Installation and Setup Guide | PUBLIC
Software Provisioning Manager 1.0 SP39
Document Version: 39.0 – 2023-10-09

Installation of Diagnostics Agent on IBM i
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# Appendix

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1 Introduction

This guide explains how to install a Diagnostics Agent for SAP Solution Manager.

This guide is part of a global installation and configuration procedure which is described in the document How to Use SAP Solution Manager Configuration (SOLMAN_SETUP) (reference is provided at Online Information from SAP [page 83]).

⚠ Caution

Before you start the implementation:

• Make sure you have the latest version of this document, which can be downloaded from: http://support.sap.com/sitoolset Installation Option of Software Provisioning Manager Installation Guides - Standalone Engines and Clients Diagnostics Agent <Select your operating system>

• Check SAP Note 1858920: Diagnostics Agent installation with the software provisioning manager, for issues that may exist with this version of the installer, and for corresponding solutions.

Naming Conventions

• Diagnostics Agent
  SAP Solution Manager Diagnostics Agent is the remote component of End-to-End Root Cause Analysis. It allows having a connection between SAP Solution Manager and the Managed System(s), and then to collect information from the Managed Systems for reporting purposes.

• FQN
  Abbreviation for Fully Qualified Name (for example host.domain.corp and not the short host name host).

• Managed System
  Term for a satellite system (for example, an AS ABAP or SAP NetWeaver AS for Java system) managed by SAP Solution Manager.

• Operating System Names
  As of operating system version “IBM i 5.4”, the operating system has been renamed from “IBM i5/OS” to “IBM i”. The names of previous operating system versions remain unchanged. In this document “IBM i” is used if we do not refer to a specific operating system version. If we refer to a specific version, we use the relevant operating system name.

Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;DASID&gt;</td>
<td>Diagnostics Agent system ID in uppercase letters.</td>
</tr>
<tr>
<td>&lt;dasid&gt;</td>
<td>Diagnostics Agent system ID in lowercase letters.</td>
</tr>
</tbody>
</table>
### Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;fqn&gt;</code></td>
<td>Fully Qualified Name (host.domain.corp and not the short host name host).</td>
</tr>
<tr>
<td><code>&lt;Instance_Number&gt;</code></td>
<td>Instance Number of a Diagnostics Agent.</td>
</tr>
<tr>
<td><code>&lt;OS&gt;</code></td>
<td>Operating System name.</td>
</tr>
<tr>
<td><code>&lt;SAPSID&gt;</code></td>
<td>The system ID of an arbitrary SAP system in uppercase letters, possibly, but not necessarily a Diagnostics Agent system ID. In this guide <code>&lt;SAPSID&gt;</code> is only used in situations where also non Diagnostics Agent system IDs are meant, for example in section Diagnostics Agent System ID and Instance Number [page 16].</td>
</tr>
<tr>
<td><code>&lt;sapid&gt;</code></td>
<td>The system ID of an arbitrary SAP system in lowercase letters, possibly, but not necessarily a Diagnostics Agent system ID. In this guide <code>&lt;sapid&gt;</code> is only used in situations where also non Diagnostics Agent system IDs are meant.</td>
</tr>
</tbody>
</table>

### Constraints

- Effective immediately, the software provisioning manager no longer supports IBM i V7R1 listed in SAP Note 2998013.

> **i Note**

- If your current operating system is listed as deprecated in SAP Note 2998013, we strongly recommend that you migrate to a supported platform.
- If you continue to run Software Provisioning Manager on IBM i V7R1, you do so at your own risk and without support from SAP. The software provisioning manager 1.0 SP36 and higher will still run on IBM i V7R1 but it may run into an error. When you start the software provisioning manager, you will see the following warning on the PASE commandline: “Platform Support : Support for SAP JVM on OS400 V7R1 ends March 31st, 2022. See SAP note 2998013.” If you run into an issue, you must use the “frozen” software provisioning manager 1.0 SP35 software and the related installation guide. For more information, see SAP Note 3220901.

### 1.1 New Features

This section provides an overview of the new features in software provisioning manager 1.0.

SP-specific changes for Diagnostics Agent installations are documented in SAP Note 1858920.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>New SAPinst Framework Version 753</td>
<td>The SAPinst framework patch level has been upgraded from version 749 (SAP Note <a href="#">2393060</a> SAPinst Framework 749 Central Note) to 753. For more information, see SAP Note <a href="#">3207613</a> SAPinst Framework 753 Central Note.</td>
<td>software provisioning manager 1.0 SP36 (SL Toolset 1.0 SP36)</td>
</tr>
<tr>
<td>The software provisioning manager on IBM i 7.5</td>
<td>The new OS release IBM i 7.5 is certified for SAP Solutions since May 30, 2022. For more information, see the SAP on IBM i blog entry &quot;SAP on IBM i: IBM i 7.5 Certified for SAP Solutions &quot;. In addition, see SAP Note <a href="#">1680045</a>, section Planning and Preparation : SAP System Installation on OS release IBM i V7R5.</td>
<td>software provisioning manager 1.0 SP35 (SL Toolset 1.0 SP35)</td>
</tr>
<tr>
<td>SAP Host Agent Upgrade During the Installation (Optional)</td>
<td>During the Define Parameters phase of the installation, software provisioning manager prompts you whether you want to upgrade an existing version of the SAP Host Agent on the installation host. If there is no SAP Host Agent on the installation host, it is installed automatically without prompt. For more information, see General Installation Parameters [page 14].</td>
<td>software provisioning manager 1.0 SP31 (SL Toolset 1.0 SP31)</td>
</tr>
<tr>
<td>SAP Rename for SAP systems installed on the independent auxiliary storage pool (IASP)</td>
<td>The SAP Rename for IBM i now supports SAP systems installed on the IASP. For more information, see the SAP Rename guide for IBM i. In the past, the SAP System Copy had to be used to rename a system located on the IASP.</td>
<td>software provisioning manager 1.0 SP29 (SL Toolset 1.0 SP29)</td>
</tr>
<tr>
<td>New Look and Feel of SL-UI</td>
<td>As of version 1.0 SP24 Patch Level (PL) 5, the software provisioning manager comes with a new look and feel of the SL-UI. For more information, see <a href="https://blogs.sap.com/2018/11/10/new-look-for-software-provisioning-manager/">https://blogs.sap.com/2018/11/10/new-look-for-software-provisioning-manager/</a>.</td>
<td>software provisioning manager 1.0 SP24, PL05 (SL Toolset 1.0 SP24)</td>
</tr>
<tr>
<td>software provisioning manager Log Files Improvements</td>
<td>software provisioning manager log files are now available immediately after software provisioning manager has been started, that is before a product has been selected on the Welcome screen. For more information, see <a href="#">Useful Information about Software Provisioning Manager</a> and <a href="#">Troubleshooting with Software Provisioning Manager</a>.</td>
<td>software provisioning manager 1.0 SP22 (SL Toolset 1.0 SP22)</td>
</tr>
<tr>
<td>Digital Signature Check of Installation Archives</td>
<td>The digital signature of installation archives is checked automatically by software provisioning manager during the Define Parameters phase while processing the Software Package Browser screens. As of now software provisioning manager only accepts archives whose digital signature has been checked. For more information, see <a href="#">Archive-Based Diagnostics Agent Installation</a> [page 29].</td>
<td>software provisioning manager 1.0 SP22 (SL Toolset 1.0 SP22)</td>
</tr>
<tr>
<td>Enabling IPv6</td>
<td>You can now set up a new SAP system or SAP system instance using Internet Protocol Version 6 (IPv6). For more information, see <a href="#">Prerequisites for Running Software Provisioning Manager</a> [page 36].</td>
<td>software provisioning manager 1.0 SP22 (SL Toolset 1.0 SP22)</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
<td>Availability</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Media Signature Check</td>
<td>The digital signature of media is checked <strong>automatically</strong> by the software provisioning manager during the <strong>Define Parameters</strong> phase while processing the <strong>Media Browser</strong> screens. The software provisioning manager only accepts media whose digital signature has been checked. For more information, see <a href="#">Preparing the Installation Media</a> and <a href="#">Running the software provisioning manager</a>.</td>
<td>software provisioning manager 1.0 SP21 (SL Toolset 1.0 SP21)</td>
</tr>
<tr>
<td>SL-UI with SAPINST 7.49</td>
<td>With the new software provisioning manager framework version SAPINST 7.49, you can now use the new SAPUI5-based graphical user interface (GUI) “SL-UI”. For more information, see <a href="#">Useful Information about Software Provisioning Manager</a> and <a href="#">Running Software Provisioning Manager</a>.</td>
<td>software provisioning manager 1.0 SP20 (SL Toolset 1.0 SP20)</td>
</tr>
<tr>
<td>Cleanup of Operating System Users</td>
<td>You can now specify during the <strong>Define Parameters</strong> phase that the group <strong>SAPINST</strong> is to be removed from the operating system users after the execution of software provisioning manager has completed. For more information, see <a href="#">Operating System Users</a>.</td>
<td>software provisioning manager 1.0 SP20 (SL Toolset 1.0 SP20)</td>
</tr>
<tr>
<td>Verification of Integrity of Data Units in software provisioning manager</td>
<td>The integrity of data units extracted from the software provisioning manager archive is verified. For more information, see <a href="#">Downloading and Extracting the Software Provisioning Manager 1.0 Archive</a>. In addition, check SAP Note 1680045 whether additional information is available.</td>
<td>software provisioning manager 1.0 SP19 (SL Toolset 1.0 SP19)</td>
</tr>
<tr>
<td>System Provisioning for SAP NetWeaver 7.5 and SAP NetWeaver 7.5-based Products</td>
<td>All system provisioning tasks (installation, system copy, system rename) are available for the new SAP NetWeaver 7.5 release. The Dual Stack option, which integrates an AS ABAP and AS Java in a single system (common System ID <code>&lt;SAPSID&gt;</code>, common startup framework, common database), is no longer supported in SAP systems based on SAP NetWeaver 7.5.</td>
<td>software provisioning manager 1.0 SP09 (SL Toolset 1.0 SP15)</td>
</tr>
<tr>
<td>Feedback Evaluation Form</td>
<td>SAP SE’s aim is to provide fast and efficient procedures. To evaluate the procedure you just carried out, we need information generated by the tool during process execution and your experience with the tool itself. A new evaluation form contains a simple questionnaire and XML data generated during the procedure. Port 4239 is used for displaying the feedback evaluation form.</td>
<td>software provisioning manager 1.0 SP07 (SL Toolset 1.0 SP12)</td>
</tr>
<tr>
<td>Option Verify Signed Media</td>
<td>The digital signature ensures that the signatory of a digital document can be identified unambiguously and signatory’s name is documented together with the signed document, the date, and the time. For more information, see SAP Note 1979965.</td>
<td>software provisioning manager 1.0 SP06 (SL Toolset 1.0 SP11)</td>
</tr>
</tbody>
</table>
1.2 Service Pack Specific Documentation

This guide is updated with each software provisioning manager 1.0 service pack (SP). The following sections hold Diagnostics Agent related, SP specific details, and should be read carefully.

- Kernel for the Diagnostics Agent [page 13]
- JVM for the Diagnostics Agent [page 13]
- Patching the Installation Media [page 34]
- Diagnostics Agent Download Paths [page 34]
- Installing the Diagnostics Agent Optionally with the SAP System [page 64]
- Software Provisioning Manager and Diagnostics Agent Version Information [page 79]
- Unsupported Features [page 81]

1.3 SAP Notes for the Installation

This section lists the most important SAP Notes relevant for an installation using Software Provisioning Manager

You must read the following SAP Notes before you start the installation. These SAP Notes contain the most recent information on the installation, as well as corrections to the installation documentation.

Make sure that you have the up-to-date version of each SAP Note, which you can find at https://support.sap.com/notes.

SAP Notes for the Installation

<table>
<thead>
<tr>
<th>SAP Note Number</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1680045</td>
<td>Release Note for software provisioning manager 1.0</td>
<td>software provisioning manager 1.0 with installation and system copy for SAP NetWeaver-based systems</td>
</tr>
<tr>
<td>1365123</td>
<td>Installation of Diagnostics Agents</td>
<td>Overview of the Diagnostics Agent installation strategies</td>
</tr>
<tr>
<td>1833501</td>
<td>Diagnostics Agent – Software Provisioning Manager Versions</td>
<td>More information about available Diagnostics Agent software provisioning manager versions</td>
</tr>
<tr>
<td>1858920</td>
<td>Diagnostics Agent installation with software provisioning manager</td>
<td>Installation and Post-installation steps for software provisioning manager 1.0</td>
</tr>
<tr>
<td>886535</td>
<td>Downloading multising archives</td>
<td>Downloading multising archives</td>
</tr>
</tbody>
</table>
## 1.4 Components for Reporting an Incident

In case of problems, contact SAP Support by reporting an incident on one of the following components:

<table>
<thead>
<tr>
<th>Components</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV-SMG-INS</td>
<td>Issues related to Installation, Configuration and Upgrade of SAP Solution Manager</td>
</tr>
<tr>
<td>SV-SMG-INS-AGT</td>
<td>Issues related to Diagnostics Agent Installation</td>
</tr>
<tr>
<td>BC-INS-SWPM</td>
<td>Issues related to the installation with Software Provisioning Manager</td>
</tr>
<tr>
<td>BC-INS-*</td>
<td>Other issues related to the installation tooling. For more information about using subcomponents of BC-INS, see <a href="https://support.sap.com/notes/1669327">SAP Note 1669327</a></td>
</tr>
<tr>
<td>BC-OP-AIX</td>
<td>OS specific issues related to Diagnostics Agent Installations on IBM AIX</td>
</tr>
<tr>
<td>BC-OP-AS4</td>
<td>OS specific issues related to Diagnostics Agent Installations on IBM i</td>
</tr>
<tr>
<td>BC-OP-LNX</td>
<td>OS specific issues related to Diagnostics Agent Installations on Linux</td>
</tr>
<tr>
<td>BC-OP-NT</td>
<td>OS specific issues related to Diagnostics Agent Installations on Windows</td>
</tr>
<tr>
<td>BC-OP-SUN</td>
<td>OS specific issues related to Diagnostics Agent Installations on Solaris</td>
</tr>
<tr>
<td>BC-OP-S390</td>
<td>OS specific issues related to Diagnostics Agent Installations on z/OS</td>
</tr>
<tr>
<td>SV-SMG-DIA</td>
<td>Issues related to SAP Solution Manager Diagnostics</td>
</tr>
<tr>
<td>SV-SMG-DIA-SRV-AGT</td>
<td>Issues related to Diagnostics Agent</td>
</tr>
<tr>
<td>BC-CCM-HAG</td>
<td>Issues related to SAP Host Agent</td>
</tr>
<tr>
<td>BC-JVM</td>
<td>Issues related to SAP Java Virtual Machine</td>
</tr>
<tr>
<td>XX-PART-WILY</td>
<td>Issues related to Introscope</td>
</tr>
</tbody>
</table>

[Installation of Diagnostics Agent on IBM i](https://support.sap.com)
# 1.5 Accessing the SAP Library

The references to **SAP NetWeaver Library** documentation in this installation guide always refer to the following on SAP Help Portal:

<table>
<thead>
<tr>
<th>Product and Release</th>
<th>SAP Library Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP systems based on SAP NetWeaver 7.3 EHP1</td>
<td>SAP NetWeaver 7.3 EHP1: <a href="http://help.sap.com/nw731">http://help.sap.com/nw731</a></td>
</tr>
<tr>
<td>SAP systems based on SAP NetWeaver 7.4</td>
<td><a href="http://help.sap.com/nw74">http://help.sap.com/nw74</a></td>
</tr>
<tr>
<td>SAP systems based on SAP NetWeaver 7.5x</td>
<td>• <a href="http://help.sap.com/nw75">SAP NetWeaver 7.5</a>: <a href="http://help.sap.com/nw75">Application Help</a></td>
</tr>
<tr>
<td></td>
<td>• SAP NetWeaver Application Server for ABAP 7.51 innovation package: <a href="https://help.sap.com/nw751abap">https://help.sap.com/nw751abap</a></td>
</tr>
<tr>
<td></td>
<td>• SAP NetWeaver AS for ABAP 7.52: <a href="https://help.sap.com/nw752abap">https://help.sap.com/nw752abap</a></td>
</tr>
</tbody>
</table>

---

**Introduction**

Installation of Diagnostics Agent on IBM i
2 Planning

2.1 Planning Checklist

Before starting the installation you must perform the following planning steps:

1. Follow the Pre-Installation Guidance in section Complying with SAP Solution Manager Security Guidelines [page 61].
2. Make sure you have understood the terminology with regard to Logical Host Names [page 22] and Virtual Host Names [page 22].
4. Check the Product Availability Matrix [page 12] and ensure that your operating system release is supported.
5. Make sure the Hardware Requirements [page 12] for the Diagnostics Agent are met.
6. Make sure you have read the sections listed in Service Pack Specific Documentation [page 8].
7. Select a Kernel for the Diagnostics Agent [page 13].
8. Understand the situation with regard to the JVM for the Diagnostics Agent [page 13].
10. Collect the Basic Installation Parameters [page 14].

