Planning Landscape Changes
Best Practices incl. Information from the Maintenance Planning Guide
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1 About This Document

This version is based on the latest developments for SAP Solution Manager 7.2. The latest version of this document is available at https://wiki.scn.sap.com/wiki/x/gEW7Gg.

This document also contains relevant information that was previously provided in the Maintenance Planning Guide, for SAP Solution Manager 7.1 and the Maintenance Optimizer. The merge was done due to the consolidation of tools, with the Maintenance Planner replacing the Maintenance Optimizer. For more information, see https://blogs.sap.com/2015/07/09/maintenance-planner-2/ and https://help.sap.com/viewer/p/MAINTENANCE_PLANNER.
2 Introduction and Scope

This document describes how to find new functions for SAP Business Suite (SAP ERP 6.0 EHP4 and higher) and to plan their implementation in an existing IT landscape, from the perspective of lifecycle management.

Although the installation of other products, such as SAP NetWeaver, are not described, many of the tools described here are also used to handle changes to those systems.

The process described here is the recommended approach. You can add steps that are not described here, or omit others if you already know their result (for example, if you already know which function you want to implement, you can skip the SAP product innovation discovery).

The following figure shows an overview of the tools involved, their connections, and the roles that use them. The distribution of roles is just a model and this guide only makes suggestions. For example, the line of business manager, IT architect, and basis administrator described in this document may have slightly different tasks or titles in different companies.

SAP creates software products and describes them in the SAP software catalog. Software and the software catalog data describing it, are delivered mostly via SAP Support Portal. Customers connect to SAP Support Portal for software delivery, including the catalog data and upload data to consume services, in all three roles:

- Line of business finds innovation (1).
- The IT architect checks the feasibility, based on the landscape information delivered by basis administrator and the SAP product catalog, and creates a landscape plan (2).
- The basis administrator implements the new software according to the landscape plan (3).

Note

Other processes running on a higher level – such as steps from project management in SAP Solution Manager – are not part of this guide. The same applies to, for example, the handling of custom development on top of the software delivered by SAP.
A more detailed view of the steps is shown in the next two graphics (update or upgrade and new installation), which show the main steps of the process, as performed by the three roles mentioned previously. You will also see that in some cases, you use tools in parallel, and that the basis administrator acts at the beginning and the end of the process.

**Update or Upgrade Existing Installations**

Tools and activities involved in innovation adoption to update or upgrade installations of SAP Business Suite products:

Changes to existing software are triggered either by the line of business manager finding innovations, or by the IT architect, who keeps track of the release and upgrade information in SAP Support Portal. Mandatory tools are marked with an asterisk (*). All other steps help you to manage this process better, and are therefore recommended.

**Other Options to Change Existing Systems**

With the conversion of an existing SAP ERP 6.0 system, a new option has been added for landscape changes that you can plan with the Maintenance Planner based on data from the SLD and LMDB.
Implementation of New Installations

Tools and activities involved in innovation adoption by new installations:

Examples in this Guide

To illustrate the process, example screenshots in this guide show the adoption of an innovation delivered with EHP7 for SAP ERP 6.0, and installed for the same system setup of an SAP ERP 6.0 system E00 including EHP5 using a portal system P00, which is reused by a CRM system C00.
3 Prerequisite: Landscape Data

To be able to plan based on up-to-date landscape data, managed systems must register in a central System Landscape Directory (SLD) that is connected to the SAP Solution Manager landscape management database (LMDB). The information that is sent from the systems to the SLD is then synchronized with the LMDB. Using this data, you enrich the technical information in the LMDB to create landscape data.

The technical system information from the LMDB is uploaded to SAP Support Portal because many tools and processes (such as Process Integration) require system data. For processes such as updates and upgrades in the application lifecycle management, this data needs to be available in the LMDB.

For SAP Solution Manager 7.2, the solution landscape has been simplified:

- The Maintenance Optimizer is replaced by the Maintenance Planner.
- Product systems do not exist in SAP Solution Manager 7.2 any longer, so
  - logical components are now based on technical systems
  - maintenance dependencies are defined only in the Maintenance Planner
- Logical components now have much less dependencies, for example, they are no longer used for SAP EarlyWatch Alerts and service sessions. They also do not need to be created in the landscape management database (LMDB) any longer, to model maintenance dependencies in product systems. Logical components have moved to focus on the process management in the solution documentation. Logical components and logical component groups are documented in detail inside the solution documentation area. This affects other SAP Solution Manager applications, like change management, test management, and business process monitoring and alerting.
- The scope and effort analyzer (SEA) consumes transactions from the Maintenance Planner.
- LMDB focuses on the enrichment of technical system data retrieved from the SLD.

