Installation Guide

Homogeneous and Heterogeneous System Copy for SAP® Systems Based on SAP Web Application Server 6.20

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Type Style	Represents
Example Text	Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths and options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, titles of graphics and tables
EXAMPLE TEXT	Names of elements in the system. These include report names, program names, transaction codes, table names, and individual key words of a programming language, when surrounded by body text, for example, SELECT and INCLUDE.
`Example text`	Screen output. This includes file and directory names and their paths, messages, names of variables and parameters, source code as well as names of installation, upgrade and database tools.
`Example text`	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
`<Example text>`	Variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries.
`EXAMPLE TEXT`	Keys on the keyboard, for example, function keys (such as `F2`) or the `Enter` key.

Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

Contents

Homogeneous and Heterogeneous System Copy for SAP Systems Based on SAP Web Application Server 6.20

Purpose

A system copy should only be done by a person with experience in copying systems and with knowledge of the operating system, the database, and the ABAP Dictionary.
Create an SAPNet - R/3 Frontend message in the application area **BC-INS-UNX** (UNIX), **BC-INS-NT** (Windows), or **BC-INS-AS4** (IBM eServer iSeries) if you experience problems during the homogeneous system copy.
In the case of a heterogeneous system copy (OS/DB migration) of a productive system, create an SAPNet - R/3 Frontend message in the application area **BC-INS-MIGR3** if you experience problems during the heterogeneous system copy.

When a homogeneous system copy is performed, the target SAP system is installed on the same operating system and the same database system as the source SAP system. The contents of the database is copied from the source system.

If you are planning a heterogeneous system copy (that is, changing your operating system or database system during the system copy), please be aware of the migration procedure. For information concerning the migration procedure, see:

- SAP OS/DB Migration page on SAP Service Marketplace under the Interenet address `service.sap.com/osdbmigration`

  This page also contains the *SAP OS/DB Migration Fact Sheet* and the *SAP OS/DB Migration Planning Guide*.

- **SAP Note 82478**

  The customer may perform a system copy on his own, but SAP recommends that it be done by a certified system support consultant or an SAP Technical Consultant.

This documentation applies to SAP systems based on the SAP Web Application Server 6.20 (for example, SAP R/3 Enterprise 4.70 Extension Set 1).

Terminology

- *Homogeneous System Copy*

  The copy does not modify the operating system or database platform.

- *Heterogeneous System Copy*

  During the copy, either the operating system or the database system is switched, or both. *Heterogeneous system copy* is a synonym for migration.

- *Source System* and *Target System*

  The SAP system containing the original database is called the source system and the system to which the database copy is to be imported is called the target system. Their SAP system names are abbreviated to `SOURCE_SAPSID` and `TARGET_SAPSID` (IBM eServer iSeries: `source_<SID>` and `target_<SID>`). The terms source database and target database are also used in this description.

- *System Copy*

  Duplication of an SAP system. Certain SAP parameters may change in a copy. When a system copy is made, all the instances are newly installed, but the database is set up using a copy of the source system database.

- *Database Copy*

  Database-dependent part of the system copy.

- *Placeholders*

  Placeholders such as `<SAPSID>` are used in commands. They are used in the same way as in the SAP system installation documentation, and must be replaced with the values valid for your site.

  The following additional placeholders are used:

Placeholder	Meaning	How to find out
`<S_HOST>`	System name of the source host	Command `hostname`
`<T_HOST>`	System name of the target host	Command `hostname`
`<S_SAPSID>`	SAP system ID of the source system	`<SAPSID>` of the original system
`<T_SAPSID>`	SAP system ID of the target system	`<SAPSID>` of the target system
`<S_DBSID>`	Database ID of the source system	`<DBSID>` of the original system
`<T_DBSID>`	Database ID of the target system	`<DBSID>` of the target system

Constraints

- A system copy should only be done by a person with experience in copying systems and with knowledge of the operating system, the database, and the ABAP Dictionary.
- Client transport is **not supported** as a system copy method. Transporting production clients is not supported at all. You can use client transport for the initial set up of a SAP system infrastructure. The client copy procedure is not handled in this documentation.
- Export and import of a database with the installation tools for reorganization purposes is not described in this documentation, and is not supported by SAP. Please use the appropriate tools for database reorganization.
- If you have made modifications in your development system, and want to copy your quality assurance or production system onto the development system, see **SAP Note 130906**.
- Copying data from SAP R/2 Systems to an SAP R/3 System is not described in this documentation. Copying data from non-SAP systems to SAP systems is not described in this documentation either.

1 Planning

Purpose

Before you begin with the practical system copy tasks, it is essential to have a planning phase in which you make a number of fundamental decisions that influence the subsequent system copy procedure. Careful planning is a prerequisite for the successful system copy of the system.

SAP recommends that you make a system copy in order to build a test, demo, training or standby system (Oracle and Informix: standby systems cannot be created with a system copy). You should perform upgrades in a test system first. This way you can identify customer-specific problems which might result from modifications.

The SAP system infrastructure (development, quality assurance and production system) can be set up without making a system copy as follows:

- Install all SAP systems (begin with the development system). Customize the development system as described in the implementation documentation.
- Transport the client-dependent and client-independent data to the quality assurance and production systems.

However, if you do not follow this concept, you can also install a system, customize it and then perform a system copy.

When copying a system which contains production data it is important to choose the right moment for the copy. This could be a month-end or year-end closing. Make sure that there is a well-defined starting point for the data in the new system.

Prerequisites

Read the following SAP Note before beginning the system copy. This note contains the most recent information regarding the system copy. It is available only in English.
SAP Note 516246 *System Copy for SAP Systems based on SAP Web AS 6.20*
Make sure that you have the most recent version of the note. SAP Notes are located on the SAP Service Marketplace under the Internet address **`service.sap.com/notes.`**

A consistent system copy can only be ensured if you perform all steps described in this documentation.

The system copy is applicable for:

- Setting up system landscapes (where the SAP systems have different SAPSIDs).
- Creating systems for testing, demonstration, training and standby. Depending on the purpose of the system, it may be advisable to use the same SAP system name, even though the system cannot be included in a system group for transports in this case.

The SAP system release of the source and target systems must be the same.

Process Flow

1. Obtain the latest versions of the SAP Notes.
2. In the case of a major change in hardware configuration (for example, new machine type, new hard disk configuration, new file system type), consult your SAP-authorized hardware partner.

3. Create a plan for performing the system copy.

   Take into account the downtime of the source system (for preparations and copying) when planning the system copy.

4. Homogeneous system copy: Decide which copy method you want to use. There are two ways to perform a homogeneous system copy of an SAP system:

   - With database-specific tools (tools provided by the database vendor):

     Some database vendors offer specific tools for copying a database. These tools allow you to:

     - Restore a backup of one database (source DB) in another one (target DB) (backup method), or
     - Unload the source DB and load the data into the target DB.

     The database-specific procedures are not described in this documentation. These methods are explained in different SAP Notes (see table below).

   - With SAP tools (R3load procedure):

     The system copy is carried out with SAP tools. This method should be used if database-specific methods are either not available or not suitable.

     Copying an SAP system with these tools is described in section *R3load Procedures*.

     

     For a heterogeneous system copy, only the R3load procedure is available.

   Neither of these methods is supported for all database systems. See the following table to check which copy methods are available for your database system:

Database	OS Platform	Available Methods
SAP DB	UNIX	Use the R3load method (see section *R3load Procedure on UNIX*).
	Windows	Use the R3load method (see section *R3load Procedure on Windows*).
IBM DB2 Universal Database for eServer iSeries	eServer iSeries	Use the R3load method (see section *R3load Procedure on eServer iSeries*) or the Save/Restore Library method (see SAP Note 585277).
IBM DB2 Universal Database for UNIX and Windows	UNIX	Use the R3load method (see section *R3load Procedure on UNIX*). The backup method of IBM DB2 Universal Database for UNIX and Winodws is not generally supported for this version of the SAP Web Application Server. For more information, see **SAP Note 646393.**
	Windows	Use the R3load method (see section *R3load Procedure on Windows*). The backup method of IBM DB2 Universal Database for UNIX and Winodws is not generally supported for this version of the SAP Web Application Server. For more information, see **SAP Note 646393.**
IBM DB2 Universal Database for zSeries	eServer zSeries	Use the R3load method (see section *R3load Procedure on UNIX* or *R3load Procedure on Windows*). There is no IBM DB2 UDB for zSeries backup method supported for this version of the SAP Web Application Server.

Informix	UNIX	You can use the R3load method (see section *R3load Procedure on UNIX*).
	Windows	You can use either: • The R3load method (see section *R3load Procedure on Windows*) or • The backup method (see **SAP Note 158079**)
Oracle	UNIX	Use the R3load method (see section *R3load Procedure on UNIX*). The Oracle backup method is not generally supported for this version of the SAP Web Application Server. This method is only available as a pilot project. For more information, see **SAP Note 543715**.
	Windows	Use the R3load method (see section *R3load Procedure on Windows*).
MS SQL Server	Windows	You can use either: • The R3load method (see section *R3load Procedure on Windows*) or • Use the Detach / Attach Database Method (see **SAP Note 151603**).

5. Order the right version of the installation kit before starting the system copy.
6. Choose an SAP system name. The new SAP system name `<TARGET_SAPSID>` can be chosen freely (during a new installation), but to meet the requirements of the Workbench Organizer you must choose different SAP system names for different systems.
7. Make sure that the versions of the SAP system and the installation tools are the same on the target and source systems (exceptions are only allowed if they are described in an SAP Note).

Several SAP systems can be operated on a single host without encountering any problems. Nevertheless, SAP recommends that you use a separate host for each system because an SAP system upgrade may depend on an OS upgrade. If the SAP systems are on separate hosts, it is possible to upgrade them at different

The source system must be in a consistent state before it can be copied.

8. Heterogeneous System Copy: Get Migration Key

If you change the operating system or the database system during the copy (heterogeneous system copy), you need a **migration key**.
You can generate the migration key required for the heterogeneous system copy via SAP Service Marketplace under the Internet address `service.sap.com/migrationkey`.

