http://&lt;host&gt;:&lt;port&gt;).</p>	 <p><b>Connection and Transport</b></p> <p><b>Connection Information</b></p> <p>URL: <input type="text"/></p> <p><b>Additional Settings for SAP Systems</b></p> <p>System ID: <input type="text"/></p> <p>Client: <input type="text"/></p> <p>Language: <input type="text"/></p> <p><b>SSL Server Certificates</b></p> <p><input checked="" type="checkbox"/> Ignore SSL Server Certificates</p> <p>Trusted Server Certificates Keystore View: <input type="text"/></p>
<p>4. Set Authentication to <i>BASIC</i> and enter an appropriate user name and password.</p> <p>Note: The specified user must have the user role <code>SAP_SLD_DATA_SUPPLIER</code> or higher on the target SLD Server.</p>	 <p><b>Logon Data</b></p> <p>Authentication: <input type="text" value="Basic (User ID and Password)"/></p> <p><b>Basic Authentication</b></p> <p>User Name: <input type="text"/></p> <p>Password: <input type="text"/></p>
<p>5. Create a destination called <b><i>SLD_Client</i></b> of type <i>HTTP</i>.</p>	 <p><b>General Data</b></p> <p>Hosting System: * <input type="text" value="Local Java System C73"/></p> <p>Destination Name: * <input type="text" value="SLD_Client"/></p> <p>Destination Type: * <input type="text" value="HTTP"/></p>

<p>6. Enter the SLD URL (http://&lt;host&gt;:&lt;port&gt;).</p>	
<p>7. Set <i>Authentication</i> to <i>BASIC</i> and enter an appropriate user name and password.</p> <p>Note: The specified user must have user role SAP_SLD_GUEST or higher.</p>	
<p>8. You can now check your current configuration. Go to <i>Configuration &gt; Infrastructure &gt; SLD Data Supplier Configuration</i>.</p>	

9. In this view, you can see whether your system is configured correctly to supply your central SLD with data.



The SLD Data Supplier service registers this J2EE Engine in the System Landscape Directory (SLD) and provides access to the SLD for other J2EE applications. For help with configuration, click [here](#)

**Last Send Info**

Target URL:

Send Time:

Automatic Send:

Success:

**Next Send Info**

Next Automatic Send Time:

For more information, see

<http://wiki.sdn.sap.com/wiki/display/SMSETUP/Connect+Managed+Systems+to+SLD>

## 2. Install Diagnostics Agent

Since we are using Solution Manager 7.1 SP04 we need to install the 7.3 SP02 Diagnostics Agent. No separate host agent installation is required.

In case of a Solution Manager Upgrade, it is not mandatory to upgrade the Diagnostics Agent version. This specification applies only to new installations.

### 2.1. Connection Options

Before starting the installation make sure that you have identified which installation strategy you want to use. This means that you can choose between the two following scenarios:

- **SLD Registration:** In this scenario, the SMD Agent registers itself into the production SLD assigned to the managed system on which the SMD Agent will be installed. This scenario should be used if Solution Manager is not yet installed.
- **Direct Solution Manager Registration:** In this scenario, the Diagnostics Agent establishes a direct connection to the Solution Manager system. Using this type of connection no SLD attachment is necessary, neither the link *Agent Candidates Management* needs to be used in the *Agent Administration*.

You can also set up both options during installation. If you have Solution Manager already installed you can just go with the direct Solution Manager registration.

Detailed information about installing the Diagnostics Agent can be found, here:

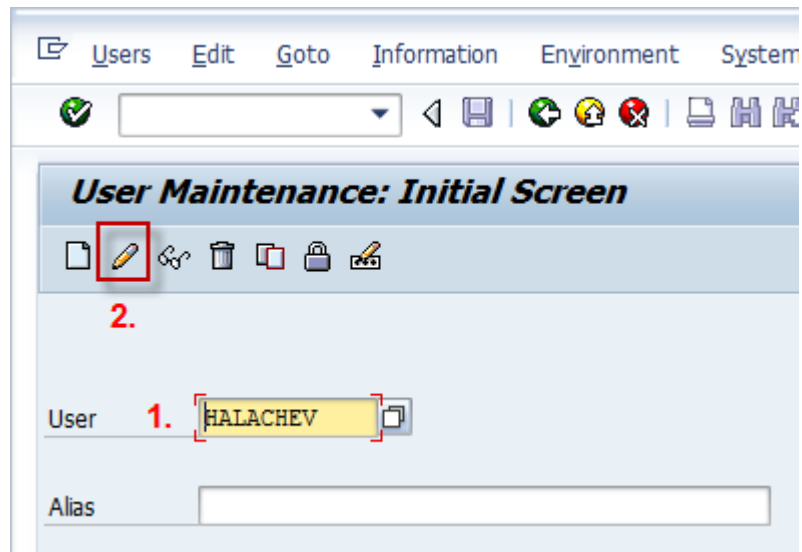
<http://wiki.sdn.sap.com/wiki/display/SMSETUP/Diagnostics+Agents#DiagnosticsAgents-Installation>

