SAP@Web Installation Guide

Release 3.0D to 4.5B
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## Typographic Conventions

<table>
<thead>
<tr>
<th>This type style</th>
<th>represents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface Text</td>
<td>words or characters that appear on the screen. This includes system messages, field names, screen titles, pushbuttons, menu names, and menu options.</td>
</tr>
<tr>
<td>Document Title</td>
<td>cross-references to other documentation</td>
</tr>
<tr>
<td>User Entry</td>
<td>exact user entry. These are words and characters that you enter exactly as they appear in the documentation.</td>
</tr>
<tr>
<td>&lt;Variable User Entry&gt;</td>
<td>variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries.</td>
</tr>
<tr>
<td>NAME</td>
<td>names of elements in the R/3 System. These include report names, program names, transaction codes, table names, ABAP/4 language elements, file names, and directories.</td>
</tr>
<tr>
<td>KEY</td>
<td>keys on your keyboard. These include function keys (for example, F2) and the ENTER key, among others.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>This icon</th>
<th>helps you identify</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Note]</td>
<td>a note. Notes contain important information like special considerations or exceptions.</td>
</tr>
<tr>
<td>![Example]</td>
<td>an example. Examples help clarify concepts or procedures.</td>
</tr>
<tr>
<td>![Caution]</td>
<td>a caution. Cautions help you avoid errors such as those that could lead to data loss.</td>
</tr>
</tbody>
</table>
Chapter 1: Planning the Installation

Overview

The SAP Internet Transaction Server (ITS) links the R/3 System to the Internet. The ITS enables Internet and intranet users to communicate directly with R/3 and run R/3 Internet Application Components (IACs), which are Internet-enabled R/3 transactions.

To run IACs, you need three main components:

- R/3 System (Release 3.0D or later)
- SAP Internet Transaction Server (Version 4.5B)
- SAP@Web Studio (Version 4.5B)

The SAP@Web Studio is a PC tool for developing and maintaining all the R/3-external files needed to implement ITS services, which provide the basis for running IACs.

This manual contains the complete procedure for installing the ITS and the SAP@Web Studio. You can install the above three components independently, but SAP recommends that you install them in the above sequence. This enables you to perform post-installation configuration tasks for each.

This chapter contains a brief overview of the ITS, and describes the installation options open to you. You do not have to perform any tasks at this stage.

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Introduction

Architecture of the ITS

The Internet Transaction Server (ITS) is a gateway between one or more Web servers and one or more R/3 application servers.

The ITS consists of two main components called WGate and AGate.

- **WGate**
  WGate is the Web server gateway that links the ITS to the Web server.
  WGate receives requests from the Web browser via the Web server, and forwards them to AGate via a TCP/IP connection.
  WGate always resides on the same machine as the Web server.
  WGate is a Web server extension that shields AGate from differences in the various Web server APIs used. WGate supports the following Web servers:
  - Microsoft Information Server API (ISAPI)
  - Netscape Network Server API (NSAPI)
  All other Web server APIs are supported via the Common Gateway Interface (CGI).
  WGate connects a ‘stateless’ Web server that communicates with Web browsers via single request/response cycles to a ‘stateful’ R/3 System where business transactions depend on internal status. When an Internet user starts an R/3 transaction via the ITS, there must be a server process running throughout the lifetime of the user session (possibly longer) in order to maintain the user’s context in R/3. Since communication between the Web browser and the Web server is based on single request/response cycles, WGate must transfer the browser request to a permanently running server process. This is the role of AGate.

- **AGate**
  AGate is the application server gateway that links the ITS to the R/3 application server.
  AGate is the core processing component of the ITS.
  AGate receives Web browser requests from WGate and communicates with the R/3 application server via the DIAG protocol or the RFC protocol. AGate then processes the requests, and sends all relevant details (including logon information) to the R/3 System, which either starts the first dialog step of a new transaction or submits further data for the next dialog step of a transaction already started. When the dialog step has finished, AGate retrieves the result from R/3, processes it, and sends the response back to WGate. AGate is effectively responsible for managing all sessions, services, and users, and for generating the HTML documents that are sent back to the Web browser client.

AGate and WGate can be installed on separate hosts.

There can be more than one AGate, but all must reside on the same machine. AGate can handle concurrent requests for multiple sessions.

The following graphic shows the main ITS components, protocols, and interfaces:
Separation of WGate and AGate

Enabling Internet users to communicate directly with the R/3 System via the ITS has obvious advantages for business users, but it also raises a number of security issues. To minimize unwanted access by unauthorized users, it makes sense to separate R/3-related information (particularly passwords and connection information) from the Web server, and restrict generally available functionality to a bare minimum.

WGate is small and functionally simple. Its sole function is to pass requests back and forth between the Web server and ITS, so there are few possible targets of attack.

AGate, however, handles most of the processing required to run a transaction over the Internet, and is connected directly to R/3.

You can install both WGate and AGate on the same machine, but it is better to install them on separate hosts, especially if you are setting up production systems. You can then place a firewall between the two and increase the level of protection.

ITS Support for Virtual Instances

The ITS supports virtual instances. When you have run the setup program once to create one physical installation, you can create any number of additional virtual ITS instances by running the setup program again as many times as you like.

Each ITS instance should have a one-to-one relationship with an R/3 System, so that each ITS provides access to IACs for a specific R/3 release.

When you create an ITS instance, you specify a Web server, which must support multiple Web server instances. Each ITS instance should have its own dedicated Web server instance.
When you create a new ITS instance, the installation procedure stops any other instances that are currently running. As a result, when the procedure is finished, only the new instance is running. This is also true when you deinstall.
Security Features

Windows NT Security Features

Some ITS information, such as passwords and files needed for ITS execution, must be safeguarded against unauthorized access. SAP recommends that you restrict access to this information as much as possible, using Windows NT Security.

The ITS setup dialogs (described in the chapter *Installing ITS on Windows NT Machines*) show you how to use Windows NT Security. For further information, see the section *Setting the Security Level of an ITS* in *Chapter 5: Maintaining ITS Instances*.

R/3 Security Features

The ITS needs an R/3 user account to access the R/3 System. To set this up, you can do any of the following:

- Create a global R/3 user account for all services
- Create a specific R/3 user account for each individual service
- Create no static R/3 user account
  
  In this case, the user is prompted for the user name and password in a logon procedure each time the service is started.

The ITS handles security very strictly. Static R/3 user names and passwords are stored in the service files, and all passwords are encrypted. If you use the secure installation option, all service files are also protected by Windows NT Security. Only the Windows NT user *ITSadm* and the Windows NT user group *ITSusers* can access these files.

**Caution**

Using one global R/3 user account with extensive authorizations can be a security risk. Although the setup program uses one global user account, SAP strongly recommends that you apply security settings for each service. Service-specific user accounts must be set up by your R/3 system administrator.

ITS Security Features


There, you can find information on ITS security in *Volume II: R/3 Security Services in Detail, Chapter 2-10: Special Topics. Under Protecting Internet Application Components (IACs)*, read the section *A Secure Network Infrastructure for the ITS*. 
Installation Options

You have two main options when installing the ITS:

- Single host installation
- Dual host installation

**Single Host Installation**

This installation places the Web (HTTP) server, WGate, and AGate on the same host, as shown in the following graphic:

Single Host Installation

This installation type is appropriate for development and test installations where less security is required, since there is only one firewall protecting your ITS installation.
Dual Host Installation

This installation places WGate and AGate on separate hosts - WGate on the Web (HTTP) server host, and AGate on another host, as shown in the following graphic:

This installation type is appropriate for production systems where additional security is desirable. In this case, you can install a second firewall between WGate and AGate, as shown below. For even greater security, you could also place a firewall between AGate and R/3.

Increased ITS Security
IAC Packages

Prior to ITS 2.1, the setup program came with a single set of ITS files specific to one R/3 release. If you wanted to run a newer version of the ITS, but use an older R/3 release, you had to:

1. Install an older version of the ITS, with files corresponding to your R/3 release.
2. Upgrade to the newer version of the ITS.

When upgrading, you had to be careful not to overwrite the already installed files.

What is an IAC Package?

From ITS 2.1, all the ITS files needed to run IACs for a specific R/3 release are shipped separately from the ITS setup program in IAC packages. These files include:

- Service files
- HTML templates
- Language resource files
- Multipurpose Internet Mail Extension (MIME) files

MIME files include graphics, sound, and video files. They are stored in the Web server's document directory.

How the Setup Program Handles IAC Packages

The setup program now includes a dialog step that allows you to select the IAC packages you want to install with a particular ITS instance. You can select more than one, and the setup program lists available packages from three sources:

- Packages stored included with the setup program itself

Since the ITS is always shipped together with a particular R/3 release, the setup program always contains the IAC package for the corresponding R/3 release. This simplifies the installation.

Sometimes the setup program contains multiple packages. For example, ITS 2.1 runs with R/3 Releases 3.1I and 4.0B, and therefore contains packages for both.

The setup program may also contain multiple packages for the same R/3 release. For example, these may be language-specific packages like an Asian package, or a West European package.
• Packages already installed on the same machine
  The setup program copies all packages installed on a particular machine to the ITS installation directory. These packages are presented to you each time you run the setup program on the same machine.

• Packages you select manually from any file system or network location
  The packages dialog has a *Browse* button that allows you to select additional packages using a file selector dialog box. This option is useful if you want to store several packages on a central file server and allow users to install these packages over the network.
  If you get a package from a location other than the installation CD, you can copy it to the ITS installation directory and start the setup program afterwards. During setup, you simply select the package as the one you want.

The packages you select for installation are copied to the ITS installation directory (usually `c:\program files\sap\its\2.0\install\packages`). You can use these packages to configure additional ITS instances (for example, by using the command line utilities, or by running the setup program again).

**How Installed IAC Packages Interact**

The ITS setup program always contains an IAC package for a specific R/3 release, but you can choose to install several packages at the same time.

All the packages you select are installed together for a particular ITS instance. This means that if you choose packages that contain different versions of the same IAC, one version overwrites the other. This could happen, for example, with the standard packages for R/3 Releases 3.1I and 4.0B, both of which contain the IAC WW20. Since the order of installation is random, you cannot know which version actually gets to the file system.

To avoid this problem, you can use the *Check release consistency* feature in the dialog box for selecting IAC packages when you run the setup program. If you select this option, the setup program checks that your packages are either all for the same R/3 release, or that they are release-independent.

The R/3 release for a package is determined by the package name:

• The file name prefix specifies the R/3 release
  For example, `45a_all.car` is a Release 4.5A package.

• Release-independent packages have the prefix `zzz` or `all`
  For example, `zzz_Purchasing.car` is a release-independent Purchasing package.

The file names are not case-sensitive, but if a package does not conform to the naming conventions, it is assumed to be incompatible with other releases (that is, you cannot install it with other packages that are release-specific).
Chapter 2: Installing ITS on Windows NT

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Introduction

This chapter describes how to install the Internet Transaction Server (ITS) on a Windows NT system.

You can choose from the following installation types:

- **Single host installation**
  In this case, both the WGate and AGate components are installed on the same host.
  For this installation, which is recommended for development/test environments, see *Defining the ITS Administrator Account* on page 2–7.

- **Dual host installation**
  In this case, the WGate and AGate components are installed on separate hosts.
  For this installation, which is recommended for live production environments, see *Defining the ITS Administrator Account* on page 2–7.

---

**Note**

Before you proceed with the installation, read the following notes in the Online Service System (OSS):

- 105055  *ITS, R/3 and Web Server Supported Releases*
- 113914  *SAP Internet Transaction Server Release 2.2 News*

These notes contain the latest installation and upgrade information.