2.2 Installation Strategy

Follow the Diagnostics Agent installation guidance in the documentation attached to SAP Note 1365123. It is important that you decide if you want to install one or more Diagnostics Agents on your system, or if you want to use the Agents On-the-fly feature.

→ Recommendation

For installations on IBM i the Agents On-the-fly feature is strongly recommended.

In general, you will need one Diagnostics Agent on each host to be managed. In case the SAP or third party systems to be managed have been set up using logical host names, it is essential to have one Diagnostics Agent instance per logical host. For further details refer to section Using Logical Host Names [page 22].

If a Diagnostics Agent is already installed on your system, the folder /usr/sap/<DASID>/SMDA<Instance_Number>/SMDAgent should exist. For further details refer to sections Diagnostics Agent System ID and Instance Number [page 16] and SAP Directories [page 20].
2.3 Product Availability Matrix

Product Availability Matrix (PAM) information for installing a Diagnostics Agent with software provisioning manager 1.0 based installers can be found at:

http://support.sap.com/sltoolset\textgreater Product Availability Matrix \textgreater <Follow the instructions> \textgreater

Then open the provided PDF file and search for “Diagnostics Agent”.

General PAM Information

The central PAM entry page for all SAP products can be found at: http://support.sap.com/pam

Platform Compatibility Matrix for EEM Robots

For a Platform Compatibility Matrix for EEM Robots (that require a Diagnostics Agent installation) refer to following SCN Wiki page: http://wiki.scn.sap.com/wiki/x/goCKEw

2.4 Hardware Requirements

Diagnostics Agent Hardware Requirements

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum disk space</td>
<td>Depending on your platform:</td>
</tr>
<tr>
<td></td>
<td>• Up to 6 GB for installation media (packed and unpacked versions of the software provisioning manager SAR-file and kernel ZIP-file)</td>
</tr>
<tr>
<td></td>
<td>• Up to 1.5 GB for the installed Diagnostics Agent</td>
</tr>
<tr>
<td></td>
<td>• Up to 1 GB of free space in the installation directory</td>
</tr>
<tr>
<td>Minimum RAM</td>
<td>256 MB</td>
</tr>
<tr>
<td>Space requirements</td>
<td>The amount of space required for an SAP system on IBM i is dependent on many variables, such as:</td>
</tr>
<tr>
<td></td>
<td>• Size of the database</td>
</tr>
<tr>
<td></td>
<td>• Number of work processes</td>
</tr>
<tr>
<td></td>
<td>• Number of users</td>
</tr>
<tr>
<td></td>
<td>Sizing recommendations are made by the IBM Competency Center. We recommend that auxiliary storage pool (ASP) usage in SAP production systems is 70% or less.</td>
</tr>
</tbody>
</table>
2.5 Kernel for the Diagnostics Agent

Dependency to Kernel of Managed System

The Diagnostics Agent is an SAP System just like any other SAP System (AS ABAP, SAP NetWeaver AS for Java, etc.). The Diagnostics Agent has its own kernel, that is completely independent of the kernel of the Managed System(s) available on the host where the Diagnostics Agent is installed. It is also possible and supported, that a Diagnostics Agent and a Managed System have the same kernel version, but have different patch levels.

General Information

Diagnostics Agent installations are supported with one of the below listed kernels. The Product Availability Matrix (PAM) [page 12] provides information on which kernel versions are supported on which platform versions.

For download instructions refer to Diagnostics Agent Download Paths [page 34].

Install – Diagnostics Agent

The installation option Install - Diagnostics Agent can be used to perform installations using a supported Unicode Kernel. For information about kernel versions supported with the current Software Provisioning Manager release, see SAP Note 2253383.

2.6 JVM for the Diagnostics Agent

For information about JVM versions supported with the current Software Provisioning Manager release, see SAP Note 2253383.

2.7 Connection Selection

Before starting the installation make sure that you have identified which installation strategy you want to use.

Recommendation

We recommend that you choose Direct SAP Solution Manager Connection.
Direct SAP Solution Manager Connection: In this scenario, the Diagnostics Agent establishes a direct connection to the SAP Solution Manager system. If you select Do not configure connection the Diagnostics Agent is not connected to the SAP Solution Manager system. For details see section Direct SAP Solution Manager Connection [page 14].

2.8 Direct SAP Solution Manager Connection

Connect the Diagnostics Agent directly to the SAP Solution Manager system. The below connection types are available.

See also SAP Solution Manager Connectivity Parameters [page 18].

- **P4 connection via Java SCS Message Server**: the Diagnostics Agent connects to the Java SCS Message Server and is redirected to one of the dispatcher nodes of the J2EE engine.
- **P4 SSL connection via Java SCS Message Server**: the same as P4 connection via Java SCS Message Server, but with SSL support.

2.9 Basic Installation Parameters

2.9.1 General Installation Parameters

The parameters in the below table must be provided when installing a Diagnostics Agent via Generic Installation Options.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Host Name</strong></td>
<td>Change Host Name if you plan to manage systems running on a logical host. This scenario lets the Diagnostics Agent take part in a switchover environment.</td>
</tr>
<tr>
<td></td>
<td><strong>Caution</strong></td>
</tr>
<tr>
<td></td>
<td>The Host Name is the short host name and not the FQN.</td>
</tr>
<tr>
<td><strong>Destination ASP</strong></td>
<td>Number of the auxiliary storage pool (ASP) on which the Diagnostics Agent should be installed.</td>
</tr>
</tbody>
</table>
### Parameters

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP Host Agent Upgrade (Optional)</td>
<td>If there already exists an SAP Host Agent on the installation host, the software provisioning manager asks you if you want to upgrade it to a newer patch level version. If you want the existing version to be upgraded, you must provide the new target version of the SAPHOSTAGENT&lt;Version&gt;.SAR archive. For more information, see Archive-Based Diagnostics Agent Installation [page 29]</td>
</tr>
</tbody>
</table>

### Master Password

Common password for all users that are created during the installation:

- Operating system users (for example `<sapsid>adm`)

⚠️ **Caution**

If you did not create the operating system users manually before the installation, the installer creates them with the common master password (see Operating System Users). In this case, make sure that the master password meets the requirements of your operating system.

- Secure Store key phrase

**Note**

If your global host is on IBM i, the name of the Windows SAP service user isSAPSe<sapsid> instead of SAPService<sapsid>.

### Basic Password policy

The master password must meet the following requirements:

- It must be 8 to 14 characters long
- It must contain at least one letter (a-z, A-Z)
- It must contain at least one digit (0-9)
- It must not contain `\` (backslash) or " (double quote).

**→ Recommendation**

The Master Password feature can be used as a simple method to obtain customer-specific passwords for all newly created users. A basic security rule is not to have identical passwords for different users. Following this rule, we strongly recommend individualizing the values of these passwords after the installation is complete.

For more information, see Ensuring User Security [page 60].
2.9.2 Diagnostics Agent System ID and Instance Number

Diagnostics Agent System ID and Instance Number

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagnostics Agent System ID (DASID)</strong></td>
<td>By default the software provisioning manager sets the <em>Diagnostics Agent System ID (DASID)</em> to <strong>DAA</strong>.</td>
</tr>
<tr>
<td></td>
<td>If a Diagnostics Agent with the same kernel version as the one you are currently installing is already present on the local installation host, the software provisioning manager sets <strong>&lt;DASID&gt;</strong> to the system ID of this already installed agent.</td>
</tr>
<tr>
<td></td>
<td>If the kernel version you have selected for your installation is different from the kernel versions of already installed Diagnostics Agents, the software provisioning manager assigns another default system ID, starting from <strong>DA1</strong> to <strong>DA9</strong>.</td>
</tr>
<tr>
<td></td>
<td>You can overwrite the proposed system ID as required.</td>
</tr>
<tr>
<td></td>
<td>Diagnostics Agents installed on different logical hosts (but on the same physical or virtual host) can use the same <strong>&lt;DASID&gt;</strong>.</td>
</tr>
</tbody>
</table>

⚠️ Caution

Choose the **<DASID>** carefully. Renaming is difficult and requires you to reinstall the Diagnostics Agent.

Make sure that the **<DASID>**:

- Either does not yet exist on the local installation host, or does already exist but was only used for a Diagnostics Agent installation in the exact same version
- Consists of exactly three alphanumeric characters
- Contains only uppercase letters
- Has a letter for the first character
- Is allowed according to SAP Note 1979280
### Parameters

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instance Number</strong> of the Diagnostics Agent</td>
<td>Technical identifier for internal processes for the Diagnostics Agent. It consists of a two-digit number from 98 to 00. Default is 98. If instance number 98 is already used, the Diagnostics Agent instance number is automatically set to the next free, lower, valid instance number. The instance number must be unique on a host. That is, if more than one SAP instance is running on the same host, these instances must be assigned different numbers. The instance number is used to specify the name of the Diagnostics Agent instance directory that the software provisioning manager automatically creates during the installation. The directory of the Diagnostics Agent instance is called SMDA&lt;Instance_Number&gt;. For more information, see SAP Directories [page 20]. To find out the instance numbers of SAP systems that already exist on the installation host, look for subdirectories ending with &lt;nn&gt; of local (not mounted) /usr/sap/&lt;SAPSID&gt; directories. The value &lt;nn&gt; is the number assigned to the instance.</td>
</tr>
</tbody>
</table>

### 2.9.3 Operating System Users

#### Operating System Users

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAP System Administrator</strong>: &lt;dasid&gt;adm</td>
<td>Administrator for the Diagnostics Agent. This user is dedicated to the Diagnostics Agent installation and has the authorization to manage the Diagnostics Agent. If you did not create user &lt;dasid&gt;adm manually before the installation, the installer creates it automatically on every application server instance host during the installation. Make sure that the user ID and group ID of &lt;dasid&gt;adm are unique and the same on each application server instance host. Make sure to respect the password guidance at the end of this table.</td>
</tr>
<tr>
<td><strong>SAP System Administrator</strong>: sapadm</td>
<td>SAP Host Agent administrator is the user for central monitoring services. This user is created only if the SAP Host Agent is automatically installed during the installation of the Diagnostics Agent. Make sure to respect the password guidance at the end of this table.</td>
</tr>
</tbody>
</table>
Parameters | Description
---|---
Password guidance | Make sure that the password that you choose for a user meets the requirements of your operating system. In addition the password must meet the following requirements:
- It must be 8 to 14 characters long
- It must not contain \ (backslash) and " (double quote)
- It must contain at least one digit (0-9)
- It must contain at least one letter (a-z, A-Z)

Related Sections

This guide holds several sections that are closely related to the above described operating system users. You may want to read these sections before performing the installation:
- Preparing an IBM i User Profile [page 23]
- Ensuring User Security [page 60]

2.9.4 SAP Solution Manager Connectivity Parameters

SAP Solution Manager Connectivity Parameters

Parameters | Description
---|---
Connection of the Diagnostics Agent to SAP Solution Manager | You can choose between the following options:
- **Configure connection via Java SCS Message Server**
  The Diagnostics Agent will be connected to the SAP Solution Manager system. If you choose this option you will be able to select *Use SSL connectivity*.
  The software provisioning manager will prompt you for the SAP Solution Manager connection parameters listed below.
- **Do not configure connection**
  If you choose this option, the software provisioning manager does not prompt you for any SAP Solution Manager connection parameters.
  You may configure the SAP Solution Manager connection for the Diagnostics Agent via the `smdsetup` script after the installation has finished.
  For more information, see Using the SMD Setup Script [page 64].

Host (FQN) | The fully qualified host name of the SAP Solution Manager system, for example `host.domain.corp`

→ Recommendation
The host name will be checked. It is recommended to input the fully qualified host name.
### Parameters | Description
---|---
**Port** | Depending on the **Connection Type**, you have to specify one of the following ports of the Java Stack of your SAP Solution Manager system:
- [Java SCS Message Server HTTP Port](#)
- [Java SCS Message Server HTTPS Port](#)
To determine the HTTP(S) port of the SAP Solution Manager Java SCS message server, see SAP Note [3169661](#).

**User and Password** | User must be assigned with the SAP_RCA_AGT_CONN group. For more information, see SAP Note [2385361](#).

**SAP Router (optional) Route and Password** | The route string describes the stations of a connection required between the Diagnostics Agent and SAP Solution Manager.
The route string contains a substring for each SAP router without the target server such as: `/H/host/S/service/W/pass`
- `/H/` indicates the host name
- `/S/` is used for specifying the service (port); it is an optional entry, the default value is **3299**
- `/W/` indicates the password for the connection between the predecessor and successor on the route and is also optional (default is "", no password)

⚠️ **Example**
The route between the Diagnostics Agent and SAP Solution Manager can look like: `/H/host.domain.corp/S/3299`
3 Preparation

3.1 Preparation Checklist

Before starting the installation you must perform the following preparation steps:

1. Prepare an IBM i User Profile [page 23].
2. Enable the User QSECOFR [page 24].
3. Prepare the Installation Media [page 25].
4. Copy the Installation Media Manually to Your IBM i [page 32]
5. Continue with the Installation [page 36] or the Unattended Installation [page 51] section.

3.2 SAP Directories

Directories of the Diagnostics Agent

For the Diagnostics Agent the installer creates the following types of directories:

- Logically shared directories
- Local directories

Details are shown in the following figure.
The Diagnostics Agent directory `/usr/sap/<DASID>` contains the following subdirectories:

- **SYS**, which is a logically shared directory
- **SMDA<Instance_Number>**, which is a local directory

⚠️ Caution
Since traces for the instance are created in this directory, sufficient space must be available in this directory.

### Logically Shared Directories

The logically shared directory **SYS** contains the following subdirectories:

- **exe**
  Contains executable kernel programs
- **global**
  Contains globally shared data
- **profile**
  Contains the profiles of the Diagnostics Agent instance

### Local Directories
The (local) instance directory of the Diagnostics Agent instance is called SMDA<Instance_Number>. It contains the instance-specific data of the Diagnostics Agent and has the following subdirectories:

- **script**: Contains the smdsetup script
- **SMDAgent**: Contains the Diagnostics Agent software and properties files
- **exe**: Contains executable kernel programs
- **work**: Contains log files

### 3.3 Using Logical Host Names

SAP Solution Manager has introduced the term logical host name, as an alternative to the term virtual host name which is generally used in the context of software provisioning manager and SAP NetWeaver based installations. Refer to section Using Virtual Host Names [page 22] from the standard software provisioning manager and SAP NetWeaver based installation guides (section is included below) for details.

For a detailed description on logical hosts, logical host names, virtual hosts, virtual host names, physical hosts and physical host names, and how they are defined in the context of SAP Solution Manager and Diagnostics Agent installations, refer to the Terminology section in the SCN Wiki page http://wiki.scn.sap.com/wiki/x/DgRgE, or to SAP Note 1365123 - Installation of Diagnostics Agents.

### 3.3.1 Using Virtual Host Names

You can use one or more virtual TCP/IP host names for SAP servers within an SAP server landscape to hide their physical network identities from each other. This can be useful when quickly moving SAP servers or complete server landscapes to alternative hardware since you do not need to reinstall or reconfigure.

#### Prerequisites

Make sure that the virtual host name can be correctly resolved in your Domain Name System (DNS) setup.

#### Context

⚠️ **Caution**

Make sure that you first read the section on Using Logical Host Names [page 22].
Procedure

Proceed as described in SAP Note 1624061.

3.4 Preparing the SAP Installation User on IBM i

For running the software provisioning manager, you must create the SAP installation user profile on the IBM i host.

The following requirement applies:

- The SAP installation user profile on IBM i must have user class *SECOFR and all special authorities that belong to the user QSECOFR.