The following figure shows the entities used in SAP Solution Manager 7.1 (left side) compared to SAP Solution Manager 7.2 (right):

![Diagram showing entities in SAP Solution Manager 7.1 and 7.2](image)

More information:
SAP product model, and all tools that describe the landscape (SLD, LMDB,...): Landscape Descriptions

Product Systems and Maintenance Planner in SAP Solution Manager 7.1: Landscape Entities & Maintenance Planner in SAP Solution Manager 7.2

There are several places to view and manage landscape information (SLD, SAP Solution Manager, Maintenance Planner, ...): How to get an overview of Your IT landscape

Perform the following activities to provide all required landscape information.

3.1 Complete SAP Solution Manager Configuration

Before you can manage the systems in your landscape, complete the Mandatory Configuration and the Managed Systems Configuration in SAP Solution Manager (transaction SOLMAN_SETUP).

Check if you have an s-user for SAP Support Portal. If you do not have one, request it at http://support.sap.com/user-admin under Request a new user.

To order software from the SAP Software Catalog, your s-user needs the SWCATALOG authorization. Check your authorizations under http://support.sap.com/user-admin: Log on with your s-user, and choose Search and Maintain Users. The required permission name is SWCATALOG: Order Software in Software Catalog.

Your user in SAP Solution Manager must be assigned to your s-user for the SAP Support Portal, in transaction AISUSER. To do so, note the following:

- There is only a value help for the Contact Person field if the background job REFRESH_ADMIN_DATA_FROM_SUPPORT has already been run. If this is not the case, manual entries cause a warning message because the s-user is not found. First, assign the contact for the system administrator user. When the administrator has run the background job, maintain the contacts for all other project members.
- Choose New Entries. Under User, enter an SAP Solution Manager system user; under Contact Person, assign a contact for SAP Support Portal, which is an s-user ID without the ‘s’.

3.2 Register Systems (SLD)

As a basis administrator, one of your tasks is to provide the system data for ALM processes. The preferred way of collecting system landscape information is automatic system registration by SLD data suppliers, which are implemented on most system types. The data suppliers send the SID (in most cases) and information on hardware and installed software to the SLD, which provides it to many client applications and synchronizes the information 1:1 to the LMDB.
Depending on your system landscape setup, data can be sent automatically to the SLD from the following systems:

- Application Server ABAP systems are registered using transaction RZ70.
- Application Server Java systems are registered with the Visual Administrator or, as of SAP NetWeaver 7.1, SAP NetWeaver Administrator.
- A dual-stack is registered automatically when the related AS ABAP and the AS Java have been registered.
- TREX systems are registered by generating SLD configuration files and copying them to the Global SLD Directory.
- Selected technical systems used by SAP, for example ATC Server, Unspecific Cluster System, MS IIS Instance, use predefined data suppliers.
- For third-party systems, you can setup generic data suppliers like sldreg. Set up the data suppliers for technical systems and register them in the SLD, which is described in SAP Note 1869701.

Follow the topology recommendations for SLD and LMDB in your landscape, which did not change with SAP Solution Manager 7.2. But it requires an up-to-date version of the SAP NetWeaver system running the source SLD of the LMDB. For more information, see Required SAP NW Version of the Source SLD for LMDB in SAP Solution Manager 7.2 & Options to Get there.

More information:
- Connecting the LMDB to the SLD
- SAP Notes 1842956 (Check Data Supplier Completeness for Technical System) and 1018839 (Registering in the System Landscape Directory using sldreg)
- System Landscape Directory (SLD)
- SLD Planning Guide
- Registering Technical Systems Automatically by Data Suppliers
- More on System Landscape Directory

### 3.3 Synchronize SLD and SAP Solution Manager (LMDB)

As a basis administrator, it will also be your task to make system metadata (on hardware and installed software) available in the LMDB. It must receive as much system information as possible from an SLD, automatically and frequently.

**Note:** The source SLD providing CIM and CR data to the LMDB needs a minimum version according to SAP Note 2175739 – Required SAP NW version of SLD for LMDB in SAP Solution Manager 7.2. For details see Required SAP NW Version of the Source SLD for LMDB in SAP Solution Manager 7.2 & Options to Get there.

This data is enriched by the SAP Solution Manager Diagnostics (SMD) agent. The process is also known as Outside Discovery, it writes directly into the LMDB.

In the LMDB, dependencies between systems are described in technical scenarios (for monitoring) and product systems for maintenance processes.
Data in the LMDB primarily is used for maintenance, monitoring purposes, and change request management.

For more information, see Landscape Management Database and SAP Note 1669649 (SLD/LMDB synchronization: principle of the clear path). To connect the SLD to SAP Solution Manager, see Connecting LMDB to System Landscape Directory (SLD).

Do not edit technical system information from the SLD manually in the LMDB. This makes further updating by the SLD impossible, the data can become out-of-date and incorrect. Some information can, however, only be added by manual editing, for example additional attributes. For more information, see Completing Technical System Information Manually.

The data you collected in the SLD and created in the LMDB are the basis for the following steps.