ITS installation tools must be used in accordance with the instructions and for the purposes described in this documentation. Improper use can damage existing files and systems.
Installation Requirements

Hardware Requirements

The tables below specify the hardware needed to run the ITS. You should be aware that memory and disk space requirements can vary, depending on:

- The number of users concurrently accessing the system
- The number of ITS files stored on the host file system

Hardware Requirements for Single Host Installation

<table>
<thead>
<tr>
<th>Component</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>Intel Pentium, PentiumPro, or Pentium II architecture</td>
</tr>
<tr>
<td>Backup (optional)</td>
<td>Either over network or tape drive</td>
</tr>
<tr>
<td></td>
<td>(DAT 4mm or DLT; hardware compression recommended)</td>
</tr>
<tr>
<td>CD-ROM drive</td>
<td>ISO 9660 compatible</td>
</tr>
<tr>
<td>Memory</td>
<td>1 GB</td>
</tr>
<tr>
<td>RAM</td>
<td>64 MB</td>
</tr>
</tbody>
</table>

Hardware Requirements for Dual Host Installation

<table>
<thead>
<tr>
<th>Component</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>Intel Pentium, PentiumPro, or Pentium II architecture</td>
</tr>
<tr>
<td>Backup (optional)</td>
<td>Either over network or tape drive</td>
</tr>
<tr>
<td></td>
<td>(DAT 4mm or DLT; hardware compression recommended)</td>
</tr>
<tr>
<td>CD-ROM drive</td>
<td>ISO 9660 compatible</td>
</tr>
<tr>
<td>Memory</td>
<td>2 x 1 GB mirrored</td>
</tr>
<tr>
<td>RAM</td>
<td>2 x 128 MB</td>
</tr>
</tbody>
</table>
The number of processors required depends on the number of concurrent requests made to the R/3 System. In a production environment, a moderate load requires two processors, but a high load (more than 40 hits per second) requires four processors. For further information, consult your hardware vendor.

**Software Requirements**

For information about software requirements, including platforms, Web servers, and Web browsers, see the section *Internet Interfaces* in the document *SAP System Requirements for Networks, Frontends, Communication Interfaces* at http://www.sap.com/ssr

**Checklists**

The following tables are checklists indicating what information you need to install the ITS components. Make sure that you have the required information available before running the setup program.

<table>
<thead>
<tr>
<th>AGate Configuration Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation directory</td>
</tr>
<tr>
<td>(used for AGate, WGate)</td>
</tr>
<tr>
<td>Homepage</td>
</tr>
<tr>
<td>(URL displayed when leaving a service)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R/3 Parameters (Always Required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R/3 System name</td>
</tr>
<tr>
<td>R/3 client</td>
</tr>
<tr>
<td>R/3 user (global user for all services)</td>
</tr>
<tr>
<td>Password matching R/3 user and client</td>
</tr>
</tbody>
</table>
R/3 Parameters (Load Balancing/Single Application Server)

<table>
<thead>
<tr>
<th>Option</th>
<th>Load Balancing</th>
<th>Single Application Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>R/3 message server name</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Port number used by R/3 message server</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Login group used by ITS</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>R/3 application server name</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>R/3 System number</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>SAProuter string</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Windows NT System Parameters

<table>
<thead>
<tr>
<th>Options</th>
<th>Use NT Security</th>
<th>Set up Security Later</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of NT user <em>ITSadm</em></td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Password of NT user <em>ITSadm</em></td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Name of NT group <em>ITSuser</em></td>
<td></td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

Information Checklist for Installing WGate

<table>
<thead>
<tr>
<th>Options</th>
<th>WGate Installation on a Separate Host</th>
<th>Single Host Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation directory (used for AGate, WGate)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name or IP address of AGate host</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Number of ports (<em>sapavw00_</em>&lt;virtual ITS&gt; and <em>sapavwm0_</em>&lt;virtual ITS&gt;) on AGate host</td>
<td></td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
Upgrading from Previous Versions

The default ITS setup installs new versions of the files required to run Internet Application Components (IACs) in the directories specified in the following table:

<table>
<thead>
<tr>
<th>ITS File</th>
<th>Directory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services</td>
<td>C:\Program Files\SAP\ITS\2.0&lt;virtual ITS&gt;\Services</td>
</tr>
<tr>
<td>HTML templates</td>
<td>C:\Program Files\SAP\ITS\2.0&lt;virtual ITS&gt;\Templates\99</td>
</tr>
<tr>
<td>MIME files</td>
<td>C:\Inetpub\wwwroot\SAP\ITS\MIMES&lt;service&gt;\99</td>
</tr>
</tbody>
</table>

Note

If you are using R/3 Release 3.1G or earlier, select the option not to install the ITS files. The new versions of the ITS files require R/3 Release 3.1H or later.

If you are using R/3 Release 3.1H or later, do the following before installing the ITS:

- Make a backup of your existing ITS files.
- Make sure that none of your modified ITS files reside in theme 99.
- Read the following OSS notes for important version and upgrade information:

  105055  ITS, R/3 and Web Server Supported Releases
  113914  SAP Internet Transaction Server Release 2.2 News
Preparing for Installation

Before installing the ITS, you should take the following steps:

1. Check the installation requirements.
   For details, see Installation Requirements on page 2–3.

2. Make sure that the Windows NT 4.0 server and the Web server software have been installed properly on the Web server host.

3. Make sure that you are using the Windows NT File System (NTFS) to store ITS files.
   NTFS fully supports Windows NT security and long file names.
   To check that you are using NTFS:
   - Select the hard drive icon in the Windows NT Explorer.
   - Press the right mouse button.
   - Choose Properties.
   - Choose the General tab.
   - Check that the specified file system is NTFS.

4. Define the ITS administrator account ITSadm.
   For details, user accounts, see Defining the ITS Administrator Account on page 2–7.

5. Define the ITS user group itsusers.
   For details, see Defining the ITS User Group on page 2–8.

6. Make sure that the TEMP directory is empty.

Defining the ITS Administrator Account

This document uses the ITS administrator account ITSadm, but you are free to choose a different name.

1. Log on to the Windows NT system with the ITS administrator account ITSadm.

2. On the Windows NT 4.0 desktop, choose Start → Programs → Administrative Tools (Common) → User Manager for Domains.

3. Choose User → Select Domain.

4. Enter a Windows NT domain name for the ITSadm account and choose OK.


6. Enter the following values:

   Username: itsadm
   Full Name: SAP Internet Transaction Server Administrator
   Description: <your description>
   Password: <your password>
   Confirm Password: <your password>

7. Choose Groups.
8. Add the new user to the group *Domain Administrators* and choose *OK*.
9. Choose *Profile*.
   
   SAP recommends you to enter the following home directory in the *Local Path* field:
   
   `c:\winnt\Profiles\ITSadm`
   
   Choose *OK*.
10. Choose *Add* to create the *ITSadm* account.
11. Choose *Close* to close the *New User* window.
12. Choose *User → Exit* to leave the *User Manager*.

---

**Defining the ITS User Group**

This document uses the ITS user group name *itsusers*, but you are free to choose a different name.

1. Log on to the Windows NT system with the ITS administrator account *ITSadm*.
2. On the Windows NT 4.0 desktop, choose *Start → Programs → Administrative Tools (Common) → User Manager for Domains*.
3. Choose *User → Select Domain*.
4. Enter a Windows NT domain name for the *ITSadm* account and choose *OK*.
5. Choose *User → New Global Group or New Local Group*.
6. Enter the following values:

   - *Group Name*: *itsusers*
   - *Description*: *<your description>*

7. Choose *Add*.
   
   You see a list of names in the Add Users and Groups dialog box.
8. Select group member(s):
9. Choose *Add*.
   
   The selected user(s) are added.
   
   You can always add other users to the group later.
10. Choose *OK*.
11. Choose *OK* to return.
12. Choose *User → Exit* to leave the *User Manager*. 
Single Host Installation

This section describes how to install the ITS (WGate and AGate) on a single host - the Web host. Before starting the installation, make sure that all other applications are closed.

**Note**

If you are installing an Asian language version of the ITS, please read the section *Defining the ITS Administrator Account* on page 2–7 before you proceed.

**Installation Basics**

To start the ITS single host installation:

1. Log on to the Windows NT 4.0 server with the ITS administrator account *ITSadm*.
2. Insert the presentation CD-ROM.
3. On the Windows NT 4.0 desktop, choose *Start ‒ Run*.
4. Choose *Browse* and select the directory *\its\nt\i386* on the CD-ROM drive.
5. Double-click *setupits.exe* and choose *OK*.
   
   You see the *Welcome* screen.
6. Choose Next.

You see the Installation Type screen.
Select Installation Type

7. Select Single-Host and choose Next.
   
   You see the Destination Location screen.
Select Destination Location

Setup has determined that an ITS has already been installed on this machine.

Setup will therefore use the previously used installation path.

If you want to install the ITS to a different location, you first have to uninstall the previous version.

8. Choose Next to accept the default destination of the ITS main directory, or choose Browse to select a different destination.

If there is already an ITS instance installed on this machine, the previous installation directory is used. In this case, the Browse option is not activated, and you cannot change the destination.

When you choose Next, you see the ITS Installation Type screen.
Select ITS Installation Type

9. Select an installation type and choose Next.

The setup program prompts you for an ITS instance name. If you select Administration as the installation type, the default name ADM appears.

Note

If you select Administration, the setup program installs an ITS instance that runs the ITS Administration Tool. Like any other ITS instance, the administration instance must run under its own dedicated ITS server.

If you already have ITS 1.1 on this host, do not install a separate administration instance, because it will deinstall your current ITS instance. If you need to run the ITS Administration Tool, you should:

i. Install an ITS of type Typical.

ii. Install another ITS of type Administration to run the ITS Administration Tool.

The setup program informs you of this in a special dialog box.

For further information about all aspects of ITS administration after installation, see the ITS Administration Guide. You can find the 4.5B version of this documentation in the R/3 library of any Release 4.5B R/3 System. Choose Help → R/3 library → CA - Cross-Application Components → Web Basis → ITS Administration Guide.
The setup program now prompts for an ITS instance name. If you chose Administration as the installation type, the name ADM is proposed.

**Specify Virtual ITS**

10. Enter a virtual ITS instance name and choose Next.

SAP recommends that you use the R/3 System name as the instance name. If there are virtual ITS instances already installed on this machine, you can display their names in the dropdown box.
Select a Web Server

11. Select a Web server and choose Next.

As shown above, the setup program states whether the server you select is already attached to a virtual ITS. You can only attach a Web server to one virtual ITS.

If you choose Other Web Server (CGI interface), the setup program prompts you for the Documents and CGI Directories. Otherwise, you go directly to the next step.
12. Enter the URL for accessing the Web server and choose Next.

Make sure that you enter the full URL name.

You don’t need to enter the HTTPS Access(Secure) information, because the setup program echoes this for you automatically. However, if you want to enter a different port (443 is the default), deselect Automatic to make the fields accept input.

**Note on installing an administration ITS:**

If you chose Administration as the installation type, the setup program omits the next dialogs on upgrading and installing, so you can skip to Specifying System Information.
Upgrading or Installing
When you choose Next, the system tells you whether an older version of the ITS exists on this host. Your next few steps depend on whether you have an older ITS already installed, and which one.
- If you have ITS 1.1:
  Continue with the Migrate ITS 1.1 Files step described here.
- If you have ITS 2.0/2.1, or no ITS at all:
  You don’t see the upgrade-related dialogs described here, so you can skip to Select Installation Packages.