2 Preparations

Before you start the system copy, you must perform steps to prepare the procedure.

Organizational Preparations

- Required CDs

  Make sure that all required CDs for the system copy are available.

- Tool Versions

  Check that you have the appropriate tool versions for your SAP Kernel.

- SAP License

  Once installation is complete and the SAP system copy has been imported, you will require a new license key for the target system. The license key of the source system is not valid for this system. You can order a new license key for the target system as follows:

  - SAP Service Marketplace
  - SAPNet R/3-Frontend
  - Telefax

    For more information, see **SAP Note 94998**.

- Archive Files

  You must make data archived in the source system (data that does not reside in the database but was moved to a different storage location using SAP Archive Management) accessible in the target system. Adapt the file residence information in the target system. Refer to the SAP Online Documentation (*SAP Library → Cross-Application Components → Archiving Application Data)* for help.

  Access to archive files is platform-independent.

- Configuration Analysis / Hardware Analysis

  The following factors have to be determined:

  - The number of application servers
  - The expected size of the database
  - Additional disks or other hardware required
  - Required memory

    

    See *Hardware and Software Requirements Check* in the SAP system installation documentation to determine the system requirements.

- Test Run / Schedule
  - Perform a test run of the system copy. The time taken by the test run is used to calculate the system downtime:
    - If your target system will replace your source system, try to perform a complete test run, meaning that the entire database is exported from the source system, transferred to the target system and imported there. Approximately system downtime will be equal to the total test time (that is, time for export, transport and import).

- If you do not want to replace your source system, a partial test run (export of entire database or parts of it) may suffice to calculate the system downtime. The source system will only be down for the time of the export.

  Calculating the system downtime is particularly important for very large databases (VLDB) or when tapes are being used. The test run is also done to determine the amount of export data. You should choose the best data transfer method (for example, FTP or tape). We recommend to perform read/write actions only on local file systems. Do not use NFS-mounted file systems, as:

- Reading from NFS-mounted file systems may fail.
- Writing to NFS-mounted file systems may cause corrupted dumps.

  - Define a schedule for the test migration and the final migration.

Technical Preparations

In order to make a consistent copy of the database, it is necessary to prepare the source system and to carry out some subsequent actions on the target system. This is not necessary when performing a test run.

The following list describes important preparatory actions. For further information on SAP system administration, see the *SAP Online Documentation*.

- Preparing the Source System
  - No canceled or pending update requests should be in the system. Check this via: *Tools* → *Administration* → *Monitor* → *Update* (SM13). If canceled or pending updates exist, these must be updated again or deleted from all clients. You can see whether canceled or pending updates exist by checking if table `VBDATA` contains any entries. Proceed as follows in order to find the canceled or open updates:
    i. Call transaction SM13.
    ii. Delete the default values for the client, user, and time.
    iii. Choose all update requests.

    If canceled or pending records exist, then these must be updated again or deleted. Check whether this action was successful using transaction SE16 for table `VBDATA`.
  - Cancel all released jobs: *Administration* → *CCMS* → *Jobs* → *Maintenance*. This also applies to the jobs which must run periodically (see **SAP Note 16083**). Select all jobs (include *start after event*): *Job* → *Schedule Job* → *Cancel*.
  - Adapt the operation mode timetable to make sure that no switching of operating modes takes place while a system is being copied: *Administration* → *CCMS* → *Configuration* → *Operation mode calendar*.
  - Before the export, delete QCM tables from your system. Proceed as follows:
    i. Before deleting you must check
    - that the tables are consistent (no restart log or conversion procedure termination must be displayed)
    - that the data of the original table is legible
    - If application programs do not run correctly which use the affected original table, do not delete the QCM table yet.

    ii. Start transaction SE14.

iii. Choose *Extras* → *Invalid temp. table*

All QCM tables that can be deleted are displayed.

iv. Mark the tables and delete them.

- FI customers: You can perform an additional consistency check by running the job `SAPF190` before the system copy in the source system, as well as after the copy in the target system, and then comparing the results. No customer data may be changed in the meantime. (*Accounting* → *Financial Accounting* → *General ledger* → *Periodic Processing* → *Closing* → *Check/count* → *Comparison*)
- FI customers: You can further check consistency by running the jobs `RFUMSV00` (tax on sales/purchases), `RAGITT01` (asset history sheet), `RAZUGA01` (asset acquisitions), `RAABGA01` (fixed asset retirements) before the system copy in the source system, as well as after the copy in the target system, and then comparing the results. No customer data may be changed in the meantime.
- CO customers: You can perform an additional consistency check by running the report group `1SIP` before the system copy in the source system, as well as after the copy in the target system, and then comparing the results. No customer data may be changed in the meantime.

Prerequisites for an export:
Before performing an export, make sure that:
- No upgrade-prepare is performed.
- No incremental conversion is in progress.

To test if an incremental conversion is in progress, start the transaction ICNV. If there are any table entries in the TICNV, an incremental conversion is in progress. In this case, you have the following options:
1. Defer the migration until the incremental conversion has finished.
2. Try to finish the incremental conversion by performing the following steps:
   - If the tables are in state '`For conversion`' or in state '`Done`', delete the entries by choosing *Control* → *Delete Entry*.
   - If the tables are in any other state, you have to finish the incremental conversion. Choose the button `Assistant` and proceed according to the

Only Heterogeneous System Copy:
Before you start the export of your source system, make sure that the tables `TATGPC` and `TATGPCA` are empty. To do so, use your database utility and delete the contents of these tables with the following statements:

```
DELETE from TATGPC
DELETE from TATGPCA
```

Normally both tables are empty. If you do not delete the contents of these tables you will encounter problems while importing the data to your target system because of non NULL capable fields in these tables.

3 R3load Procedures

Purpose

With the SAP installation tool SAPinst, you can export and import your database in a database-independent format. The procedure generates a database export of all SAP objects that are defined in the ABAP Dictionary.

Prerequisites

R3load Restrictions

Keep the following restrictions of R3load procedures in mind:

- SAPinst generates a database dump of all SAP objects that are defined in the ABAP Dictionary. Other objects are not exported by SAPinst.
- Changes to database objects that cannot be maintained in the ABAP Dictionary (transaction SE14), such as the distribution of tables over several tablespaces/dbspaces, are lost after the system copy.
- No indexes longer than 18 characters are allowed on the database to be exported.
- For migrations to and from IBM eServer iSeries, only Latin 1 (ISO 8859-1) languages are supported.
- For a consistent database export, no transactions on export-relevant database objects are allowed during the export. Otherwise, the export has to be restarted. Therefore, it is recommended to shutdown the SAP system for the export. The database must still be running.

See also the sections before for additional restrictions.

Considerations concerning the System Copy Tools

- Every installation service (dialog instance installation, for example) must have its own separate installation directory whenever you start SAPinst.
- If the target system is already existing, delete the database on the target system before the import according to the corresponding description in section *Additional Information* in the installation documentation for your SAP component.

  If the database configuration of your database is stored in the file system, it is advisable to backup these configuration files before deleting the database.

Process Flow

- On UNIX, see R3load on UNIX [page 16].
- On Windows, see R3load on Windows [page 26].
- On IBM eServer iSeries, see R3load on IBM eServer iSeries [page 34]

3.1 R3load Procedure on UNIX

Purpose

This section describes the R3load system copy procedure for Oracle, Informix, IBM DB2 UDB for UNIX and Windows, IBM DB2 UDB for OS/390 and z/OS, and SAP DB on UNIX platforms.

Process Flow

The R3load procedure consists of the following steps:

1. Heterogenous system copy: Generate the migration key via SAP Service Marketplace.

   

   You need a **migration key** for a heterogeneous system copy.
   You can generate the migration key required for the heterogeneous system copy via SAP Service Marketplace under the Internet address `service.sap.com/migrationkey`.

2. Export the source database:
   a. Before the export, delete QCM tables from your system. Proceed as follows:
      i. Before deleting you must check
      - that the tables are consistent (no restart log or conversion procedure termination must be displayed)
      - that the data of the original table is legible

        If application programs do not run correctly which use the affected original table, do not delete the QCM table yet.

      ii. Start transaction SE14.
      iii. Choose *Extras* → *Invalid temp. table*

        All QCM tables that can be deleted are displayed.

      iv. Mark the tables and delete them.
   b. Set up an installation directory [page 17].
   c. IBM DB2 UDB for UNIX and Windows, Informix and Oracle only:
      Set the library path environment variable [page 18].
   d. Check that the prerequisites for running SAPinst are met [page 19].
   e. Run SAPinst to export the database [page 19].
3. Transfer the database export and the sizing information file to the target host [page 44].
4. Install the target system [page 45].

Result

You finished this part of the system copy. To complete the system copy, you have to perform the steps in section Final Activities [page 46].

3.1.1 Setting Up an Installation Directory

Use

For every installation service, you must create an own separate installation directory whenever you start SAPinst.

Otherwise, you might lose former log and command files.

Prerequisites

- Installation directory name

  You can choose any name for the installation directory. In this documentation, `<SAPinst_INSTDIR>` refers to the installation directory.

- Required space

  The following table shows the required space on UNIX operating systems for `<SAPinst_INSTDIR>`:

Platform	Required Space for an Installation Directory
AIX	120 MB
Compaq Tru64 UNIX	50 MB
HP-UX	130 MB
Linux	60 MB
Solaris	60 MB

SOLARIS only:
Do **not** use `/tmp` and its subdirectories because they are removed when the system is rebooted. For more information, see the documentation *SAP Software on UNIX: OS Dependencies*, section *Solaris: Preparing the Installation*.

Procedure

You can set up an installation directory before you start the installation as follows:

- Create directory `<SAPinst_INSTDIR>` **manually** or
- Create directory `<SAPinst_INSTDIR>` by using the environment variable `SAPINST_DIR`

You must set the permissions of the installation directory to `777`.

3.1.2 Setting the Library Path Environment Variable

Use

This section is only valid for IBM DB2 UDB for UNIX and Windows, Informix and Oracle.

You need to set the library path environment variable of user `root` **before** starting SAPinst.

