SAP@Web Studio

HELP.BCFESITSWEBSTUD

Release 4.6C

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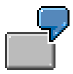
Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

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SAP@Web Studio

Purpose

The SAP@Web Studio is a PC tool for developing Internet applications.

The SAP@Web Studio allows you to create, modify, and manage all the files required by the Internet Transaction Server (ITS) to drive Internet applications that access data in the R/3 System. Users can start these applications from any suitable Web browser.

Developing Internet applications driven by the ITS is a two-stage process that defines a clear separation between business logic and presentation logic. This process takes place both inside and outside the R/3 System.

- Inside the R/3 System. you define the business logic.

  To implement the business logic, you create transactions, function modules, or simple reports, in the ABAP Workbench.

  If you are using the Web transactions implementation model to enable R/3 transactions to run from a Web browser, the dialog flow is defined in the screen flow logic of the relevant transaction on the R/3 side.

- Outside the R/3 System, you define the presentation logic.

  To implement the presentation logic, you create all the required ITS files in the SAP@Web Studio.

  If you are using the flow file implementation model to develop an application where user navigation is not predefined in advance, you also define the dialog flow in the SAP@Web Studio.

Implementation Considerations

If you want to develop Internet applications that users can run from a Web browser via the ITS to access data in the R/3 System, you should install the SAP@Web Studio.

Integration

To allow Internet applications developed in the SAP@Web Studio to access data in the R/3 System, you must install an R/3 System, which is Release 3.0D or higher.

To connect the R/3 System to the Internet, test Internet applications developed in the SAP@Web Studio, and allow users to run them from a Web browser, you must also install the ITS.

Features

The SAP@Web Studio contains several features that support the development, design, and testing of Internet applications. This involves creating, maintaining, publishing, and managing all the ITS files required to run them.

The SAP@Web Studio wizards allow you to:

- Create ITS services.
- Generate HTML$^{\text{Business}}$ templates.
- Create language resources.

Using the application design features in the SAP@Web Studio, you can:

- Define the presentation aspects ("look and feel") of applications by editing HTML$^{\text{Business}}$ templates in the HTML$^{\text{Business}}$ editor.

  The HTML$^{\text{Business}}$ editor provides support for entering both HTML$^{\text{Business}}$ and standard HTML code.

- Define the dialog flow of applications based on the flow file implementation model by generating a flow file for each HTML$^{\text{Business}}$ template in the HTML$^{\text{Business}}$ editor.

  The HTML$^{\text{Business}}$ editor provides support for entering the eXtensible Markup Language (XML) code that defines the dialog flow of such applications.
- Edit services and languages in the grid control editor.

  The grid control editor allows you to enter parameters in name/value pairs.
  - In service files, the parameters define how a service should run.
  - In language resource files, the parameters define the language-independent texts used in your application.

When you have completed the design process, you can use the SAP@Web Studio's testing, file publishing, and source control facilities to:

- Test new applications by running them directly in a Web browser.

  The HTML$^{\text{Business}}$ editor allows you to preview the layout of HTML$^{\text{Business}}$ templates and view data values in context by recording them when you run an application.
- Publish the files that make up an application to an ITS site.

  It is also possible to publish individual files as you develop applications.
- Manage the files that make up an application in ITS source control within the R/3 System.

For an overview of the steps required to develop Internet applications driven by the ITS in the SAP@Web Studio, see Internet Application Development [Seite 12].

The SAP@Web Studio is a flexible, integrated development environment that allows you to develop Internet applications driven by the ITS outside the constraints of the R/3 System.

You can also develop Internet applications by implementing services inside the R/3 System. To do this, you use the Web Application Builder in the ABAP Workbench. For further information, see the section on integrating Internet services in BC ABAP Workbench Tools [Extern]. If this link does not work from your current location, and you are outside the R/3 System, log on to the latest release and see under *Help* → *SAP Library* → *Basis Components* → *ABAP Workbench (BC-DWB)* → *BC ABAP Workbench Tools*.

ITS File Types

All Internet applications developed in the SAP@Web Studio are known to the Internet Transaction Server (ITS) as services.

An ITS service is the set of files required by the ITS to run an Internet application from a Web browser. Each service can consist of up to five ITS file types:

- A service file
- HTML^{Business} templates
- Flow files
- Language resources
- Multipurpose Internet Mail Extension (MIME) files

Service File

The service file contains the service description, which is the set of parameters that determines how a service runs. If this information is incomplete at runtime, the ITS may derive some details from the global service file (see below), or require the user to enter logon information. In any case, there must be one service file for each application.