Migrate ITS 1.1 Files

13. Specify how you want the older ITS installation handled and choose Next.
- To keep the existing files for the new ITS version, select Migrate the ITS 1.1 IAC related files to the new virtual ITS
- To delete the older ITS installation, select Deinstall the ITS 1.1 after a successful migration

If you choose not to migrate, you do not see the next migration-related dialog, so you can skip to Select Installation Packages.
Specify Migration Information

If the Web server part (WGate) of an ITS 1.1 installation has to be migrated, you must provide the name of the Web server used.

14. Select the desired Web server and choose Next.
Select Installation Packages

The setup program asks you to choose the IAC package(s) you want to install. These packages contain the IAC-related files to be used for your installation.

- If you have ITS 2.0/2.1:
  
  Do not select any packages. If the dialog below contains package names in the Install box, make sure that you select each one and choose Don’t Install. Then, choose Next and skip to Specifying System Information.

- If you have no ITS version at all (that is, you are installing ITS for the first time): Continue with the steps below.

15. Select the package you want to install and choose Install.

   If you are installing an Asian language version, choose Browse to locate the correct package.

   You can install more than one package. If you do this, make sure that Check release consistency is selected.

---

You cannot add packages to an existing ITS later by running the setup program again, so make sure that you choose all the packages you need. For information on using IAC packages, see Chapter 1: Planning the Installation.
The installation CD contains Retail packages with names like `45a_reta.car`. You can install Retail packages separately by browsing to them in the `packages` directory, but they are also included in the `xxx_all.car` file.

- If you want to install a full set of IACs (that is, both Retail and other types), install the `xxx_all.car` package alone.

- If you want to install Retail IACs only, select the Retail package for installation. The reason is that the Retail package replaces all the standard IAC homepages with the specific logon page for the Retail IACs.

When you have selected all the packages you want, choose Next.
16. To confirm that you want to proceed, choose Yes.
18. Select the configuration type and choose *Next*.

   The default ITS configuration is optimized for performance with many concurrent users. It is sized for a server with a minimum of 128 MB of physical memory. SAP recommends the default configuration for production systems.

   However, you can opt to install the ITS with minimized memory usage. This configuration runs with 32 MB of physical memory. Select this option only when performance considerations do not apply and the number of concurrent users is small. This is to meet the needs of developers installing a personal ITS on their local development platforms.

**Note on installing an Administration ITS:**

If you chose *Administration* as the installation type, the setup program omits the next two dialogs, so you can skip to *Specify Security Access*. 

---

**Specifying System Information**

**Select Configuration Type**

- Default configuration
- Minimize memory usage
19. Specify logon information for the R/3 System:
   − **System Name**
     
     The 3-character name of the primary R/3 System with which the ITS will be communicating.
     
     The R/3 System must be Release 3.0D or later.
   
   − **Client**
     
     The global client the ITS will use to log on to the R/3 System.
   
   − **R/3 User**
     
     The global user the ITS will use to log on to the R/3 System.
   
   − **Password**
     
     The matching password for the R/3 user.
   
   − **Confirm Password**
     
     Enter the password again.
20. Enter the message server information and choose Next.

To ensure a balanced load on all R/3 Systems, the ITS uses the R/3 message server to distribute accesses to multiple application servers. This option should be the default setting for every production system.

For a development system where performance considerations may not apply, you can choose to connect to a single application server.

You need to provide the following information depending on your choice:

- **If you choose load balancing:**
  
  Specify the information required to connect to the R/3 Message Server. You can test this information by choosing Test.
  
  - **Message Server**
    
    The host name of the R/3 message server as it is known either by the domain name server (DNS) or the SAProuter.
  
  - **Port Number**
    
    The port number the message server is listening on. This value is needed only if no SAProuter is specified.
  
  - **Login Group**
    
    The login group used for the load balancing.
If you have specified a valid message server and either a valid port number or SAProuter, the “...” button appears next to the Login group field. Choose this button to retrieve a list of possible login groups from the message server.

- **SAP Router String**

  This field identifies one or more SAProuter hosts and ports which are used to establish a connection to the R/3 System.

  The syntax used is `/H/router/S/service`, where `router` is the host name of an SAProuter and `service` is either the service name or the port number of the SAProuter service. If `/S/service` is missing, `sapdp99` will be used as the default service name. To define more than one SAProuter, you can concatenate the strings in the same order the routers connect the AGate host to the R/3 System.

  If no SAProuter is used to connect to the R/3 system, leave this field blank.

  If a valid `saproute.ini` file can be found in the Windows directory, the “...” button appears next to the SAP Router String field. Choose this button to get a list of SAProuters known to this machine.

- If you choose a **single application server**, specify:
  - **Application Server**

    The name of the application server.

    If you specify a valid message server and either a valid port number or SAProuter, the “...” button appears next to the Application server field. Choose this button to retrieve a list of possible login groups from the message server.

  - **System Number**

    The system number for the application server.

  - **SAP Router String**

    See the information in the previous list item.

When you choose Next, the setup program asks about security.
Specify Security Access

It is strongly recommended that you install the Internet Transaction Server with restricted access to all sensitive files and services using the Windows NT security features (see the installation manual for more information).

If you decide to use Windows NT security, you will need a special Windows NT administrator account and a special user group.

- **Everyone**: Grant access to ITS-related files to everyone. No access restrictions are applied.
- **ITS Administrator and ITS Users**: Grant access to ITS-related files to the ITS administrator account. Additionally, grant members of the ITS user group access to files they need to modify when developing.
- **ITS Administrator Only**: Grant access to ITS-related files to the ITS administrator account only. This locks out all other users from getting access to ITS-related files.

21. Select a security access level.

The setup program can configure the Windows NT Security in a way that provides optimal security for your system.

If you select **ITS Administrator and ITS Users**, you restrict access to AGate, and to the service files, HTML templates, and graphics, all of which may contain sensitive information. In this case, the ITS administrator has full control of all files, while the ITS user group has the access rights required for development purposes.

During development, however, access restrictions may be undesirable. You should analyze your needs and decide whether to use the security restrictions provided by the setup program, or whether to use some other security procedure.

**Note**

SAP strongly recommends that you install the ITS with restricted access to all sensitive files and services using the Windows NT Security features.
Specify Security Accounts

22. If you have chosen to use Windows NT Security, enter the following information to set up restricted access:

- **ITS Administrator**
  The user running the setup program must be the ITS Administrator, so this name is displayed here. You cannot choose a different user as the ITS administrator.

- **Password**
  The password for the ITS administrator.

- **Confirm Password**
  Enter the password again.

- **ITS Users Group**
  The name you have chosen for the ITS user group.

- **Web Server Account**
  The user account under which the Web server is running.
23. Enter the homepage URL information.

The URL you enter can be for your homepage or any other page that you would like to present after an Internet Application Component terminates.

For example: \texttt{http://myserver.mydomain.com}

The page must be accessible by the client. You can modify this setting in the \texttt{global.srvc} file any time after the installation.
Completing the Installation

24. Choose Finish to install the software with the settings you have specified. If you want to modify any of your settings, choose Back and proceed backwards through the installation procedure. When you choose Finish, the setup program completes the installation. A dialog asks if you want to read the Release Notes for the release.

25. Choose Yes.

Read the Release Notes to check for release changes. When you close the Release Notes, the Setup is complete dialog appears.

26. Confirm with OK.

Your ITS installation is now complete. Continue with Checking the Installation on page 2–67.
Dual Host Installation

This section describes how to install the ITS on two separate hosts, that is, the WGate on the web host and the AGate on the AGate host.

Before starting the installation, make sure that:

- the AGate host has Windows NT 4.0 Server installed.
- the web server software is installed and operational on the web host.
- both computers are on the LAN and can ping each other.

To test this, log on to the web host and enter the command `ping <AGate host>` from the `cmd.exe` window. Use the equivalent ping command on the AGate host.

- all other applications are closed

*Note*

If you are installing an Asian language version of the ITS, please read the section *Defining the ITS Administrator Account* on page 2–7 before you proceed.
Installing AGate on the AGate Host

To install AGate, proceed as follows:

1. Log on to the AGate host with the ITS administrator account ITSadm.
2. Insert the presentation CD-ROM.
3. On the Windows NT 4.0 desktop, choose Start → Run.
4. Choose Browse and select the directory \its\nt\i386 on the CD-ROM drive.
5. Double-click setupits.exe and choose OK.

You see the Welcome screen.
6. Choose Next

You see the Installation Type screen.
7. Select *Dual-Host (R/3 Application Server Side)* and choose *Next*. SAP recommends that you always install the AGate (application server side) before the WGate (Web server side).

You see the *Destination Location* screen.
Select Destination Location

Setup has determined that an ITS has already been installed on this machine.
Setup will therefore use the previously used installation path.
If you want to install the ITS to a different location, you first have to uninstall the previous version.

8. Choose Next to accept the default destination of the ITS main directory, or choose Browse to change it.
If there is already an ITS instance installed on this machine, the previous installation directory is used. In this case, the Browse option is not activated, and you cannot change the destination.
When you choose Next, you see the ITS Installation Type screen.
Select ITS Installation Type

9. Select an installation type and choose Next.

Note

If you select Administration, the setup program installs an ITS instance that runs the ITS Administration Tool. Like any other ITS instance, the administration instance must run under its own dedicated ITS server. You can install the administration instance on a single host, but it must reside on the same machine as Agate.

If you already have ITS 1.1 on this host, do not install a separate administration instance, because it will deinstall your current ITS instance. If you need to run the ITS Administration Tool, you should:

i. Install an ITS of type Typical.

ii. Install another ITS of type Administration to run the ITS Administration Tool.

The setup program informs you of this in a special dialog box.

For further information about all aspects of ITS administration after installation, see the ITS Administration Guide. You can find the 4.5B version of this documentation in the R/3 library of any Release 4.5B R/3 System. Choose Help → R/3 library → CA - Cross-Application Components → Web Basis → ITS Administration Guide.
The setup program now prompts for an ITS instance name. If you chose *Administration* as the installation type, the name *ADM* is proposed.

**Specify Virtual ITS**

10. Enter a virtual ITS instance name and choose *Next*.

SAP recommends that you use the R/3 System name as the instance name. If there are virtual ITS instances already installed on this machine, you can display their names in the dropdown box.

**Note**

If you chose *Administration* as the installation type, the setup program omits the next dialogs on upgrading and installing, so you can skip to *Specifying System Information* on page 2–42.
Upgrading or Installing

When you choose Next, the system tells you whether an older version of the ITS exists on this host. Your next few steps depend on whether you have an older ITS installed, and which one.

- If you have ITS 1.1:
  Continue with the section Migrate ITS 1.1 Files described here.

- If you have ITS 2.0/2.1 or no ITS version at all
  You don’t see the upgrade-related dialogs described here, so you can skip to Select Installation Packages on page 2–39.

Migrate ITS 1.1 Files

11. Specify how you want the older ITS installation handled and choose Next.
   - Select Migrate the ITS 1.1 IAC-related files to the new virtual ITS to preserve the existing files for the new ITS version.
   - Select Deinstall the ITS 1.1 after a successful migration to remove the older ITS installation.

If you choose not to migrate, you do not see the next migrate-dialog, so you can skip to Specifying System Information.
Provide Migration Information

If the Web server part (WGate) of an ITS 1.1 installation has to be migrated, you must provide the name of the Web server used.

12. Select the desired Web server and choose Next.
Select Installation Packages

The setup program asks you to choose the IAC package(s) you want to install. These packages contain the IAC-related files to be used for your installation.

- If you have ITS 2.0/2.1:
  Do not select any packages. If the dialog below contains package names in the Install box, make sure that you select each one and choose Don’t Install. Then, choose Next and skip to Specifying System Information.