Procedure

As user `root`, set the library path environment variable on your installation host according to the following tables:

Value of Library Path Environment Variable

DB Version	Operating System	Variable Value
IBM DB2 UDB for UNIX and Windows Version 7	Linux	`/usr/sap/<SAPSID>/SYS/exe/run:/usr/IBMdb2/V7.1/lib:.`
	Solaris (32 Bit)	`/usr/sap/<SAPSID>/SYS/exe/run:/opt/IBMdb2/V7.1/lib:.`
	Solaris (64 Bit)	`/usr/sap/<SAPSID>/SYS/exe/run:/opt/IBMdb2/V7.1/lib64:.`
	HP-UX (64 Bit)	`/usr/sap/<SAPSID>/SYS/exe/run:/opt/IBMdb2/V7.1/lib64:.`
	AIX (64 Bit)	`/usr/sap/<SAPSID>/SYS/exe/run:/usr/lpp/db2_07_01/lib64:.`
	AIX (32 Bit)	`/usr/sap/<SAPSID>/SYS/exe/run:/usr/lpp/db2_07_01/lib:.`
IBM DB2 UDB for UNIX and Windows Version 8	AIX (32 Bit)	`/usr/sap/<SAPSID>/SYS/exe/run:/usr/opt/db2_08_01/lib:.`
	AIX (64 Bit)	`/usr/sap/<SAPSID>/SYS/exe/run:/usr/opt/db2_08_01/lib64:.`
	All other UNIX OSs (32 Bit)	`/usr/sap/<SAPSID>/SYS/exe/run:/opt/IBM/db2/V8.1/lib:.`
	All other UNIX OSs (64 Bit)	`/usr/sap/<SAPSID>/SYS/exe/run:/opt/IBM/db2/V8.1/lib64:.`
Informix	All UNIX operating systems	`/informix/<SAPSID>/lib:/ \ informix/<SAPSID>/lib/esql`
Oracle 8.1.7, Oracle 9.2.0	Linux, ReliantUNIX Compaq Tru64	`<sapmnt>/<SAPSID>/exe: \ $ORACLE_HOME/lib`

	All other UNIX operating systems	<sapmnt>/<SAPSID>/exe

Name of Library Path Environment Variable

Operating System	Variable Name
AIX	LIBPATH
HP-UX	SHLIB_PATH
All other UNIX operating systems	LD_LIBRARY_PATH

If you restart SAPinst at a later time, make sure the variable is still set.

3.1.3 Running SAPinst to Export the Database

It is recommended to shutdown the SAP system before the export. The database must still be running. Otherwise, the target system may be inconsistent.

Use

This procedure tells you how to run SAPinst to export the database of your SAP system.

The following sections describe a normal, that is, a local installation with SAPinst.

However, you can also perform a remote installation using a standalone SAPinst GUI on a separate Windows or UNIX host. This enables you to perform the installation on a remote host while monitoring it with SAPinst GUI from a local host. If you want to perform a remote installation, also see section Performing a Remote Installation with SAPinst [page 51].

Prerequisites

1. The Java-based SAPinst graphical user interface (GUI) called SAPinst GUI require a Java Development Kit (Java™ 2 SDK, Standard Edition). Therefore, make sure that a JDK is installed on **every** host on which you want to run a SAPinst GUI.

   You can find the JDK versions that are released for the SAP Web Application Server in the SAP Service Marketplace at: **`http://service.sap.com/platforms`** → *Availability for SAP Basis / SAP Kernel → Planned OS / DB / JDK Releases for SAP Web AS 6.20*.

   

   SAPinst GUI requires the **same** JDK version as the SAP Web Application Server. JDK is **not** part of the SAP shipment.

2. Make sure that the JAVA_HOME environment variable (on UNIX: for user root) is set to <JAVA_HOME>.

3. On Windows, make sure that `%JAVA_HOME%\bin` is included in your system path.

   On Windows you have to reboot your system when you have set the system environment variable.

4. If you start SAPinst GUI on your host, your `DISPLAY` environment variable must be set correctly.

5. To avoid an error when starting SAPinst GUI, make sure that there are no `.jar` files from an XML parser tool, such as, Xerces or Xalan, in the JDK `ext` directory:

   a. Log on to the host on which you intend to run the SAPinst GUI.

   b. Check whether there are already `<parser_name>.jar` files, for example, `xerces.jar` in your `ext` directory. The default path is:

      - UNIX: <JAVA_HOME>/JRE/lib/ext
      - Windows: <JAVA_HOME>\JRE\lib\ext

   c. If you find any `.jar` files, do one of the following:

      - Move these files to a temporary dirctory. This is only possible if the application to which the JAR files belong is not running during the installation.

      

      Do **not** forget to move these files back to the `ext` directory after the installation procedure is complete.

      - Run the SAPinst GUI remotely on any other host (see Performing a Remote Installation with SAPinst [page 51]).

6. Oracle only:

   Make sure that the password for the database user `SAP<SAPSID>` is **`SAP`** and that the password for the database user `system` is **`manager:`**

   a. Log on as user `ora<dbsid>`.

   b. If the password of user `system` is not `manager,` enter:
   `sapdba -u system/<passwd> -alter_user system/manager`

   c. Enter:
   `sapdba -alter_user SAP<SAPSID>/SAP`

7. IBM DB2 Universal Database for Unix and Windows only:

   Before you start the export of existing SAP System, you have to download the current version of `R3szchk` from SAP Service Marketplace under `service.sap.com/patches` and copy it into directory `/usr/sap/<SAPSID>/SYS/exe/run/`.

Procedure

Depending on you installation package, SAPinst is either located on the *Kernel* CD or the *SAPinst* CD. If there is no *SAPinst* CD in your installation package, use the *Kernel* CD.

1. Log on to your host as user `root`.

2. Mount the *SAPinst* CD-ROM.

   For more information on mounting CD-ROMs, see documentation *SAP Software on UNIX: OS Dependencies*, section *<Your OS>: Mounting a CD-ROM.*

Mount the CDs locally. We do **not** recommend using Network File System (NFS) as reading from NFS-mounted CDs may fail.

3. Change to the installation directory:
   cd <SAPinst_INSTDIR>
4. Enter:

```
<SAPinst CD>/SAPINST/UNIX/    \
   <platform>/INSTALL
```

SAPinst uses the ports 21212 and 21213 during the installation for communication with SAPinst GUI. If one of these ports is already used by another service you must start SAPinst as follows:

```
<SAPinst CD>/SAPINST/UNIX/    \
   <platform>/INSTALL --port    \
   <free_port_number>
```

whereas `<free_port_number>` and `<free_port_number>` + 1 are unused port numbers.
For example, if you enter `60000` as `<free_port_number>`, SAPinst uses the ports `60000` and `60001`.

SAPinst is now copied to your `<SAPinst_INSTDIR>` and SAPinst GUI starts automatically by displaying the *Welcome* screen.

5. Select *Export SAP System Server Database*.
6. Choose *Next*.
7. Accept the *License Agreement for the STL port*.
8. Follow the instructions in the SAPinst dialogs (see section Input for Exporting Your Database [page 22]).

If you have entered all required information during the dialog phase, SAPinst starts the installation and displays installation progress during the processing phase.

Troubleshooting

- If there is not enough disk space in the export directory, the R3load database export will fail. You will then find error messages in the log files `SAP*.log`.

  You can subsequently move the dump files that have been created from the file system in which the export directory is located to a different file system during the export. Currently there is no possibility to automatically distribute the export over different file systems.

- If an error occurs during the **dialog phase**, SAPinst:
  - Stops the installation.
  - Displays a dialog that informs you about the error.

    You can now directly view the log file by choosing *View Logs*.

    Finally you must abort the installation with *OK* and try to solve the problem.

- If an error occurs during the **processing phase**, SAPinst:
  - Stops the installation.
  - Displays a dialog that informs you about the error.

    You can now:

- Directly view the log file by choosing *View Logs*.
- Try to solve the problem (see SAPinst Troubleshooting Guide on SAP Service Marketplace under the Internet address `service.sap.com/sapinstfeedback`).
- Retry the installation by choosing *Retry*.
- Abort the installation by choosing *OK*.

See also: Continuing an Interrupted Installation [page 55].

Input for Exporting Your Database

The following table shows the prompts that are required for the export of your SAP system database:

The table does not necessarily reflect the actual order in which the input windows appear during the installation.

Window	Prompt	Meaning
CD Browser	CD Name	This dialog appears if the system wants to check or cannot find the file `LABEL.ASC` that contains the relevant installation information. Enter the path to the directory where the file `LABEL.ASC` is located
Selecting the SAP System	SAP System: SAP System ID	Enter exactly the name of the SAP system `<SAPSID>`.
SAP System Common Parameters	Database: Database System ID	Enter exactly the name of the database instance `<DBSID>`.
	Central Instance: Instance number	Enter exactly the central instance number. To find out the number, look under the SAP directory `usr/sap/<SAPSID>/DVEBMGS<nn>`. The value `<nn>` is the number assigned to the central instance.
	Central Instance: Instance host	Enter exactly the name of the central instance host. To find out the host name, enter **`hostname`** at the command prompt of the central instance host.

SAP System Instance Directories	SAP System mount directory	Enter or confirm the base directory for the SAP system. Do not add `<SAPSID>` as subdirectory because the system automatically creates this directory. That is, if you enter **`/sapmnt`**, the system creates the directory `/sapmnt/<SAPSID>`.
Oracle only: Database System Common Parameters	Database Instance Parameters	Enter the information of your SAP system database: • *Database Schema*: Enter the name of the database schema (**`SAP<SAPSID>`**) you want to export. • *Database character set:* Make sure that the database character set is chosen that is used by your database. You normally only have to change this value in special cases.
	Database Server and Client information	Specify the information of your SAP system database for your server and client host: • *DB server version:* Specify the Oracle server software version you want to export. • *32/64 bit DB server:* Specify if the Oracle server software on the database host is a 32 or 64 bit version. • *DB client version:* Specify the Oracle client software version you want to export. • *32/64 bit DB client:* Specify if the Oracle client software on the database client host is a 32 or 64 bit version.
Informix only: User information	Password (confirm)	Enter and confirm the password for the `informix` user.
Database Export Parameters	Target DB	Choose the target database. For a homogeneous system copy, source and target database must be the same.
	Export Directory	Specify an export directory where the database dump files are written to.  SAPinst creates the specified export directory if it does not exist.