Each service can be divided into one or more themes. Themes are instances of services that differ only in look and feel (appearance, graphics, layout or language). Each theme has its own set of HTML^{Business} templates, flow files (if applicable), language resources, and Multipurpose Internet Mail Extension (MIME) files, but the functionality of the service is identical. In the SAP@Web Studio, themes are stored in subdirectories of the service directory.

HTML^{Business} Templates

HTML^{Business} templates are the means used by the ITS to display application screens in a Web browser when running a service.

For each screen, there must be one HTML^{Business} template. Each template contains standard HTML code, and HTML^{Business} statements.
HTML^{Business} is an SAP-specific macro language, which allows you to merge R/3 data dynamically into HTML^{Business} templates.

Flow Files

Flow files contain the dialog flow logic that defines logical transitions between application states, depending on what the user chooses to do in the course of running an application.

When you are developing applications with the flow file implementation model, you need to generate one flow file for each HTML^{Business} template. Each flow file contains Extensible Markup Language (XML) statements, using a predefined subset of XML elements.

Language Resources

Language resources are language-independent texts used by the ITS to run a service in a particular language.

Instead of hard-coding language-specific texts in HTML^{Business} templates, you specify placeholders and store the texts in the relevant language resource file. At runtime, the ITS looks for placeholders in the templates and replaces them with texts from the language resource file.

For ease of maintenance alone, it makes sense to keep HTML^{Business} templates for a service language-independent by creating language resources. However, not all templates use language resource files, and they are not mandatory.

MIME Files

MIME files contain the image, sound, and video elements you may want to include in services to enhance the visual appearance and effectiveness of your Internet applications. Like language resources, MIME files are optional.

Summary of ITS File Types

The following table summarizes the ITS file types used to develop Internet applications in the SAP@Web Studio, together with their name format and file extenson. The table also specifies whether each file type is required or optional.

ITS File Types

File Type	File Name Format and Extension	Required or Optional?
Service file	**<service>.srvc**	Required. One service file per application.
HTML^{Business} templates	Web transaction implementation model: • Language-independent templates: **<program>_<screen>.html** • Language-specific templates: **<program>_<screen>_<language>.html** The **<program>**, **<screen>**, and **<language>** elements refer to the R/3 program, screen, and development language of the associated ABAP transaction. Flow file implementation model: • **<template name>.html** In this case, the template name is arbitrary.	Required.
Flow files	Flow file implementation model: • **<template name>.flow** One for each HTML^{Business} template.	Required in flow file applications.
Language resources	**<service>_<language>.htrc**	Optional but recommended.

MIME files	MIME file names are arbitrary. The file extensions depend on the type of file you are using. Here are some examples: • Image files: – **<name>.gif** – **<name>.jpeg** • Video files – **<name>.avi** • Sound files – **<name>.wav**	Optional.

Global Service File

Services also derive information from the global service file (**global.srvc**), which is created during ITS setup and defines default parameter values for all services. The values defined in individual service files always override values in the global service file.

ITS File Storage Locations

The storage location of Internet Transaction Server (ITS) files that make up Internet applications developed in the SAP@Web Studio depends on the file type and whether the files have already been published, as shown in the following table:

ITS File Storage Locations

File Type	Storage Location
Unpublished files	Project directory on local hard drive. The default is: `C:\Program Files\SAP\Studio\2.0\bin\<project>`
Published HTML Business templates and all other non-MIME files	ITS site [Seite 38]
Published MIME files	Web server
Master copies of files	ITS source control in R/3

Internet Application Development

Purpose

This process describes the main steps you have to take in the SAP@Web Studio to develop Internet applications driven by the Internet Transaction Server (ITS).

Prerequisites

You have defined the business logic in the R/3 System:

- If you are developing an application based on the Web transactions implementation model, you have developed a dialog transaction.

  You must do this first, because you need to be able to specify the underlying ABAP program and screen numbers when creating HTML^{Business} templates.

- If you are developing an application based on the flow file implementation model, you have developed a set of Business APIs (BAPIs) or standard function modules.

  In this case, it is not essential to define the business logic first, but it makes sense to follow the procedure described in this documentation.