- If you have no ITS at all (that is, you are installing ITS for the first time):
  Continue with the steps below.

13. Select the package you want to install and choose Install.

If you are installing an Asian language version, choose Browse to locate the correct package.

You can install more than one package. If you do this, make sure that Check release consistency is selected.

Note

You cannot add packages to an existing ITS later by running the setup program again, so make sure that you choose all the packages you need. For information on using IAC packages, see Chapter 1: Planning the Installation.
The installation CD contains Retail packages with names like 45a_reta.car. You can install Retail packages separately by browsing to them in the packages directory, but they are also included in the xxx_all.car file.

- If you want to install a full set of IACs (that is, both Retail and other types), install the xxx_all.car package alone.

- If you want to install Retail IACs only, select the Retail package for installation. The reason is that the Retail package replaces all the standard IAC homepages with the specific logon page for the Retail IACs.

When you have selected all the packages you want, choose Next.
Confirm Setup

14. To confirm that you want to proceed, choose Yes.
Specifying System Information

The setup program now asks you to specify system information.

Choose Configuration Type

14. Select a configuration type and choose Next.

- If you select Default configuration, the ITS is optimized for performance with a large number of concurrent users, and sized for a server with a minimum of 128 MB of physical memory. This configuration is suitable for production systems.

- If you select Minimize memory usage, the ITS is optimized for performance with a small number of concurrent users and sized for a server with 32 MB of physical memory. This configuration is suitable only if performance considerations do not apply. It is primarily intended to meet the needs of developers installing a personal ITS on their local machines.

If you are installing an administration instance of the ITS, the setup program omits the next two dialogs, so you can skip to Specify Security Access.
Enter R/3 Logon Information

15. Enter the following logon information, and then choose Next.
   - **System Name**
     Enter the name of the primary R/3 System with which the ITS is meant to communicate. This R/3 System must be Release 3.0D or higher. The name consists of three alphanumeric letters.
   - **Client**
     Enter the global client used by the ITS to log on to the R/3 System.
   - **R/3 User**
     Enter the global user used by the ITS to log on to the R/3 System.
   - **Password**
     Enter a password for the R/3 user.
   - **Confirm Password**
     Enter the password again.
16. Enter the message server information, and then choose Next.

To guarantee a balanced load on all R/3 Systems, the ITS uses the R/3 message server to distribute access to multiple application servers. This option is the default setting for all production systems.

For a development system where performance considerations are less important, you can choose to connect to a single application server.

- If you select Load Balancing:
  Enter the information required to connect to the R/3 message server. You can test this information by choosing Test.

  - Message Server
    This is the host name of the R/3 message server as it is known either by the domain name server (DNS) or the SAProuter.

  - Port Number
    This is the port number the message server is listening on. You need this value only if no SAProuter is specified (see below).

  - Login Group
    This is used for load balancing.

    If you have entered a valid message server and either a valid port number or SAProuter, you can choose the button next to the Login Group field to get a list of possible groups from the message server.
SAP Router String

This field identifies one or more SAProuter hosts and ports that are used to establish a connection to the R/3 System.

The syntax used is /H/<router>/S/<service>, where <router> is the host name of an SAProuter, and <service> is either the service name or the port number of the SAProuter service.
If /S/<service> is missing, sapdp99 is the default service name. To define more than one SAProuter, you can concatenate the strings in the same order the routers connect the AGate host to the R/3 System.
If no SAProuter is used to connect to the R/3 system, leave this field blank.
If there is a valid saproute.ini file in the Windows directory, you can choose the button next to the SAP Router String field to get a list of SAProuters known to this machine.

- If you select Single Application Server, enter the following information:
  - Application Server
    This is the name of the application server.
    If you specify a valid message server, and either a valid port number or SAProuter, you can choose the button appears next to the Application Server field to get a list of possible groups from the message server.
  - System Number
    This is the system number for the application server.
  - SAP Router String
    See information under SAP Router String above.

When you choose Next, the setup program asks about security.
Specify Security Access

17. Select a security access level.

The setup program can configure the Windows NT Security in a way that provides optimal security for your system.

If you select *ITS Administrator and ITS Users*, you restrict access to AGate, and to the service files, HTML templates, and graphics, all of which may contain sensitive information. In this case, the ITS administrator has full control of all files, while the ITS user group has the access rights required for development purposes.

During development, however, access restrictions may be undesirable. You should analyze your needs and decide whether to use the security restrictions provided by the setup program, or whether to use some other security procedure.

**Note**

SAP strongly recommends that you install the ITS with restricted access to all sensitive files and services using the Windows NT Security features.
Set Up Security Accounts

18. If you have chosen to use Windows NT Security, enter the following information to set up restricted access:

- **ITS Administrator**
  The user running the setup program must be the ITS Administrator, so this name is displayed here. You cannot choose a different user as the ITS administrator.

- **Password**
  The password for the ITS administrator.

- **Confirm Password**
  Enter the password again.

- **ITS Users Group**
  The name you have chosen for the ITS user group.

- **Web Server Account**
  The user account under which the Web server is running.
19. Enter the homepage URL information.

The URL you enter can be your own homepage or any other page that you want to present when an IAC has finished.

The URL you enter must be accessible by the client. You can modify this setting in the global service file any time after the installation.
Complete the AGate Installation

20. To install the software as specified, choose *Finish*.

    If you want to modify any of your settings, use the *Back* button to proceed backwards through the installation procedure.

    When you choose *Finish*, the setup program completes the installation. You then see a dialog, which asks if you want to read the Release Notes.

21. Choose *Yes*.

    Read the Release Notes to check for release changes. When you close the Release Notes, you see the *Setup is complete* dialog.

22. Confirm with *OK*.

    Your installation of AGate is now complete. Continue by installing WGate, as described in the next section.
Installing WGate on the Web Host

To install WGate on an NT system, proceed as follows:

1. Log on to the Web host with the ITS administrator account ITSadm.
2. Insert the presentation CD-ROM.
3. On the Windows NT 4.0 desktop choose Start → Run.
4. Choose Browse and select the directory \its\nt\i386 on the CD-ROM drive.
5. Double-click setupits.exe and choose OK.
   You see the Welcome screen.
Setup Program Welcome

6. Choose Next.

You see the Installation Type screen.
7. Select *Dual-Host (Web Server Side)* and choose *Next.*
   
   You see the *Destination Location* screen.
Select Destination Location

8. Choose Next to accept the default destination of the ITS main directory, or choose Browse to change it.

   If there is already an ITS instance installed on this machine, the previous installation directory is used. In this case, the Browse option is not activated, and you cannot change the destination.

   When you choose Next, you see the ITS Installation Type screen.
Select ITS Installation Type

9. Select an installation type and choose Next.

**Note**

If you select Administration, the setup program installs an ITS instance that runs the ITS Administration Tool. Like any other ITS instance, the administration instance must run under its own dedicated ITS server. You can install the administration instance on a single host, but it must reside on the same machine as Agate.

If you already have ITS 1.1 on this host, do not install a separate administration instance, because it will deinstall your current ITS instance. If you need to run the ITS Administration Tool, you should:

i. Install an ITS of type Typical.

ii. Install another ITS of type Administration to run the ITS Administration Tool.

The setup program informs you of this in a special dialog box.

For further information about all aspects of ITS administration after installation, see the ITS Administration Guide. You can find the 4.5B version of this documentation in the R/3 library of any Release 4.5B R/3 System. Choose Help → R/3 library → CA - Cross-Application Components → Web Basis → ITS Administration Guide.
The setup program now prompts for an ITS instance name. If you chose Administration as the installation type, the name ADM is proposed.

Specify Virtual ITS

10. Enter a virtual ITS instance name and choose Next.

SAP recommends that you use the R/3 System name as the instance name. If there are virtual ITS instances already installed on this machine, you can display their names in the dropdown box.
11. Select a Web server and choose Next.

The setup program notifies you if the selected server is already attached to an ITS instance. You can only attach a Web server to one ITS instance.

If you choose Other Web Server (CGI interface), the setup program prompts you for the Documents and CGI Directories. Otherwise, you go directly to the following step.
Upgrading or Installing

When you choose Next, the system tells you whether an older version of the ITS exists on this host. Your next few steps depend on whether you have an older ITS installed, and which one.

- If you have ITS 1.1:
  Continue with the section Migrate ITS 1.1 Files described here.
- If you have ITS 2.0/2.1 or no ITS version at all
  You don’t see the upgrade-related dialogs described here, so you can skip to Select Installation Packages.

Migrate ITS 1.1 Files

13. Specify how you want the older ITS installation handled and choose Next.

- To keep the existing files for the new ITS version, select Migrate the ITS 1.1 IAC related files to the new virtual ITS.
- To delete the older ITS installation, select Deinstall the ITS 1.1 after a successful migration.

If you choose not to migrate, you do not see the next migration-related dialog, so you can skip to Select Installation Packages.
Provide Migration Information

If the Web server part (WGate) of an ITS 1.1 installation has to be migrated, you must provide the name of the Web server used.

14. Select the desired Web server and choose Next.
Select Installation Packages

The setup program asks you to choose the IAC package(s) you want to install. These packages contain the IAC-related files to be used for your installation.

- If you have ITS 2.0/2.1:
  Do not select any packages. If the dialog below contains package names in the Install box, make sure that you select each one and choose Don't Install. Then, choose Next and skip to Specifying System Information.

- If you have no ITS at all (that is, you are installing ITS for the first time):
  Continue with the steps below.

15. Select the package you want to install and choose Install.

   If you are installing an Asian language version, choose Browse to locate the correct package.

   You can install more than one package. If you do this, make sure that Check release consistency is selected.

   **Note**

   You cannot add packages to an existing ITS later by running the setup program again, so make sure that you choose all the packages you need. For information on using IAC packages, see Chapter 1: Planning the Installation.
The installation CD contains Retail packages with names like `45a_reta.car`. You can install Retail packages separately by browsing to them in the `packages` directory, but they are also included in the `xxx_all.car` file.

- If you want to install a full set of IACs (that is, both Retail and other types), install the `xxx_all.car` package alone.
- If you want to install Retail IACs only, select the Retail package for installation. The reason is that the Retail package replaces all the standard IAC homepages with the specific logon page for the Retail IACs.

When you have selected all the packages you want, choose `Next`. 
16. To confirm that you want to proceed, choose Yes.
Specifying System Information

The setup program now asks you to specify the ITS (that is, AGate) host.

Specify Connection to AGate Host

16. Enter values for the following and choose Next.

− Name or IP address
  This is the AGate host name or address, as it is known by the domain name server (DNS).

− AGate port number
  This is the port number on the AGate host that AGate is listening on.

− ITS Manager port number
  If you select Automatic, this value is the value of the AGate port number, plus 9.
  If you do not select Automatic, enter the port number as specified in the file
  <drive>:\winnt\system32\drivers\etc\services, where <drive> is the
  system's hard drive and <winnt> is your Windows NT directory (system root) on
  the AGate host. To find the correct value, look up the port number for the port
  named sapavwmm_<virtual ITS>.

Both the Web host and the AGate host must have identical settings for the AGate network ports sapavw00_<virtual ITS> and sapavwmm_<virtual ITS>.

− The default value of sapavwmm_<virtual ITS> is 3900.
− The default value of sapavw00_<virtual ITS> is the AGate port number, plus 9.

During the AGate installation, the entries are automatically added to the file
<drive>:\winnt\system32\drivers\etc\services.
If port 3900 is already in use on the AGate host, the setup program automatically chooses the next available block of 10 free ports. During the WGate installation, you must make sure that the same port number is used on the WGate host.