Informix only: User information	Password (confirm)	Enter and confirm the password for the `sapr3` user.
General Export Parameters	General Settings	• If you want to customize the export order, choose *export packages in custom order*. Otherwise, choose *export packages in alphabetical order*. • *Data file code page*: You normally do not have to change this value. • *Number of parallel jobs*: Specify the number of parallel R3load processes.

3.1.4 Transferring the Files to the Target Host

On the target host, create a directory `<EXPDIR>` with sufficient space for the database export files available.

Copy all files and directories (recursively) that are located on the source host in the migration export directory from the source host to the target host.

If you transfer the files with ftp, make sure you use binary mode for transferring the files `<EXPDIR>/DATA/*.00<n>` and use ASCII mode for transferring all other files.

3.1.5 Installing the Target System

Make sure there is enough free space on the target system for the database load. To find out the size of the export and the sizes of the tablespaces or dbspaces that will be created, look at the file `DBSIZE.XML` located in the directory `<DRIVE>:\<EXPDIR>\DB\<DATABASE>` (Windows) or `<EXPDIR>/DB/<DATABASE>` (UNIX).

1. To install the target database system follow the installation documentation for your SAP component. Start SAPinst and make the required entries up to the window *Selecting the Database Instance Installation Method*. Choose *System Copy/Migration*.
2. Enter the following parameters according to the installation documentation for your SAP component.
3. When SAPinst displays the CD Browser-Window and asks for the CD Export Migration, enter the path to the export directory `<EXPDIR>`.
4. Continue as described in the installation documentation for your SAP component.

5. When SAPinst displays the window General Load Parameters, specify the following settings:
   - Migration Key: If you perform a heterogeneous system copy, enter the migration key.
   - General Settings:
     - Specify the order in which the packages are loaded (alphabetical order, according to the size or custom order)

       If you choose *Load packages in custom order* the additional window *Data Load Options* is displayed (see below).
     - DB code page: You normally do not have to change this value.
     - Number of parallel jobs: Specify the number of parallel R3load processes.
   - Advanced Configuration of Packages
     - If you choose *Individual configuration for task file generation* the window *Task File Generation Options* is displayed.
     - If you choose *Individual configuration for data load* the window *Data Load Options* is displayed.

     

     Advanced package configuration should only be performed by certified database administrators. We recommend that you use the default settings if possible.
6. Complete the installation as described in the installation documentation for your SAP component.

3.2 R3load Procedure on Windows

Purpose

This section describes the R3load system copy procedure for Oracle, MS SQL Server, Informix, IBM DB2 UDB, MS for UNIX and Windows, IBM DB2 UDB for OS/390 and z/OS, and SAP DB on Windows platforms.

Process Flow

The R3load procedure consists of the following steps:

1. Heterogeneous system copy:

   Generate the migration key via SAP Service Marketplace.

   

   You need a **migration key** for a heterogeneous system copy.
   You can generate the migration key required for the heterogeneous system copy via the SAP Service Marketplace at the Internet addresss:
   `service.sap.com/migrationkey`

2. Export the source database:

   a. Before the export, delete QCM tables from your system. Proceed as follows:

      i. Before deleting you must check that

      - the tables are consistent (no restart log or conversion procedure termination must be displayed)
      - the data of the original table is legible

        If application programs do not run correctly which use the affected original table, do not delete the QCM table yet.

      ii. Start transaction SE14.

      iii. Choose *Extras* → *Invalid temp. table*

        All QCM tables that can be deleted are displayed.

      iv. Mark the tables and delete them.

   b. Run SAPinst to export the database [page 27].

3. Transfer the database export and the sizing information file to the target host [page 32].
4. Install the target system [page 32].

Result

You finished this part of the system copy. To complete the system copy, you have to perform the steps in section Final Activities [page 46].

3.2.1 Running SAPinst to Export the Database

It is recommended to shutdown the SAP system before the export. The database must still be running. Otherwise, the target system may be inconsistent.

Use

You use this procedure to run SAPinst to export the database of your SAP system.

The following sections describe a standard, that is, a local installation with SAPinst.

However, you can also perform a remote installation using a standalone SAPinst GUI on a separate Windows or UNIX host. This enables you to perform the installation on a remote host while monitoring it with SAPinst GUI from a local host. If you want to perform a remote installation, also see section Performing a Remote Installation with SAPinst [page 51].

Prerequisites

1. The SAP J2EE Engine and the Java-based SAPinst graphical user interface (GUI) called SAPinst GUI require a Java Development Kit (Java™ 2 SDK, Standard Edition). Therefore, make sure that a JDK is installed on **every** host on which you want to run a SAPinst GUI.

   You can find the JDK versions that are released for the SAP Web Application Server in the SAP Service Marketplace at the Internet address:

   `service.sap.com/platforms` → *Availability for SAP components in Detail* → *SAP Web AS / Basis / Kernel* → *OS / DB / JDK Releases for SAP Web AS*.

   

   - The SAPinst GUI requires the **same** JDK version as SAP Web Application Server.
   - JDK is **not** part of the SAP shipment.
   - To check the version of an already installed JDK, enter: **`java -version`**
   - If you have more than one Java Virtual Machine (JVM) installed on your system (for example, you have two JDKs with different versions installed), make sure that the `JAVA_HOME` environment variable is set to the correct `<JAVA_HOME>` directory..

2. Make sure that `%JAVA_HOME%\bin` is included in your system path.
3. To avoid an error when starting the SAPinst GUI, make sure that there are no `.jar` files from an XML parser tool, such as, Xerces or Xalan, in the JDK `ext` directory:
   a. Log on to the host on which you intend to run the SAPinst GUI.
   b. Check whether there are already `<parser_name>.jar` files, for example, `xerces.jar` in your `ext` directory. The default path is:

      `<JAVA_HOME>\JRE\lib\ext`

   c. If you find any `.jar` files, do one of the following:
      - Move these files to a temporary directory. This is only possible if the application to which the JAR files belong is not running during the installation.

   

   Do **not** forget to move these files back to the ext directory after the installation procedure is complete.

- Run the SAPinst GUI remotely on any other host (see Performing a Remote Installation with SAPinst [page 51]).

4. Oracle only:

   Make sure that the password for the database user `SAP<SAPSID>` is **`SAP`** and that the password for the database user `system` is **`manager:`**

   a. Log on as user `ora<dbsid>`.

   b. If the password of user `system` is not `manager,` enter:
   `sapdba -u system/<passwd> -alter_user system/manager`

   c. Enter:
   `sapdba -alter_user SAP<SAPSID>/SAP`

5. IBM DB2 Universal Database for Unix and Windows only:

   Before you start the export of an existing SAP system, you have to download the current version of `R3szchk` from the SAP Service Marketplace under `service.sap.com/patches` and copy it into directory `/usr/sap/<SAPSID>/SYS/exe/run/`.

Procedure

1. Log on to your host as a user who is a member of the local administration group.
2. Insert the SAP Installation Master CD in your CD drive.

   

   If you do not have the SAP Installation Master CD, use the SAPinst CD.
3. Run **`setup.cmd`** from the following path:

   `<CD drive>:\SAPinst\NT`

   SAPinst uses the ports 21212 and 21213 during the installation for communication with SAPinst GUI. You get an error message if one of these ports is already in use. In this case, you must do the following:

   - Open a command prompt.
   - Change to `<CD drive>:\SAPINST\NT\I386 and run` **`.\sapinst.exe SAPINST_SAPINST_DIALOG_PORT=<port>`** where `<port>` is an unused port on your host.

4. Follow the instructions in the SAPinst dialogs:

   - If SAPinst prompts you to reboot, reboot your system.
   - If SAPinst prompts you to relog your system, log off and log on again.

     In both cases, the installation starts automatically and the *Welcome* screen is displayed.

5. Select *Export SAP System Server Database* and choose *Next*.
6. Accept the *License Agreement for STL port*.
7. Follow the instructions in the SAPinst dialogs (see section Input for Exporting Your Database [page 30]).

   If you have entered all required information during the dialog phase, SAPinst starts the export and displays the export progress during the processing phase.

Troubleshooting

- If there is not enough disk space in the export directory, the R3load database export will fail. You will then find error messages in the log files `SAP*.log`.

  You can subsequently move the dump files that have been created from the file system in which the export directory is located to a different file system during the export. Currently there is no possibility to automatically distribute the export over different file systems.

- If an error occurs during the **input phase**, SAPinst:
  - Stops the installation.
  - Displays a dialog that informs you about the error.

    You can now directly view the log file by choosing *View Logs.*

    You must abort the installation with *OK* and try to solve the problem.

- If an error occurs during the **processing phase**, SAPinst:
  - Stops the installation.
  - Displays a dialog that informs you about the error.

  You can now:
  - Directly view the log file by choosing *View Logs.*
  - Try to solve the problem

  For more information, see the *SAPinst Troubleshooting Guide* in the *SAP Service Marketplace* at the Internet address:

  `service.sap.com/sapinstfeedback`
  - Retry the installation by choosing *Retry.*
  - Abort the installation by choosing *OK.*

For more information, see Continuing an Interrupted Installation with SAPinst [page 55].

Input for Exporting Your Database

The following table shows the prompts that are required for the export of your SAP system database:

The table does **not** reflect the actual order in which the input windows appear.