More information:
- SLD-LMDB Topology – Connections, Valid, and Invalid Data Exchange Between SLD and LMDB of SAP Solution Manager
- Setting Up the Landscape Management Infrastructure
- Landscape Management Database (LMDB)
- Documentation for System Landscape Management - LMDB
- Data and Topology of SLD, LMDB, and Customer Profile – How to Get Reliable Landscape Data in SAP Support Portal as a Basis for Planning
- Agent Data in the SAP Solution Manager LMDB

3.4 Synchronize LMDB with SAP Support Portal

As the basis administrator, in this phase you have to provide the technical system information from the LMDB for the customer profile, which is in the SAP Support Portal, for support purposes, for example, for the Early Watch Alert, or to establish service connections. This data is now also used to plan changes in your company’s landscape with Maintenance Planner and innovation discovery.
The most important, required system information is the following:

- Installed software component versions
- Installed product (only if unique; multiple installed products are not supported)
- Technical instances with host details like fully-qualified domain name (FQDN)
- Database attributes with host details like FQDN

Technical system information in the LMDB is by default synchronized to the SAP Support Portal, daily. If you want to transfer changes from the LMDB immediately, you can trigger this for selected technical systems.

More information:

- Synchronizing with SAP Support Portal
- SAP Note 993775 (Synchronizing system data with SAP Support Portal)
- Topology of SLD, LMDB, and Customer Profile – How to Get Reliable Landscape Data in SAP Support Portal as a Basis for Planning
- Uploading, Accessing, and Trouble-Shooting System Data in the Customer Profile Used for Planning Changes in Your IT Landscape

### 3.5 Modeling the System Landscape in the Maintenance Planner

The Maintenance Planner gets all landscape data from the LMDB and models the dependencies between systems: You can define dependencies between technical systems on which one product version is installed (this was called a “product system” in SAP Solution Manager 7.1), and you can define system tracks, which reflect the installation on systems that have certain roles (such as development, test or production system).

For more information, see Landscape Entities & Maintenance Planner in SAP Solution Manager 7.2.
The graphic illustrates how the maintenance dependencies in the Maintenance Planner replace the product systems from SAP Solution Manager 7.1:

- In the product system, you had to manually assign product instances installed on technical systems.
- In the Maintenance Planner, you only need to choose the technical systems, while the product instance assignment is done automatically. The purpose is taken into account when creating maintenance dependencies – only if there are product instances of the same product, you can create a maintenance dependency between technical systems.

The verification now integrated in the Maintenance Planner (see Verify Installed Software Information (Maintenance Planner) [page 26]). Still check that product instances are correctly assigned, based on coverage of software components on the technical system in the LMDB.

**Defining Maintenance Dependencies**

With the technical system information from the LMDB and SAP product catalog, you can model the maintenance dependencies in the Maintenance Planner. They define which technical systems and product instances need to be updated and upgraded together. You need to set the upgrade strategy for a technical system of type Application Server (AS) Java, so that the correct upgrade strategy can be defined in maintenance transactions.

The assignment of landscape patterns is required for AS Java technical systems in a maintenance dependency (= landscape pattern "sidecar") or several maintenance dependencies (=landscape pattern "hub") in which also ABAP technical systems are assigned. The landscape pattern decides whether a maintenance strategy with minimum or maximum impact will be used. For details, see Product Maintenance Dependency in the Maintenance Planner User Guide.
Click the **Explore Systems** tile, select the system and click the system name in the middle of the circle.

Here you can explore the installed elements, like product versions and software components. Under **Dependencies**, you can see all related technical systems. When you hover over the circle in the middle, the maintenance dependencies are displayed:

In this example, product instances of one product version (SAP ERP 6.0) are installed on two technical systems: on an Application Server ABAP (E00) and on an Application Server Java (P00). The maintenance dependencies are modeled under the name E00 (which would be modeled as product system E00 in the LMDB of SAP Solution Manager 7.1, in the past).

In this example, an SAP Enterprise Portal frontend is used by an SAP ERP and a SAP CRM backend system (E00 and C00), so some parts of the product version SAP ERP 6.0 with enhancement package 5 are installed on the ERP backend, and other parts are installed on the portal front-end, and you must update both technical systems must together. The product system defined for the ERP installation describes this, and is used by Maintenance Planner to visualize the setup and calculate changes.
In edit mode, you can click the Plus icon to assign another technical system that shares the same product version:

Creating Maintenance Dependencies for a Dual-Stack

Dual-stacks are systems where an Application Server ABAP and an Application Server Java are installed on the same technical system. In SAP Solution Manager, they are represented by two technical systems. Both technical systems representing the dual-stack parts have the same system ID and the same message server.

The installation of dual-stacks is only recommended for selected scenarios where this is mandatory: for example, for SAP Solution Manager 7.0 and 7.1, and for SAP Process Integration 7.11. Apart from that, it is no longer recommended to install dual-stacks. Split existing dual-stacks into individual technical systems. For more information, see Dual-Stack Split – How to Ensure Correct Technical System Data in SLD and LMDB after the Split.