Procedure

Note

The user name SAPIUSR and the password SAP are used as examples. You can use a different user name for the SAP installation user. Make sure you do not use SAP as the password as this is not secure.

To create the SAP installation user profile, enter the following command:

```bash
CRTUSRPRF USRPRF(SAPIUSR) PASSWORD(SAP) USRCLS(*SECOFR) TEXT('SAP installation user') SPCAUT(*USRCLS) OWNER(*USRPRF) LANGID(ENU) CNTRYID(US) CCSID(500) LOCALE(*NONE)
```

Caution

You should not set the system variable QIBM_PASE_CCSID. Do not leave this variable empty. Make sure that QIBM_PASE_CCSID is deleted at least for the time while you are installing your SAP system using the following command:

```bash
RMVENVVAR ENVVAR(QIBM_PASE_CCSID) LEVEL(*SYS)
```

Note

In previous releases, we recommended that you create the user SAPINST on IBM i to install the SAP system. In the current release, a group SAPINST is created generically on all platforms and is used for the installation of the SAP system. If the user SAPINST already exists on your system, you must delete this user. If you do not want to delete this user for any reason, you must add the user profile SAPINST the feature of a group by adding SAPINST to the group of a SAP installation user profile such as SAPIUSR. To do this, use the following command:

```bash
CHGUSRPRF USRPRF(SAPIUSR) GRPPRF(SAPINST)
```

Now the user SAPINST can also be used as a group by the software provisioning manager.
iNote
If you have already an old SAP installation user and you want to make sure this user is configured correctly for your next SAP system installation, enter the following command:

```
CHGUSRPRF USRPRF(SAPIUSR) USRCLS(*SECOFR) TEXT('SAP installation user')
SPCAUT(*USRCLS) OWNER(*USRPRF) LANGID(ENU) CNTRYID(US) CCSID(500) LOCALE(*NONE)
```

iNote
In a distributed environment, the SAP installation user must have the same name and password on all hosts so that the required remote access permissions are available. For example, the profile directory on the global host should be accessible to the SAP installation user of a remote additional application server instance.

3.5 Enable the User QSECOFR

The user QSECOFR is the standard administrator user on IBM i. This user has the most authority. For running the software provisioning manager on IBM i, the user QSECOFR must be enabled. Although for running the software provisioning manager you only require the installation user, the SAP kernel tools on IBM i need some adopted permissions from the user QSECOFR. If the user QSECOFR is disabled this will lead to errors when SAP kernel tools such as CRTR3INST are called.

iNote
If the SAP Host Agent release 7.21, patch level 43 and higher is used, the QSECOFR can be disabled. Whether the QSECOFR needs to be disabled depends on the customer’s security concept. As of SAP Host Agent release 7.21, patch level 43, the installation no longer requires an enabled QSECOFR.

For more information, see SAP Note 1031096 - Installing Package SAPHOSTAGENT.

Procedure

1. To check the status of the user profile QSECOFR use the following command using your installation user:

   ```
   DSPUSRPRF USRPRF(QSECOFR)
   ```

2. To enable the user QSECOFR use the following command using your installation user:

   ```
   CHGUSRPRF USRPRF(QSECOFR) STATUS(*ENABLED)
   ```

iNote
In a distributed environment, the installation user must have the same name and password on all hosts so that the required remote access permissions are available. For example, the profile directory on the global host should be accessible to the installation user of a remote additional application server instance.
Recommendation

Check also if the password of the user QSECOFR is expired. To do this, login as QSECOFR. When the password is already expired you will be asked for a new password. Set a new password and the password of QSECOFR is then no longer expired.

Only when the password of the QSECOFR is not expired the installation procedure will finish successfully.

3.6 Preparing the Installation Media

This section describes how to prepare the installation media.

Installation media are available as follows:

- The software provisioning manager 1.0 archive containing the software provisioning manager software
  You always have to download the latest version of the software provisioning manager 1.0 archive.
  For more information, see Downloading and Extracting the Software Provisioning Manager 1.0 Archive [page 25].
- Required kernel media (see also Kernel for the Diagnostics Agent [page 13]) or dedicated installation archives (see Archive-Based Diagnostics Agent Installation [page 29]).

3.6.1 Downloading and Extracting the Software Provisioning Manager 1.0 Archive

You must always download and extract the software provisioning manager 1.0 archive from the SAP Software Download Center because you must use the latest version.

Prerequisites

- Make sure that you use the latest version of the SAPCAR tool when manually extracting the software provisioning manager archive. You need the SAPCAR tool to be able to unpack and verify software component archives (*.SAR files). *.SAR is the format of software lifecycle media and tools that you can download from the SAP Software Download Center.

Note

An older SAPCAR version might extract archive files in a wrong way and this could prevent the software provisioning manager from working consistently.

Proceed as follows to get the latest version of the SAPCAR tool:

1. Go to https://launchpad.support.sap.com/#/softwarecenter SUPPORT PACKAGES & PATCHES By Category SAP TECHNOLOGY COMPONENTS SAPCAR
2. Select the SAPCAR for your operating system and download it to an empty directory.

3. Even if you have the latest SAPCAR already available, we strongly recommend that you verify its digital signature anyway, unless you downloaded it directly from https://launchpad.support.sap.com/#/ softwarecenter yourself. You can do this by verifying the checksum of the downloaded SAPCAR tool:
   1. Depending on what operating system you are using, compute a hash of the downloaded SAPCAR tool, using the SHA-256 algorithm used by SAP.
   2. Now verify the digital signature of the downloaded SAPCAR tool by comparing the hash with the checksum (generated by SAP using the SHA-256 algorithm) from the Content Info button in the Related Info column on the right-hand side of the place where you downloaded the SAPCAR tool.

4. To improve usability, we recommend that you rename the executable to sapcar.

For more information about SAPCAR, see SAP Note 212876.

Procedure

1. Download the latest version of the Software Provisioning Manager 1.0 archive SWPM10SP<Support_Package_Number>_<Version_Number>.SAR from:
   https://support.sap.com/sitoolset System Provisioning Download Software Provisioning Manager

2. If you did not do so already, make sure you have configured your TCP/IP as described in SAP Note 92589. Afterwards, do not forget to perform an IPL to make the change effective. Otherwise, the file copying is very slow from your local Windows optical media drive or Windows file system to the IFS on your IBM i.

3. Using the latest version of SAPCAR, you can verify the digital signature of the downloaded SWPM10SP<Support_Package_Number>_<Version_Number>.SAR archive as follows:
   a. Get the latest version of the SAPCRYPTOLIB archive to your Windows PC as follows:
      1. Go to https://launchpad.support.sap.com/#/ softwarecenter SUPPORT PACKAGES & PATCHES and search for “sapcryptolib”.
      2. Select the archive file for your operating system and download it to the same directory where you have put the SAPCAR executable.
      3. Use the following command to extract the SAPCRYPTOLIB archive to the same directory where you have put the SAPCAR executable:
         \n         \n         SAPCAR –xvf sapcryptolibp_84...sar –R <target directory>
      4. Download the Certificate Revocation List from https://tcs.mysap.com/crl/crlbag.p7s and move it to the same directory.
   b. Verify the digital signature of the downloaded SWPM10SP<Support_Package_Number>_<Version_Number>.SAR archive by executing the following command:

   i Note
   Check SAP Notes 2178665 and 1680045 whether additional information is available.
4. Unpack the Software Provisioning Manager archive to a local directory on your Windows PC using the following command:

```cmd
<path to SAPCAR>\sapcar.exe -tvf <path to download directory>\SWPM10SP<support_package_number>_<version_number>.SAR -crl <filename of revocation list>
```

**i Note**

Make sure that all users have at least read permissions for the directory to which you unpack the Software Provisioning Manager archive.

**Caution**

Make sure that you unpack the Software Provisioning Manager archive to a dedicated folder. Do not unpack it to the same folder as other installation media.

5. We recommend that you copy the Software Provisioning Manager 1.0 to the IFS of the IBM i host. For more information about how to do this, see the section Copying the Installation Media Manually to Your IBM i [page 32].

### 3.6.2 Media Required for the Installation

This section provides a list of the media required for the installation.

The digital signature of installation media is checked automatically by the software provisioning manager during the Define Parameters phase while the Media Browser screens are processed (see also Running Software Provisioning Manager [page 38]). The software provisioning manager only accepts media whose digital signature has been checked.

Proceed as follows to make the media available:

1. Identify the required media as listed below.
   
   You need several media during an SAP system installation. We recommend that you copy all relevant media for an instance installation to the IFS of the IBM i host before you install the instance.
   
   For more information, see the section Copying the Installation Media Manually to Your IBM i [page 32].
   
   If not already done, make sure you have configured your TCP/IP as described in SAP Note 92589. Do not forget afterwards to perform an IPL to make the change effective. Otherwise, copy performance is poor from your local Windows media drive or your local Windows file system to the IFS on your IBM i.
## Installation

<table>
<thead>
<tr>
<th>Installation</th>
<th>Installation Media</th>
</tr>
</thead>
</table>
| Diagnostics Agent | • Software Provisioning Manager 1.0 archive  
| | • UC Kernel (folder K_<Version>_U_<OS>) where U means Unicode. |

### Note
For information about supported kernel versions see [Kernel for the Diagnostics Agent](#) [page 13].

### Note
Every new Diagnostics Agent installation must be Unicode.

## Preparation

2. Make the installation media available on your Windows PC as follows:

   1. Download and unpack the latest version of Software Provisioning Manager as described in [Downloading and Extracting the Software Provisioning Manager 1.0 Archive](#) [page 25].

      **Recommendation**
      For Diagnostics Agent installations you only require a Software Provisioning Manager archive and a kernel archive. Alternative download paths that you may be more familiar with are documented in [Diagnostics Agent Download Paths](#) [page 34].

   2. Download and unpack the kernel ZIP file to a dedicated directory. For details see [Diagnostics Agent Download Paths](#) [page 34]. The unpacked kernel can be made available on a local drive or on a network drive.

      **Caution**
      If you copy the media to disk, make sure that the paths to the destination location of the copied media do not contain any blanks.

## Related Information

- [Downloading and Extracting the Software Provisioning Manager 1.0 Archive](#) [page 25]
- [Downloading Complete Installation Media](#) [page 30]
- [Copying the Installation Media Manually to Your IBM i](#) [page 32]
- [Copying the Installation Media Manually to Your IBM i](#) [page 32]
3.6.3 Archive-Based Diagnostics Agent Installation

As an alternative to providing the complete SAP Kernel media, you can also download just the required installation archives for your Diagnostics Agent installation.

**Context**

We recommend to store the downloaded archives in a dedicated directory. During the installation procedure, on step **Define Parameters**, you can either specify the relevant directory, or you select the individual archives that must be used for the installation.

For a Diagnostics Agent installation, you only need to download - apart from the Software Provisioning Manager 1.0 archive which is always required for an installation - the `SAPEXE.SAR`, `SAPHOSTAGENT.SAR`, SAP JVM SAR-file, and the Diagnostics Agent SAR-file. (See also section Solution in SAP Note 2253383).

**Note**

The digital signature of **installation archives** is checked **automatically** by the software provisioning manager [page 38] during the **Define Parameters** phase while processing the **Software Package Browser** screens. The software provisioning manager only accepts archives whose digital signature has been checked. After scanning the archives and verifying the digital signature, an info file is written where you can find detailed information about matching and non-matching archive files. You can access this info file by choosing the **info file** link in the Archive Scanning Result section of the **Software Package Browser** screen. The info file contains only the results of the latest archive scan.

**Note**

The `SAPHOSTAGENT<Version>.SAR` archive is only prompted if there is either no SAP Host Agent available on the installation host or you specified during the Define Parameters phase that you want to upgrade an existing version of the SAP Host Agent already available on the installation host. In the latter case, you must specify a higher version of the `SAPHOSTAGENT<Version>.SAR`. Otherwise, the existing SAP Host Agent is not upgraded.

**Caution**

Make sure that you always use the highest available patch level unless special patch levels are specified for the relevant package in SAP Note 1680045.

**Procedure**

- Download and extract the latest version of Software Provisioning Manager as described in Downloading and Extracting the Software Provisioning Manager 1.0 Archive [page 25].
- Download and extract the required version of the `SAPEXE.SAR` archive from a path like the one below:
  - If you want to apply installation option **Install - Diagnostics Agent**, download the latest patch level of `SAPEXE.SAR` from: [https://launchpad.support.sap.com/#/softwarecenter/Software Downloads](https://launchpad.support.sap.com/#/softwarecenter/Software Downloads)
3.6.4 Downloading Complete Installation Media

This section describes how you can download complete media from the SAP Software Download Center.

Procedure

1. Download and unpack the latest version of Software Provisioning Manager as described in Downloading and Extracting the Software Provisioning Manager 1.0 Archive [page 25].
2. You identify the required media as listed in Media Required for the Installation [page 27].
3. Identify **all** download objects that belong to one medium according to one of the following:

---

**i Note**

Installation media might be split into several files. In this case, you have to reassemble the required files after the download.

---

* Download path or location:
  - To download the complete kernel media, go to [https://launchpad.support.sap.com/#/softwarecenter/](https://launchpad.support.sap.com/#/softwarecenter/) > SUPPORT PACKAGES & PATCHES > By Category > ADDITIONAL COMPONENTS > SAP KERNEL > SAP KERNEL 64-BIT UNICODE > SAP KERNEL <Version> 64-BIT UNICODE > <Select your OS>.
  - Select [DATABASE INDEPENDENT](https://launchpad.support.sap.com/#/softwarecenter/Software Downloads/SUPPORT PACKAGES & PATCHES/By Category/ADDITIONAL COMPONENTS/SAP KERNEL/SAP KERNEL 64-BIT UNICODE/SAP KERNEL <Version> 64-BIT UNICODE/<Select your OS>) to download the database-independent parts of the kernel.
4. Download the objects to the download directory.
5. To correctly re-combine the media that are split into small parts, unpack all parts into the same directory.
In the unpacking directory, the system creates a subdirectory with a short text describing the medium and copies the data into it. The data is now all in the correct directory, the same as on the medium that was physically produced. For more information, see SAP Note 1258173.

⚠️ Caution
Make sure that you unpack each installation media to a separate folder. Do not unpack installation media to the same folder where you unpack the Software Provisioning Manager archive.
Do not unpack installation media to the same folder where you unpack the SAP kernel archives for archive-based installation.

6. You need to copy the installation media manually to your IBM i [page 32].

Related Information

Copying the Installation Media Manually to Your IBM i [page 32]

3.6.5 Copying the Installation Media Manually to Your IBM i

This section describes a secure way to copy the required installation media from your Windows PC to your IBM i using OS version V7R2 and higher. To copy the media, you have to use a binary share `TMP_SAP`. This guarantees that the content of the media is copied correctly from the Windows PC to your IBM i. No copied content is corrupted, and no copied files with longer file names are shortened by a converting share.

🧠 Note
In the past, we suggested to create a binary share pointing to the root directory / on your IBM i host. We do not recommend this because it is not considered secure anymore.

Procedure

Creating a Binary Share on IBM i
If you do not already have a binary share `TMP_SAP` on your IBM i, and you want to copy manually media from your Windows PC into the IFS of your IBM i, you have to create this share manually using the IBM Systems Director Navigator for i. To do so, proceed as follows:

1. Start the IBM Systems Director Navigator for i on your Windows PC.
2. Connect to your IBM i using My Connections.
3. To create or change the share `TMP_SAP`, choose File Systems > File Shares.
4. Right-click File Shares > Open i5/OS Netserver.
   A new screen i5/OS Netserver appears.
5. Click the folder Shared Objects to see the shares.
6. To check the already existing share TMP_SAP or create a new share TMP_SAP, right-click [New File].

**i Note**
The share TMP_SAP must have the access permission Read/Write and the path name should be /tmp/SAP.

If the directory /tmp/SAP does not exist directly create it manually as QSECOFR or installation user using the following command:

```
mkdir /tmp/SAP
```

7. On the Text Conversion tab, do not select Allow file text conversion.

8. To save the share TMP_SAP, press OK.

Now you have created the share TMP_SAP on your IBM i.

**Copying the Installation Media Manually Using the Binary Share TMP_SAP**

1. To open the command prompt on Windows, choose [Start Run].

2. Enter cmd.exe.

3. Press OK.
   The command prompt appears.

4. In the command prompt, enter net use.
   All network connections to shared resources are displayed.

5. To change to the new network drive, enter X: in the command prompt.

6. Create the subdirectories in your IFS where you want to copy the required media.
   For each media, enter:
   ```
   mkdir /tmp/<DASID>/<Media_Name>
   mkdir /tmp/<DASID>/<Unpack_Directory>
   ```
   **Note**
   You must avoid blanks or commas in the media path name.