**Note:** Path to icudt34.dll, icuin34.dll and icuuc34.dll files must be present in your PATH environment variable. Otherwise, the installation of the Diagnostic Agent might fail.

### 3. Assign Required Roles

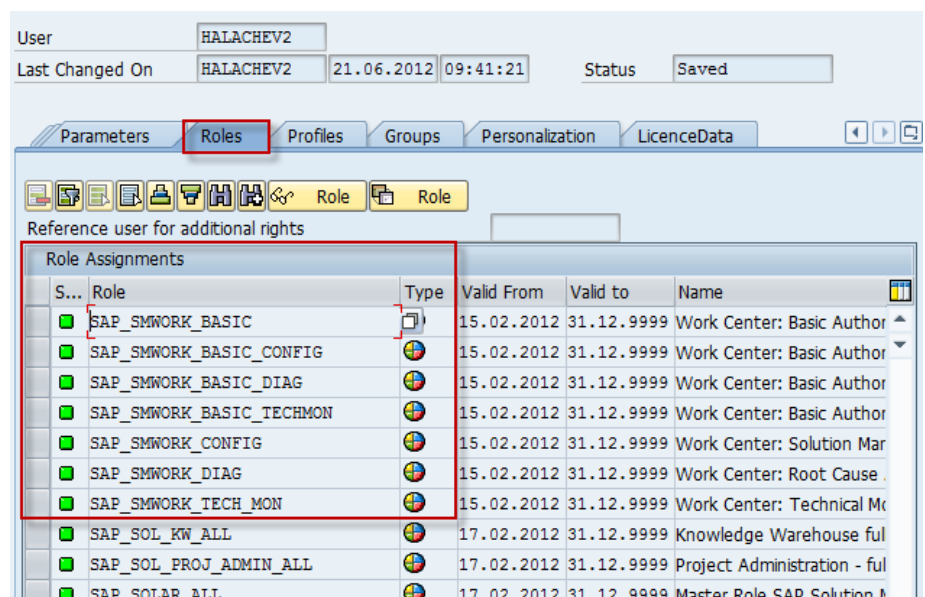
The role assignment is done automatically in step “2.4 Create Users” in the Basic Configuration Wizard of Solution Manager. However you might need these roles in advance in order to access the SAP Solution Manager Work Center.

1. Log in to your SAP Solution Manager system. Enter transaction SU01. Edit the user that you are going to perform the configuration with.



2. Go to the Roles tab and assign the required roles. Assign the following roles to your user:

SAP\_SMWORK\_BASIC  
 SAP\_SMWORK\_BASIC\_CONFIG  
 SAP\_SMWORK\_BASIC\_DIAG  
 SAP\_SMWORK\_BASIC\_TECHMON  
 SAP\_SMWORK\_CONFIG  
 SAP\_SMWORK\_DIAG  
 SAP\_SMWORK\_TECH\_MON





## 4. Configure Solution Manager

**Note:** SAP note 1647267 “Solution Manager Adaptation to Java UME security” needs to be implemented

Log in to your SAP Solution Manager system and enter the transaction - **SOLMAN\_WORKCENTER**. Go to the SAP Solution Manager *Configuration* tab. Here, you must execute the following steps:

- System Preparation Wizard
- Maintain System Landscape
- Basic Configuration and Managed Systems Configuration Wizards
- Technical Monitoring Wizard

### 4.1. System Preparation Wizard

Detailed explanation about this wizard in this tab you can find in the following PDF document:

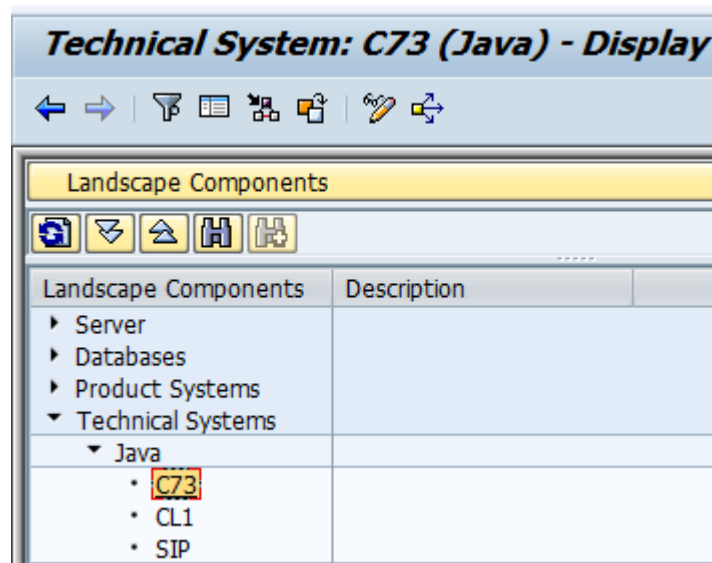
<https://websmp205.sap-ag.de/~sapidb/011000358700000482292011E>

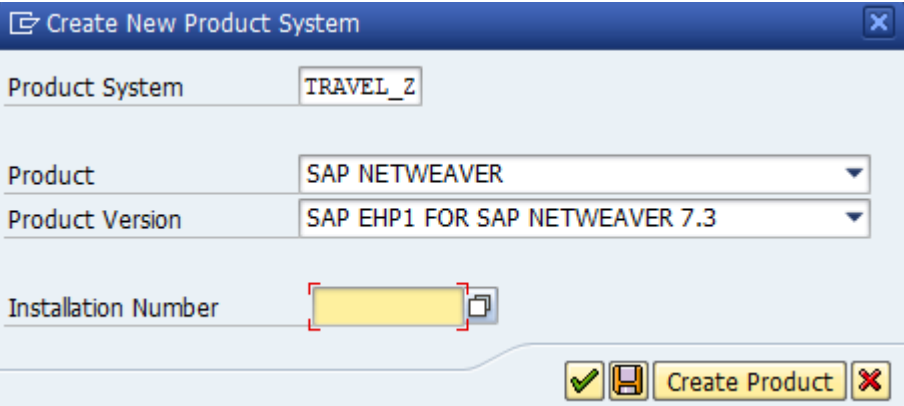

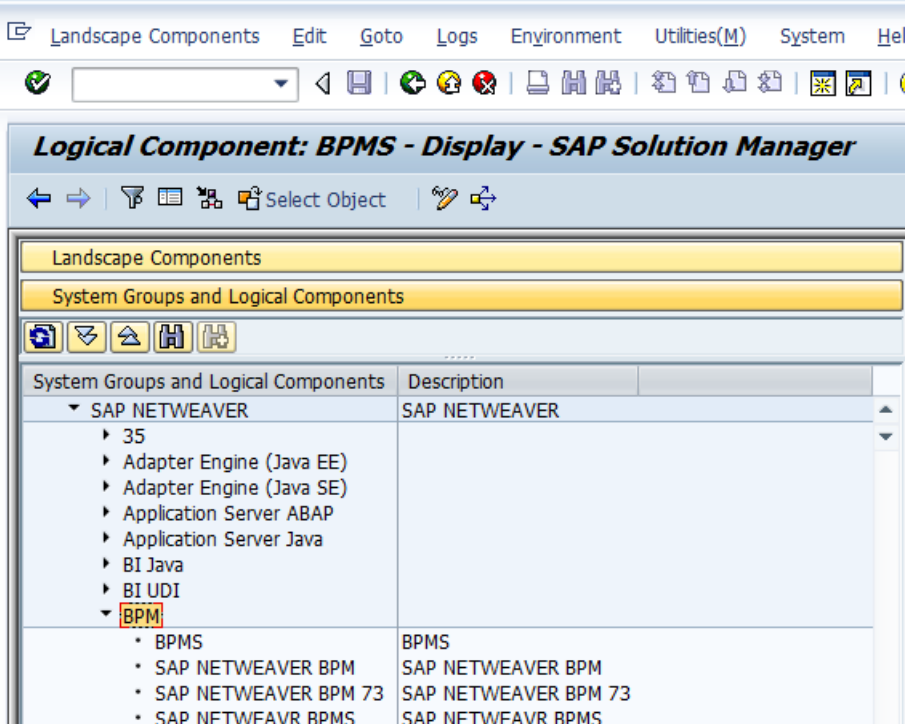
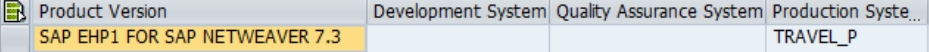
The document contains general information about monitoring as well as detailed explanation about the wizard. You need to implement only the part for “System Preparation Wizard” for now.