A dual-stack can be created in SAP Solution Manager automatically. The two dual stack parts are registered as two technical systems and as one technical scenario in SAP Solution Manager. By default, the two parts of a dual-stack are automatically registered as a technical scenario consisting of an AS ABAP and an AS Java technical system. When you display one of the technical systems in the LMDB, you can see the dual-stack partner in the Overview screen.

You can edit technical scenarios in the Technical Scenarios application (SAP Solution Manager launchpad).

For more information, see Landscape Entities & Maintenance Planner in SAP Solution Manager 7.2.

Modeling System Tracks

From a software logistic point of view, an SAP system is usually not considered as isolated, but as disposed in a hierarchical order: The development system comes first and is followed by the quality assurance systems, and last
the productive system. All systems are bound by one condition: The installed software should not deviate from system to system. The Maintenance Planner takes this into account and provides the so-called ‘track of systems’.

To maintain a system track consistently, include all systems of one track in one maintenance transaction. Produce a single stack configuration file for the whole track. Do not generate a separate stack configuration file for every single system of a system track. This ensures the consistency of the patch or upgrade throughout all systems and prevents extra work. You can assign technical usages separately for each system of the track during the maintenance transaction.

**Note**

We recommend that you do not implement Legal Change Packages during the patch phase of a system track. This can cause inconsistencies between the different systems of a track and invalidate the generated stack configuration file for the whole system track. Information about upcoming Legal Change Packages is provided using SAP Notes (“planned legal changes”).

Software changes must be tested in every configuration, by all involved users and parties.

Implementing new software in the production system must be the last step.

For more information, see *Working with System Tracks* in the *Maintenance Planner User Guide*. 

Planning Landscape Changes
Prerequisite: Landscape Data
Finding Innovations

As a manager of a line of business (LoB), you keep track of the latest functions and features for your business needs, and discuss their technological aspects with the IT architect.

Note

Another reason for planning changes in your landscape would be a technology-driven update. In that case, the information used in the planning process could be derived, for example, from https://support.sap.com/swdc → Release & Upgrade Info / Release Strategy, and the process starts – with the same prerequisite steps – in Maintenance Planner. The role to drive that update would be the IT architect.

Innovation Discovery for SAP products provides a new access to SAP Business Suite products. It can be used by LoB, the IT architect, and end users at the customer, including SAP partners and consulting. Here, we will focus on the LoB and the IT architect.

As a manager of an LoB, you can use innovation discovery to search for new ways of improving business processes:

- Innovation discovery is a self-service tool, hosted by SAP Support Portal that simplifies your search for new functionality SAP has delivered (as enhancement packages, support packages, add-ons, or improvement notes).
- An innovation contains one or more product features, which are delivered as enhancement packages, add-ons, or stand-alone products.
- Innovation discovery analyzes only SAP Business Suite systems.
- If you have the required authorizations for the systems in which you are interested, and if your company authorizes SAP to use SAP EarlyWatch Alert data, system-specific information is available, in addition to the generic information available to all SAP customers.
4.1 Search for Innovation Options (Innovation Discovery)

In https://go.support.sap.com/innovationdiscovery/, you can select the line of business on the start screen, like Finance, in this example. In the list of available innovations, you can search for keywords.
All innovations found are to be checked by the IT architect for technical feasibility and implementation options.
4.2 Hand Over Search Results to IT Architect (Innovation Discovery)

As an LoB manager, communicate the search result in innovation discovery to your IT architect. He can evaluate the feasibility and cost of a change. You can directly send the result of your search from innovation discovery by e-mail. On the tab for technical details of a selected innovation, you find the e-mail service:

An e-mail is created by innovation discovery. It includes a link to the innovation:

Subject: Checkout new innovation

Hi Tom,

I found this new function for FIN reporting: Direct cash flow statement for actual data

https://apps.support.sap.com/Innovation-discovery/index.html#innovation/IHLT_000871

Could you check out if we can implement this soon?

Best regards,

Chris
5 Planning Requested Changes

For the concrete planning of an enhancement, several tasks are performed, which are described in the following sections.

5.1 Investigate Requirements for Change (Innovation Discovery)

The LoB has communicated a planned change to the IT architect.

As the IT architect, take over the information from the LoB for further investigation: The e-mail from https://go.support.sap.com/innovationdiscovery/ contains a link to the search result page of an innovation.

Go to the Technical View and note the product version and business function.
You need this information for the following process, in which you answer the following questions:

- When are new functions available?
- What is the upgrade path?
- What are the landscape recommendations?
- What is the scope of change, and which target systems are involved?

## 5.2 Check Availability (PAM)

As the IT architect, carry out the next steps in the Product Availability Matrix (PAM) at [https://apps.support.sap.com/sap/support/pam](https://apps.support.sap.com/sap/support/pam). Enter the product version in the search field, and select the product version from the result list.