7. Copy the installation media from your Windows drive (for example D:\) or your download directory to the IFS of your IBM i host by entering the following command:
   ```
   xcopy D:\ X:\<DASID>\<Media_Name> /E or
   xcopy C:\tmp\download\<Unpack_Directory> X:\<DASID>\<Unpack_Directory> /E
   ```
   **Note**
   You must copy the root directory of the media respectively of the <Unpack_Directory> and all required subdirectories to the IFS of your IBM i.

8. For each required media, create a subdirectory and copy the required media.

   **i Note**
   For advanced users only: Instead of copying the complete media you also can copy only dedicated subdirectories. For IBM i the following directories have to be copied:
   * K_<Version>_U_OS400_PPC64
3.7 Patching the Installation Media

SAR-Files

As of Diagnostics Agent 7.49 there are operating system independent SMDA710*.SAR and SMDA720*.SAR Download Objects available on the SAP Service Marketplace.

The SAR-files are required for the Archive-Based Diagnostics Agent Installation [page 29].

The SAR-files can also be used for patching Diagnostics Agents that are initially shipped via standard kernel media. The SAR-files are named like:

SMDA<Release_Number>_SP<Support_Package_Number>_Patch_Number_<Number>.SAR

Downloading

The SAR-files can be downloaded from:

https://launchpad.support.sap.com/#/softwarecenter/Software Downloads SUPPORT PACKAGES & PATCHES By Alphabetical Index (A-Z) SAP SOLUTION MANAGER SAP SOLUTION MANAGER 7.2 AGENTS FOR MANAGED SYSTEMS DIAGNOSTICS AGENT 7.53 # OS independent

For a mapping of software provisioning manager version to Diagnostics Agent version refer to Software Provisioning Manager and Diagnostics Agent Version Information [page 79].

Patching

Once you have downloaded and unpacked the software provisioning manager 1.0 archive and the kernel media that you have selected, you must replace the SAPDIAGNOSTICSAGENT.SAR file on the unpacked kernel media with the SMDA<Release_Number>*.SAR file that you have downloaded.

The SAPDIAGNOSTICSAGENT.SAR file can be found at the following location on the unpacked kernel media:

<Path_To_Unpack_Directory>/DBINDEP/SAPDIAGNOSTICSAGENT.SAR

3.8 Diagnostics Agent Download Paths

More general download instructions are provided in Preparing the Installation Media [page 25]. Alternatively the below download paths can be used to download installer and kernel archives that are needed for Diagnostics Agent installations. All of the below download paths lead to the same installer and kernel archives.
Download Path via SL Toolset Pages

SL Toolset download path for the Software Provisioning Manager 1.0 archive: http://support.sap.com/sitoolset [System Provisioning] [Software Provisioning Manager 1.0 SP [current SP]] [Download Software Provisioning Manager].

Download Path for SAP Kernels

https://launchpad.support.sap.com/#/softwarecenter/ [Software Downloads] [Support Packages & Patches] [By Alphabetical Index (A-Z)] [K] SAP KERNEL 64-BIT UNICODE [Supported_Kernel_Version] [OS].

Related Documentation

The following sections contain information to support you in your decision on which installer and kernel archive to download:

- Product Availability Matrix [page 12]
- Kernel for the Diagnostics Agent [page 13]
4 Installation

4.1 Installation Checklist

In order to execute the installation you have to perform the following steps:

1. Make sure to fulfill the Prerequisites for Running Software Provisioning Manager [page 36].
2. Follow the instructions in Running Software Provisioning Manager [page 38].
3. For alternative installation scenarios refer to Additional Information about Software Provisioning Manager [page 42].
4. Continue with the Post-Installation [page 60] section.

4.2 Prerequisites for Running Software Provisioning Manager

Make sure you fulfil the following prerequisites before running the software provisioning manager.

• For the SL-UI, make sure that the following web browser requirements are met:
  • You have one of the following supported browsers on the device where you want to run the SL-UI:
    • Google Chrome (recommended)
    • Mozilla Firefox
    • Microsoft Edge
    • Microsoft Internet Explorer 11 or higher.
  Always use the latest version of these web browsers.

• If you copy the SL-UI URL manually in the browser window, make sure that you open a new Web browser window in private browsing mode (Internet Explorer), incognito mode (Chrome) or private browsing mode (Firefox). This is to prevent Web browser plugins and settings from interfering with the SL-UI.

⚠️ Caution

The software provisioning manager uses a self-signed certificate, which is used temporarily only while the software provisioning manager is running. This certificate is not trusted by the browser unless it is imported manually by the user running the software provisioning manager. This behavior is intentionally designed in this way because - unlike ordinary public web servers - the software provisioning manager has different usage patterns. You must configure your browser do trust the self-issued certificate of the software provisioning manager after carefully performing the “thumbprint” verification described in Running Software Provisioning Manager [page 38]. For more information about adding trusted certificates, see the documentation of your browser.

For more information about the SL-UI, see Useful Information about Software Provisioning Manager [page 42].
If you want to enable Internet Protocol Version 6 (IPv6), make sure that you set `SAP_IPv6_ACTIVE=1` in the environment of the user with `root` authorization which you use to start the software provisioning manager. While running the software provisioning manager, this setting is then also added to the environment of the `<sapsid>adm` user.

**Note**

By applying this setting the SAP system administrator is responsible for configuring the IP version on each host of the system landscape, before installing any additional instance to it.

- Make sure that you have logged on to your host as an installation user with similar authorization rights to `QSECOFR`. For more information about how to create an installation user, see *Preparing the SAP Installation User on IBM i* [page 23].

- Check the value of the temporary directory set in the environment if available:

<table>
<thead>
<tr>
<th>Shell</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command prompt</td>
<td><code>WRKENVVAR</code></td>
</tr>
<tr>
<td>Qp2Term</td>
<td><code>echo $TEMP, echo $TMP or echo $TMPDIR</code></td>
</tr>
</tbody>
</table>

- Make sure that your operating system does not delete the contents of the temporary directory `/tmp` or the contents of the directories to which the variables `TEMP`, `TMP`, or `TMPDIR` point, for example by using a `crontab` entry.

- Make sure that you have at least 700 MB of free space in the installation directory for each installation option. In addition, you need 700 MB free space for the software provisioning manager executables. If you cannot provide 700 MB free space in the temporary directory, you can set one of the environment variables `TEMP`, `TMP`, or `TMPDIR` to another directory with 700 MB free space for the software provisioning manager executables. You can set values for the `TEMP`, `TMP`, or `TMPDIR` environment variable to an alternative installation directory as described in section *Useful Information about Software Provisioning Manager* [page 42].

- Make sure that you have defined the most important SAP system parameters as described in *Basic Installation Parameters* [page 14] before you start the installation.

- Make sure that the following ports are not used by other processes:
  - Port 4237 is used by default as HTTPS port for communication between the software provisioning manager and the SL-UI.
    If this port cannot be used, you can assign a free port number by executing `sapinst` with the following command line parameter:  
    ```
    SAPINST_HTTPS_PORT=<Free Port Number>
    ```
  - Port 4239 is used by default for displaying the feedback evaluation form at the end of the software provisioning manager processing. The filled-out evaluation form is then sent to SAP using HTTPS.
If this port cannot be used, you can assign a free port number by executing `sapinst` with the following command line parameter:

```
SAPINST_HTTP_PORT=<Free Port Number>
```

### 4.3 Running Software Provisioning Manager

This section describes how to run the software provisioning manager.

#### Prerequisites

For more information, see Prerequisites for Running Software Provisioning Manager [page 36].

#### Context

⚠️ **Caution**

The Diagnostics Agent Platform Availability Matrix supports a wide range of operating systems, operating system versions, hardware architectures, and kernel versions. The prerequisites checker integrated in the software provisioning manager may generate warnings for the operating system version that you are installing on, or for the kernel version that you are installing with. As long as you comply with the Diagnostics Agent Product Availability Matrix [page 12] you can ignore these prerequisites checker warnings.

The software provisioning manager has a web browser-based GUI named “SL-UI of the software provisioning manager” - “SL-UI” for short.

This procedure describes an installation where you run the software provisioning manager and use the SL-UI, that is you can control the processing of the software provisioning manager from a browser running on any device.

For more information about the SL-UI, see Useful Information about Software Provisioning Manager [page 42].

#### Procedure

1. Log on to the installation host as the SAP installation user. For more information, see Preparing the SAP Installation User on IBM i [page 23].
Caution
Make sure that the installation user has not set any environment variables for a different SAP system or database by using the command WRKENVVAR.

Caution
Do not use an existing <dasid>adm user for performing an uninstallation.

If your security policy requires that the person running the software provisioning manager is not allowed to know QSECOFR like credentials on the installation host, you can specify another operating system user for authentication purposes. You do this using the SAPINST_REMOTE_ACCESS_USER parameter when starting the sapinst.

2. Make the installation media available.

For more information, see Preparing the Installation Media [page 25].

→ Recommendation
Make the installation media available locally. For example: The software provisioning manager might require a certain PL. For example, if you use Network File System (NFS), reading from media mounted with NFS might fail.

3. Start the software provisioning manager from the directory to which you unpacked the Software Provisioning Manager archive by entering the following commands:

   CD DIR('<Path_To_Unpack_Directory> ')
   CALL PGM(QP2TERM) PARM('./sapinst')

i Note
If you need to assign a logical host name and you do not want to assign it by entering it as a parameter using the software provisioning manager screens (see Basic Installation Parameters [page 14]), you can alternatively assign it as follows:

   CD DIR('<Path_To_Unpack_Directory> ')
   CALL PGM(QP2TERM) PARM('./sapinst' 'SAPINST_USE_HOSTNAME=<Virtual_Host_Name>')

i Note
If you need to assign a logical host name and you do not want to assign it by entering it as a parameter using the software provisioning manager screens (see Basic Installation Parameters [page 14]), you can alternatively assign it by starting the software provisioning manager with the SAPINST_USE_HOSTNAME property:

   CD DIR('<Path_To_Unpack_Directory> ')
   CALL PGM(QP2TERM) PARM('./sapinst' 'SAPINST_USE_HOSTNAME=<Logical_Host_Name> ')

Before using this option, you should have read and understood the sections Installation Strategy [page 11] (especially the Agents On-the-fly feature) and Using Logical Host Names [page 22].
4. The software provisioning manager now starts and waits for the connection with the SL-UI.

You can find the URL you require to access the SL-UI at the bottom of the shell from which you are running the software provisioning manager.

```
...
************************************************************************
Open your browser and paste the following URL address to access the GUI
https://[<hostname>]:4237/sapinst/docs/index.html
Logon users: [<users>]
************************************************************************
...
```

**Note**

If the host specified by `<hostname>` cannot be reached due to a special network configuration, proceed as follows:

1. Terminate the software provisioning manager as described in Useful Information about Software Provisioning Manager [page 42].
2. Restart the software provisioning manager from the command line with the `SAPINST_GUI_HOSTNAME=<hostname>` property.

You can use a fully-qualified host name.

Open the URL on a device with a supported web browser (see Prerequisites for Running Software Provisioning Manager [page 36]).

**Caution**

After opening the browser URL, make sure that the URL in the browser starts with “https://” to avoid security risks such as SSL stripping.

Before you reach the Welcome screen, your browser warns you that the certificate of the sapinst process on this computer could not be verified.

Proceed as follows to avoid security risks such as a man-in-the-middle attack:

1. Click on the certificate area on the left hand side in the address bar of your browser, and view the certificate.
2. Open the certificate fingerprint or thumbprint, and compare all hexadecimal numbers to the ones displayed in the console output of the software provisioning manager.
   Proceed as follows to get the certificate fingerprint or thumbprint from the server certificate printed in the software provisioning manager console:
   1. Go to the `sapinst_exe.xxxxxx.xxx` directory in the temporary directory to which the software provisioning manager has extracted itself:
      `/home/<Installation_User>/.sapinst`
   2. In the `sapinst_exe.xxxxxx.xxx` directory, execute the `sapgenpse` tool with the command line option `get_my_name -p`.
      As a result, you get the server fingerprint or thumbprint from the server certificate.
3. Accept the warning to inform your browser that it can trust this site, even if the certificate could not be verified.

The SL-UI opens in the browser by displaying the Welcome screen.

5. On the Welcome screen, choose the required option:
Go to **Generic Options > Diagnostics in SAP Solution Manager** and choose one of:

<table>
<thead>
<tr>
<th>Diagnostics in SAP Solution Manager</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Install - Diagnostics Agent</strong></td>
<td>Choose this option to install a Diagnostics Agent instance.</td>
</tr>
<tr>
<td><strong>Uninstall - Diagnostics Agent</strong></td>
<td>Choose this option to uninstall a Diagnostics Agent instance.</td>
</tr>
</tbody>
</table>

For more information, see Deleting an SAP System or Single Instances [page 75].

6. Choose **Next**.

**Note**

If there are errors during the self-extraction process of the software provisioning manager, you can find the log file `dev_selfex.out` in the temporary directory.

7. Follow the instructions on the software provisioning manager screens and enter the required parameters.

**Note**

To find more information on each parameter during the Define Parameters phase, position the cursor on the required parameter input field, and choose either `F1` or the HELP tab. Then the available help text is displayed in the HELP tab.

**Caution**

The digital signature of installation media and installation archives is checked automatically during the Define Parameters phase while processing the Media Browser and - if you perform an archive-based installation - the Software Package Browser screens.

Note that this automatic check is only committed once and not repeated if you modify artifacts such as SAR archives or files on the media after the initial check has been done. This means that - if you modify artefacts later on either during the remaining Define Parameters phase or later on during the Execute Service phase - the digital signature is not checked again.

For more information, see SAP Note 2393060.

After you have entered all requested input parameters, the software provisioning manager displays the Parameter Summary screen. This screen shows both the parameters that you entered and those that the software provisioning manager set by default. If required, you can revise the parameters before starting the installation.

8. To start the installation, choose **Next**.

The software provisioning manager starts the installation and displays the progress of the installation. When the installation has finished, the software provisioning manager shows the message: Execution of `<Option_Name>` has completed.

9. If you copied the software provisioning manager software to your hard disk, you can delete these files when the installation has successfully completed.

For more information, see Removing Software Provisioning Manager Installation Files [page 62].

10. For security reasons, we recommend that you remove the group SAPINST from the operating system users after you have completed the installation.
11. For security reasons, we recommend that you delete the `.sapinst` directory within the home directory of the user with which you ran the software provisioning manager:

```
/home/<Installation_User>/sapinst
```

12. The software provisioning manager log files contain IP addresses and User IDs such as the ID of your S-User. For security, data protection, and privacy-related reasons we strongly recommend that you delete these log files once you do not need them any longer. You find the software provisioning manager log files in the `sapinst_instdir` directory. For more information, see Useful Information about Software Provisioning Manager [page 42].

### 4.4 Additional Information about Software Provisioning Manager

The following sections provide additional information about the software provisioning manager.

- Useful Information about Software Provisioning Manager [page 42]
- Restarting Interrupted Processing of Software Provisioning Manager [page 44]
- Troubleshooting with Software Provisioning Manager [page 48]
- Using the Step State Editor (SAP Support Experts Only) [page 49]

#### 4.4.1 Useful Information about Software Provisioning Manager

This section contains some useful technical background information about the software provisioning manager and the software provisioning manager’s SL-UI.

- The software provisioning manager has a framework named “SAPinst”. For more information about the current SAPinst Framework version and its features, see SAP Note 3207613 Central Note.

- The software provisioning manager has the web browser-based “SL-UI of the software provisioning manager” – “SL-UI” for short. The SL-UI uses the SAP UI Development Toolkit for HTML5 - also known as SAPUI5 - a client-side HTML5 rendering library based on JavaScript. The benefits of this new user interface technology for the user are:
  - Zero foot print, since only a web browser is required on the client
  - New controls and functionality, for example, view logs in web browser.
As of version 1.0 SP24 Patch Level (PL) 5, the software provisioning manager comes with a new look and feel of the SL-UI. For more information, see https://blogs.sap.com/2018/11/10/new-look-for-software-provisioning-manager/.