When you choose Next, the setup program asks about security.
Specify Security Access

17. Select a security access level.

The setup program can configure the Windows NT Security in a way that provides optimal security for your system.

If you select **ITS Administrator and ITS Users**, you restrict access to AGate, and to the service files, HTML templates, and graphics, all of which may contain sensitive information. In this case, the ITS administrator has full control of all files, while the ITS user group has the access rights required for development purposes.

During development, however, access restrictions may be undesirable. You should analyze your needs and decide whether to use the security restrictions provided by the setup program, or whether to use some other security procedure.

---

**Note**

SAP strongly recommends that you install the ITS with restricted access to all sensitive files and services using the Windows NT Security features.
18. If you have chosen to use Windows NT Security, enter the following information to set up restricted access:

- **ITS Administrator**
  The user running the setup program must be the ITS Administrator, so this name is displayed here. You cannot choose a different user as the ITS administrator.

- **Password**
  The password for the ITS administrator.

- **Confirm Password**
  Enter the password again.

- **ITS Users Group**
  The name you have chosen for the ITS user group.

- **Web Server Account**
  The user account under which the Web server is running.
Complete the WGate Installation

19. To install the software as specified, choose Finish.
   
   If you want to modify any of your settings, use the Back button to proceed backwards through the installation procedure.
   
   When you choose Finish, the setup program completes the installation. You then see a dialog, which asks if you want to read the Release Notes.

20. Choose Yes.
   
   Read the Release Notes to check for release changes. When you close the Release Notes, you see the Setup is complete dialog.

21. Confirm with OK.

Your ITS installation is now complete. Continue with Checking the Installation on page 2–67.
Checking the Installation

When you have completed the ITS installation, you should check that:

- The setup program ran successfully
- The R/3 System is available
- The ITS connection between the Web browser and the R/3 System works

Did the Setup Program Run Successfully?

To check your installation:

1. Log on to the host(s) containing the ITS components (WGate, AGate, or both), and perform the checks as listed in the tables below according to the installation type.

<table>
<thead>
<tr>
<th>Single Host Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Check</strong></td>
</tr>
</tbody>
</table>
| Check that the Web server status is started and that startup is automatic. | 1. On the Windows NT desktop, choose Start → Settings → Control Panel.  
2. Double-click on Services.  
3. Find the Web server in the list of Services and check that the values in the Status and Startup columns are set to Started and Automatic. |
| Check that the WGate component is present. | Look in the subdirectory scripts of your Web server.  
- If you are using the Microsoft Internet Information Server (IIS), you should find wgate.dll in the scripts directory (usually C:\InetPub\scripts).  
- If you are using the Netscape Enterprise Server (NES), you should find wgate20.dll, wgate30.dll, or wgate35.dll in the subdirectory scripts of the Web server’s document root directory.  
To see .dll files, make sure that your Windows NT Explorer displays all file types. |
| Check that the ITS Manager is started and that startup is set to automatic. | 1. On the Windows NT desktop, choose Start → Settings → Control Panel.  
2. Double-click on Services.  
3. Find the ITS Manager in the list of Services and check that the values in the Status and Startup columns are set to Started and Automatic. The ITS Manager is listed as ITS Manager - <virtual ITS>. |
## Dual Host Installation

<table>
<thead>
<tr>
<th>Check</th>
<th>Procedure</th>
</tr>
</thead>
</table>
| On the Web host, check that the Web server is started and **Startup** is **Automatic**. | 1. On the Windows NT desktop, choose **Start** → **Settings** → **Control Panel**.  
2. Double-click on **Services**.  
3. Find the Web server in the list of **Services** and check that the values in the **Status** and **Startup** columns are set to **Started** and **Automatic**.  

On the Web host, check that the Wgate component is present. | Look in the subdirectory **scripts** of your Web server.  
- If you are using the Microsoft Internet Information Server (IIS), you should find **wgate.dll** in the **scripts** directory (usually **C:\InetPub\scripts**).  
- If you are using the Netscape Enterprise Server (NES), you should find **wgate20.dll**, **wgate30.dll**, or **wgate35.dll** in the subdirectory **scripts** of the Web server’s document root directory.  
To see .dll files, make sure that your Windows NT Explorer displays all file types.  

On the AGate host, check that the ITS Manager is started and startup is set to automatic. | 1. On the Windows NT desktop, choose **Start** → **Settings** → **Control Panel**.  
2. Double-click on **Services**.  
3. Find the ITS Manager in the list of **Services** and check that the values in the **Status** and **Startup** columns are set to **Started** and **Automatic**. The ITS Manager is listed as **ITS Manager - <virtual ITS>**.  

---

**Checking the Installation**

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Is the R/3 System Available?

To check whether the R/3 System is available:

- Do you have R/3 Release 3.0D or later installed and operating?
- Can you log on to the R/3 System via the SAPgui and run transaction WEX1?

Make sure that you enter the same logon information that you specified in the installation step Enter R/3 Logon Information. To do this, check the entries in the global service file under

\<drive>:\Program Files\SAP\ITS\2.0\<virtual_ITS>\services\global.srvc

Does the ITS Connection Work?

To test the connections:

1. Start a Web browser and enter the following URL:
   - Microsoft Internet Information Server (IIS):
     \http://<webhost>:<serverport>/scripts/wgate/wex1/!
   - Netscape Enterprise Server (NES):
     \http://<webhost>:<serverport>/scripts/wgate/wex1/!

   <webhost> is the hostname of your web server.
   <serverport> is the the port number on which the Web server is listening (this is typically port 80).

   You should see a logon screen for the service WEX1 containing the following fields:
   - Customer Number
   - Password
   - Login

   If you do not see this logon screen in your Web browser, see Chapter 3: Troubleshooting the ITS Installation for more information.
Installing an Asian Language Version

If you are installing an Asian language version, you need to follow a slightly different procedure. SAP provides these files as a separate IAC package, because they are usually delivered some months later than the R/3 release for which they are intended.

When the setup program asks you to choose the package you want, you need to know where the packages for these languages are stored, because you have to locate them with the *Browse* function. Make sure you have this information before proceeding with the installation.
Chapter 3: Troubleshooting the ITS Installation

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Diagnosis Problems ........................................................................................................... 3–2
Trace Facility Settings ....................................................................................................... 3–2
Changing the AGate Host ............................................................................................... 3–4
Changing the R/3 Connection Information ..................................................................... 3–4
Uninstalling the ITS ......................................................................................................... 3–4
Reporting a Problem ....................................................................................................... 3–4
Troubleshooting the ITS Installation

SAP AG

Installation Problems

If you get error messages like *General file transfer error* when using the `setupITS.exe` program, make sure that your `TEMP` directory is empty.

Diagnosis Problems

To diagnose a problem, check the trace files. You can find these in the directory `C:\Program Files\SAP\ITS\<virtual ITS>\Traces`.

Trace Facility Settings

You can modify the trace facility settings listed below, but only to make a temporary diagnosis of a problem. Remember that changing these settings can adversely affect performance.

You can modify the following settings:

- **HKEY_LOCAL_MACHINE\SOFTWARE\SAP\ITS\2.0\Programs\AGate\IoalTraceLevel**
  - Default: 1
  - Range: 1 (errors only), 2 (errors and warnings), 3 (errors, warnings and information records)
  - Description: Trace level for tracing the ITS interface to the R/3 System.

- **HKEY_LOCAL_MACHINE\SOFTWARE\SAP\ITS\2.0\<virtual ITS>\Traces\TracePath**
  - Default: `C:\Program Files\SAP\ITS\2.0\<virtual ITS>\Traces`
  - Description: Path where all virtual ITS-related trace files are stored.
• HKEY_LOCAL_MACHINE\SOFTWARE\SAP\ITS\2.0\virtual ITS>\Traces\...

followed by one of:

AGate\TraceLevel
MManager\TraceLevel
SAPjulep\TraceLevel
SAPirf\TraceLevel
SAPxGDK\TraceLevel

Default: 1
Range: 1 (errors only)
2 (errors and warnings)
3 (errors, warnings and information records)

Description: Trace level for the corresponding trace type.

• HKEY_LOCAL_MACHINE\SOFTWARE\SAP\ITS\2.0\<virtual ITS>\Traces\...

followed by one of:

AGate\TraceAppend
MManager\TraceAppend
SAPjulep\TraceAppend
SAPirf\TraceAppend
SAPxGDK\TraceAppend

Default: 1
Range: 1 (only one trace file; additional records are always appended)
0 (each new version of this software creates a new trace file; the old
one is renamed with a timestamp in the trace file name)

Description: Toggle switch to select one or more trace files. Do not change.
Changing the AGate Host

If you want to change the AGate host, run the setup program for the AGate as described in the section Dual Host Installation. Also, change the registry key on the WGate host that points to the new AGate Host as follows:

```
HKEY_LOCAL_MACHINE\SOFTWARE\SAP\ITS\2.0\<virtual ITS>\Connects\Host:
<new AGate-host>
```

Changing the R/3 Connection Information

For each service you offer on the Web, there is:

- A specific service file `<service>.srvc`, where `<service>` is the service name.
- A global service file `global.srvc`, which contains settings that apply to all services.

These service files are located in the directory:

```
C:\Program Files\SAP\ITS\2.0\P30\Services
```

You can create and maintain these service files in the SAP@Web studio. If you modify them manually using a text editor, do not change the file structure and syntax.

Basic definitions like R/3 connection information are written to the global service file at setup. You can change the setup information by modifying the relevant entries in this file.

Each service can also define its own particular connection information in its own service file. Settings in service-specific files always override settings in the global service file.

Uninstalling the ITS

Before uninstalling the ITS, SAP recommends that you:

- Make a backup copy of all files you want to keep.
- Stop your Web server and the ITS Manager service.

To uninstall the ITS, log in as the ITS administrator and use the standard Windows NT 4.0 uninstall procedure. To do this from the Windows NT 4.0 desktop, choose `Start → Settings → Control Panel → Add/Remove Programs`.

Reporting a Problem

If you need to report a problem that you cannot solve, provide SAP with as much information as possible. In particular, you should do the following:

1. Make a note of the exact error message you see in the Web browser.
2. Save all current trace files. The default location of the trace files is:
   
   `C:\Program Files\SAP\ITS\2.0\P30\Traces`

3. Find a way to reproduce the error.
4. Make a note of your configuration (Windows NT version, host name(s), Web server software, Web browser software, network/firewall configuration, user accounts, etc.).
Chapter 4: Installing the SAP@Web Studio

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- Requirements ................................................................................................................. 4–3
- Installation Procedure ................................................................................................... 4–4
  - Installation Preparations ......................................................................................... 4–4
  - Installing the SAP@Web Studio ................................................................................. 4–5
  - Setup Tasks After Installation ............................................................................. 4–5
- Installation Problems .................................................................................................... 4–6
Introduction

The SAP@Web Studio is a tool for creating, modifying, and managing all the external files required by the Internet Transaction Server (ITS) to run R/3 transactions as Internet Application Components (IACs).

SAP recommends that you install the SAP@Web Studio on all development and administration workstations used for ITS work.

The SAP@Web Studio includes easy-to-use wizard dialogs that allow you to generate the required service files, HTML templates, and language resource files. Please note that the template wizard only works with R/3 System Release 3.1G or later.

---

**Note**

Before you proceed with the installation, read the following notes in the Online Service System (OSS):

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>105055</td>
<td>ITS, R/3 and Web Server Supported Releases</td>
</tr>
<tr>
<td>113914</td>
<td>SAP Internet Transaction Server Release 2.2 News</td>
</tr>
</tbody>
</table>

These notes contain the latest installation and upgrade information.