You can also jump directly from innovation discovery to the related PAM entry, by clicking the product version link in the Technical View in innovation discovery:

In the PAM, under [General Information ➤ Details & Dates ➤](https://apps.support.sap.com/sap/support/pam) for a selected product, check the general availability (standard release) and end-of-maintenance of the product version. The Related Links on the same page direct you
to documentation, such as master guides and release notes. These documents provide important information about the installation and prerequisites of the selected product version.
5.3 Check the Upgrade Paths (PAM)

In the PAM, under General Information > Related Product Versions, check the supported upgrade paths from previous releases to the desired target release, and the product versions required by the new product version:

![Upgrade Paths (PAM)](image)

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5.4 Check Landscape Recommendations (PAM)

As the IT architect, you are also responsible for the way new functions are implemented, and answer questions such as “will a system be reused in a hub or sidecar scenario?” A ‘hub’ is, for example, if an SAP Enterprise Portal frontend is used by an ERP and a CRM backend system. In a ‘sidecar’ setup, ERP and CRM each have an own, dedicated portal system.

To define the hub scenario for maintenance dependencies created in the maintenance planner, select Minimum Impact. For a sidecar scenario, select Maximum Impact.
SAP provides guidance for these questions, for example, in the PAM, under General Information Details & Dates Related Links, the IT architect checks the documentation of the product version, which, for example for enhancement packages, includes the following:

- Master guide
- Installation and upgrade guide
- Product documentation in the SAP Help Portal
- Release note or release information note

For more information, see Landscape Deployment Recommendations and Landscape Deployment Options.

### 5.5 Find Installable Units (SAP Notes)

Business functionality identified in the innovation discovery or PAM might require software on one or several systems, an ABAP back-end and Java Portal for example. Therefore, the product instances that must be installed together to use the business function are grouped together in a technical entity called ‘technical usage’ (TU). One TU comprises all software needed for one or more business functions.

The technical usage is selected, for example, in Maintenance Planner.

Example: SAP Note [1818596](https://support.sap.com) - Enhancement package 7 for SAP ERP 6.0: Required SWC (incl. attachments)

**Map the business function to the correct TU.** You need the business function name that was, for example, mentioned in the search result of innovation discovery.

![Technical View](image-url)
This is not required for all SAP products. We need to differentiate - see the following sections.

**SAP ERP and Its Enhancement Packages – Technical Usages (SAP Note)**

There are many deployment options, you need the technical usage for the business function from the innovation discovery search result. A description of the mappings of technical usages to business functions and product instances is attached to the software component (SWC) note (SAP Note 1818596), which is also referred to by the EHP release notes. Search it for the business function name.

This is an example for Direct Cash Flow from EHP 7 for SAP ERP 6.0. The mapping of business functions to technical usages, for business function `FIN_GL_DIR_CASHFLOW`.

Source: Release note for EHP7 for SAP ERP 6.0 (SAP Note 1737650) → SWC note for EHP 7 for SAP ERP 6.0 (SAP Note 1818596) → attachment BF-TU_mapping_EHP_2-7_f_ERP_6_V1.pdf.

**SAP CRM, SRM, and SCM**

For SAP Suite non-ERP products, like CRM, SRM, or SCM, there is only one deployment option, so all business functions are installed by default. So business functions do not need to be mapped to technical usages.

**Add-On Products (Other than SAP Fiori)**

Which implementable units are required to install the add-on, depends on the add-on type. This information is provided in the master guide of the add-on. In Maintenance Planner, you can select the add-on version of various types, independently of the innovation discovery service.

**Add-On Products (SAP Fiori)**

SAP Fiori add-ons are shown in innovation discovery. To create a maintenance transaction, use the Maintenance Planner.
The following screenshot shows the selection of an SAP Fiori add-on in innovation discovery:

![SAP Innovation Discovery](image)

We found 2179 Innovations

### SAP Fiori for Employee - Core HR and Payroll (initial delivery)

- Helps employees book their time against assigned Cost Objects
- Enable an employee to quickly book and manage his/her leaves

Available from: November 29, 2013

Detailed information and a PAM link are displayed for each add-on, by which you can access further information.

When you have found an add-on in innovation discovery or via other sources, the installation of the add-on is planned in the Maintenance Planner, just like any other update.

### 5.6 Verify Installed Software Information (Maintenance Planner)

Check in the Maintenance Planner whether the installed software information for a technical system complies with the SAP product model. For example, the system description may show a software component different from the one expected by the currently installed software stack. Click the Explore Systems tile. In the list, search for your system and check its verification status.
For verification, click the system name, then click Verify.

Correcting Installed Software Information (CISI)

Installed software information (ISI) is the set of data associated with a technical system. It stored in different tables and files on the system itself and propagated to the System Landscape Directory (SLD) to be used, for example, in system landscape maintenance. This is the most important information that is included:

- System ID
- Hosts
- Product and product version
- Product instances
- Software components

During the installation or upgrade of a technical system, information about the installed product version and product instances is stored on the system itself. This information is forwarded to the SLD and SAP Solution Manager.