The SL-UI connects the web browser on a client with the sapinst executable - which is part of software provisioning manager - running on the installation host using the standard protocol HTTPS. For the SL-UI the software provisioning manager provides a pre-generated URL at the bottom of the shell from which you are running the software provisioning manager. If you have a supported web browser installed on the host where you run the software provisioning manager, you can start the SL-UI directly from this URL. Otherwise, open a web browser supported by the SL-UI on any device and run the URL from there.

For more information about supported web browsers see Prerequisites for Running Software Provisioning Manager [page 36].

If you need to run the SL-UI in accessibility mode, apply the standard accessibility functions of your web browser.

As soon as you have started the sapinst executable, the software provisioning manager creates a .sapinst directory underneath the /home/<User> directory where it keeps its log files. <User> is the user with which you have started the software provisioning manager. After you have reached the Welcome screen and selected the relevant software provisioning manager option for the SAP system or instance to be installed, the software provisioning manager creates a directory sapinst_instdir where it keeps its log files, and which is located directly below the temporary directory. The software provisioning manager finds the temporary directory by checking the value of the TEMP, TMP, or TMPDIR environment variable. If no value is set for these variables, the software provisioning manager uses /tmp by default.

All log files which have been stored so far in the .sapinst folder are moved to the sapinst_instdir directory as soon as the latter has been created.

If you want the sapinst_instdir directory to be created in another directory than /tmp, set the environment variable TEMP, TMP, or TMPDIR to this directory before you start the software provisioning manager.

### Shell Used

<table>
<thead>
<tr>
<th>Command prompt</th>
<th>Command</th>
</tr>
</thead>
</table>
| Command prompt | ADDENVVAR ENVVAR(TEMP) VALUE(''<Directory>'')  
| Qp2Term | REPLACE(*YES)  |
| Qp2Term | export TEMP=''<Directory>'' |

⚠️ Caution

Make sure that the installation directory is not mounted with NFS, or there might be problems when the Java Virtual Machine is started.

The software provisioning manager records its progress in the keydb.xml file located in the sapinst_instdir directory. Therefore, if required, you can continue with the software provisioning manager from any point of failure, without having to repeat the already completed steps and without having to reenter the already processed input parameters. For security reasons, a variable encryption key is generated as soon as the sapinst_instdir directory is created by the software provisioning manager. This key is used to encrypt the values written to the keydb.xml file.
Recommendation

We recommend that you keep all installation directories until the system is completely and correctly installed.

- The software provisioning manager extracts itself to the temporary directory. These executables are deleted again after the software provisioning manager has stopped running. Directories called sapinst_exe.xxxxx.xxxx sometimes remain in the temporary directory after the software provisioning manager has finished. You can safely delete them. The temporary directory also contains the log file dev_selfex.out from the self-extraction process of the software provisioning manager, which might be useful if an error occurs.

Caution

If the software provisioning manager cannot find a temporary directory, the installation terminates with the error FCO-00058.

- To see a list of all available software provisioning manager properties (command line options) and related documentation, enter the following commands:
  ```
  CD DIR('<Path_To_Unpack_Directory>')
  CALL PGM(QP2TERM) PARM('./sapinst' '-p')
  ```
- If you want to install or uninstall a Diagnostics Agent in unattended mode, see section Unattended Installation [page 51].
- If required, stop the software provisioning manager by choosing the Cancel button.

Note

If you need to terminate the software provisioning manager, press Shift + Esc then 2 on your IBM i host.

4.4.2 Restarting Interrupted Processing of Software Provisioning Manager

Here you find information about how to restart the software provisioning manager if its processing has been interrupted.

Context

The processing of the software provisioning manager might be interrupted for one of the following reasons:

- An error occurred during the Define Parameters or Execute phase:
  The software provisioning manager does not abort the installation in error situations. If an error occurs, the installation pauses and a dialog box appears. The dialog box contains a short description of the choices listed in the table below as well as a path to a log file that contains detailed information about the error.
You interrupted the processing of the software provisioning manager by choosing Cancel in the SL-UI.

⚠️ Caution
If you stop an option in the Execute phase, any system or component installed by this option is incomplete and not ready to be used. Any system or component uninstalled by this option is not completely uninstalled.

The following table describes the options in the dialog box:

<table>
<thead>
<tr>
<th>Option</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retry</td>
<td>The software provisioning manager retries the installation from the point of failure without repeating any of the previous steps. This is possible because the software provisioning manager records its progress in the keydb.xml file. We recommend that you view the entries in the log files, try to solve the problem, and then choose Retry. If the same or a different error occurs, the software provisioning manager displays the same dialog box again.</td>
</tr>
<tr>
<td>Stop</td>
<td>The software provisioning manager stops the installation, closing the dialog box and the software provisioning manager’s SL-UI. The software provisioning manager records its progress in the keydb.xml file. Therefore, you can continue with the software provisioning manager from the point of failure without repeating any of the previous steps. See the procedure below.</td>
</tr>
<tr>
<td>Continue</td>
<td>The software provisioning manager continues the installation from the current point.</td>
</tr>
<tr>
<td>View Log</td>
<td>Access installation log files.</td>
</tr>
</tbody>
</table>

The following procedure describes the steps to restart an installation, which you stopped by choosing Stop, or to continue an interrupted installation after an error situation.

**Procedure**

1. Log on to the installation host as a user with the required permissions as described in Running Software Provisioning Manager [page 38].
2. Make sure that the installation media are still available.
   For more information, see Preparing the Installation Media [page 25].

→ Recommendation

Make the installation media available locally. For example, if you use remote file shares on other Windows hosts, CIFS shares on third-party SMB-servers, or Network File System (NFS), reading from media mounted with NFS might fail.
3. Make sure that the installation media are still available.

For more information, see Preparing the Installation Media [page 25].

→ Recommendation

Make the installation media available locally. For example, if you use remote file shares on other Windows hosts, CIFS shares on third-party SMB-servers, or Network File System (NFS), reading from media mounted with NFS might fail.

4. Restart the software provisioning manager from the installation media directory to which you unpacked the software provisioning manager archive.

Enter the following commands:

```plaintext
CD DIR('<Path_To_Unpack_Directory>')
CALL PGM(QP2TERM) PARM('./sapinst')
```

5. The software provisioning manager is restarting.

You can find the URL you require to access the SL-UI at the bottom of the shell from which you are running the software provisioning manager.

```
************

Open your browser and paste the following URL address to access the GUI
https://[<hostname>]:4237/sapinst/docs/index.html
Logon users: [<users>]

************
```

i Note

If the host specified by `<hostname>` cannot be reached due to a special network configuration, proceed as follows:

1. Terminate the software provisioning manager as described in Useful Information about Software Provisioning Manager [page 42].
2. Restart the software provisioning manager from the command line with the `SAPINST_GUI_HOSTNAME=<hostname>` property.

You can use a fully-qualified host name.

Open the URL on a device with a supported web browser (see Prerequisites for Running Software Provisioning Manager [page 36]).

△ Caution

After opening the browser URL, make sure that the URL in the browser starts with “https://” to avoid security risks such as SSL stripping.

Before you reach the Welcome screen, your browser warns you that the certificate of the sapinst process on this computer could not be verified.

Proceed as follows to avoid security risks such as a man-in-the-middle attack:

1. Click on the certificate area on the left hand side in the address bar of your browser, and view the certificate.
2. Open the certificate fingerprint or thumbprint, and compare all hexadecimal numbers to the ones displayed in the console output of the software provisioning manager.
Proceed as follows to get the certificate fingerprint or thumbprint from the server certificate printed in the software provisioning manager console:

1. Go to the sapinst.exe.xxxxx.xxxxx directory in the temporary directory to which the software provisioning manager has extracted itself:
   
   /home/<Installation_User>/.sapinst

2. In the sapinst.exe.xxxxx.xxxxx directory, execute the sapgenpse tool with the command line option get_my_name -p.

As a result, you get the server fingerprint or thumbprint from the server certificate.

3. Accept the warning to inform your browser that it can trust this site, even if the certificate could not be verified.

The SL-UI opens in the browser by displaying the Welcome screen.

6. From the tree structure on the Welcome screen, select the installation option that you want to continue and choose Next.

The What do you want to do? screen appears.

7. On the What do you want to do? screen, decide between the following alternatives and continue with Next:

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Behavior</th>
</tr>
</thead>
</table>
| Perform a new run                 | The software provisioning manager does not continue the interrupted installation option. Instead, it moves the content of the old software provisioning manager directory and all software provisioning manager-specific files to a backup directory. Afterwards, you can no longer continue the old option. The following naming convention is used for the backup directory: log_<Day>_<Month>_<Year>_<Hours>_<Minutes>_<Seconds>

    Example

    log_01_Oct_2016_13_47_56

    i Note

    All actions taken by the installation before you stopped it (such as creating directories or users) are not revoked.

    Caution

    The software provisioning manager moves all the files and folders to a new log directory, even if these files and folders are owned by other users. If there are any processes currently running on these files and folders, they might no longer function properly.

| Continue with the existing one    | The software provisioning manager continues the interrupted installation from the point of failure. |

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4.4.3 Troubleshooting with Software Provisioning Manager

This section tells you how to proceed when errors occur while the software provisioning manager is running.

**Context**

If an error occurs, the software provisioning manager:

- Stops processing
- Displays a dialog informing you about the error

**Procedure**

1. Check SAP Note SAP Note 3207613 (SAPinst Framework 753 Central Note) for known software provisioning manager issues.

2. If an error occurs during the Define Parameters or the Execute Service phase, do one of the following:
   - Try to solve the problem:
     - To check the software provisioning manager log files (sapinst.log and sapinst_dev.log) for errors, choose the LOG FILES tab.
     
     **Note**
     The LOG FILES tab is only available if you have selected on the Welcome screen the relevant software provisioning manager option for the SAP product to be installed.
     
     If you need to access the log files before you have done this selection, you can find them in the .sapinst directory underneath the /home/<User> directory, where <User> is the user that you used to start the software provisioning manager.
     
     For more information, see Useful Information about Software Provisioning Manager [page 42].
   
   - To check the log and trace files of the software provisioning manager’s SL-UI for errors, go to the directory /home/<Installation_User>/sapinst/
   
   - Then continue by choosing Retry.

   - If required, abort the software provisioning manager by choosing Cancel in the tool menu and restart the software provisioning manager. For more information, see Restarting Interrupted Processing of Software Provisioning Manager [page 44].

3. If you cannot resolve the problem, report an incident using the appropriate subcomponent of BC-INS*.

   For more information about using subcomponents of BC-INS*, see SAP Note 1669327.
4.4.4 Using the Step State Editor (SAP Support Experts Only)

This section describes how to use the Step State Editor available in the software provisioning manager.

**Note**

Only use the Step State Editor if the SAP Support requests you to do so, for example to resolve a customer incident.

**Prerequisites**

- SAP Support requests you to use the Step State Editor.
- Make sure that the host where you run the software provisioning manager meets the requirements listed in Prerequisites for Running Software Provisioning Manager [page 36].

**Procedure**

1. Start the software provisioning manager from the command line as described in Running Software Provisioning Manager [page 38] with the additional command line parameter `SAPINST_SET_STEPSTATE=true`.

2. Follow the instructions on the software provisioning manager screens and fill in the parameters prompted during the Define Parameters phase until you reach the Parameter Summary screen.

3. Choose Next.

   The Step State Editor opens as an additional dialog. Within this dialog you see a list of all steps to be executed by the software provisioning manager during the Execute Service phase. By default all steps are in an initial state. Underneath each step, you see the assigned software provisioning manager component. For each step you have a Skip and a Break option.

   - Mark the checkbox in front of the Break option of the steps where you want the software provisioning manager to pause.
   - Mark the checkbox in front of the Skip option of the steps which you want the software provisioning manager to skip.

4. After you have marked all required steps with either the Break or the Skip option, choose OK on the Step State Editor dialog.

   The software provisioning manager starts processing the Execute Service phase and pauses one after another when reaching each step whose Break option you have marked. You can now choose one of the following:

   - Choose OK to continue with this step.
   - Choose Step State Editor to return to the Step State Editor and make changes, for example you can repeat the step by marking the checkbox in front of the Repeat option.
• Choose **Cancel** to abort the software provisioning manager.

5. Continue until you have run through all the steps of the **Execute Service** phase of the software provisioning manager.
5 Unattended Installation

The unattended installation and uninstallation mechanism, described in this section, is available per software provisioning manager 1.0 SP7. This new unattended installation mechanism is “properties file” based.

This mechanism can be used to run unattended installations (or uninstallations) of Diagnostics Agents on one, some, or a larger number of hosts, while providing the same or similar installation parameter sets for those installations. You specify the input parameters for the installation scenario in a properties file that you can then use for the unattended installations. Unattended installations are sometimes referred to as silent or dark mode installations.

5.1 Unattended Installation Checklist

Unattended Installation

In order to execute an unattended installation you have to perform the following steps:

1. Follow the instructions in the Planning Checklist [page 11].
2. Follow the instructions in the Preparation Checklist [page 20].
3. Execute Preparing an Unattended Installation [page 52].
4. Execute Running an Unattended Installation [page 53].
5. Follow the instructions in the Post-Installation Checklist [page 60].

Unattended Uninstallation

In order to execute an unattended uninstallation you have to perform the following steps:

1. Follow the instructions in the Preparation Checklist [page 20].
2. Execute Preparing an Unattended Installation [page 52].
3. Execute Running an Unattended Uninstallation [page 57].

5.2 Unattended Archive-Based Diagnostics Agent Installation

Refer to SAP Note 2253383 if you want to perform an unattended archive-based Diagnostics Agent installation.
5.3 Preparing an Unattended Installation

The described preparation steps must be executed on each host on which you want to run the software provisioning manager in unattended mode.

Create an Installation Directory

Create an installation directory `<Installation_Directory>`.

⚠️ Example

Create an `<Installation_Directory>` like `/unattended/install`

⚠️ Caution

Make sure that:

1. A user group `sapinst` is available.
   
   If a user profile `sapinst` already exists, you have nothing to do. If no user profile `sapinst` exists, enter the following command:
   
   ```
   CRTUSRPRF USRPRF(SAPINST) GID(*GEN)
   ```
   
   2. `sapinst` is assigned as a user group to your `<Installation_User>`:
   
   ```
   CHGUSRPRF USRPRF(<Installation_User>) GRPPRF(SAPINST)
   ```
   
   3. The `<Installation_Directory>` is owned by user group `sapinst` and has at least permissions 775.
   
   Change permissions: CALL PGM(QP2TERM) PARM('/QOpenSys/usr/bin/chmod' '-R' '775' '<Installation_Directory>') (press F3 to exit the session)
   
   Change user group: CALL PGM(QP2TERM) PARM('/QOpenSys/usr/bin/chgrp' '-R' 'sapinst' '<Installation_Directory>') (press F3 to exit the session)

4. The software provisioning manager executable must at least have permissions 775.

   Change permissions: CALL PGM(QP2TERM) PARM('/QOpenSys/usr/bin/chmod' '775' '<Installer_Media_Directory>/sapinst') (press F3 to exit the session)

Create a start_dir.cd File

1. In the `<Installation_Directory>` create a file named `start_dir.cd`

2. In the file `start_dir.cd` you must specify the paths of the `<Installer_Media_Directory>` and the `<Kernel_Media_Directory>` that must be used for the unattended installation. For an unattended uninstallation the `<Kernel_Media_Directory>` does not have to be specified.

⚠️ Caution

In the file `start_dir.cd` a separate line is required for each media directory path.
The media directory paths that must be added to the `start_dir.cd` file, are the paths that you get when browsing until the main `LABEL.ASC` file, in the respective media directories.

5.4 Running an Unattended Installation

Creating a Properties File

   In this `<Installation_Properties_File>` you will specify the properties (name/value pairs) for the unattended installation.