Window	Prompt	Meaning
CD Browser	CD Name	This dialog appears if the system wants to check or cannot find the file `LABEL.ASC` that contains the relevant installation information. Enter the path to the directory where the file `LABEL.ASC` is located.
Welcome		Choose *Export SAP System Server Database.*
Selecting the SAP System	SAP System: SAP System ID	Enter exactly the name of the SAP system `<SAPSID>`.
SAP System Common Parameters	Database: Database System ID	Enter exactly the name of the database instance `<DBSID>`.
	Central Instance: Instance number	Enter exactly the central instance number. To find out the instance number, look under the SAP directory `usr\sap\<SAPSID>\DVEBMGS<nn>`. The value `<nn>` is the number assigned to the central instance.
	Central Instance: Instance host	Enter exactly the name of the central instance host. To find out the host name, enter **`hostname`** at the command prompt of the central instance host.
SAP System Instance Directories	Host with Transport Directory	Enter the name of the host where the central transport directory is located**.**
Oracle only: Database System Common Parameters	Database Instance Parameters	Enter the information of your SAP system database: • *Database Schema*: Enter the name of the database schema (**`SAP<SAPSID>`**) you want to export. • *Database character set:* For a non-Unicode system, the default value is `WE8DEC` For a Unicode system, the default value is `UTF8`.

Window	Prompt	Meaning
	Database Server and Client information	Specify the information of your SAP system database for your server and client host: • *DB server version:* Specify the Oracle server software version you want to export. • *32/64 bit DB server:* Specify if the Oracle server software on the database host is a 32 or 64 bit version. • *DB client version:* Specify the Oracle client software version you want to export. • *32/64 bit DB client:* Specify if the Oracle client software on the database client host is a 32 or 64 bit version.
MS SQL Server only: Database Parameters	Database Host: Host	Enter the name of the database instance host. To find out the host name, enter **`hostname`** at the command prompt of the central instance host. For a named instance enter **`<hostname>\>instance_name>`**
	Database Name	Enter the name of the database of your SAP system.
Informix only: User information	Password (confirm)	Enter and confirm the password for the `informix` user.
Database Export Parameters	Target DB	Choose the target database. For a homogeneous system copy, source and target database must be the same.
	Export Directory	Specify an export directory where the database dump files are written to. SAPinst creates the specified export directory if it does not exist.
Informix only: User information	Password (confirm)	Enter and confirm the password for the `sapr3` user.
General Export Parameters	General Settings	These settings are for experts only. • If you want to customize the export order, choose *export packages in custom order*. Otherwise, choose *export packages in alphabetical order*.

Window	Prompt	Meaning
		• *Data file code page*: You normally do not have to change this value. • *Number of parallel jobs*: Specify the number of parallel R3load processes used.

3.2.2 Transferring the Export Files to the Target Host

On the target host, create a directory `<EXPDIR>` with sufficient space for the database export files available.

Copy all files and directories (recursively) that are located on the source host in the migration export directory from the source host to the target host.

If you transfer the files with ftp, make sure that you use binary mode for transferring the files `<EXPDIR>/DATA/*.00<n>` and use ASCII mode for transferring all other files.

3.2.3 Installing the Target System

Make sure there is enough free space on the target system for the database load. To find out the size of the export and the sizes of the tablespaces or dbspaces that will be created, look at the file `DBSIZE.XML` located in the directory `<DRIVE>:\<EXPDIR>\DB\<DATABASE>` (Windows) or `<EXPDIR>/DB/<DATABASE>` (UNIX).

1. To install the target database system follow the installation documentation for your SAP component. Start SAPinst and make the required entries up to the window *Selecting the Database Instance Installation Method*. Choose *System Copy/Migration*.
2. Enter the following parameters according to the installation documentation for your SAP component.
3. When SAPinst displays the CD Browser-Window and asks for the CD Export Migration, enter the path to the export directory `<EXPDIR>`.
4. Continue as described in the installation documentation for your SAP component.
5. When SAPinst displays the window General Load Parameters, specify the following settings:
   - Migration Key: If you perform a heterogeneous system copy, enter the migration key.
   - General Settings:
     - Specify the order in which the packages are loaded (alphabetical order, according to the size or custom order)

       If you choose *Load packages in custom order* the additional window *Data Load Options* is displayed (see below).
     - DB code page : You normally do not have to change this value.
     - Number of parallel jobs: Specify the number of parallel R3load processes.

- Advanced Configuration of Packages
  - If you choose Individual configuration for task file generation the window Task File Generation Options is displayed.
  - If you choose Individual configuration for data load the window Data Load Options is displayed.

Advanced package configuration should only be performed by certified database administrators. We recommend that you use the default settings if possible.

6. Complete the installation as described in the installation documentation for your SAP component.

3.3 R3load Procedure on IBM eServer iSeries

Purpose

This section describes the R3load system copy procedure for IBM DB2 UDB on iSeries.

Process Flow

The R3load procedure consists of the following steps:

1. Heterogenous system copy: Generate the migration key via SAP Service Marketplace.

   

   You need a **migration key** for a heterogeneous system copy.
   You can generate the migration key required for the heterogeneous system copy via SAP Service Marketplace (`service.sap.com/migrationkey`).
2. Exporting the source database.
3. Preparing the Windows Host for the SAP System Installation [page 35].
4. Preparing a Windows User Account and iSeries User Profile [page 36].
5. Installing TMKSVR and Creating an Installation Share [page 37].
6. Running SAPinst to Export the Database [page 39].
7. Transferring the Files to the Target Host [page 44].
8. Installing the target system [page 45].

Result

You finished this part of the system copy. To complete the system copy, you have to perform the steps in the section Final Activities [page 46].

3.3.1 Preparing the Windows Host for the SAP System Installation

Use

The Java-based SAPinst graphical user interface called the SAPinst GUI requires a Java Development Kit (Java™ 2 SDK, Standard Edition) with graphical capabilities (AWT, Swing). Since SAPinst is running on Windows 2000 or Windows Server 2003 to install R/3 Enterprise on iSeries, you must install the JDK on a Windows host to perform the installation.

Prerequisites

- Operating system of Windows 2000 or Windows Server 2003 is necessary.
- The current Java™ 2 SDK version needed is 1.3.1. The JDK is **not** part of the SAP shipment. You have to download it from the SUN homepage to install it on your system. You can find the information at **`http://java.sun.com/j2se/1.3/download.html`**.

To check the version of an already installed JDK, enter **`java –version.`**

Make sure that:Your `JAVA_HOME` environment variable is set for example to `C:\jdk 1.3.1_04.` The main version is 1.3.1. The postfix `_04` indicates a fix level, which will change from time to time. However, this fix level is not important, only the main version is important. For more information, see the JDK installation documentation. `$JAVA_HOME\bin` is included in your system path.

You can find the JDK versions that are released for the SAP Web Application Server in the SAP Service Marketplace at: **`http://service.sap.com/platforms`**. Choose *Availability of SAP Components in Detail → SAP Web AS / Basis / Kernel → Planned OS / DB / JDK Releases for SAP Web AS 6.20*. Check database release *DB2/400* and operating system release *Windows 2000* or *Windows Server 2003* to determine the right JDK release.

Procedure

To avoid an error when starting the SAPinst GUI, you must make sure that there are no `.jar` files from an XML parser tool, such as Xerces or Xalan, in the JDK `ext` directory.

1. Log on to the host on which you intend to run the SAPinst GUI.
2. Check whether there are already <`parser_name`>`.jar` files, for example, `xerces.jar` in your `ext` directory. The default path under Windows is:

   `<JAVA_HOME>\JRE\lib\ext`
3. If you find any `.jar` files, move these file to a temporary directory.

Do **not** forget to move these files back to the `ext` directory after the installation procedure is complete.

3.3.2 Preparing a Windows User Account and iSeries User Profile

Use

For the installation you need to create a user account on your Windows installation host and a user profile on the iSeries you want to install.

The following requirements apply:

- The iSeries user profile and the Windows user account must have the same name and password.
- The iSeries user profile must have user class *SECOFR and all special authorities that belong to user QSECOFR.
- The Windows user account must have administrator rights on the Windows installation host.

Procedure

The user name **SAPINST** and the password **sap** are used in the procedures as examples.

Windows :

1. Choose *Start* → *Settings* → *Control Panel.*
2. Choose *Users and Passwords*.
3. Choose *Advanced* → *Advanced User Management*. Then, choose *Advanced*.

   The *Local User and Groups* screen appears. This screen contains the *Users* and *Groups* folders.
4. Click the *Users* folder with the right mouse button.
5. Choose *New User.*

   The *New User* dialog box appears.
6. In the field *User name,* enter your installation user name, for example, **SAPINST**.
7. In the fields *Password* and *Confirm password*, enter the password **sap**.
8. Deselect User must change password at next logon.
9. To create your new installation user, choose *Create*.
10. To close the *New User* dialog box, choose *Close*.
11. To add the new user SAPINST to group *Administrators*, double-click the *Users* folder on the *Local Users and Groups* screen.

    All local users of your Windows system and SAPINST are displayed.
12. Click SAPINST with the right mouse button.

    The context menu appears.
13. Choose Properties.

    The *SAPINST Properties* screen appears.

14. Choose *Member Of* and then *Add*.

    The *Select Groups* screen appears.

15. Select *Administrators* and choose *Add*.
16. Choose *OK*.

    User `SAPINST` is now displayed in the *Administrators* group.

17. Close the *SAPINST Properties* dialog box by choosing *OK*.
18. Close the Local Users and Groups screen and the Control Panel.

iSeries:

Execute the following command:

```
CRTUSRPRF USRPRF(SAPINST) PASSWORD(sap) USRCLS(*SECOFR) TEXT('Test User
for SAP Installation') SPCAUT(*USRCLS)Use
```

3.3.3 Installing TMKSVR and Creating an Installation Share

Use

`The TMKSVR` is the interface between iSeries and Windows for the installation with SAPinst. SAPinst is running on Windows, but has to install the product on iSeries. This means that all actions required for iSeries are initiated remotely on Windows but executed locally using the `TMKSVR`. The communication is done using TCP/IP.

In addition, an installation share on the iSeries host needs to be created and mapped to the Windows installation host, which is done automatically by the `TMKSVR`.

The `TMKSVR` has to be installed and an installation share has to be created on all iSeries hosts where instances of an SAP system should be installed.

Prerequisites

- An FTP server must be running on iSeries.
- You must prepare a user. For more information on how users are prepared, see Preparing a Windows User Account and iSeries User Profile [page 36].
- The CD containing the installation package (SAPINST) must be inserted in the CD drive of your Windows host.