If the information is wrong or missing on the technical system itself, it cannot be correctly forwarded in the system landscape. For example, installed product instances can be reported as being installed on the technical system in the LMDB but they do not match the installed software components. You can correct the information by a corrective XML file, that is installed with the Software Update Manager (SUM) on the managed system.

More information:
- About installed software information (ISI): SAP Note 1877731
- About creating the CISI file: SAP Note 1816146
- Verifying an Erroneous System in the Maintenance Planner User Guide
The Maintenance Planner unites and simplifies the old planning functions of the Landscape Planner and the file selection and download of the Maintenance Optimizer.

In the maintenance planner, you as an IT architect can plan changes based on a graphical map, based on system data and defined maintenance dependencies. Maintenance dependencies and system tracks (e.g. for development, production, and test systems) are shown as a graphical map.

You can define the following types of maintenance transactions:

- Updates and upgrades, like raising the support package stack, or installing an enhancement package or add-on
- Updating or upgrading complete system tracks
- Planning a completely new installation on a technical system
You will need the information about technical usage and product version that you gathered in the previous steps. Start the Maintenance Planner with https://apps.support.sap.com/sap/support/mp/.

**SAP S/4 HANA**

If you want to newly install SAP HANA, or update it, use the Maintenance Planner as starting point. It is also mandatory for planning system conversions to SAP S/4HANA. The Maintenance Planner performs the following tasks:

- Checking for installed software components, activated business functions and add-ons
- Preventing the conversion if there is no valid path for the conversion (for example, the add-on is not yet released)
- Generating mandatory stack file for conversion and supporting the download of files, which are consumed by the Software Update Manager (SUM)
- Offering several deployment options, such as front-end system embedded with or separate from backend

![SAP Maintenance Planner](image)

**SAP ERP EHP 8**

You can now also use the maintenance planner to update SAP ERP EHP 8. The modeling of EHP8 is not as modular as its predecessors anymore, regarding the ABAP product version instances. The EHP8 installation is using the load procedure of the upgrade. For the download, the Maintenance Planner shows the archives that have to be installed in addition to the load.
SAP Fiori

Use the Maintenance Planner to maintain SAP Fiori apps. It is integrated with the SAP Fiori Apps Reference Library.

Installing SAP Fiori apps involves comprehensive consideration of technical prerequisites. SAP Fiori apps require frontend, backend, and, if applicable, SAP HANA components. The required frontend and backend components are delivered in separate products and have to be installed in the system landscape. The Maintenance Planner addresses the requirement to install frontend and backend components delivered in separate products, by calculating all the system requirements for SAP Fiori apps installation.
6.1 Define Target for an Update

In Maintenance Planner, click the Explore Systems tile:

Select a technical system with the product version you want to update, and click Plan:
You are guided through the selection process for an update or upgrade:

### Updating System Tracks

By selecting a system track, you can add more than one system to a maintenance plan, and assign the same changes to all systems, for example, development, test and production system.
In the Maintenance Planner, click the Explore System Tracks tile:

Select the track and choose Plan.

As you can see, all systems that belong to a track are listed in the same maintenance transaction. You are guided through the same steps as for an update or upgrade for an individual technical system.

6.2 Define Target for a New Installation

You can also use the Maintenance Planner to plan new product installations. This may be a complete new AS ABAP-based system or an SAP Gateway to enhance the use of an existing installation.
For more information, see SCN: Unified Consumption Experience at https://blogs.sap.com/2016/10/21/up-to-date-installation-2/.

Click the tile for new installations in the Maintenance Planner, then choose Plan:
You define a system ID and are guided through the selection of product and the target system:

6.3 Select and Download Files

Selecting and downloading files is the same process for each kind of maintenance. It follows the target definition. For new installations and upgrades, the only difference is that you will find a link to required DVDs in the PDF plan document:

```
Planned Changes
Process Type: New system Installation
Installation tool: SOFTWARE PROVISIONING MGR 1.0 Support Package Level-009
Update Tool: SOFTWARE UPDATE MANAGER 1.0 Support Package Level-014
Download Installation Media from Service Market Place
```

When you have defined the target as described in the previous sections, select the download files. The selection depends on your operating system and database, and on stack-dependent and stack-independent files.
When you have compiled the required files, go to the next step, **Download Files**. Here, you can give the maintenance plan a title and save the calculated stack XML file to a local drive:

Then you can push the file to the download basket:

Also note the new feature for the simplified download for upgrade scenarios, which integrated the DVD download directly in the Maintenance Planner.

For the download you can also use the **Download Service** application in the launchpad of SAP Solution Manager 7.2.
6.4 Complete the Maintenance Transaction

i Note

When you have set the maintenance transaction to Completed, you cannot edit it any longer.

Before you set a maintenance transaction to completed, consider the following points:

- We recommend that you first run an approval phase of the planned changes, as described under Checking Requirements for Implementation [page 38]. This gives you the chance to adjust the maintenance transaction.
- If you had run a verification in the Maintenance Planner and created a correction of system information in a CISI file (correction of installed software information), you should install this file with SUM, first. Then you can be sure that from then on the system is sending correct system information. Once the system is sending the correct information, it can be considered for all subsequent maintenance transactions and you do not have to run a verification, again.
- Consider whether you need to plan and the installation of an add-on, for example. In case you ran a verification with corrections and did not install the CISI file yet, you can use the verification results from the current maintenance transaction.