2. The Diagnostics Agent related properties available for an unattended installation are:

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Parameter in Related Documentation Section</th>
<th>Property Value Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>DiagnosticsAgent.LogicalHostName</code></td>
<td><em>Host Name</em> in General Installation Parameters [page 14]</td>
<td>Optional property. See mentioned section. If this property is omitted, the Diagnostics Agent will be installed on the physical host. This is recommended when using the <strong>Agents On-the-fly</strong> feature.</td>
</tr>
<tr>
<td><code>DiagnosticsAgent.DestinationASP</code></td>
<td><em>Destination ASP</em> in General Installation Parameters [page 14]</td>
<td>Optional property. See mentioned section. If this property is omitted, the <code>Destination ASP</code> will default to 1.</td>
</tr>
<tr>
<td><code>DiagnosticsAgent.SID</code></td>
<td><em>Diagnostics Agent System ID (DASID)</em> in Diagnostics Agent System ID and Instance Number [page 16]</td>
<td>See mentioned section.</td>
</tr>
<tr>
<td><code>DiagnosticsAgent.InstanceNumber</code></td>
<td><em>Instance Number</em> of the Diagnostics Agent in Diagnostics Agent System ID and Instance Number [page 16]</td>
<td>See mentioned section.</td>
</tr>
</tbody>
</table>
3. The SAP Solution Manager related properties available for an unattended installation are:

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Parameter in Related Documentation Section</th>
<th>Property Value Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>DiagnosticsAgent.SolMan.Connection</td>
<td><em>Connection of the Diagnostics Agent to SAP Solution Manager</em> in SAP Solution Manager Connectivity Parameters [page 18]</td>
<td>Specifying solman or none. If you specify solman, the Diagnostics Agent will be connected to the specified SAP Solution Manager system. If you specify none, the values further below in this table, and the SAP Router related ones in next table will be ignored and can be omitted.</td>
</tr>
<tr>
<td>DiagnosticsAgent.SolMan.UseSSL</td>
<td><em>Use SSL connectivity in SAP Solution Manager Connectivity Parameters</em> [page 18]</td>
<td>Specify true or false.</td>
</tr>
<tr>
<td>DiagnosticsAgent.SolMan.HostName</td>
<td><em>Host (FQN) in SAP Solution Manager Connectivity Parameters</em> [page 18]</td>
<td>See mentioned section.</td>
</tr>
<tr>
<td>DiagnosticsAgent.SolMan.PortNumber</td>
<td><em>Port in SAP Solution Manager Connectivity Parameters</em> [page 18]</td>
<td>See mentioned section.</td>
</tr>
</tbody>
</table>
### Property Name | Parameter in Related Documentation Section | Property Value Guidance
--- | --- | ---
DiagnosticsAgent.SAPJVMVersion | The JVM according to JVM for the Diagnostics Agent [page 13] | See mentioned section. Provide the version of the SAP JVM. The value is SAPJVM8. For more information, see SAP Note 3388754.


4. The SAP Router related properties available for an unattended installation are:

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Parameter in Related Documentation Section</th>
<th>Property Value Guidance</th>
</tr>
</thead>
</table>

5. Specify the properties that you require for the installation in your `<Installation_Properties_File>`.

⚠️ **Caution**

If you do not want to specify a specific property, the respective property should not be part of the property file at all. Just leaving the property value empty will not have the same effect as not specifying a property at all.

→ **Recommendation**

Unattended installations/uninstallations should be run with just the properties documented in this guide. You can generate an `inifile.params` file to fill the properties file you want to use for the unattended installation/uninstallation, by running the software provisioning manager with command line parameter `SAPINST_STOP_AFTER_DIALOG_PHASE=true`. This causes the software provisioning manager to exit after all parameters have been provided. You can find the file `inifile.params` under the path `sapinst_instdir/GENERIC/SMD/INST`. This path is located either in the directory defined by the environment variable `TEMP` or in `%ProgramFiles%`. Only specify the parameters you really want to set in your properties file. The generated `inifile.params` file also holds des24 encrypted values of all provided passwords, that can also be used in your properties file.
**Example**

```plaintext
DiagnosticsAgent.DestinationASP=1
DiagnosticsAgent.SID=DAA
DiagnosticsAgent.InstanceNumber=98
DiagnosticsAgent.dasidAdmPassword=Abcdef123456
hostAgent.sapAdmPassword=Klmnop123456
DiagnosticsAgent.SolMan.Connection=solman
DiagnosticsAgent.SolMan.UseSSL=true
DiagnosticsAgent.SolMan.HostName=host.domain.corp
DiagnosticsAgent.SolMan.PortNumber=44401
DiagnosticsAgent.SAPJVMVersion=SAPJVM8
```

**Further Clarifications**

1. You have now prepared your `<Installation_Directory>` and your `<Installation_Properties_File>`.
2. Before you continue, we recommend that you create a backup of your `<Installation_Directory>`.
3. To run the unattended installation, you will start the software provisioning manager with several command line parameters. Executing the following command will give you an overview of the all command line parameters that are available:
   ```call pgm(qp2term) parm('installer_media_directory)/sapinst' '-p')
   ```
4. The unattended installation requires you to specify a `<Product_ID>`. The specified `<Product_ID>` determines the installation option that will be executed and it defines which kernel versions will be accepted during the installation. Use the below table to select the `<Product_ID>` for your installation.

<table>
<thead>
<tr>
<th>Installation Option</th>
<th>Kernel Version</th>
<th><code>&lt;Product_ID&gt;</code> Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install - Diagnostics Agent</td>
<td>For details refer to Kernel for the Diagnostics Agent [page 13].</td>
<td>NW_DiagnosticsAgent:GENERIC:IND:PD</td>
</tr>
</tbody>
</table>

**Running the Installation**

⚠️ **Caution**

The `<Installation_Directory>` must not contain any leftovers from previous unattended installations or uninstallations. It must not contain more files than the ones mentioned in this section:

- `<Installation_Properties_File>`
- `<Uninstallation_Properties_File>`
- `start_dir.cd`

Now start the unattended installation in the following way:

1. `cd dir('<Installation_Directory>')`
2. `call pgm(qp2term) parm('installer_media_directory)/sapinst' 'sapinst_input_parameters_url=installation.properties' 'sapinst_execute_product_id=<Product_ID>' 'sapinst_skip_dialogs=true' '-nogui' '-noguiserver')`
The Diagnostics Agent will now be installed in unattended mode. The installation duration will typically be between 5 and 15 minutes. You may check the result by opening the sapinst_dev.log file in the <Installation_Directory>.

The installation was successful if the file installationSuccessfullyFinished.dat has been generated.

5.5 Running an Unattended Uninstallation

Creating a Properties File

    In this <Uninstallation_Properties_File> you will specify the properties (name/value pairs) for the unattended uninstallation.

2. The Diagnostics Agent related properties available for an unattended uninstallation are:

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Mandatory</th>
<th>Default Value</th>
<th>Property Value Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>NW_readProfileDir.profileDir</td>
<td>Yes</td>
<td></td>
<td>Location of the system profile directory for the Diagnostics Agent that you want to run an unattended uninstallation for, in the following format (applies also to Windows operating systems): /usr/sap/&lt;DASID&gt;/SYS/profile</td>
</tr>
<tr>
<td>NW_System_Uninstall.completSystem</td>
<td>No</td>
<td>true</td>
<td>Specify true if you want to uninstall the complete Diagnostics Agent, including all the instances. If you specify false, you must specify the numbers of the instances that must be deleted in property NW_System_Uninstall.instanceNumberList.</td>
</tr>
<tr>
<td>NW_System_Uninstall.instanceNumberList</td>
<td>No</td>
<td></td>
<td>Comma separated list of the numbers of the instances that must be deleted, when NW_System_Uninstall.completeSystem equals false.</td>
</tr>
<tr>
<td>NW_System_Uninstall.uninstallHostAgent</td>
<td>No</td>
<td>true</td>
<td>Indicate if the SAP Host Agent should be uninstalled. An SAP Host Agent will only be uninstalled if no other SAP Systems are available on the host any more.</td>
</tr>
</tbody>
</table>
3. Specify the properties that you require for the uninstallation in your `<Uninstallation_Properties_File>`.

⚠️ **Caution**

If you do not want to specify a specific property, the respective property should not be part of the property file at all. Just leaving the property value empty will not have the same effect as not specifying a property at all.

→ **Recommendation**

Unattended installations/uninstallations can usually be run with just the properties documented in this guide. You can generate an `inifile.params` file to fill the properties file you want to use for the unattended installation/uninstallation, by running the software provisioning manager with command line parameter `SAPINST_STOP_AFTER_DIALOG_PHASE=true`. This causes the software provisioning manager to exit after all parameters have been provided. You can find the file `inifile.params` under the path `sapinst_instdir/Generic/SMO/INST`. This path is located either in the directory defined by the environment variable `TEMP` or in `%ProgramFiles%`. It is usually sufficient to only specify the parameters you really want to set in your properties file. The generated `inifile.params` file also holds des24 encrypted values of all provided passwords, that can also be used in your properties file.

⚠️ **Example**

This example shows how to uninstall a Diagnostics Agent and the SAP Host Agent, and how to remove related operating system users.

```ini
NW_readProfileDir.profileDir=/usr/sap/DAA/SYS/profile
NW_System_Uninstall.completeSystem=true
NW_System_Uninstall.uninstallHostAgent=true
NW_System_Uninstall.removeUsers=true
```

⚠️ **Example**

This example shows how to uninstall only the Diagnostics Agent instances 96 and 97, while keeping the SAP Host Agent, and keeping related operating system users.

```ini
NW_readProfileDir.profileDir=/usr/sap/DAA/SYS/profile
NW_System_Uninstall.completeSystem=false
```
**Further Clarifications**

1. You have now prepared your `<Installation_Directory>` and your `<Uninstallation_Properties_File>`.
2. Before you continue, we recommend that you create a backup of your `<Installation_Directory>`.

**Running the Uninstallation**

⚠️ Caution

The `<Installation_Directory>` must not contain any leftovers from previous unattended installations or uninstallations. It must not contain more files than the ones mentioned in this section:

- `<Installation_Properties_File>`
- `<Uninstallation_Properties_File>`
- `start_dir.cd`

Now start the unattended uninstallation in the following way:

1. `CD DIR('<Installation_Directory>')`
2. `CALL PGM(QP2TERM) PARM('<Installer_Media_Directory>/sapinst' 'SAPINST_INPUT_PARAMETERS_URL=uninstallation.properties' 'SAPINST_EXECUTEPRODUCT_ID=NW_Uninstall:GENERIC.IND.PD' 'SAPINST_SKIP_DIALOGS=true')`

The Diagnostics Agent will now be uninstalled in unattended mode. The uninstallation duration will typically be between 5 and 10 minutes. You may check the result by opening the `sapinst_dev.log` file in the `<Installation_Directory>`.

The uninstallation was successful if the file `installationSuccessfullyFinished.dat` has been generated.

**5.6 Troubleshooting an Unattended Installation**

To not execute the installation, but just verify the provided command line parameters and installation or uninstallation properties, the command line parameter `SAPINST_STOP_AFTER_DIALOG_PHASE=true` can be used. For example:

`CALL PGM(QP2TERM) PARM('<Installer_Media_Directory>/sapinst' 'SAPINST_INPUT_PARAMETERS_URL=installation.properties' 'SAPINST_EXECUTE_PRODUCT_ID=<Product_ID>' 'SAPINST_SKIP_DIALOGS=true' 'SAPINST_STOP_AFTER_DIALOG_PHASE=true')`
6 Post-Installation

6.1 Post-Installation Checklist

After the installation of the Diagnostics Agent and before the Diagnostics Agent goes into production, you have to perform the following steps:

1. Check if you need to set the Operating System Limits for the Diagnostics Agent [page 77].
2. Ensure User Security [page 60].
3. If not done yet, you may want to remove the software provisioning manager Installation Files [page 62].

If you want to change Diagnostics Agent configuration parameters like the connection type, connection credentials, the SAP Solution Manager system the Diagnostics Agent is connected to, see Using the SMD Setup Script [page 64].

6.2 Ensuring User Security

You need to ensure the security of the users that the software provisioning manager created during the installation.

→ Recommendation

The Master Password feature can be used as a simple method to obtain customer-specific passwords for all newly created users. A basic security rule is not to have identical passwords for different users. Following this rule, we strongly recommend individualizing the values of these passwords after the installation is complete.

→ Recommendation

In all cases, the user ID and password are encoded only when transported across the network. Therefore, we recommend using encryption at the network layer, either by using the Secure Sockets Layer (SSL) protocol for HTTP connections, or Secure Network Communications (SNC) for the SAP protocols dialog and RFC.

⚠️ Caution

Make sure that you perform this procedure before the newly installed SAP system goes into production.

For the security guide location and further security requirements refer to the Post-Installation Guidance in section Complying with SAP Solution Manager Security Guidelines [page 61].

To change passwords at the operating system level, use the command CHGPWD or CHGUSRPRF.
Operating System Users

After the installation, operating system users for the Diagnostics Agent and SAP Host Agent are available as listed in the following table:

→ Recommendation

For security reasons, we recommend that you remove the group SAPINST from the operating system users after you have completed the installation of your SAP system.

You do not have to do this if you specified this “cleanup” already during the Define Parameters phase on the Cleanup Operating System Users screen. Then the removal had already been done automatically when the processing of the software provisioning manager had completed.

Diagnostics Agent Users

<table>
<thead>
<tr>
<th>User Type</th>
<th>User</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system user</td>
<td>&lt;dasid&gt;adm</td>
<td>Administrator for the Diagnostics Agent.</td>
</tr>
</tbody>
</table>

SAP Host Agent User

<table>
<thead>
<tr>
<th>User Type</th>
<th>User</th>
<th>Comment</th>
</tr>
</thead>
</table>
| Operating system user   | sapadm | SAP Host Agent administrator is the user for central monitoring services.  
|                         |       | You do not need to change the password of this user after the installation.  
|                         |       | This user is for administration purposes only.  
|                         |       | On IBM i, you are not able to log on as sapadm as this user profile does not allow it. |

6.3 Complying with SAP Solution Manager Security Guidelines

Pre-Installation Guidance

Before the installation of a Diagnostics Agent, and before connecting a Diagnostics Agent to an SAP Solution Manager system, the SAP Solution Manager system must have been properly configured. Information on required administrator users for the SAP Solution Manager ABAP and Java systems, Secure Socket Layer (SSL) configuration, required communication channels and destinations, involved technical users, and much more, can be found in the relevant SAP Solution Manager Security Guide.
Post-Installation Guidance

After the installation of a Diagnostics Agent and before a Diagnostics Agent goes into production, it must be ensured that your respective end-to-end scenario complies with the guidance provided in the relevant SAP Solution Manager Security Guide.

Security Guide Location

SAP Solution Manager Security Guides can be found at: https://help.sap.com/solutionmanager Security.

6.4 Removing Software Provisioning Manager Installation Files

You use this procedure to gain disk space after the installation by deleting the software provisioning manager.

On the IBM i host, you should remove the installation directory, the temporary software provisioning manager files, and the copied installation media.

⚠️ Caution

You might want to disconnect from the share TMP$AP and remove it from the IBM i. However, if you want to start tools like the SAP NetWeaver AS for Java EE ConfigTool from the share TMPSAP on your Windows PC, then you should keep the share.

⚠️ Caution

Do not use this procedure until all instances of the SAP system on the IBM i host have been installed.

Prerequisites

• You have completed the SAP system installation.
• The SAP system is up and running.
Procedure

⚠️ Caution

Only delete the log files if you are sure that you do not need them again. Do not delete log files other than those in the paths given here.

On IBM i:

1. If you want to remove the software provisioning manager installation directory, enter the following command:
   
   ```
   RMVDIR DIR('<Installation_Directory>') SUBTREE(*ALL)
   ```

2. Parallel to the software provisioning manager in the installation directory a library `SAP<SAPSID>` is created containing the ILE load tools for the database. When the software provisioning manager installation directory is deleted, you can also remove this library using the following command:
   
   ```
   DLTLIB LIB(SAP<SAPSID>LOAD)
   ```

3. To remove temporary `SAPINST` files, enter the following command:
   
   ```
   RMVDIR DIR('/tmp/sapinst_exe*') SUBTREE(*ALL)
   ```

   **Note**

   If you have chosen one of the three variables: `TEMP`, `TMP`, or `TMPDIR` for your temporary directory in section Useful Information about Software Provisioning Manager [page 42], you must use this temporary directory instead of `'/tmp'`.

4. To remove the downloaded and/or copied installation media, enter the following command:
   
   ```
   RMVDIR DIR('/tmp/<DASID>') SUBTREE(*ALL)
   ```

To disconnect your mapped drive from the IBM i, enter the following command on your Windows PC:

```
net use <Mapped_Drive>: /DELETE
```
7 Additional Information

7.1 Installing the Diagnostics Agent Optionally with the SAP System

Per software provisioning manager 1.0 SP10, the Diagnostics Agent can no longer be automatically installed during the installation process of AS ABAP and Java systems, and AS ABAP and Java based systems.