Procedure

1. Log on to your Windows host as the installation user. For more information, see Preparing a Windows User Account and iSeries User Profile [page 36].
2. Run `setup.exe` from the directory `\SAPINST\AS400\TMKSVR` on the CD containing the installation package. You can start the setup program by double-clicking it in the Windows Explorer.

Enter the following values:

- *iSeries Hostname*
  Enter the name of the iSeries host where you want to install `TMKSVR`.
- *iSeries Administrator (QSECOFR or similar)*
  Enter iSeries user. For more information, see Preparing a Windows User Account and iSeries User Profile [page 36].
- *Update existing TMKSVR instances*
  Do **not** select this option.
- *Yes, create TMKSVR instance*
  Select this option.
- *TMKSVR instance number*
  Leave the value at `0`.
- *TMKSVR Instance Port* (also referred to as the *Dispatcher Port*)
  Leave the value at `59975`, if possible. Only change this port number if you encounter problems during installation because the port is in use.

Result

The installation uses FTP to install and start the `TMKSVR` on iSeries. During installation, the `TMKSVR` library is created on iSeries. If you want a `TMKSVR` instance to be created, a library named `TMKSVR<nn>` is also created, where `<nn>` is the instance number (for example, `TMKSVR00`).

3.3.4 Running SAPinst to Export the Database

This section installation talks sometimes about the “installation of an instance”. This can be viewed as a synonym for “export an SAP system”.

Use

You use this procedure to run SAPinst if you want to export an SAP system. Make sure you create a new installation directory for every SAP system you want to export.

Prerequisites

Before you start SAPinst, make sure that:

- `TMKSVR` is up and running: `wrkactjob sbs` (`TMKSVR00`) (there must be a `DISPATCH` job)

If an IPL is perfomed on your iSeries, the TMKSVR will be stopped and will not be restarted. To restart the TMKSVR, proceed as follows:
1. Log on as a user with similiar authorizations to QSECOFR
2. Enter the following commands:
   `ADDLIBLE TMKSVR`
   `STRTMKSVR INSTNO (TMKSVR00) DISPPORT (59975)`

- The Windows host is set up. For more information, see Preparing the Windows Host for the SAP System Installation [page 35].
- The users required for the installation are prepared. For more information, see Preparing a Windows User Account and iSeries User Profile [page 36].
- The relevant installation CDs are copied to iSeries
- *SAPinst CD* is inserted into the CD drive of the Windows host
- If you start the SAPinst GUI on your host, make sure that the `JAVA_HOME` environment variable is set correctly.
- As the SAPinst installation directory contains important log and command files for the installation, make sure that you use a **separate** installation directory for **every** instance you are going to install. Otherwise, you might lose previous log and command files stored in the SAPinst installation directory.

Before you start the installation, be aware of the following:

- When you install an SAP instance with SAPinst for the very first time on your host, you have to start SAPinst from the SAPinst CD with the setup.cmd command. SAPinst is copied to the directory you have specified. This directory is also used as the installation directory for the instance you are installing.
- If you want to install an SAP instance on the host where a previous SAP instance has **not** been successfully installed, you must run SAPinst **again** from the *SAPinst CD* to create a new installation directory for the SAPinst log and command files.
- For every additional SAP instance that you want to install on the **same** host, we recommend that you start SAPinst from the *SAPinst CD*. By doing so, you make sure that every instance installation has its own log and command files.

However, you can start the new installation by entering:

a. *Start* → *Programs* → *<menu_entry>* → *Prepare New Installation*

b. *Start* → *Programs* → *<menu_entry>* → *SAPinst server with GUI*

Be aware that the installation directory of the previously installed instance on that host will be overwritten when you use the *Start* menu to start the new installation. For this reason, you should **only** use it if you are sure that you **do not** need the

The *Prepare New Installation* Window disappears after a short period of time. Nevertheless, the preparation for the new installation was completed successfully.

Procedure

1. Log on to the Windows host as the installation user. For more information, see Preparing a Windows User Account and iSeries User Profile [page 36].

   

   If you have already installed an SAP instance on iSeries, you can use the *Start* menu entries to start SAPinst as described under Prerequisites. In this case, you can continue the installation with step 8.
2. Insert the *SAPinst CD* in your CD drive.
3. Run `setup.cmd` from the CD located in `\SAPINST\AS400`.

   The *SAPinst Installation Host* dialog box appears and prompts you for the target iSeries.
4. Enter the host name and choose *Next*.
5. If you have not yet mapped your installation share to your Windows host, the *SAPinst Installation Drive* dialog box appears asking you for the SAPinst installation drive. Choose a drive and enter the prepared user and password.
   Then, choose *Next*. For more information, see Preparing a Windows User Account and iSeries User Profile [page 36].
6. The *SAPinst Installation Default Parameters* dialog box appears. SAPinst asks if you want to perform a *Standard* or *Custom* installation.

   If you choose a *Custom* installation, you can define:

   - Installation directory for SAPinst

     You can choose any name for the installation directory. In this documentation,`<INSTDIR>` refers to the installation directory.
   - SAPinst folder in the *Start* menu

     

     The *Start* menu entry is used to create unique *Start* menu entries.
     The default name is: **`SAPinst DB2 400 KERNEL <iSeries_Hostname>`** . The default *Start* menu entry created by SAPinst is: *Start* → *Programs* → *SAPinst DB2 400 KERNEL <iSeries_Hostname>* → <enter option>
     For example, you enter the following for the *Start* menu during the installation: **`R/3 Enterprise Instance`**
   - Connection parameters (not relevant)

     Select *Standard* or *Custom* and choose *Next*.

SAPinst is now copied to your <INSTDIR> and the following *Start* menu entries are created under *Start* → *Programs* → *<menu_entry>*

Start Menu Entry	Description
Prepare New Installation	Prepares SAPinst to install an additional instance on this host. Current log and command files are copied to a backup directory (under the current SAPinst directory) indicating the date and time of the backup: <SAPinst_Dir>\log_<date>_<time>
Remove SAPinst Files	Deletes the whole SAPinst installation directory.
SAPinst GUI	Only relevant for a remote installation. Starts the SAPinst GUI **only**. A further dialog then prompts you for parameters (host and port) to connect to the SAPinst server host.
SAPinst Server only	Only relevant for a remote installation. Starts the SAPinst server only and waits for a connection to the SAPinst GUI.
SAPinst server with GUI	Starts the SAPinst server and the SAPinst GUI. The *Welcome* screen is displayed and you can perform the installation.

7. After the installation of SAPinst, the installation of the SAP system is started automatically. The *SAPinst –iSeries User Authentication* dialog box appears.
8. Enter the user name and password of the installation user. For more information, see Preparing a Windows User Account and iSeries Profile [page 36]. By default, the value **59975** (or 51515 for older installation kits) is needed for the service port for TMKSVR.

Check if PUBLIC has all object and data authorities for directory 'usr/sap/sapinst

If you do not have this set up, enter: **CHGAUT OBJ('/usr/sap/sapinst') USER(*PUBLIC) DTAAUT(*RWX) OBJAUT(*ALL)**

The SAPinst GUI now starts and the *Welcome* screen is displayed.

SAPinst uses the ports 21212 and 21213 during the installation for communication with the SAPinst GUI. You get an error message if one of these ports is already in use. In this case, you must do the following:

a. Open a command prompt.
b. Change to your <INSTDIR> and run:
   .\sapinst.exe SAPINST_DIALOG_PORT=<port> where **<port>** is an unused port on your Windows installation host.

9. If you want to:
   - install a central, database, or dialog instance, select *SAP R/3 Enterprise 4.71 for DB2 UDB for iSeries - Default*.
   - export an SAP system, select *Export SAP R/3 Enterprise 4.71 for DB2 UDB for iSeries.*
10. Accept the License Agreement for STL port.
11. Follow the instructions in the SAPinst dialogs. For more information, see Input for Exporting your Database [page 43].

There is a box in the background, in which SAPinst is running and the output of the SAPinst is displayed (trace). If you click on this box while the installation is running, the execution of SAPinst is no longer carried out. You can recognize this state by the word *Select* in the title bar of the box. If this is the case, click the box with the right mouse button and the installation process will resume.

If you have entered all required information during the input phase, SAPinst starts the installation and displays installation progress during the processing phase.

Required CDs

For exporting the database you need the CD with the installation package. For earlier products based on WebAS 620, this is the *Kernel CD 1*. For later products, this is the *SAPinst CD*. It is also possible that you need to use *Kernel CD 1* and *Kernel CD 2*.

Input for Exporting your Database

The following table shows the prompts that are required for the export of your SAP system database:

The table does not necessarily reflect the actual order in which the input windows appear during the installation.

Window	Prompt	Meaning
CD Browser	CD Name	This dialog box only appears if the system wants to check or cannot find `LABEL.ASC` file that contains the relevant installation information. Depending on the required installation CD, specify the path to the directory where the corresponding `LABEL.ASC` file is located.  When the CD Browser asks for the installation CDs, you must always enter the path to the CDs residing on the iSeries host in Windows notation, using the drive letter to your installation share. For example, use x:\tmp\<sid>\krn<number> instead of /tmp/<sid>/krn<number>. As an example for the kernel CD, use 1/2: x:\temp\C11\krn1. If your installation share was not mapped to your Windows installation host before, it will be done the first time you run a SAPinst installation on an iSeries host.
Welcome	Welcome to the System Landscape Implementation Manager (SAPinst)	Choose *Export <your product> for DB2 UDB for iSeries*  Choose the option you want. Only if an option is selected, can you choose Next and continue your installation.
Database Instance Installation Method	Installation Method	Choose: *Standard System Copy/Migration (R3LOAD Method)* to use the standard SAP method to load a homogeneous or a heterogeneous System Copy (see documentation SAP Web AS Homogeneous and Heterogeneous System Copy).
Selecting the SAP System	SAP System: SAP System ID	Enter exactly the name of the SAP System `<SAPSID>`.