In the end, you can complete the maintenance transaction in the Maintenance Planner. This is also for documentary reasons, so that everybody can see that this planned update, upgrade, or installation has been implemented.

You can display the plan as PDF. Each completed plan is saved with a transaction ID.

The stack XML file is suited for further use in Software Update Manager (SUM) and Software Provisioning Manager (SWPM).
7 Checking Requirements for Implementation

When you have completed the maintenance transaction in the Maintenance Planner, you check some further details and efforts for the planned change.

The following steps are not performed in the Maintenance Planner, they provide information on involved systems, effects on business processes to which these systems belong, and the testing effort to be expected due to the planned changes.

None of the steps is technically required to continue, but you should perform them and consider their results.

7.1 Check Details of Involved Technical System (LMDB)

This activity is not mandatory, but can be helpful if you are looking for metadata on a technical system that is planned to be updated. You, as the basis administrator, can check the following, for example:

- system roles (development, test, production etc.)
- system size
- system owners for approval or further enquiries, or other business partners

This can be done in SAP Solution Manager: either directly in transaction LMDB, or with the Landscape Management tile in the SAP Solution Manager launchpad.
Ensure that the system landscape information is up-to-date and correct in SAP Solution Manager.

7.2 Check Dependency of Changes on Other Systems (UDA)

Typically, SAP systems, like SAP ERP, SAP CRM, SAP SCM or SAP SRM, are part of an SAP system landscape that contains various interconnected systems. Business processes can run across the various systems. When planning an upgrade of the systems in your landscape, you need to know whether it has an impact on other systems in your landscape, that is, whether the upgrade also requires changes to other systems in the landscape.

The Upgrade Dependency Analyzer (UDA) provides this information.

The Upgrade Dependency Analyzer checks the existence of upgrade dependencies between two separately installed SAP systems in your system landscape. The result of this check is a dependency statement that informs you of known upgrade dependencies between these systems. The dependency statement does not generally indicate whether two components are technically compatible, it is relevant only for functions that were already in use before the upgrade.
In the following, no dependency was detected:

7.3 Estimate the Effort to Test the Changes (SEA)

With the Scope and Effort Analyzer (SEA), you can analyze the scope of activities and effort, before you physically deploy enhancement packages and support packages.

The Scope and Effort Analyzer performs a comprehensive analysis with minimal customer input. All its steps are performed in the background, after you have entered the necessary data. Some of the most important and time consuming analyses before a physical deployment of EHPs and SPs are:

- Identification of affected custom code and modifications, and required adjustments in the customer system, since an enhancement or support package contains updates of SAP standard objects
- Identification of required test scope, test planning, creation of missing test cases, and execution of manual tests
With the analysis results, you can determine the change impact on custom code and modifications, and estimate the rework effort for custom code and modifications, and the effort for regression tests of impacted business processes.

You can start the analysis and result calculation in the Test Suite group of the SAP Solution Manager launchpad, under Scope and Effort Analyzer.

The test runs in the background over all technical systems involved (DEV, PRD, QA...). SAP Solution Manager receives a calculation of SAP objects (bill of material, BOM) for the planned change.

The result is displayed in charts, and provides the following information:

- Usage statistics
- Number of business scenarios, processes, and process steps
- Number of test cases, automated tests, manual tests, and missing tests
- Impact analysis for custom code and modifications
- Effort calculation
- Business blueprint
- Test scope and effort optimization
- Other recommendations
The change project team can review the results with fact sheets, assessment of analysis details, and by using parameter variation for result optimization.

Note

The Scope and Effort Analyzer is now fully integrated with the Maintenance Planner. So you can now trigger the creation of a maintenance transaction from SEA, as it was possible with the maintenance optimizer, in the past.

More information:

- SCN Wiki - Test Suite
- Best Practice for Regression Testing of E2E Business Processes
- Functional scope of the tool: Scope and Effort Analyzer (SAP Help Portal) and Scope and Effort Analyzer (SAP Support Portal)
8 Implementing Changes

The basis administrator performs the implementation of new software in the system landscape.

8.1 Creating a Sandbox Environment (Optional, LaMa)

To test new software, create a test or sandbox system. The enterprise edition of the SAP Landscape Management tool (LaMa, previously known as the Landscape Virtualization Management, LVM), offers system provisioning features to simplify and automate the effort required to configure, provision, deploy, monitor, and manage SAP systems.

LaMa helps companies to reduce the TCO of their SAP systems and increase their business agility.

For more information about LVM, see SAP Landscape Virtualization Management at a Glance.