Process Flow

To develop an Internet application that accesses data in the R/3 System and can be run from a Web browser, you must create an Internet Transaction Server (ITS) service.

The steps specified below describe how to:

- Create a new service.
- Modify an existing service.

Creating a New Service

1. Start the SAP@Web Studio [Seite 17] and set up the environment [Seite 21].
2. Create a new project [Seite 32] to store the service directories and files.

   You can assign several services to one project.

3. Define an ITS site [Seite 39].
4. Create the ITS files:
   a. Create the service [Seite 43].
   b. Create the HTMLBusiness templates [Seite 48].
   c. If required, create flow files [Seite 52] for the HTML^{Business} templates.
   d. If required, create language resource files [Seite 53].
   e. If required, create more themes [Seite 55] for the service.
5. Specify the active service [Seite 87].
6. Edit the files [Seite 58] as necessary, and perform a syntax check [Seite 71] on the HTML^{Business} templates.
7. Publish and test [Seite 86] the service.
8. Store the new files in ITS source control:
   a. Add the files to ITS source control [Seite 95].
   b. Create a change request in the R/3 System.
   c. Assign the files to the change request [Seite 96].

Modifying an Existing Service

1. Start the SAP@Web Studio [Seite 17] and, if necessary, adjust the environment [Seite 21].
2. Open an existing project [Seite 33].
3. Select an existing ITS site [Seite 41].
4. Import the existing files [Seite 36].

   You can import files from the ITS server, or from the Web server, or check them out of ITS source control.

   If you import the files from ITS source control, you must assign them to a change request [Seite 96].
5. Specify the active service [Seite 87].
6. Edit the files [Seite 58] as necessary, and perform a syntax check [Seite 71] on the HTML^{Business} templates.
7. Publish and test [Seite 86] the service.
8. If you previously checked the files out of ITS source control, check them back in [Seite 98].

Result

You can now run the new or modified application from a Web browser.