---

**Caution**

SAP@Web Studio installation tools must be used in accordance with the instructions and for the purposes described in this installation documentation. Improper use can damage existing files and systems.
Requirements

### Hardware Requirements

<table>
<thead>
<tr>
<th>Hardware component</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>Intel Pentium, PentiumPro, or Pentium II architecture</td>
</tr>
<tr>
<td>Backup (optional)</td>
<td>Either over network or tape drive</td>
</tr>
<tr>
<td></td>
<td>(DAT 4mm or DLT; hardware compression recommended)</td>
</tr>
<tr>
<td>CD-ROM drive</td>
<td>ISO 9660 compatible</td>
</tr>
<tr>
<td>Memory</td>
<td>1 GB</td>
</tr>
<tr>
<td>RAM</td>
<td>32 MB</td>
</tr>
</tbody>
</table>

### Software Requirements

<table>
<thead>
<tr>
<th>Software component</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Windows NT 4.0</td>
</tr>
<tr>
<td>Virtual memory</td>
<td>According to Microsoft guidelines</td>
</tr>
<tr>
<td>File system</td>
<td>NTFS</td>
</tr>
<tr>
<td>Network / TCP/IP</td>
<td>Installed</td>
</tr>
</tbody>
</table>
Installation Procedure

The following procedure applies to Windows NT 4.0 operating systems.

### Installation Preparations

- Check the requirements for the installation.
- Make sure that the `TEMP` directory is empty.
- For security reasons, use the Windows NT File System (NTFS) to store ITS files. NTFS fully supports Windows NT Security and long file names. To check the type of file system used, select the hard drive icon in the Windows NT Explorer window, press the right mouse button and choose `Properties` from the menu. Then, choose the `General` tab and check that the file system is `NTFS`.
- Check that your version of Windows is 4.0 or later.
- If there is no SAPgui installed on the system where you intend to install the ITS, and you are not using a SAProuter to access your R/3 System, add SAP ports manually to the service file `<drive>:\winnt\system32\drivers\etc\services`.
  
  Open the file and use your editor to add the following entries:
  
  ```
  sapdp<systemnumber>       32<systemnumber>
  sapgw<systemnumber>       33<systemnumber>
  ```
  
  where `<systemnumber>` is the two-digit number identifying your R/3 instance.

**Example**

<table>
<thead>
<tr>
<th>sapdp00</th>
<th>3200</th>
</tr>
</thead>
<tbody>
<tr>
<td>sapgw00</td>
<td>3300</td>
</tr>
</tbody>
</table>

If you append these entries to the end of the file, make sure that there is an additional line in the `services` file, i.e. make sure that the `sapgw<systemnumber>` entry is not the last line.

- Make sure that all other applications are closed.
Installing the SAP@Web Studio

To install the SAP@Web Studio:
1. Log on to the Windows NT 4.0 server with the ITS administrator account.
2. Insert the presentation CD-ROM.
3. On the Windows NT 4.0 desktop, choose Start → Run.
4. Choose Browse and select the subdirectory studio\NT\I386 on the CD-ROM drive.
5. Double-click setup.exe and choose OK.
6. Choose Next.
7. Choose the destination. The default is c:\Program Files\SAP\Studio\.
8. Choose Next.
9. Select Yes, I want to restart my computer now.
10. Choose OK.

This completes the installation.

Setup Tasks After Installation

When you have installed the SAP@Web Studio, there are a number of setup tasks you need to complete. These tasks are described below.

Starting the SAP@Web Studio

To start the SAP@Web Studio:
1. On the Windows NT 4.0 Desktop, choose Start → Programs → SAP@Web Studio.

Setting up R/3 Servers

To set up R/3 servers for the HTML template generator and the ITS source control in the SAP@Web Studio:
1. Choose Options → R/3 Systems
   You see the Select R/3 System screen, which contains a list of all R/3 Systems maintained in the SAP Logon application.
2. To specify a new R/3 System, or change an existing entry, choose New or Edit, or use the Group or Server selection options.
Installation Problems

If you get error messages such as *General file transfer error* when running the `setupex.exe` program, make sure that your TEMP directory is empty.
Chapter 5: Maintaining ITS Instances

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  Prerequisites .................................................................................................................. 5–3
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  With the Setup Program ............................................................................................... 5–20
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Performing the Initial Installation

The initial ITS installation creates the physical version of the ITS server and one virtual ITS instance. This chapter explains how to create and manage additional instances.

You start the initial installation by running the program `setup.exe` either from the installation CD or from a Web download package.

The setup is an InstallShield program that:

- Self-extracts its content
- Checks that it is currently running under a Windows NT account with administrator rights, and that the installation is taking place on a Windows NT 4.0 server. If either of these conditions is not satisfied, `setup.exe` exits immediately.
- Prompts you for information via dialog boxes, and checks your input. For example, the program checks that there is enough disk space to proceed with the installation, and that the message server you have specified is correct.

After running `setup.exe`, the initial installation is complete.

---

Note

This chapter describes only basic activities of the ITS installation. For full details about running the setup program, see Chapter 2: Installing ITS on Windows NT.
Creating Additional ITS Instances

Prerequisites
If you want to add ITS instances:

- There must be a one-to-one relationship between ITS instances and R/3 systems. For example, you cannot assign two instances to the same R/3 system.

- The Web server must support multiple (Web server) instances.
  Netscape Enterprise Server (NES) supports multiple Web server instances as of Version 2.0.
  Microsoft Internet Information Server (IIS) supports multiple Web server instances as of Version 4.0.

- If you are using IIS 4.0, make sure that each Web server instance runs in a separate memory space.
  To check this from the Windows NT 4.0 desktop:
  - Choose Start → Programs → Windows NT 4.0 Option Pack → Microsoft Internet Information Server → Internet Service Manager.
  - Click the Web server instance name to expand the hierarchy and select the Scripts subdirectory.
  - Press the right mouse button and choose Properties.
  - Select the Virtual Directory tab and make sure that Run in separate memory space (isolated process) is enabled.

With the Setup Program
When you want to create another virtual ITS instance, you simply run the setup program again. During the rerun, the setup program recognizes that an initial installation has already been performed.

SAP recommends that you use the setup program to create new instances, but you can also create them explicitly, using the Itsvinstall utility. This utility was used in previous releases, and is described in next section. The ITS utilities can target particular tasks more easily, but they require more knowledge to use.
**With the Itsvinstall Utility**

For added flexibility and procedural control, you can use the `itsvinstall` command to add virtual instances. This command provides arguments for supplying essential environment information (such as the Web server name).

You can either:
- Pass all the necessary information in the command line (using the `/d...` option).
- Create a configuration file.

The configuration file is called `itsvinstall_<vits_id>.cfg`. It is more convenient to use, since (if available) you can copy the file used for earlier installations. Also, if errors occur, it is easier to use the file again if you have to repeat an installation.

You must also indicate whether you want to perform a single host installation or a dual host installation. In a dual host installation, the Web server and the ITS Manager run on separate machines.

If you want to know which command line options are supported by the `itsvinstall.exe` utility, enter the commands listed below in the command prompt.

> cd <dirItsRoot>\admin
> itsvinstall /?

**Note**

Replace `<dirItsRoot>` with your ITS root directory. This directory is the one you selected during the setup, by default `C:\program files\sap\its\2.0`.

To get the correct value for the `webServerName` parameter, use the current name recorded in the Windows NT Registry.
Adding a Single Host Virtual ITS

Suppose you simply want to add an unmodified, new virtual ITS called Q30 to your existing ITS installation. The existing installation includes the physical version of the ITS, and an initial virtual ITS called P30. You want to attach Q30 to Web server w3svc.

To do this, use commands like those listed below. Here we assume that the directory Program files/SAP/2.0/install/packages contains the package 45a_all.car.

```
> cd <dirItsRoot>\admin
> itsvinstall /v Q30 /d webservename=w3svc /i 45a_all
Are you sure [y/n]? y
Virtual installation...
Installing virtual ITS (AGate)...Creating ITS directory share...
Virtual installation (AGate) ok.
Installing virtual ITS (WGate)...
Creating installation package for virtual ITS...
Collecting MIME files...
Creating package file...
Removing temporary files...
Creating installation package for virtual ITS ok.
The web server "W3SVC" is already attached to the virtual ITS "P30"!
Proceeding will detach the web server from its current virtual ITS. Do you want to proceed [y/n]? y
Applying installation package for virtual ITS...
Extracting package...
There are already MIME files installed in "C:\InetPub\wwwroot\sap\its"! Do you want to overwrite them [y/n]? y
Copying MIME files...
Removing temporary files...
Creating MIME directory share...
Applying installation package for virtual ITS ok.
Virtual installation (WGate) ok.
Virtual installation ok.
> 
```
The /i command line option specifies a package of IAC-related files (i.e. HTML templates, language resource files, and MIME files) to be included in the installation. If you omit this command, no IAC-related files are included.

The two command line options /v and /d are the only required settings. All other arguments are optional.

In the example above, the ITS gives you two warnings:

- The first warning notifies you that, by asking to attach the new virtual ITS Q30 to the requested Web server, you are about to detach the existing P30 from the same Web server.
- The second warning notifies you that your command overwrites already existing MIME files in the Web server’s document directory.

If you want to run the ITS Manager service under a Windows NT account other than system, use the /d itsaccount=... and /d itspassword=... arguments (with the corresponding values).

**Copying an Existing Virtual ITS (Single Host)**

You can create a virtual ITS that is a copy of an existing instance. If you do this, the new virtual ITS takes all the attributes of the source instance.

For example, suppose you want to duplicate the virtual ITS Q30 and call it Q30B. The following commands do this for you:

```plaintext
> cd <dirItsRoot>\admin
> itsvinstall /v Q30B /d webservename=https-pal001452 /i 45a_all
Are you sure [y/n]? y
Virtual installation...
```

**Creating a Dual Host Virtual ITS**

A dual host installation usually involves the following steps:

1. Install the AGate part of the virtual ITS.

   In this example, P30 is the requested virtual ITS:

   ```plaintext
   > cd <dirItsRoot>\admin
   > itsvinstall /v P30 /r agate /i 45a_all
   Are you sure [y/n]? y
   Virtual installation... Installing virtual ITS (Agate)...
   ...
   >
   ```

   AGate is now installed for P30 on the ITS host.
2. Create a WGate package file on the ITS host for the current installation.

```bash
> cd <dirItsRoot>\admin
> itsvinstall /v P30 /r package /i 45a_all
Are you sure [y/n]? y
Virtual installation...
Creating installation package for virtual ITS...
...
>
```

After this command, you’ll find a file `package_P30.car` in the subdirectory `<dirItsRoot>\install\packages`.

3. Copy the WGate package file to the Web host.

The Web host is the home of the WGate side of the virtual ITS. If the `package_P30.car` file is not already in the folder `<dirItsRoot>\install\packages` on the Web host, you must move it there.

To do this, you can use any file-transfer program, for example, `ftp`:

```bash
> cd <dirItsRoot>\install\packages
> ftp myRemoteWebHost
login: ...
password: ...
: binary
Switched to binary mode.
: prompt
Prompt is now off.
: put package_P30.car
### bytes transferred.
: bye
> cd ..
> 
```
4. Install the WGate package on the Web host.
   The following commands install the Web host side of the virtual ITS.

```
> cd <dirItsRoot>\admin
> itsvinstall /v P30 /p package_P30.car /d webservername=w3svc /i 45a_all
Are you sure [y/n]? y
Virtual installation...
Installing virtual ITS (WGate)...
Creating installation package for virtual ITS...
Collecting MIME files...
Creating package file...
Removing temporary files...
Creating installation package for virtual ITS ok.
Applying installation package for virtual ITS...
Extracting package...
Copying MIME files...Removing temporary files...
Creating MIME directory share...
Applying installation package for virtual ITS ok.
Virtual installation (WGate) ok.
Virtual installation ok.
```

Now the virtual ITS installation is complete.