Tip

If you only want to create a system copy, you can use the Software Provisioning Manager (SWPM). For more information, see the system copy guide at http://support.sap.com/sitoolset → Software Logistics Toolset 1.0, scroll down to the bottom and expand Software Provisioning → System Copy based on SAP NetWeaver <release>, then select your operating system.
LaMa automates end-to-end provisioning activities, which support you in creating new test or sandbox systems. With LaMa, you can automate the creation by cloning or copying a system:

| Table 1: |
|---|---|
| **system clone** | **system copy** |
| ![system clone](image1) | ![system copy](image2) |

You can clone a system to create a duplicate of an existing system. The clone has the same system ID, but it is isolated from the landscape.

Example: Create isolated systems for testing, demo, or training, or to test the update and upgrade paths.

You can copy a system to create a duplicate of an existing system with a different host name and a unique system ID.

Example: Create new quality or test systems in a track of synchronized systems.

To install or update software on a sandbox system and other systems of one track, use the Explore System Tracks tile in the Maintenance Planner. Here, you can create the same maintenance plan for all systems of a track and keep them in synchronization. See Define Target for an Update [page 31] -> Maintain System Tracks.

### 8.2 Implementation (SWPM or SUM)

You can download our files in the following places:

- Directly in the Maintenance Planner (see Select and Download Files)
- In SAP Solution Manager, under Download Service, using your transaction ID from the Maintenance Planner

Use the appropriate tool to implement the downloaded items. This ensures that the correct installed software information is written on to the system, and can be forwarded to the SLD.
Software Update Manager (SUM) installs updates and add-ons. It controls different kinds of implementation processes, such as upgrading SAP systems, installing enhancement packages, or applying support package stacks. It is part of the Software Logistics Toolset (SL Toolset). SUM replaces previous tools like SAPehpi, SAPup, SAPJup, JSPM, CEupdateManager, and SolManUp.

The tool consumes the stack XML that was created by the Maintenace Planner. (Though also the tools SPAM and SAINT can also consume stack XMLs, using use SUM is highly recommended; see SAP Note 1803986 Rules to use SUM or SPAM and SAINT to apply SPs for ABAP stacks.)

Software Provisioning Manager (abbreviated with to SWPM in this document) performs new installations, uninstallation, system copy, or system transformation. It is also part of the SL Toolset, too. It is used for all SAP NetWeaver-based systems, which are systems either based on SAP NetWeaver AS ABAP, or SAP NetWeaver AS Java, or on a dual-stack system. For example, you can also create a test or sandbox system as a copy from of an existing system.

After a new installation, an update to a higher SP stack level with SUM may be required.

More information:

- Software Update Manager (SUM): introducing the tool for software maintenance (SAP Community Network)
- Software Provisioning Manager 1.0 (SAP Community Network)
- Software Update Manager at https://support.sap.com/sltoolset
- Software Logistics Toolset
- Landscape Management - the Process
9 Document History, Abbreviations, Legal Disclaimer

Table 2: Document History

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>October 2016</td>
<td>New version into which additional information from the Maintenance Planning Guide for SAP Solution Manager 7.1 (see <a href="https://wiki.scn.sap.com/wiki/x/oUS7Gg">https://wiki.scn.sap.com/wiki/x/oUS7Gg</a>) has been merged and updated. The maintenance planning guide is now completely substituted by the Planning Landscape Changes guide.</td>
</tr>
</tbody>
</table>
| 1.0     | August 2016 | New version for SAP Solution Manager 7.2 SPS 3  
Landscape Virtualization Management was renamed to SAP Landscape Management (LaMa)  
Scope and effort analyzer (SEA) is now fully integrated with the maintenance planner.  
Updates to SAP Business Suite EHP 8 and installation of SAP S/4 HANA is now supported by the maintenance planner. |

Table 3: Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ALM</td>
<td>application lifecycle management</td>
</tr>
<tr>
<td>FQDN</td>
<td>fully-qualified domain name</td>
</tr>
<tr>
<td>LMDB</td>
<td>Landscape Management Database</td>
</tr>
<tr>
<td>LoB</td>
<td>Line of Business</td>
</tr>
<tr>
<td>LaMa</td>
<td>SAP Landscape Management (previously SAP Landscape Virtualization Management, LVM)</td>
</tr>
<tr>
<td>PAM</td>
<td>Product Availability Matrix</td>
</tr>
<tr>
<td>SEA</td>
<td>Scope &amp; Effort Analyzer</td>
</tr>
<tr>
<td>SLD</td>
<td>System Landscape Directory</td>
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<tr>
<td>SMD</td>
<td>SAP Solution Manager diagnostics</td>
</tr>
</tbody>
</table>
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
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</tr>
</thead>
<tbody>
<tr>
<td>SUM</td>
<td>Software Update Manager</td>
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<tr>
<td>SWPM</td>
<td>Software Provisioning Manager</td>
</tr>
<tr>
<td>TU</td>
<td>technical usage</td>
</tr>
<tr>
<td>UDA</td>
<td>Upgrade Dependency Analyzer</td>
</tr>
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</table>

### Note

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