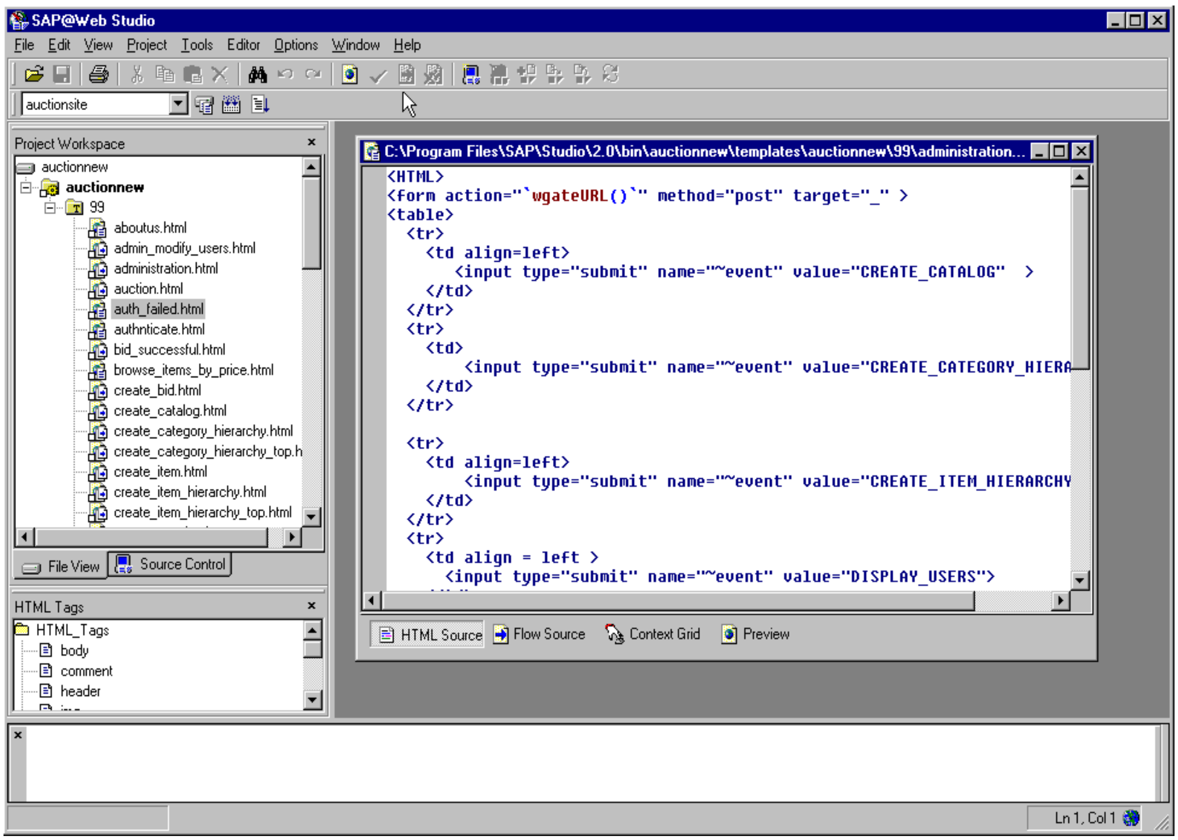
SAP@Web Studio User Interface

Purpose

This process describes the basic functions of the SAP@Web Studio user interface.

The SAP@Web Studio user interface is a flexible environment, which you can adjust to suit your development requirements. It includes all the features you need to create, maintain, and manage files required by the Internet Transaction Server (ITS) to run Internet applications from a Web browser.

SAP@Web Studio User Interface



Apart from the title bar and standard toolbar, the user interface consists of:

- Four windows:
  - Main work area
  - Project workspace
  - HTML Tags
  - Message area
- Publish toolbar

SAP@Web Studio Windows

The four main windows that make up the SAP@Web Studio user interface are listed in the following table:

Window	Location	Purpose
Main Work Area	Upper right window.	Used to display and edit ITS files.
Project Workspace	Upper left window.	Lists all ITS files belonging to the current project. There are two available views [Seite 19], so what you see depends on the view you choose. The above graphic shows the *File View*.
HTML Tags	Below project workspace	Displays a list of standard HTML tags. You can modify the initial list to include the tags you use most frequently for developing HTML^Business templates.
Message Area	Lower window.	Displays status and error messages.

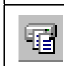
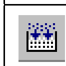
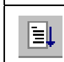
You can adjust the relative size of all these windows (see below for details).

SAP@Web Studio Publish Toolbar

Located below the standard toolbar, the SAP@Web Studio publish toolbar contains a list box for currently defined ITS sites, as well as functions for building, publishing, and testing ITS services.

SAP@Web Studio Publish Toolbar

The elements in the publish toolbar are listed in the following table, moving from left to right:

Element	Description	Purpose
	ITS site field.	Contains currently defined ITS sites [Seite 38].
	*Publish* button.	Publishes specified ITS files to a specified ITS site.
	*Build* button.	Publishes all ITS files in the currently active service to the current ITS site.
	*Go* button.	Publishes all ITS files in the currently active service to the current ITS site, opens a Web browser, and starts the service.

When you start the SAP@Web Studio, the main work area on the right is blank, so the *Editor* menu is inactive and thus not displayed in the menu bar. As soon as you open an HTML^Business template or other file for maintenance, the SAP@Web Studio inserts the *Editor* menu between the *Tools* and *Options* menus, as shown in the above graphic.

Process Flow

Before starting to develop Internet applications, you need know how to:

- Start and stop [Seite 17] the SAP@Web Studio.
- Adjust the user interface [Seite 18] to suit your needs.

- Use the project workspace views [Seite 19].
- Use the editors [Seite 20].

Starting and Stopping the SAP@Web Studio

Prerequisites

You must have installed the SAP@Web Studio.

Procedure

The table below describes the procedures for starting and stopping the SAP@Web Studio:

Function	**Procedure**	**Remarks**
Start the SAP@Web Studio	On the Windows NT 4.0 desktop, choose *Start → Programs → SAP@Web Studio → Studio <release>.*	The SAP@Web Studio installation procedure automatically inserts an entry in the *Programs* menu on your Windows NT 4.0 desktop.
Stop the SAP@Web Studio	In the SAP@Web Studio, choose *File → Exit*.	If the SAP@Web Studio detects unsaved changes, it prompts you to save them. When you confirm, the SAP@Web Studio closes all R/3 connections and terminates.

Adjusting the User Interface

Use

You can adjust the SAP@Web Studio user interface to suit your needs.