---

**Adding a Web Server Instance**

Every ITS instance links to its own Web server instance. As a result, you may often need to create a virtual Web server when you create the ITS instance.

When you create an ADM ITS instance to run the ITS Administration Tool, you must create a separate Web server instance. This is because the ITS Administration Tool always runs under its own ITS instance and Web server instance.

The following is a quick guide to creating a Web server instance. For full details, see your Web server documentation.

**Creating a Netscape Web Server Instance**

To create a new instance in Netscape Enterprise Server 3.5:

1. On the Windows NT 4.0 desktop, choose Start → Programs → Netscape SuiteSpot → Administration.
2. Choose Create New Enterprise Server and configure the parameters:
   - Server Port: Set this value to an unused port (for example, 81 or 82).
   - Server Identifier: Set this value to <Hostname>adm.
3. Choose View Server Setting.
5. Create a docs subdirectory under C:/Netscape/SuiteSpot/https-<hostname>-adm/docs.
Creating a Microsoft Internet Information Server Instance

The following steps outline the procedure for adding a new instance of the Internet Information Server (IIS). With IIS, you can create second instances of the web server only with release IIS 4.0 or higher.

1. Select Start → Programs → Windows NT 4.0 Option Pack → Microsoft Internet information Server → Internet Service Manager.
2. Click on the Internet Information Server folder.
3. Select the desired host name.
4. Click on the right mouse button and choose New → Web Site.
5. Enter a description in the Web Site Description field (for example pal002856-adm) and choose Next.
6. Enter an unused port (for example, 81 or 82) in the TCP Port this Web Site should use (Default: 80) field.
7. Enter a directory name in Enter the path for your home directory field.
   You must have already created this directory. For example, C:\InetPub\wwwroot-adm.
8. Choose Next, and then Finish.
   The Web Site dialog disappears.
9. Click on the Internet Service Manager window again, and select the Web site you just created.
10. Select the Scripts subdirectory, right-click the mouse, and choose Properties.
12. In the Application Settings group box, enable Run in separate memory space (isolated process).
13. Choose Apply.
Stopping/Starting ITS Instances

Stopping/Starting an Entire Virtual ITS

If you want to stop a virtual ITS for any reason, use the \texttt{itsvcontrol} utility:

```bash
> cd <dirItsRoot>
> itsvcontrol /v P30 /c stop
Virtual ITS "P30":
The virtual ITS "P30" was successfully stopped.
The web server "W3SVC" was successfully stopped.
```

To start the virtual ITS again, use \texttt{itsvcontrol} as follows:

```bash
> cd <dirItsRoot>\admin
> itsvcontrol /v P30 /c start
Virtual ITS "P30":
The virtual ITS "P30" was successfully started.
The web server "W3SVC" was successfully started.
```

To start or stop all virtual ITS instances on your machine, use \texttt{/v *}. For example:

```bash
> itsvcontrol /v * /c stop
```

1 Replace \texttt{<dirItsRoot>} by your actual ITS root directory. (This directory is the one you selected during the setup procedure. "c:\program files\sap\its\2.0" is the default)
Stopping/Starting AGate Only

If you want to start/stop only the AGate part of the ITS (and keeping the WGate and your Web server running), use \texttt{itsvcontrol} as follows:

\begin{verbatim}
> cd <dirItsRoot>\admin
> itsvcontrol /v P30 /c stop /r agate
Virtual ITS "P30":
The virtual ITS "P30" was successfully stopped.

> itsvcontrol /v P30 /c start /r agate
Virtual ITS "P30":
The virtual ITS "P30" was successfully started.
> 
\end{verbatim}
Displaying the Status of ITS Instances

You can also use `itsvcontrol` to display the status of virtual ITS instances:

```bash
> cd <dirItsRoot>/admin
> itsvcontrol /v * /c status
Virtual ITS "A30":
The virtual ITS "A30" is currently stopped.
The web server "https-pal001452" is currently stopped.
Virtual ITS "J30":
The virtual ITS "Q30" is currently stopped.
The web server "https-pal001452" is currently stopped.
Virtual ITS "K30":
The virtual ITS "K30" is currently stopped.
The web server "https-pal001452-K30" is currently stopped.
Virtual ITS "P30":
The virtual ITS "P30" is currently running.
The web server "W3SVC" is currently running.
Virtual ITS "R30":
The virtual ITS "R30" is currently stopped.
The web server "https-pal001452-K30" is currently stopped.
Virtual ITS "S30":
The virtual ITS "S30" is currently stopped.
The web server "W3SVC" is currently running.
```
Setting the Security Level of an ITS Instance

One aspect of ITS 2.2 is Windows NT file security. Whereas ITS 1.1 supported file protections at only two security levels, ITS 2.2 supports three levels.

Whenever you create a virtual ITS instance, you should protect it by assigning an ITS security level. You can do this using the \texttt{itsvprotect} command, which assigns permissions to ITS files and directories, as described below.

Security Level: Everyone

This security level applies no security attributes to ITS-related files. All files for this specific virtual ITS get the access attribute "everyone: full control".

The following example shows how to use \texttt{itsvprotect} to set the security to this level:

```
> cd <dirItsRoot>/admin
> itsvprotect /v Q30 /s everyone
Are you sure [y/n]? y
Setting security attributes...
Setting security attributes for shared files...
Setting security attributes for virtual ITS "Q30" related files...
Setting security attributes for virtual ITS "Q30" related files (AGate)...
Setting security attributes ok.
>
```

This option modifies the security attributes of ITS directories and files as follows:

<table>
<thead>
<tr>
<th>Directory and Files</th>
<th>Security Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;dirItsRoot&gt;/admin/*</td>
<td>everyone: full control</td>
</tr>
<tr>
<td>&lt;dirItsRoot&gt;/install/*</td>
<td>everyone: full control</td>
</tr>
<tr>
<td>&lt;dirItsRoot&gt;/programs/*</td>
<td>everyone: full control</td>
</tr>
<tr>
<td>&lt;dirItsRoot&gt;/&lt;vits_id&gt;/*/</td>
<td>everyone: full control</td>
</tr>
<tr>
<td>&lt;dirWebScriptRoot&lt;/vits_id&gt;/wgate*</td>
<td>everyone: full control</td>
</tr>
<tr>
<td>&lt;dirWebScriptRoot&lt;/vits_id&gt;/virtualits.conf</td>
<td>everyone: full control</td>
</tr>
<tr>
<td>&lt;dirWebDocRoot&lt;/vits_id&gt;/sap/its/*</td>
<td>everyone: full control</td>
</tr>
<tr>
<td>&lt;admin$&gt;/system32/sapbasis20.dll</td>
<td>everyone: full control</td>
</tr>
</tbody>
</table>

\textbf{Caution}

Since all virtual ITS instances share the files in the \texttt{<dirItsRoot>/programs} and \texttt{<dirItsRoot>/admin} directories, using this security level grants access to files which may have been protected for another virtual ITS! In general, it is wiser to use the
same security level for all virtual ITS instances on one machine. Only in this way can you avoid introducing unwanted security risks.

### Security Level: ITS Administrators and ITS Users

Use this security level if you don't want to give ITS access to everybody, but there is a distinct group of users that needs access. This group usually includes developers who need to modify HTML templates and resource files.

This security level divides all ITS files into two classes:

- The first class is only accessible to the ITS administrator account.
- The second class includes all files needed to implement an IAC development.

To use this security level, you must create two Windows NT accounts on your ITS server machine or Windows NT domain:

- The ITS administrator account
  This is a regular Windows NT administrator account.
- The ITS users group
  Create this group with the Windows NT administration tools and add to it every account that needs access to IAC-related files.

The following example how to set the security to the ITS Administrator and ITS Users level.

```
  > cd <dirItsRoot>/admin
  > itsvprotect /v Q30 /s itsusers /d itsusers=mydomain\allItsUsers /d webadmin=mydomain\myWebAdministrator
  Are you sure [y/n]? y
  Setting security attributes...
  Setting security attributes for shared files...
  Setting security attributes for virtual ITS "Q30" related files...
  Setting security attributes for virtual ITS "Q30" related files (AGate)...
  Setting security attributes for virtual ITS "Q30" related files (WGate)...
  Setting security attributes ok.

```

The ITS Administrator and ITS Users level applies the following file security attributes:

<table>
<thead>
<tr>
<th>Directory and Files</th>
<th>Security Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;dirItsRoot&gt;/admin</td>
<td>&lt;itsadmin&gt;: full control</td>
</tr>
<tr>
<td>&lt;dirItsRoot&gt;/install</td>
<td>&lt;itsadmin&gt;: full control</td>
</tr>
<tr>
<td>&lt;dirItsRoot&gt;/programs</td>
<td>&lt;itsadmin&gt;: full control</td>
</tr>
<tr>
<td>&lt;dirItsRoot&gt;/&lt;vits_id&gt;/logs</td>
<td>&lt;itsadmin&gt;: full control</td>
</tr>
<tr>
<td>&lt;dirItsRoot&gt;/&lt;vits_id&gt;/traces/agate*.trc</td>
<td>&lt;itsadmin&gt;: full control</td>
</tr>
<tr>
<td>&lt;dirItsRoot&gt;/&lt;vits_id&gt;/traces/mmanager*.trc</td>
<td>&lt;itsadmin&gt;: full control</td>
</tr>
</tbody>
</table>
Security Level: ITS Administrators Only

Use this security level to deny access to all ITS-related files for everyone except the ITS administrator account.

This security level is important if you run your ITS in a production environment and want to make sure that no one but the ITS administrator can modify any ITS files.

The security attributes of exactly the same files and directories are modified as in the security level "ITS Administrator and ITS Users" (see above) except that all "<itsusers>" permissions have to be removed:

The following security attributes are applied at this security level:

<table>
<thead>
<tr>
<th>Directory and Files</th>
<th>Security Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;dirItsRoot&gt;/&lt;vits_id&gt;/traces/agate*.trc</td>
<td>&lt;itsadmin&gt;: full control</td>
</tr>
<tr>
<td>&lt;dirItsRoot&gt;/&lt;vits_id&gt;/traces/mmanager*.trc</td>
<td>&lt;itsadmin&gt;: full control</td>
</tr>
<tr>
<td>&lt;dirItsRoot&gt;/&lt;vits_id&gt;/traces/sapirf*.trc</td>
<td>&lt;itsadmin&gt;: full control</td>
</tr>
<tr>
<td>Directory Paths</td>
<td>Permissions</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------</td>
</tr>
<tr>
<td><code>&lt;dirItsRoot&gt;/vits_id/traces/sapjulep*.trc</code></td>
<td><code>&lt;itsadmin&gt;</code>: full control, <code>&lt;webadmin&gt;</code>: read</td>
</tr>
<tr>
<td><code>&lt;dirItsRoot&gt;/vits_id/traces/sapxgdk*.trc</code></td>
<td><code>&lt;itsadmin&gt;</code>: full control, <code>&lt;webadmin&gt;</code>: change</td>
</tr>
<tr>
<td><code>&lt;dirItsRoot&gt;/vits_id/traces/wgate*.trc</code></td>
<td><code>&lt;itsadmin&gt;</code>: full control, <code>&lt;webadmin&gt;</code>: read</td>
</tr>
<tr>
<td><code>&lt;dirItsRoot&gt;/vits_id/templates</code> (except system subdirectory)</td>
<td><code>&lt;itsadmin&gt;</code>: full control, <code>&lt;webadmin&gt;</code>: change</td>
</tr>
<tr>
<td><code>&lt;dirItsRoot&gt;/vits_id/templates/system</code></td>
<td><code>&lt;itsadmin&gt;</code>: full control</td>
</tr>
<tr>
<td><code>&lt;dirItsRoot&gt;/vits_id/services</code> (except global.srvc)</td>
<td><code>&lt;itsadmin&gt;</code>: full control, <code>&lt;webadmin&gt;</code>: change</td>
</tr>
<tr>
<td><code>&lt;dirItsRoot&gt;/vits_id/services/global.srvc</code></td>
<td><code>&lt;itsadmin&gt;</code>: full control</td>
</tr>
<tr>
<td><code>&lt;dirWebScriptRoot/vits_id&gt;/wgate*</code></td>
<td><code>&lt;itsadmin&gt;</code>: full control, <code>&lt;webadmin&gt;</code>: read</td>
</tr>
<tr>
<td><code>&lt;dirWebScriptRoot/vits_id&gt;/virtualits.conf</code></td>
<td><code>&lt;itsadmin&gt;</code>: full control, <code>&lt;webadmin&gt;</code>: read</td>
</tr>
<tr>
<td><code>&lt;dirWebDocRoot/vits_id&gt;/sap/its</code> (except mimes/system subdirectory)</td>
<td><code>&lt;itsadmin&gt;</code>: full control, <code>&lt;webadmin&gt;</code>: read</td>
</tr>
<tr>
<td><code>&lt;dirWebDocRoot/vits_id&gt;/sap/its/mimes/system</code></td>
<td><code>&lt;itsadmin&gt;</code>: full control, <code>&lt;webadmin&gt;</code>: read</td>
</tr>
<tr>
<td><code>&lt;admin$&gt;/system32/sapbasis20.dll</code></td>
<td><code>&lt;itsadmin&gt;</code>: full control, <code>&lt;webadmin&gt;</code>: read</td>
</tr>
</tbody>
</table>
The following is an example setting the security to the Administrator only level:

```bash
> cd <dirItsRoot>\admin
> itsvprotect /v Q30 /s itsadmin /d webadmin=mydomain\myWebAdministrator
Are you sure [y/n]? y
Setting security attributes...
Setting security attributes for shared files...
Setting security attributes for virtual ITS "Q30" related files...
Setting security attributes for virtual ITS "Q30" related files (AGate)...
Setting security attributes for virtual ITS "Q30" related files (WGate)...
Setting security attributes ok.
>
```
Deinstalling a Single ITS Instance

Occasionally, you need to remove a virtual ITS installation, that is, remove all files, registry entries, attachments to Web servers and Windows NT server entries. To do this, use the `itsvdeinstall` utility:

```
> cd <dirItsRoot>/admin
> itsvdeinstall /v Q30
Are you sure [y/n]? y
Virtual deinstallation...
Virtual ITS "P30"...
Virtual deinstallation ok.
```

You can deinstall all virtual ITS instances by using `/v *`, but remember that you are not asked to confirm each virtual ITS instance!
Deinstalling the Entire ITS Installation

To deinstall a physical installation and all subsequent virtual ITS installations from a machine, use the `itsdeinstall` utility. This program removes all ITS information from your system. The only exceptions to this are the deinstall-related routines. Therefore, make sure that you really want to deinstall everything!

To deinstall the ITS, use the following commands:

```bash
> cd <dirItsRoot>\admin
> itsdeinstall
Are you sure [y/n]? y
Deinstalling ...
Virtual deinstallation...
Virtual ITS "A30"...
There is no local web server attached to the virtual ITS "A30".
Virtual ITS "Q30"...
Virtual ITS "K30"...
Virtual ITS "P30"...
Virtual ITS "R30"...
There is no local web server attached to the virtual ITS "R30".
Virtual ITS "S30"...
There is no local web server attached to the virtual ITS "S30".
Virtual deinstallation ok.
Deinstallation ok.
>
```

**Note**

You can also deinstall the ITS by using the Windows NT Add/Remove Programs utility. To do this, open the Control Panel:

1. On the Windows NT 4.0 desktop, choose `Start → Settings → Control Panel`
2. Double-click on `Add/Remove Programs`.
3. Select the entry `Internet Transaction Server <ITS>`, where `ITS` specifies the relevant ITS version.
4. Choose `Add/Remove`.

When the deinstall is complete, you can delete the deinstall-related routines manually:

```bash
<dirItsRoot>\admin\itsdeinstall.exe
<dirItsRoot>\admin\itsadmin.dll
<dirItsRoot>\admin\itsadmin.trc
<admin$>\system32\sapbasis20.dll
```
Migrating an Older ITS Upwards

With the Setup Program

Suppose you already have an older ITS (version 2.1 or earlier) installed on the machine where the ITS 2.2 runs, and you need to migrate to the current version (ITS 2.2).

To do this, you simply rerun the setup program, which handles migration automatically.

SAP recommends that you use the setup program to migrate a pre-2.2 version of ITS. Use the `Itsmigrate11` utility (described below) only as needed.

With the Itsmigrate11 Utility

For added flexibility, you can also use the `itsmigrate11` utility to upgrade old versions to a new virtual instance.

The migration process affects service and template files as well as all Web server-related files (for example, MIME files). The migration cleans up old Web server configuration files (by removing or updating any ITS-related data) and changes port entries (`sapavw00`, `sapavw99`, and `sapavwmm`) in the services file to `sapavw..<vits_id>`. The setup program performs these actions automatically.)

Using the `/x` option, you can request that all ITS-related files and registry entries for the previous version be removed after a successful migration. Be careful when using this option, because your old files and settings cannot be recovered afterwards.

Set the `/d` options to the Web server name currently registered as an NT service.

```
> cd <dirItsRoot>/admin
> itsmigrate11 /v x30 /d webservername=w3svc /d webservername11=https-pal001452-IPM
Are you sure [y/n]? y
Migrating ITS 1.1...
Stopping ITS 1.1...
Copying ITS 1.1 service and template directories...
Unregistering ITS 1.1...
Stopping ITS 1.1 web server "Netscape Enterprise Server 3.0 (pal001452-IPM)"
Copying ITS 1.1 MIME directories...
Migrating ITS 1.1 port settings...
Migration of ITS 1.1 ok.
>
```
If the older ITS installation was a dual host installation, use the /r option to specify whether you want to migrate just the AGate, just the WGate, or both. Use /r a or /r w. If you omit /r, the migration utility terminates with an error.

It is not possible to migrate an older ITS to a virtual ITS installation that has already been installed. You must:

1. Use itsmigrate11.exe to migrate the older ITS to a new virtual ITS.
2. Use itsvinstall.exe to install the migrated virtual ITS.

If you try to migrate to a virtual ITS already installed on the system, you get an error message.
Migrating from R/3 Release 3.x to 4.x

To migrate your ITS files from an R/3 3.X release to an R/3 4.X release, use itsvllcnv.exe. This utility renames all files and directories for a given ITS instance in accordance with the two-character language identifiers used in 4.X systems. This renaming includes:

- The language-specific subdirectory names in the MIME and template directories
- The language-specific .html and .htrc files

For example, a language resource file that gets a two-character language identifier might change from axxx_e.htrc to axxxx_en.htrc. Available command line arguments are:

```plaintext
cd <itsRootDir>\admin
itsvllcnv /?
ITS Language Length Conversion Utility:
/?       List of supported command-line arguments.
/h       Same as "/?".
/t <tracelevel> Sets the trace level (1-3).
/i <install type> Possible values are:
dual  - agate and wgate installation
agate  - an agate installation
wgate  - a wgate installation
/v <vits_id>   The virtual ITS id to apply changes on.
```

To use the itsvllcnv utility:
1. Back up all the relevant directories before running the utility.
   - The templates, services and MIME files are contained in the following directories.
     - Program Files\2.0\<virtual ITS>\services
     - Program Files\2.0\<virtual ITS>\templates
     - Sap\its\mimes
2. Stop the ITS (before running the tool).
3. Run the itsvllcnv utility.
   - Use the /I argument to specify the type of installation (dual, AGate or WGate).
For example:

```bash
cd <itsRootDir>/admin
itsv1cnv /i dual /v P30 /t 3
Retrieving list of Netscape Servers...
Retrieving list of Microsoft Internet Information Servers...
List of Netscape Enterprise Servers successfully retrieved.
Retrieving list of Microsoft Internet Information Servers...
List of Microsoft Internet Information Servers successfully retrieved.
Renamed file: "C:\Program Files\ITS\2.0\P30\templates\aww1\99\aww1_e.htrc" to
"C:\Program Files\ITS\2.0\P30\templates\aww1\99\aww1_en.htrc"
Renamed file: "C:\InetPub\wwwroot\Sap\its\mimes\aww1\99\e" to
"C:\InetPub\wwwroot\Sap\its\mimes\aww1\99\en"
.
.
Finished applying conversion.
```

4. Check the contents of all ITS service files for references to language codes.

If your service files contain any references to single-character language identifiers, you must change these manually. You must change values for the `~language` and `~languages` parameters to two-character language identifiers. For example, `~languages e,d,j` should change to `~languages en,de,ja`. 
Appendix A: ITS Components Included on the CD

This appendix lists the files available on the ITS delivery CD.

**ITS Setup Files for Windows NT**

These two files contain all the files needed to install or upgrade the ITS and the SAP@Web Studio on Windows NT systems for Version 4.5B.

<table>
<thead>
<tr>
<th>OS</th>
<th>File</th>
<th>Size (MB)</th>
<th>CD Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>WinNT (Intel)</td>
<td>Setupits.exe</td>
<td>15</td>
<td>\its\nt\i386\setupits.exe (includes WGate, AGate, ITS Manager, Version 4.5B, ITS administration package, and IAC packages)</td>
</tr>
<tr>
<td>WinNT (Intel)</td>
<td>Setupex.exe</td>
<td>8</td>
<td>\its\nt\i386\setupex.exe (SAP@Web Studio)</td>
</tr>
</tbody>
</table>

**ITS Package Files**

ITS packages contain all service files, HTML templates, language resource files and MIME files required for the IACS of a given R/3 release.

<table>
<thead>
<tr>
<th>OS</th>
<th>File</th>
<th>Size (MB)</th>
<th>CD Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>31g_all.car</td>
<td>10</td>
<td>\its\common\packages\31g_all.car</td>
</tr>
<tr>
<td>All</td>
<td>31h_all.car</td>
<td>10</td>
<td>\its\common\packages\31h_all.car</td>
</tr>
<tr>
<td>All</td>
<td>31i_all.car</td>
<td>10</td>
<td>\its\common\packages\31i_all.car</td>
</tr>
<tr>
<td>All</td>
<td>40a_all.car</td>
<td>10</td>
<td>\its\common\packages\40a_all.car</td>
</tr>
<tr>
<td>All</td>
<td>40b_all.car</td>
<td>10</td>
<td>\its\common\packages\40b_all.car</td>
</tr>
<tr>
<td>All</td>
<td>45a_all.car</td>
<td>10</td>
<td>\its\common\packages\45a_all.car</td>
</tr>
<tr>
<td>All</td>
<td>45a_reta.car</td>
<td>4</td>
<td>\its\common\packages\45a_reta.car</td>
</tr>
<tr>
<td>All</td>
<td>45b_all.car</td>
<td>10</td>
<td>\its\common\packages\45b_all.car</td>
</tr>
<tr>
<td>All</td>
<td>45b_reta.car</td>
<td>4</td>
<td>\its\common\packages\45b_reta.car</td>
</tr>
</tbody>
</table>