It is recommended to install the Diagnostics Agent separately and prior to the installation of an SAP system. For more information refer to the Diagnostics Agent Installation Strategy SAP Note 1365123, SAP Note 1833501, SAP Note 1858920, and the latest Diagnostics Agent Installation and Setup Guide.

7.2 Using the SMD Setup Script

The smdsetup script can be used to update configuration parameters for the Diagnostics Agent.

More details about these configuration parameters are provided in section SAP Solution Manager Connectivity Parameters [page 18].

⚠️ Caution

The <smdsetup> script and the related Java implementation classes are automatically patched as soon as the Diagnostics Agent connects to the SAP Solution Manager system. The features available via the <smdsetup> script after the installation and a successful connection of the Diagnostics Agent to the SAP Solution Manager system are defined by the version of the SAP Solution Manager system.

This section documents a subset of the available features and illustrates how they may be used. The "Help Information" section below explains how to get <smdsetup> script help information for your Diagnostics Agent installation.

Script Location

The smdsetup script can be found in following directory:

• /usr/sap/<DASID>/SMDA<Instance_Number>/script
Restarting the Diagnostics Agent

The `smdsetup` script will modify one or more of the following configuration files:

- `runtime.properties`
- `secstore.properties`
- The Java KeyStore that the Diagnostics Agent uses for internal purposes.

The Diagnostics Agent will detect that these configuration files were changed and reload the modified files. A restart of the Diagnostics Agent is not required, unless it is explicitly stated in the below documentation, in the `smdsetup` script Help Information output (see below), or in the `smdsetup` script output.

Help Information

To determine the actions supported by the `smdsetup` script for your Diagnostics Agent installation, execute `smdsetup.sh` without any parameters.

Below you find a possible output of the `smdsetup` script.

Example

```
Help Information
Script which allows to update some Diagnostics Agent configuration.
smdsetup <action> <parameters>
List of actions:
  * smdsetup managingconf
    hostname:"sapms://<fqn>" port:"<MS HTTP port>" user:"XXXXXX" pwd:"******"
  * smdsetup managingconf
    hostname:"<fqn>" port:"<P4 port>" user:"XXXXXX" pwd:"******"
    [optional servername:"<value>"]
```

Script Actions

The below table summarizes the `smdsetup` script actions.

**i Note**

Further details on the different Diagnostics Agent configuration parameters that can be updated with the `smdsetup` script can be found in section Basic Installation Parameters [page 14].
### Action changeservername

This action changes the server name attribute of the agent.

- Updates the `runtime.properties` file of the agent:
  ```bash
  smdsetup changeservername servername:"myservername" user:"XXXXXX" pwd:******
  ```

### Action supportlogs

This action creates a ZIP-file holding Diagnostics Agent related configuration files and log files. The ZIP-file can be provided to SAP when creating a support ticket.

### Action addsaprouter

See section SAP Router [page 81] for background information.

### Action saprouterpass

### Action removesaprouter

### Action managingconf

This action changes the connection settings for the SAP Solution Manager system (also referred to as Managing System) to which the Diagnostics Agent connects.

⚠️ **Caution**

For productive usage the Diagnostics Agent must be connected to the Java SCS Message Server of the SAP Solution Manager system. The connection via a Java EE dispatcher node should only be used for testing and debugging purposes.

- Connect the Diagnostics Agent via a P4 or P4 SSL connection via the Java SCS Message Server (Java SCS Message Server HTTP Port and Java SCS Message Server HTTPS Port, see section SAP Solution Manager Connectivity Parameters [page 18]):
  ```bash
  smdsetup managingconf hostname:"sapms://host.domain.corp" port:"8101" user:"XXXXXX" pwd:******
  ```

- Connect the Diagnostics Agent via a direct P4 or P4 SSL connection via a Java EE dispatcher node:
  ```bash
  smdsetup managingconf hostname:"host.domain.corp" port:"53004" user:"XXXXXX" pwd:******
  ```

The Dispatcher P4 Port is determined as follows: 5<xx>04, where <xx> is the instance number of the SAP Solution Manager Java central instance.

The Dispatcher P4 SSL Port is determined as follows: 5<xx>06, where <xx> is the instance number of the SAP Solution Manager Java central instance.

### Action changeservername

This action changes the server name attribute of the agent.

- Updates the `runtime.properties` file of the agent:
**Action supportlogs**

This action creates a ZIP-file holding Diagnostics Agent related configuration files and log files. The ZIP-file can be provided to SAP when creating a support ticket.

- Execute: `smdsetup supportlogs`
  
  To create:
  `/usr/sap/<DASID>/<Instance_Number>/SMDAgent/supportLogs_<Timestamp>.zip`

The generated ZIP-file will (at least) contain the following:

- Diagnostics Agent check result file:
  `/usr/sap/<DASID>/<Instance_Number>/SMDAgent/log/AgentSupportToolReport.log`
- Diagnostics Agent log files
- Diagnostics Agent profile
- Software Provisioning Manager log files
- Content of directory `/usr/sap/<DASID>/<Instance_Number>/work`
- Relevant files from directory `/usr/sap/<DASID>/<Instance_Number>/SMDAgent`
- Relevant files from directory `/usr/sap/<DASID>/<Instance_Number>/SMDAgent/configuration`

The Diagnostics Agent check that is performed will (at least) check for following:

- JDK version
- JVM parameters
- Host name resolution
- TCP port
- P4 protocol
- Java SCS Message Server connectivity

### 7.3 Changing the Log Level

The main Diagnostics Agent log files are stored in folder `/usr/sap/<DASID>/SMDA<Instance_Number>/SMDAgent/log` and organized as follows:

<table>
<thead>
<tr>
<th>Filename</th>
<th>Default Settings</th>
<th>Default Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMDSystem.log</td>
<td>10 files of 1 MB</td>
<td>INFO</td>
<td>This file reports all information about agent framework (like connection to SAP Solution Manager system, agelets loading and patch sequence).</td>
</tr>
</tbody>
</table>
### File Details

<table>
<thead>
<tr>
<th>Filename</th>
<th>Default Settings</th>
<th>Default Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMDSystem.log</td>
<td>10 files of 1 MB</td>
<td>WARNING</td>
<td>This file reports all information about the agelets used by RCA applications, Setup Wizards and Introscope setup.</td>
</tr>
<tr>
<td>SMDAgentApplication.log</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P4.log</td>
<td>10 files of 1 MB</td>
<td>NONE</td>
<td>This file reports all information about agent connections with the SAP Solution Manager system.</td>
</tr>
</tbody>
</table>

In case the Diagnostics Agent is currently connected to the SAP Solution Manager system, the procedure to change the log level of these log location is as follows:

1. Go to the Agent Administration UI
2. Select the tab **Agent Log viewer**
3. Select the relevant agent from dropdown list
4. Configure the expected level

In case the Diagnostics Agent is not connected to the SAP Solution Manager system, the procedure to change the log level is as follows:

1. At OS level, login as user `<dasid>adm`
2. Stop the agent
3. Go to folder `/usr/sap/<DASID>/SMDA<Instance_Number>/SMDAgent/configuration`
4. Open file `log-configuration.xml`
5. Adapt the level for the respective filenames and indicated lines, according the below given table
   - Attribute: `effective-severity`
   - ALL, DEBUG, INFO, WARNING, ERROR, NONE
6. Save the file and restart the agent

### Log Configuration Examples

```xml
SMDSystem.log
<log-controller effective-severity="INFO" maximum-severity="ALL"
    minimum-severity="DEBUG" name="/SMDlogger/System">
```

```xml
SMDAgentApplication.log
<log-controller effective-severity="WARNING" maximum-severity="ALL"
    minimum-severity="DEBUG" name="/SMDlogger/AgentApp">
```
7.4 Starting and Stopping SAP System Instances Using the SAP Management Console

You can start and stop all instances of your SAP system using the SAP Management Console (SAP MC) except the database instance.

Prerequisites

- Make sure that the host names defined in the DNS server match the names of the SAP system instance hosts. In particular, keep in mind that host names are case-sensitive. For example, if the names of the SAP system instance hosts are in upper case, but the same host names are defined in the DNS server in lower case, starting and stopping the system does not work.
- If you want to start or restart remote systems or instances, make sure that you have registered them in the SAP Management Console (SAP MC). You do not need to register SAP systems or instances installed on the local host, because the SAP MC displays them automatically.
- The SAP Host Agent is installed on the host where the application server of the SAP system or instance runs.
- You have installed Java Runtime Environment (JRE) 5.0 or higher.
- Your Web browser supports Java.
- Your Web browser’s Java plug-in is installed and enabled to run scripting of Java applets.

i Note

If your Web browser no longer supports Java applet technology, you can configure the SAP MC to run locally on your PC. For more information, see section Configuring SAP MC locally in SAP Note 1014480.

Context

→ Recommendation

If you experience any issues when starting or using the SAP MC, refer to SAP Note 1153713.
For more information about handling the SAP MC, see the SAP Library at:

<table>
<thead>
<tr>
<th>SAP Release and SAP Library Quick Link</th>
<th>SAP Library Path (Continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• SAP NetWeaver 7.4</td>
<td>Application Help ➤ Function-Oriented View ➤ Solution</td>
</tr>
<tr>
<td>• SAP NetWeaver AS for ABAP 7.52</td>
<td></td>
</tr>
<tr>
<td><a href="https://help.sap.com/nw752abap">https://help.sap.com/nw752abap</a></td>
<td></td>
</tr>
<tr>
<td>• SAP NetWeaver 7.5</td>
<td></td>
</tr>
<tr>
<td><a href="http://help.sap.com/nw75">http://help.sap.com/nw75</a></td>
<td></td>
</tr>
<tr>
<td>• SAP NetWeaver Application Server for ABAP 7.51 innovation package</td>
<td></td>
</tr>
<tr>
<td><a href="https://help.sap.com/nw751abap">https://help.sap.com/nw751abap</a></td>
<td></td>
</tr>
<tr>
<td>• SAP NetWeaver AS for ABAP 7.52</td>
<td></td>
</tr>
<tr>
<td><a href="https://help.sap.com/nw752abap">https://help.sap.com/nw752abap</a></td>
<td></td>
</tr>
</tbody>
</table>

If your newly installed SAP system is part of a heterogeneous SAP system landscape comprising systems or instances on Windows platforms, you can also start and stop it from a Windows system or instance using the SAP Microsoft Management Console (SAP MMC).

For more information about handling the SAP MMC, see the SAP Library at:

<table>
<thead>
<tr>
<th>Release SAP Library Quick Link</th>
<th>SAP Library Path (Continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• SAP NetWeaver 7.4</td>
<td>Application Help ➤ Function-Oriented View ➤ Solution</td>
</tr>
<tr>
<td>• SAP NetWeaver 7.5</td>
<td></td>
</tr>
<tr>
<td><a href="http://help.sap.com/nw75">http://help.sap.com/nw75</a></td>
<td></td>
</tr>
<tr>
<td>• SAP NetWeaver Application Server for ABAP 7.51 innovation package</td>
<td></td>
</tr>
<tr>
<td>• SAP NetWeaver AS for ABAP 7.52</td>
<td></td>
</tr>
<tr>
<td><a href="https://help.sap.com/nw752abap">https://help.sap.com/nw752abap</a></td>
<td></td>
</tr>
</tbody>
</table>

**Procedure**

**Starting the Web-Based SAP Management Console**

1. Start a Web browser and enter the following URL:

   http://<Host_Name>:5<Instance_Number>13

   **Example**

   If the instance number is 53 and the host name is saphost06, you enter the following URL:

   http://saphost06:55313

   This starts the SAP MC Java applet.
2. Choose **Start**.
The SAP Management Console (SAP MC) appears.
By default, the instances installed on the host you have connected to are already added in the SAP MC.

**Note**
If the instances have not been added or if you want to change the configuration to display systems and instances on other hosts, you have to register your system manually. This is described in *Registering Systems and Instances in the SAP Management Console* below.

### Starting SAP Systems or Instances

Similarly, you can start or restart all SAP systems and individual instances registered in the SAP MC.

1. In the navigation pane, open the tree structure and navigate to the system node that you want to start.
2. Select the system or instance and choose **Start** from the context menu.
3. In the **Start SAP System(s)** dialog box, choose the required options.
4. Choose **OK**.
The SAP MC starts the specified system or system instances.

**Note**
The system might prompt you for the SAP system administrator credentials. To complete the operation, you require administration permissions.

Log in as user `<dasid>adm`.

### Stopping SAP Systems or Instances

Similarly, you can stop all SAP systems and individual instances registered in the SAP MC.

1. Select the system or instance you want to stop and choose **Stop** from the context menu.
2. In the **Stop SAP System(s)** dialog box, choose the required options.
3. Choose **OK**.
The SAP MC stops the specified system or system instances.

**Note**
The system might prompt you for the SAP system administrator credentials. To complete the operation, you require administration permissions.

Log in as user `<dasid>adm`.
7.5 Starting and Stopping SAP System Instances Using Commands

Prerequisites

You are logged on to the SAP system host as user <sapsid>adm.

Context

*i Note

The `startsap` and `stopsap` commands are deprecated. SAP recommends that you do not use them any longer. For more information, see SAP Notes 1763593 and 809477.

This section only lists the basic commands how to start or stop an SAP system. You can find a detailed list of all `SAPControl` options and features in the command line help, which you can call as follows:

Procedure

• Starting an SAP System or Instance
  • Starting an SAP System:
    You can start an SAP system by executing the following commands from the command line (`<Instance_Number>` can be the number of any instance of the SAP system):

  • Starting an SAP System Instance
    You can start an SAP system instance by executing the following commands from the command line: For remote instances, the syntax is slightly different, because you also have to apply the `-host` and `-user` parameters:

• Stopping an SAP System or Instance
  • Stopping an SAP System
    You can stop an SAP system by executing the following commands from the command line (`<Instance_Number>` can be the number of any instance of the SAP system):

  • Stopping an SAP System Instance
You can stop an SAP system instance by executing the following commands from the command line:
For remote instances, the syntax is slightly different, because you also have to apply the `-host` and `-user` parameters:

```
Note
The database is not stopped by these commands. You have to stop the database using database-specific tools or commands.
```

- **Checking System Instance and Processes**
  - With the following command you get a list of system instances, their status, and the ports used by them (`<Instance_Number>` can be the number of any instance of the SAP system):
  ```
  •
  ```
  - With the following command you get a list of instance processes and their status:

- **Troubleshooting**
  If you get an error like "FAIL: NIECONN_REFUSED", execute `sapcontrol -nr <Instance_Number> -function StartService <SAPSID>` to ensure that `sapstartsrv` is running. Then execute again the start or stop command.

### 7.6 Starting and Stopping the Diagnostics Agent on IBM i

#### Use

An installed Diagnostics Agent in IBM i is managed as any other SAP system.

You can start and stop the Diagnostics Agent using the commands `STARTSAP` and `STOPSAP`.

```
Note
You can only start or stop the Diagnostics Agent separately. It is not started or stopped automatically with the SAP system.
```

You can also use the SAP Management Console (SAP MC) to start or stop the Diagnostics Agent. For more information, see Starting and Stopping SAP System Instances Using the SAP Management Console [page 69].

In addition, you can use the PASE program `sapcontrol` to start and stop the Diagnostics Agent. For more information, see Starting and Stopping the Diagnostics Agent [page 74].

#### Procedure

**Starting the Diagnostics Agent**
To start the Diagnostics Agent, proceed as follows:

1. Log on to your system as user `<dasid>adm`.
2. To start the Diagnostics Agent, enter the following command and press F4:
   
   \[ \text{STARTSAP SID}(<\text{DASID}>)\ INSTANCE(<\text{Instance\_Number}>) \]

   **i Note**

   You can start all instances of the Diagnostics Agent at the same time by entering the following command:
   
   \[ \text{STARTSAP SID}(<\text{DASID}>)\ INSTANCE(*\text{ALL}) \]

Stopping the Diagnostics Agent

To stop the Diagnostics Agent, proceed as follows:

1. Log on to your system as user `<dasid>adm`.
2. To stop the Diagnostics Agent, enter the following command and press F4:
   
   \[ \text{STOPSAP SID}(<\text{DASID}>)\ INSTANCE(<\text{Instance\_Number}>) \]

   **i Note**

   You can stop all instances of the Diagnostics Agent at the same time by entering the following command:
   
   \[ \text{STOPSAP SID}(<\text{DASID}>)\ INSTANCE(*\text{ALL}) \]

### 7.7 Starting and Stopping the Diagnostics Agent

The Diagnostics Agent is started at the end of the installation. You can start and stop the Diagnostics Agent by running `sapcontrol`. The `sapcontrol` executable is located in the Diagnostics Agent instance specific `exe` directory:

- `/usr/sap/<DASID>/SMDA<Instance\_Number>/exe`

See also section SAP Directories [page 20].