SAP System Common Parameters	SAP System ID	Enter the SAP system <SID> of the system you want to export, for example, C11.
	Database System ID	Enter the SAP system ID <SID>.
	Database Host	Enter the name of the database host of the system you want to export.
	Central Instance: Instance number	Enter the number of the central instance of your system.
	Central Instance host	Enter the name of the central instance host.
User Information	Password	Enter the password for the user.
Database Export Parameters	Target DB	Choose the target database. For a homogeneous system copy, source and target database must be the same.
	Export Directory	Specify an export directory where the database dump files are written to.  SAPinst creates the specified export directory if it does not exist.
General Export Parameters	General Settings	• If you want to customize the export order, choose *export packages in custom order*. Otherwise, choose *export packages in alphabetical order*. • *Data file code page*: You normally do not have to change this value. • *Number of parallel jobs*: Specify the number of parallel R3load processes.

3.3.5 Transferring the Files to the Target Host

On the target host, create a directory <EXPDIR> with sufficient space for the database export files available.

Copy all files and directories (recursively) that are located on the source host in the migration export directory from the source host to the target host.

If you transfer the files with ftp, make sure you use binary mode for transferring the files <EXPDIR>/DATA/*.00<n> and use ASCII mode for transferring all other files.

3.3.6 Installing the Target System

Make sure there is enough free space on the target system for the database load. To find out the size of the export and the sizes of the tablespaces or dbspaces that will be created, look at the file `DBSIZE.XML` located in the directory `<DRIVE>:\<EXPDIR>\DB\<DATABASE>` (Windows) or `<EXPDIR>/DB/<DATABASE>` (UNIX).

1. To install the target database system follow the installation documentation for your SAP component. Start SAPinst and make the required entries up to the window *Selecting the Database Instance Installation Method*. Choose *System Copy/Migration*.
2. Enter the following parameters according to the installation documentation for your SAP component.
3. When SAPinst displays the CD Browser-Window and asks for the CD Export Migration, enter the path to the export directory `<EXPDIR>`.
4. Continue as described in the installation documentation for your SAP component.
5. When SAPinst displays the window General Load Parameters, specify the following settings:
   - Migration Key: If you perform a heterogeneous system copy, enter the migration key.
   - General Settings:
     - Specify the order in which the packages are loaded (alphabetical order, according to the size or custom order)

       If you choose *Load packages in custom order* the additional window *Data Load Options* is displayed (see below).
     - DB code page: You normally do not have to change this value.
     - Number of parallel jobs: Specify the number of parallel R3load processes.
   - Advanced Configuration of Packages
     - If you choose Individual configuration for task file generation the window Task File Generation Options is displayed.
     - If you choose Individual configuration for data load the window Data Load Options is displayed.

Advanced package configuration should only be performed by certified database administrators. We recommend that you use the default settings if possible.

6. Complete the installation as described in the installation documentation for your SAP component.

4 Final Activities

To finish the system copy of your SAP system:

1. Perform subsequent actions in the source system [page 46].
2. Perform subsequent actions in the target system [page 47].

4.1 Performing Subsequent Actions in the Source System

1. Reschedule your canceled jobs:
   Tools → *CCMS* → *Jobs* → *Maintenance* (`SM37`).
2. Using CCMS, adapt your operation mode timetable to the original status:
   Tools → *CCMS* → *Configuration* → *Operation mode calendar* (`SM63`).

4.2 Performing Subsequent Actions in the Target System

Procedure

Actions on Operating System Level

1. Adapt the configuration files on operating system level to meet network and SAP requirements.
2. Log on as OS user `<sapsid>adm` and adapt the transport parameters and transport routes in the Transport Management System (TMS).

   To adapt the tp parameters:

   a. Choose transaction STMS → *Overview* → *Systems.*

   b. Select the system and select the tab *Transporttool*.

   To adapt the transport routes:

   Choose transaction STMS → *Overview* → *Transport routes*.
3. Adapt additional SAP software components (for example, RFC, CPIC, SAP ArchiveLink) if required.
4. Adapt additional non-SAP software components (for example, archiving systems, monitoring tools, job schedulers) if required.
5. Adapt backup programs (for example, SAPDBA, BRBACKUP, BRARCHIVE, BACKINT) if required.
6. Adapt non-SAP directories, file systems, NFS mounts, etc. if required.
7. Check the SAP parameters of the default and instance profiles.
8. Check your UNIX shell files for special entries.
9. Check crontab or AT jobs.
10. Check operating system files (for example, .netrc, .rhosts).
11. Check operating system printers.
12. Oracle: Adapt the database profiles `init<SAPSID>.ora`, `init<SAPSID>.dba` and `init<SAPSID>.sap`.

Actions on Database Level

1. Before starting the SAP system, make sure that the logging mechanism of the database is active.
2. Check the parameters in the database profiles.
3. Oracle: Delete all entries from the following tables: `DBSTATHORA`, `DBSTAIHORA`, `DBSTATIORA`, `DBSTATTORA`.
4. Oracle: Delete the user `OPS$<SOURCE_SAPSID>ADM`.
5. If you changed the <DBSID> during the system copy, it is recommended to adapt the global_name parameter with the following SQL command:
   `alter database rename global_name to <NEW_DBSID>;`

   If the parameter is not existing on your system, ignore this step.

6. MSSQL: Apply SAP Note 551915.

Actions on SAP System Level

1. Run installation check: *Administration* → *System administration* → *Administration* → *Installation Check* (transaction SM28).
2. Configure the Workbench Organizer (SE06) with the option *Database Copy*. This releases all transport, repair, and customizing requests that have not been released in the source system.
3. Delete all entries from the following tables: ALCONSEG, ALSYSTEMS, DBSNP, MONI, OSMON, PAHI, SDBAD, SDBAH, SDBAP, SDBAR.
4. Delete canceled and finished jobs.

   Execute ABAP program RSBTCDEL, marking the field *delete with forced mode*: Tools → ABAP Workbench → ABAP Editor (SE38).
5. Adapt all jobs needed in the target system:
   a. Copy the old jobs.
   b. Modify the new jobs.
   c. Delete the old jobs.
6. Check the consistency of the *Temporary Sequential Objects* (TemSe) by searching for files of TemSe objects for which no TemSe objects exist: *Administration* → *CCMS* → *Spool* → *TemSe administration* (SP12). For more information, see **SAP Note 16875**.
7. Adapt the definition of the printers to meet the new system requirements:
   - Device types and character set definitions
   - Spool servers
   - Output management systems (OMS)
8. Delete entries in table DDLOG for buffer synchronization. Synchronize the buffers as described in **SAP Note 25380**. Adapt the client information for the logical system.
9. Adapt the RFC destination: *Tools* → *Administration* → *Administration* → *Network* → *RFC destinations* (SM59). Clean the transactional RFC: *Tools* → *Administration* → *Monitor* → *Transactional RFC* (SM58). See the relevant description in the *SAP Online Documentation*.
10. Create new operation modes and remove old ones:
    a. Create new operation modes and instance definitions.
    b. Maintain the timetable using the new operation modes.
    c. Delete the old operation modes and old instance definitions.
11. Adapt the operation mode time tables (CCMS): *Administration* → *CCMS* → *Configuration* → *Operation mode calendar* (SM63).
12. Adapt the instances and profiles (CCMS): *Administration* → *CCMS* → *Configuration* → *OP modes/instances* (RZ04).
13. Define or remove the SAP system users: Tools → Administration → User maintenance → Users (SU01). Furthermore, revise the authorizations of the system users.
14. Delete all entries from tables TPFET and TPFHT. These contain information about changes made to the profile of your source system: Administration → CCMS → Configuration → Profile Maintenance (RZ10).

IBM DB2 UDB for iSeries: Use the commands **CLRPFM R3<SID>DATA/TPFET** and **CLRPFM R3<SID>DATA/TPFHT**.

15. Adapt other CCMS settings (for example, alert thresholds, reorganization parameters of CCMS table MONI) if required.
16. Delete all entries from table TLOCK which holds the repair requests from your source system.
17. Make data archived in the source system (data that does not reside in the database but was moved to a different storage location using SAP Archive Management) accessible in the target system. Adapt the file residence information in the target system. Refer to the *SAP Online Documentation (SAP Web Application Server → System Administration → Application Data Archiving and Reorganization)* for help.
18. Redefine database actions (backup, update statistics, etc.) if you have used the DBA calendar in the source system (DB13).
19. Check logon groups and assignment of application servers to logon groups (SMLG).
20. Check the connection to SAPNet - R/3 Frontend (OSS1).
21. Check self-defined external commands (SM69).
22. Check the thresholds (RZ06).
23. Check entries of the following tables in all involved systems:
    - TXCOM (SM54)
    - THOSTS (SM55)
24. Check for every client in your SAP system the detail settings (logical system, client role, changes and transports for client-dependent objects, changes for client-independent objects, protection level, restrictions) (SCC4).
25. Check if you can delete clients that will no longer be used in the target system (SCC5).
26. Check the contexts and segments of remote application servers for the SAP Monitoring Infrastructure if required (RZ21).
27. Configure the domain controller in the Transport Management System (TMS) by using transaction code STMS.
28. Post-processing concerning customer objects:

    If customer objects are not original in the new system, modify the corresponding entries in table TADIR.

    If you encounter problems modifying a customer development class using transaction SMTS or SM31, try to use the option *Validate* (ENTER) instead of the option *Save* to save your changes.
29. ABAP Program Loads

    The ABAP loads are platform-dependent programs which are generated during runtime and which are stored in database tables. They are **not** exported when you use the R3load procedure to copy your SAP system. The ABAP loads are generated in the target system when they are first used. This may, however, reduce production system performance. To avoid this, you can use transaction SGEN to generate the missing loads.

    Load generation requires a large amount of system resources. You should schedule the generation job to run overnight.

    For a detailed description of the features, see the online documentation in transaction SGEN by choosing *Information on the SAP Load Generator*, or in the Job Monitor by choosing *Job Monitor*.