### 4.2. Maintain System Landscape

This step is only required if you are using solution manager 7.1 SP04. Proceed with it, if you have performed step “Set up LMDB” from System Preparation wizard successfully.

1. Log in to your Solution Manager system. Enter transaction **SMSY**. The data from your central SLD should be replicated there and you should be able to see the systems you want to monitor.



<p>2. Create <i>Product System</i> via right click &gt; <i>Create New Product System</i>. Enter the name of the system and the product that is installed on it.</p>	
<p>3. When the system is created, make sure to check the BPM Product system as relevant. Additionally assign your technical system(s) to this product system.</p>	
<p>4. Go to <i>System Groups and Logical Components</i> and create your own logical component, under <i>Logical Components &gt; SAP NETWEAVER &gt; BPM</i>.</p>	
<p>5. Assign a production system to the newly created <i>Logical Component</i>. You should assign the <i>Product System</i> that we just created.</p>	

After completing this steps, step one of “Select Product” of “Managed System Configuration” should be passing without any errors. You can now proceed with “Basic Configuration and Managed System Configuration”.

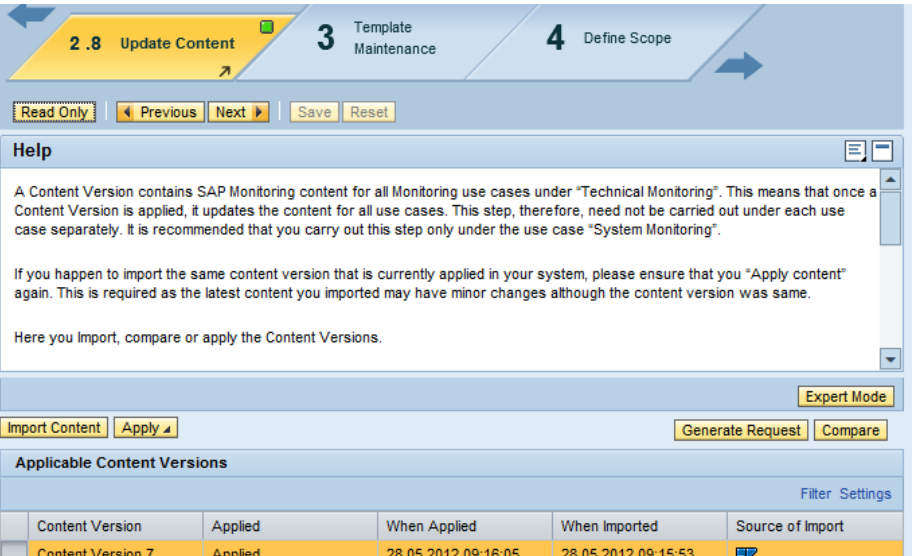
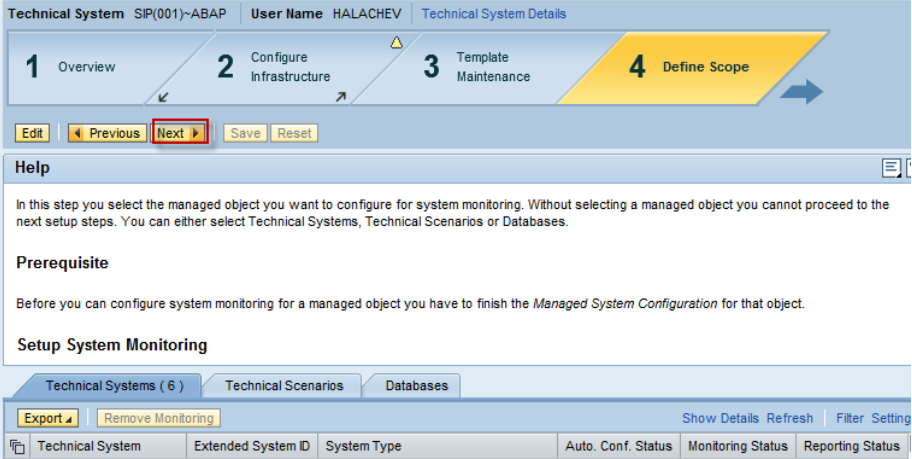
### 4.3. Basic Configuration and Managed System Configuration Wizards