**i Note**

You can only start or stop the Diagnostics Agent separately. It is not started or stopped automatically with an SAP system that you start or stop.

You can also use the SAP Management Console (SAP MC) to start or stop the Diagnostics Agent. For more information see Starting and Stopping SAP System Instances Using the SAP Management Console [page 69].

**Procedure**

You have logged on to the host as `<dasid>adm`. 
To start or stop the Diagnostics Agent system (all instances) with sapcontrol, enter one of the following commands:

```plaintext
CALL PGM(QP2TERM) PARM('sapcontrol' '-prot PIPE' '-nr <Instance_Number>' 'function StartSystem')
CALL PGM(QP2TERM) PARM('sapcontrol' '-prot PIPE' '-nr <Instance_Number>' 'function StopSystem')
```

To start or stop a single Diagnostics Agent instance with sapcontrol, enter one of the following commands:

```plaintext
CALL PGM(QP2TERM) PARM('sapcontrol' '-prot PIPE' '-nr <Instance_Number>' 'function Start')
CALL PGM(QP2TERM) PARM('sapcontrol' '-prot PIPE' '-nr <Instance_Number>' 'function Stop')
```

7.8 Uninstalling an SAP System or Single Instances

This section describes how to uninstall a complete SAP system or single SAP instances with the Uninstall option of the software provisioning manager.

**Prerequisites**

- You have installed your SAP system with standard SAP tools according to the installation documentation.
- You are logged on as user QSECOFR or as a user that has the same authorizations as QSECOFR.

⚠️ **Caution**

Do not use the <dasid>adm user to delete the Diagnostics Agent.

- Make sure that the SAP system, or single instance, or standalone engine, or optional standalone unit to be deleted is down and that you are not logged on as one of the SAP system users. Also check that all SAP-related processes are stopped. If there is a lock on one of the SAP system objects, the uninstall fails.

ℹ️ **Note**

You do not have to stop the SAP Host Agent. The SAP Host Agent is stopped automatically during the uninstall process.

- When starting the uninstall, make sure that there are no SAP system user sessions still open.
- You have completed a DMO to SAP S/4HANA 1809 and higher. Next, you want to do an SAP Uninstall to delete your SAP source system on IBM i. The SAP Uninstall requires some manual prerequisite steps to finish successfully. For example the profile directory must be adapted. For more information, see the SAP Note 2957193 - IBM i: Uninstalling the SAP source system after the DMO to SAP S/4HANA 1809 and higher.
Caution

If you run the SAP Uninstall for the SAP source system before all prerequisite steps are done, the new already running SAP S/4HANA system could be damaged! For example the kernel executables and the profiles of the new SAP S/4HANA system could be deleted.

Context

Note the following when deleting an SAP system or single instances:

• During the uninstall process, all file systems and subdirectories of the selected SAP system or single instance are deleted. Before you start uninstalling, check that you have saved a copy of all files and directories that you want to keep to a secure location.

• The uninstall process is designed to remove as much as possible of the SAP system to be deleted. If an item cannot be removed, a message informs you that you have to remove this item manually. You can do this either at once or after the uninstall process has finished. As soon as you confirm the message, the uninstall process continues.

i Note

If uninstalling a system from an independent ASP after removal ensure that the following directories have been removed:

/IASP_Name>/usr/sap/<SAPSID> and /IASP_Name>/sapmnt/<SAPSID>

Caution

Make sure to follow these recommendations related to uninstalling Diagnostics Agents:

• SCN Wiki article on “Diagnostics Agent Maintenance Procedures” (http://wiki.scn.sap.com/wiki/x/n4eIfGr).

• Section “Deleting a Diagnostics Agent Manually” in the UNIX/Linux specific SAP Note 1259982.

In case of problems see Components for Reporting an Incident [page 9].

Procedure

1. Start the software provisioning manager as described in Running Software Provisioning Manager [page 38].

2. On the Welcome screen, choose:

   Generic Installation Options ➢ Diagnostics in SAP Solution Manager ➢ Uninstall - Diagnostics Agent

3. Follow the instructions on the software provisioning manager screens to delete a complete SAP system or single instances.
To find more information on each parameter during the Define Parameters phase, position the cursor on the required parameter input field, and choose either F1 or the HELP tab. Then the available help text is displayed in the HELP tab.

The following table provides information about deleting a complete system or single instances with the software provisioning manager.

<table>
<thead>
<tr>
<th>Deletion of</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostics Agent</td>
<td>If you want to delete a Diagnostics Agent instance, enter the location of the profile directory of the Diagnostics Agent that you want to uninstall on the General SAP System Parameters screen:</td>
</tr>
<tr>
<td></td>
<td>/usr/sap/&lt;DASID&gt;/SYS/profile</td>
</tr>
<tr>
<td>Standalone SAP Host Agent</td>
<td>The SAP Host Agent is automatically uninstalled from a host together with the last remaining SAP system instance.</td>
</tr>
<tr>
<td></td>
<td>If you want to uninstall a standalone SAP Host Agent, deselect Profiles Available and select Uninstall Standalone SAP Host Agent on the General SAP System Parameters screen.</td>
</tr>
</tbody>
</table>

4. When you have finished, delete the relevant directory structure on the global host.

7.9 Setting Operating System Limits for the Diagnostics Agent

Certain operating systems limit operating system resources (such as the maximum number of open files) too strictly in the default settings. As a result, some SAP instance types (such as the Diagnostics Agent instances) do not work correctly. Therefore, the operating system settings must be adjusted.

Depending on how the Diagnostics Agent is started, limits have to be set either for the specific <dasid>adm user or in such a way that they also take effect for the sapstartsrv that was started either as a daemon at the time of the operating system boot process or using a web service client (sapcontrol, SAP MMC, SAP MC, and so on).

**Procedure**

If sapstartsrv was started as <dasid>adm in a shell running commands like:

- /usr/sap/sapservices
- sapstartsrv pf=<Instance_Profile>
- sapcontrol -nr <Instance_Number> -function StartService <DASID>
you need to set the limits in the shell before doing so.

To do this, the individual platforms provide various mechanisms to set these globally or for individual processes or users.

To set the limits for all sapstartsrv daemons that were started via the sapinit script at operating system boot time, you can set the limits in `/usr/sap/sapservices`:

```
limit.descriptors=<Value>
limit.stacksize=<Value>
```

⚠ Caution

Make sure to follow the instructions in SAP Note 1437105.

To take the new limits into account you have to:

- Stop the Diagnostics Agent:
  ```
sapcontrol -prot PIPE -nr <Instance_Number> -function StopWait 60 1
  ```
- Stop the sapstartsrv process:
  ```
sapcontrol -prot PIPE -nr <Instance_Number> -function StopService
  ```
- Start the sapstartsrv process and the Diagnostics Agent:
  ```
sapcontrol -prot PIPE -nr <Instance_Number> -function StartService <DASID>
  ```

Just restarting sapstartsrv is not enough since it would just send a restart request to sapstartsrv. Then the new sapstartsrv would inherit the limits of the currently running one.

### 7.10 Backup and Recovery

Once a Diagnostics Agent is installed and has been connected to an SAP Solution Manager system, it downloads latest binaries and configuration information from the SAP Solution Manager system. Relevant configuration changes that you do after the installation (e.g. enabling Agents On-the-fly) are stored by SAP Solution Manager. Diagnostics Agents that get corrupted can easily be recovered, by reinstalling and reconnecting to the SAP Solution Manager system. A dedicated backup and recovery procedure is not mandatory.

If you should want to put a backup and recovery procedure for Diagnostics Agents in place, please refer to the respective Accessing the SAP Library [page 10] documentation for SAP NetWeaver systems. Any database related instructions are can be ignored; Diagnostics Agents do not have a database dependency.

### Release | SAP Library Path
--- | ---
- SAP NetWeaver 7.3 | [Solution Life Cycle Management](#) [Backup and Recovery](#)
- SAP NetWeaver 7.3 including Enhancement Package 1
- SAP NetWeaver 7.3
7.11 Software Provisioning Manager and Diagnostics Agent Version Information

As of software provisioning manager 1.0 SP05, information about the installer version used to install the Diagnostics Agent is consistently stored in the `installationinfo.properties` files that are generated by the software provisioning manager. The `installationinfo.properties` file can be found at the following location:

```
/usr/sap/<DASID>/SMDA<Instance_Number>/SMDAgent/configuration/installationinfo.properties
```

The value of the `sapinst_version` property in combination with the below table can be used to determine the software logistics toolset, software provisioning manager, and Diagnostics Agent versions that were used at the time of the installation.

If you should have the need to determine this information for older Diagnostics Agent installations, you can report an incident at component `SV-SMG-INS-AGT`. Following information must be attached to the incident:

- File `/usr/sap/<DASID>/SMDA<Instance_Number>/SMDAgent/lib/smdagent.jar`
- Listing of the files in directory `/usr/sap/<DASID>/SMDA<Instance_Number>/SMDAgent/bootstrap`
- Recent Diagnostics Agent `supportLogs_<Timestamp>.zip` file for the respective installation. See `Action supportlogs` in Using the SMD Setup Script [page 64].

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>October 2020, and later releases</td>
<td>1.0 SP30, and higher</td>
<td>1.0 SP30, and higher</td>
<td>7.53, and higher</td>
<td>SWPM: SWP10SP(<strong>), where (</strong>*) matches the current SP number</td>
</tr>
<tr>
<td>June 2020</td>
<td>1.0 SP29</td>
<td>1.0 SP29</td>
<td>7.53</td>
<td>SWPM: SWPM10SP29</td>
</tr>
<tr>
<td>January 2020</td>
<td>1.0 SP28</td>
<td>1.0 SP28</td>
<td>7.53</td>
<td>SWPM: SWPM10SP28</td>
</tr>
<tr>
<td>September 2019</td>
<td>1.0 SP27</td>
<td>1.0 SP27</td>
<td>7.53</td>
<td>SWPM: SWPM10SP27</td>
</tr>
<tr>
<td>May 2019</td>
<td>1.0 SP26</td>
<td>1.0 SP26</td>
<td>7.53</td>
<td>SWPM: SWPM10SP26</td>
</tr>
<tr>
<td>January 2019</td>
<td>1.0 SP25</td>
<td>1.0 SP25</td>
<td>7.53</td>
<td>SWPM: SWPM10SP25</td>
</tr>
<tr>
<td>September 2018</td>
<td>1.0 SP24</td>
<td>1.0 SP24</td>
<td>7.53</td>
<td>SWPM: SWPM10SP24</td>
</tr>
<tr>
<td>May 2018</td>
<td>1.0 SP23</td>
<td>1.0 SP23</td>
<td>7.53</td>
<td>SWPM: SWPM10SP23</td>
</tr>
<tr>
<td>January 2018</td>
<td>1.0 SP22</td>
<td>1.0 SP22</td>
<td>749.3</td>
<td>SWPM: SWPM10SP22</td>
</tr>
<tr>
<td>September 2017</td>
<td>1.0 SP21</td>
<td>1.0 SP21</td>
<td>749.2</td>
<td>SWPM: SWPM10SP21</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>---------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>May 2017</td>
<td>1.0 SP20</td>
<td>1.0 SP20</td>
<td>7.49.1</td>
<td>SWPM: SWPM10SP20</td>
</tr>
<tr>
<td>February 2017</td>
<td>1.0 SP19</td>
<td>1.0 SP19</td>
<td>7.49</td>
<td>SWPM: SWPM10SP19</td>
</tr>
<tr>
<td>October 2016</td>
<td>1.0 SP18</td>
<td>1.0 SP18</td>
<td>7.45.3</td>
<td>70SWPM: SWPM10SP18 70SWPM10SP18</td>
</tr>
<tr>
<td>June 2016</td>
<td>1.0 SP17</td>
<td>1.0 SP17</td>
<td>7.45.2</td>
<td>SWPM: SWPM10SP17 70SWPM: SWPM10SP17</td>
</tr>
<tr>
<td>February 2016</td>
<td>1.0 SP16</td>
<td>1.0 SP10</td>
<td>7.45.1</td>
<td>SWPM: SWPM10SP10 70SWPM: SWPM10SP10</td>
</tr>
<tr>
<td>October 2015</td>
<td>1.0 SP15</td>
<td>1.0 SP9 (Patch Release to support SAP Kernel 7.45)</td>
<td>7.45</td>
<td>SWPM: SWPM10SP9 70SWPM: SWPM10SP9</td>
</tr>
<tr>
<td>September 2015</td>
<td>1.0 SP14</td>
<td>1.0 SP9</td>
<td>7.45</td>
<td>SWPM: SWPM10SP9 70SWPM: SWPM10SP9</td>
</tr>
<tr>
<td>April 2015</td>
<td>1.0 SP13</td>
<td>1.0 SP8</td>
<td>7.42.2</td>
<td>SWPM: SWPM10SP8 70SWPM: SWPM10SP8</td>
</tr>
<tr>
<td>November 2014</td>
<td>1.0 SP12</td>
<td>1.0 SP7</td>
<td>7.42.1</td>
<td>SWPM: SWPM10SP7 70SWPM: SWPM10SP7</td>
</tr>
<tr>
<td>September 2014</td>
<td>1.0 SP11</td>
<td>1.0 SP6 (Patch Release to support SAP Kernel 7.42)</td>
<td>7.42</td>
<td>SWPM: SWPM10SP6 70SWPM: SWPM10SP6</td>
</tr>
<tr>
<td>July 2014</td>
<td>1.0 SP11</td>
<td>1.0 SP6</td>
<td>7.42</td>
<td>SWPM: SWPM10SP6 70SWPM: SWPM10SP6</td>
</tr>
</tbody>
</table>
### 7.12 Unsupported Features

The below table gives an overview and explanations on features that are not supported for the Diagnostics Agent.

<table>
<thead>
<tr>
<th>Software Provisioning Manager Version</th>
<th>Feature Description</th>
<th>Support Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 SP6</td>
<td>System Copy</td>
<td>Per software provisioning manager 1.0 SP6, we officially communicate that this feature is not supported and not relevant for the Diagnostics Agent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This statement applies to all software provisioning manager versions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For alternatives, see the System Copy section in SCN Wiki article “Diagnostics Agent Maintenance Procedures” (<a href="http://wiki.scn.sap.com/wiki/x/n4efFg">http://wiki.scn.sap.com/wiki/x/n4efFg</a>).</td>
</tr>
<tr>
<td>1.0 SP6</td>
<td>System Rename</td>
<td>Per software provisioning manager 1.0 SP6, we officially communicate that this feature is not supported for the Diagnostics Agent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This statement applies to all software provisioning manager versions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For alternatives, see the System Rename section in SCN Wiki article “Diagnostics Agent Maintenance Procedures” (<a href="http://wiki.scn.sap.com/wiki/x/n4efFg">http://wiki.scn.sap.com/wiki/x/n4efFg</a>).</td>
</tr>
</tbody>
</table>

### 7.13 SAP Router

The Diagnostics Agent can be connected to the SAP Solution Manager system via an SAP router. The software provisioning manager supports configuring the Diagnostics Agent connection via an SAP router. Alternatively
the route string can be maintained after the Diagnostics Agent installation using the smdsetup script (see Using the SMD Setup Script [page 64]).

The automatic activities *Introscope Host Adapter* and *Introscope Byte Code Adapter Installation* in the SAP Solution Manager scenario *Managed System Configuration* (transaction SOLMAN_SETUP) will also use the provided route string.
## A Appendix

### A.1 Online Information from SAP

More information is available online as follows:

<table>
<thead>
<tr>
<th>Title</th>
<th>Internet Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to Use SAP Solution Manager Configuration (SOLMAN_SETUP)</td>
<td><a href="http://wiki.scn.sap.com/wiki/display/SMSETUP/Home">http://wiki.scn.sap.com/wiki/display/SMSETUP/Home</a></td>
</tr>
</tbody>
</table>

[How to Use SAP Solution Manager Configuration (SOLMAN_SETUP)]
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