Checking the Target System

The following actions are suitable for checking the consistency of the target system:

1. Perform initial consistency check (`SM28`).
2. Check the system log on all application servers (`SM21`).
3. Check the consistency of the database (`DB02`).
4. Perform server check (`SM51`).
5. Test transactions frequently used by the customer.
6. FI customers: Run the job `SAPF190` (accounting reconciliation) and compare the results to those gained on the source system before the system copy (*Accounting* → *Financial Accounting* → *General ledger* → *Periodic Processing* → *Closing* → *Check/count* → *Comparison*).
7. FI customers: Run the jobs `RFUMSV00` (tax on sales/purchases), `RAGITT01` (asset history sheet), `RAZUGA01` (asset acquisitions), `RAABGA01` (fixed asset retirements) and compare the results to those gained on the source system before the system copy.
8. CO customers: Run the report group `1SIP` and compare the results to those gained on the source system before the system copy.

5 Additional Information

5.1 Performing a Remote Installation with SAPinst

Use

You can run SAPinst GUI in standalone mode.

This allows you to install a SAP system on another host (the remote host) while monitoring the installation with SAPinst GUI on your local Windows or UNIX computer (the local host).

The procedure consists of the following basic steps:

1. Install SAPinst on your remote host and SAPinst GUI on your local host.
2. Start SAPinst server on your remote host.
3. Start SAPinst GUI on your local host.
4. Perform the installation using SAPinst GUI.

For more information, see *Procedure* below.

Prerequisites

- Make sure that you have performed the preparation activities for your local host (SAPinst GUI host) and your remote host.

  For more information, see "Installation Preparations" in this documentation.

- Both computers are on the LAN and can ping each other.

  To test this, log on to your remote host and enter the command **`ping <local host>`** from the command prompt. on the local host On the local host, use the `ping` command **`ping <remote host>`**.

- SAPinst ports

  SAPinst uses the ports 21212 and 21213 during the installation for communication with SAPinst GUI. If one of these ports is already used by another service, SAPinst aborts the installation with an appropriate error message.

  In this case, you must start SAPinst or SAPinst GUI from the command prompt as follows:

  - UNIX:
    - SAPinst: **`./sapinst SAPINST_DIALOG_PORT=<free_port_number>`**
    - SAPinst GUI: **`./sapinstgui.sh -port <free_port_number>`**
  - Windows:
    - SAPinst: **`sapinst SAPINST_DIALOG_PORT=<free_port_number>`**
    - SAPinst GUI: **`sapinstgui.bat -port <free_port_number>`**

where <free_port_number> and <free_port_number> + 1 define unused port numbers. For example, if you enter 60000 as <free_port_number>, SAPinst uses the ports 60000 and 60001.

The same applies to the SAPinst GUI commands startinstgui.bat (Windows) and startinstgui.sh (UNIX).

Procedure

Activities on Your Remote Host (Where a SAP System is to be Installed)

If your remote host runs on a Windows platform:

1. Log on to your remote host as a user who is a member of the local administration group.
2. Insert the *SAPinst* CD in your CD drive.
3. Run **Setup.cmd** from the following path:

   <CD drive>:\SAPinst\NT

   SAPinst now asks if you want to perform a *Standard* or *Custom* installation

   If you choose a *Custom* installation you can define:

   - Installation directory for SAPinst, <*SAPinst_DIR*>
   - SAPinst folder in the *Start* menu

     

     The *Start* menu entry is used to create unique *Start* menu entries.
     For example, you enter the following for the *Start* menu during the installation:
     BW Central Instance
     Then SAPinst creates the following *Start* menu:
     Start → *Programs* → *BW Central Instance* → …
   - Connection parameters (not relevant here)
4. Select *Standard* or *Custom* and choose *Next*.

   SAPinst is now copied to your <SAPinst_DIR> and the *Start* menu entries are created.
5. To start SAPinst choose *Start* → *Programs* → <*menu_entry*> → *SAPinst Server only*

   SAPinst server now starts and waits to connect to SAPinst GUI.
6. Start SAPinst GUI on the local host, as described in *Activities on your local host*.

If your remote host runs on a UNIX platform:

1. Log on to your remote host as user root.
2. Mount the *SAPinst* CD.
3. Create <SAPinst_INSTDIR> and change to this directory.
4. From <SAPinst CD>/SAPINST/UNIX/<platform> run:

   ./INSTALL --nogui

   SAPinst is now copied to your <SAPinst_INSTDIR> without SAPinst GUI.

Activities on Your Remote Host (Where a SAP System is to be Installed)

5. Start SAPinst from your `<SAPinst_INSTDIR>` by entering:

   `./sapinst`

   SAPinst now starts and waits for the connection to the SAPinst GUI. That is, you see the following at the command prompt:

   ```
   guiengine: waiting for connect...
   ```

6. Start SAPinst GUI on your local host, as described below in *Activities on your local host*.

Activities on Your Local Host (Where SAPinst GUI Runs)

If your local host runs on a Windows platform:

1. Log on to your local Windows host.
2. Insert the *SAPinst* CD into your CD drive.
3. Run **`Setup.cmd`** from the following path:

   `<CD drive>:\SAPinst\NT`

   SAPinst now asks you to perform a *Standard* or *Custom* installation
4. Select *Custom* installation.

   You can define:

   - Installation directory for SAPinst (that is, for the SAPinst GUI)
   - SAPinst folder in the Start menu
   - Connection parameters (host name and port number) to connect to your remote host(s). Use Add Row to enter all known remote hosts and their corresponding free port numbers. Be sure to enter the same port number as SAPinst uses on the corresponding remote computer. If you do not enter a port number, standard port 21212 is used.

     

     The *Start* menu entry and the connection parameters are used to generate unique *Start* menu entries. For example, you enter the following during the installation:
     - Start menu entry: **`SAPinst GUI`**
     - Connection parameters (remote host / port): **`uwi005`** / **`8000`**
     - Connection parameters (remote host / port): **`hs1101`** / **`5555`**

     Then SAPinst creates the following *Start* menu entries:
     Start → Programs → SAPinst GUI → SAPinst GUI uwi005 8000
     Start → Programs → SAPinst GUI → SAPinst GUI hs1101 5555
5. Enter your data, select the flag *Install SAPinst GUI only*, and choose *Start*.

   SAPinst GUI is now copied to your `<SAPinst_DIR>` and the *Start* menu entries are created.
6. Choose *Start → Programs → <menu_entry> → SAPinst GUI <host><port>*

Activities on Your Local Host (Where SAPinst GUI Runs)

SAPinst GUI automatically connects to the host, which is waiting to connect.

That is, SAPinst GUI now starts and the *Welcome* screen is displayed.

If you have not entered connection parameters before, a dialog now asks you for the following parameters:
- *Hostname* : Enter the host name of the remote computer
- *Port:* Enter the same port number as SAPinst uses on the remote host

7. You can now perform the installation from your local host.

If your local host runs on a UNIX platform:

1. Log on to your local UNIX host as user `root`.
2. Mount the *SAPinst* CD.
3. Create `<SAPinst_INSTDIR>` and change to this directory.
4. From `<SAPinst CD>/SAPINST/UNIX/<platform>` run

   `./startinstgui.sh`

   SAPinst GUI is now copied to your `<SAPinst_INSTDIR>`.
5. Start SAPinst GUI from your `<SAPinst_INSTDIR>` by entering:

   `./startinstgui.sh`

   SAPinst GUI automatically connects to the host, which is waiting for a connection.
6. You can now perform the installation from your local host.

5.2 Continuing an Interrupted Installation with SAPinst

Use

As SAPinst does not abort the installation in error situations, you can continue an interrupted installation in the following situations:

- You have **not** canceled the installation
- You have **already** canceled the installation

Prerequisites

You solved the problem that caused the error situation.

Procedure

- You have **not** canceled the installation

  That is, the error dialog box is still displayed and SAPinst is waiting for your input. Proceed as follows:

  In the error dialog box, choose *Retry*.

  SAPinst now retries the installation step.

- You have **already** canceled the installation

  That is, the installation was aborted and now you want to continue it. Since SAPinst records the installation progress in the `keydb.xml` file, it can continue the installation from the failed step without repeating previous steps.

  You have two alternatives:

  - Continuing the installation
  - Restarting from scratch, that is, starting the installation with the default `keydb.xml` file as delivered

  These two alternatives are described in the tables below.

  

  In some cases, you must uninstall already installed components, before repeating the installation from scratch. For example, this applies to an SAP system installation. For more information, see the uninstallation description in the corresponding installation guide.

How to Proceed on Windows

Continuing the Installation

1. Check if a SAPinst GUI Java process is still running, and if so, look for `javaw.exe` under *Processes* in your Task Manager, and kill it.
2. Choose *Start* → *Programs* → *<menu_entry>* → *SAPinst Server with GUI* (or *SAPinst GUI* if you want to start the GUI only or *SAPinst Server only* if you want to start SAPinst without the GUI).

Restarting from the Beginning

1. Check if a SAPinst GUI Java process is still running, and if so, look for `javaw.exe` under *Processes* in your Task Manager, and kill it.
2. Choose *Start* → *Programs* → *<menu_entry>*→ *Prepare New Installation*

   Current log and command files are now copied to a backup directory that indicates the date and time of the backup:

   `<SAPinst_Dir>\log<month>_<date><time>`
3. Choose *Start* → *Programs* → *<menu_entry>* → *SAPinst Server with GUI* (or *SAPinst GUI* if you want to start the GUI only or *SAPinst Server only* if you want to start SAPinst without the GUI).

How to Proceed on UNIX

Continuing the Installation

1. Check if a SAPinst GUI Java process named `java` is still running:

   `ps -efl | grep java`

   If so, kill it.

2. Make sure that all environment variables are set as described in the corresponding installation documentation.

3. Start SAPinst from your `<SAPinst_INSTDIR>` with:

   `./sapinst`

Restarting from the Beginning

You have the following alternatives

- Restart the installation from installation CD

  Start SAPinst from CD again as described in the corresponding installation documentation.

  SAPinst deletes all files in your installation directory and asks you if you want to overwrite any existing installation directory.

- Prepare the new installation manually (installation CD is not needed)

  In your `<SAPinst_INSTDIR>` do the following:

  a. Rename the `keydb.1.xml` file (original file delivered by SAP) to `keydb.xml`.

  b. Delete all `keydb.<no>.xml` files, if there are any.

  c. Start SAPinst from your `<SAPinst_INSTDIR>` with:

     `./sapinst`