Go back to the PDF document from the point that you stopped before: <https://websmp205.sap-ag.de/~sapidb/011000358700000482292011E>

Proceed with the implementation of “Basic Configuration and Managed System Configuration Wizards”.

### 4.4. Technical Monitoring Wizard

After you have performed the “System Preparation Wizard” and the “Basic Configuration Wizard and Managed Systems Configuration” you need to proceed with “Technical Monitoring Wizard”.

<p>1. Jump directly to step 2.8 <i>Update Content</i>. Import and apply <i>Content Version 7</i>.</p>	 <p>2.8 Update Content 3 Template Maintenance 4 Define Scope</p> <p>Read Only Previous Next Save Reset</p> <p><b>Help</b></p> <p>A Content Version contains SAP Monitoring content for all Monitoring use cases under “Technical Monitoring”. This means that once a Content Version is applied, it updates the content for all use cases. This step, therefore, need not be carried out under each use case separately. It is recommended that you carry out this step only under the use case “System Monitoring”.</p> <p>If you happen to import the same content version that is currently applied in your system, please ensure that you “Apply content” again. This is required as the latest content you imported may have minor changes although the content version was same.</p> <p>Here you Import, compare or apply the Content Versions.</p> <p>Expert Mode</p> <p>Import Content Apply Generate Request Compare</p> <p><b>Applicable Content Versions</b> Filter Settings</p> <table border="1"> <thead> <tr> <th>Content Version</th> <th>Applied</th> <th>When Applied</th> <th>When Imported</th> <th>Source of Import</th> </tr> </thead> <tbody> <tr> <td>Content Version 7</td> <td>Applied</td> <td>28.05.2012 09:16:05</td> <td>28.05.2012 09:15:53</td> <td>IP</td> </tr> </tbody> </table>	Content Version	Applied	When Applied	When Imported	Source of Import	Content Version 7	Applied	28.05.2012 09:16:05	28.05.2012 09:15:53	IP		
Content Version	Applied	When Applied	When Imported	Source of Import									
Content Version 7	Applied	28.05.2012 09:16:05	28.05.2012 09:15:53	IP									
<p>2. Jump to step 4 <i>Define Scope</i>. Select the system, you want to monitor and click <i>Next</i>.</p>	 <p>Technical System SIP(001)-ABAP User Name HALACHEV Technical System Details</p> <p>1 Overview 2 Configure Infrastructure 3 Template Maintenance 4 Define Scope</p> <p>Edit Previous Next Save Reset</p> <p><b>Help</b></p> <p>In this step you select the managed object you want to configure for system monitoring. Without selecting a managed object you cannot proceed to the next setup steps. You can either select Technical Systems, Technical Scenarios or Databases.</p> <p><b>Prerequisite</b></p> <p>Before you can configure system monitoring for a managed object you have to finish the <i>Managed System Configuration</i> for that object.</p> <p><b>Setup System Monitoring</b></p> <p>Technical Systems ( 6 ) Technical Scenarios Databases</p> <p>Export Remove Monitoring Show Details Refresh Filter Setting</p> <table border="1"> <thead> <tr> <th>Technical System</th> <th>Extended System ID</th> <th>System Type</th> <th>Auto. Conf. Status</th> <th>Monitoring Status</th> <th>Reporting Status</th> </tr> </thead> <tbody> <tr> <td>C73 on soffdev012</td> <td>C73</td> <td>Application Server Java</td> <td>Green</td> <td>Green</td> <td>Green</td> </tr> </tbody> </table>	Technical System	Extended System ID	System Type	Auto. Conf. Status	Monitoring Status	Reporting Status	C73 on soffdev012	C73	Application Server Java	Green	Green	Green
Technical System	Extended System ID	System Type	Auto. Conf. Status	Monitoring Status	Reporting Status								
C73 on soffdev012	C73	Application Server Java	Green	Green	Green								

3. At step 5, you assign templates to the systems that you monitor. In order to implement BPM specific monitoring, you need to assign the SAP NetWeaver CE template to your technical system. The template is available for the technical system assignment.

Managed Object Name	Type	Assign Templates	Setup Status	Installed Product
C73-JAVA		Assign Templates	<span style="color: green;">■</span>	SAP J2EE ENGI

Selected Template per Installed Product	
Installed Product	Selected Template
SAP J2EE ENGINE 7.31	SAP J2EE 7.20 - 7.31
SAP Netweaver CE 7.31	SAP Netweaver CE

## 5. SAP NetWeaver BPM System Defaults Monitoring in Action

1. Log in to your Solution Manager and enter the work center (SOLMAN\_WORKCENTER). Go to the *Technical Monitoring* tab. After that, select *System Monitoring*.

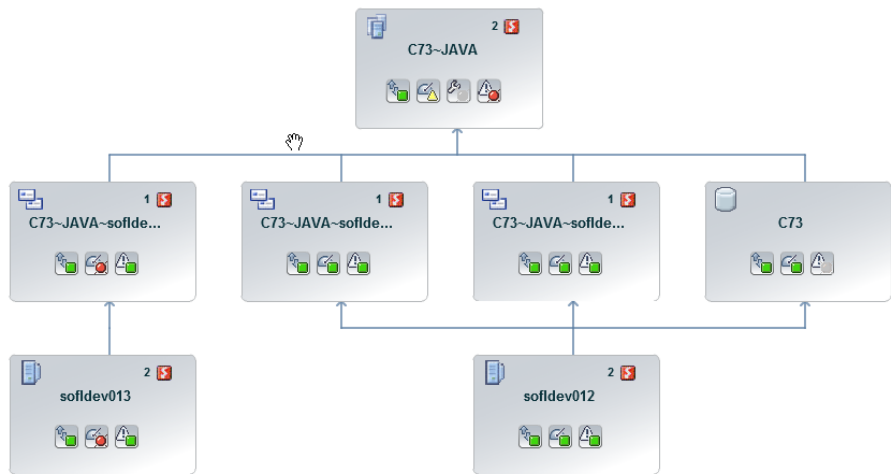
2. Select the system that you want to monitor and choose *Start Embedded* or *Start New Window*.

Extended ID	Type	Installation Number
C73	Application Server...	SAP-INTERN

3. Click again on the role displaying information about your system.

System	System	Product Versi...	Work Mode	Availa...	Perfor...	Confi...	Excep...	Alerts	Configu...
C73	JAVA	SAP EHP1 FOR ...	No Work Mod...	<span style="color: green;">■</span>	<span style="color: yellow;">■</span>	<span style="color: grey;">■</span>	<span style="color: red;">■</span>	9 Alerts	<span style="color: green;">■</span>

4. You will see a diagram with details about your system.



5. On the right site, you can see information about the data monitored. The BPM specific data is presented as shown on the screen shots.

Events/Metrics	Rating	Value
C73~JAVA		
System Availability		
BPM Kernel Monitor		
Mode Status		Runtime Mode is normal
J2EE Node=18805450		Runtime Mode is normal
J2EE Node=22788350		Runtime Mode is normal
J2EE Node=6330650		Runtime Mode is normal
Mode Change Status		No Runtime Mode changes waiti...
J2EE Node=18805450		No Runtime Mode changes waiti...
J2EE Node=22788350		No Runtime Mode changes waiti...
J2EE Node=6330650		No Runtime Mode changes waiti...
Consistency Status		
Status propagated from Technical Inst...		
Status propagated from Database		
Java System Availability		
System Performance		
Http Sessions		
BPM Workload		
Total number of process in...		144
Number of active process i...		3
Number of active process t...		0
Number of completed proce...		125
Total number of process ta...		144
Number of completed proce...		91

For all NW Application Server and BPM specific KPI violation you can enable automatic alerts mail notifications as described in “Basic Configuration of SAP Solution Manager 7.1” on SMP (<https://websmp205.sap-ag.de/~sapidb/011000358700000482292011E>).

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[SAP Solution Manager Community](#)

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