Procedure

The following table describes the functions available for adjusting the SAP@Web Studio user interface:

To	Procedure
Adjust relative size of a window.	1. Place cursor between two windows until you see a crosshair cursor. 2. Drag in either direction until you achieve the desired size.
View/hide the publish toolbar.	Choose *View* → *Publish Toolbar*.
View/hide ITS files in project workspace.	Choose *View* → *Project Workspace*.
View/hide tags in *HTML Tags* window.	Choose *View* → *HTML Tags*.
View/hide output in message area.	Choose *View* → *Message Area*.

Using the Project Workspace Views

The SAP@Web Studio's project workspace allows you to display the Internet Transaction Server (ITS) files in two different views, as listed in the following table:

View	Description	Remarks
File View	Displays a file system view of all services assigned to a project.	In this view, you can expand the hierarchy for each service to display the associated HTML^{Business} templates and other files. You can only display the files associated with one project at once.
Source Control	Displays all files in ITS source control at the currently defined ITS site.	To see this view, you must connect to the R/3 System.

Procedure

The following table describes the functions available for manipulating views and files in the project workspace:

Function	Procedure
Select view	Select the tab for the view you want. To display files in the *Source Control* view, you must connect to the R/3 System [Seite 94].
Edit files	To edit files in any of the views, double-click on the file names. This opens the file in the appropriate editor in the main work area.
Other file-related functions	1. Select any file in the *File View*. 2. Click the right mouse button. You see a list of possible functions in a pop-up window.

Using the SAP@Web Studio Editors

To edit the various Internet Transaction Server (ITS) file types, the SAP@Web Studio provides different editors:

- HTML^{Business} editor

  You use the HTML^{Business} editor to edit HTML^{Business} templates and flow files.

- Grid control editor

  You use the grid control editor to edit service files and language resource files.

Procedure

Using the HTML^{Business} Editor

To open the HTML^{Business} editor:

1. Go to the *File View* in the project workspace.
2. Expand the hierarchy for a service.
3. Double-click on the name of an HTML^{Business} template (extension **`.html`**).

For further information about editing HTML^{Business} templates and flow files in the HTML^{Business} editor, see HTMLBusiness Editor [Seite 59].

Using the Grid Control Editor

To open the grid control editor:

1. Go to the *File View* in the project workspace.
2. Expand the hierarchy for a service.
3. Double-click on the name of a service file (extension **`.srvc`**) or a language resource file (extension **`.htrc`**).

For further information about editing service files and language resource files in the grid control editor, see Grid Control Editor [Seite 74].

SAP@Web Studio Options

Purpose

This process describes the options available in the SAP@Web Studio for customizing your environment.

Process Flow

You can:

- Specify R/3 connection information [Seite 22]
- Specify a file viewer application [Seite 24]
- Specify default languages, character sets, and fonts [Seite 25]
- Specify a default project directory [Seite 28]
- Set the Web browser to open inside the SAP@Web Studio [Seite 29]
- Set HTMLBusiness editor options [Seite 30]

Specifying R/3 Connections

The SAP@Web Studio allows you to predefine logon information for each R/3 System to which you want to connect. This information includes:

- R/3 System details (system ID, host, and message server)
- User details (client, user name, password, and language)

You can specify R/3 connections that log on by group or by server:

- Connection by group

  Logging on by group means that the system chooses the application server host for you at runtime. This lets the system balance the user load by choosing the host machine that is least busy. If you are unsure which group to use, ask your system administrator.

  In general, you should specify R/3 connections by group whenever possible.

- Connection by server

  Sometimes, you want to log on to a specific R/3 host. If you create a connection by server, you specify this host explicitly. This means that when you log on, you are connected to this system only.

Procedure

Function	Procedure
Specify Connection By Group	1. Choose *Options* → *R/3 Systems*. 2. Choose *Group*. 3. Select an R/3 System and choose *Lookup*. The SAP@Web Studio displays a list all available groups. 4. Select the desired group and choose *Add*. The SAP@Web Studio displays R/3 System information for this connection. 5. Enter (or update) the values in these fields, as desired. – *Description* – *System Number* 6. Choose *OK*.
Specify Connection By Server	1. Choose *Options* → *R/3 Systems*. 2. Choose *Server*. 3. Select an R/3 System and choose *Lookup*. The SAP@Web Studio displays a list of all available servers. 4. Select the desired group and choose *Add*. The SAP@Web Studio displays R/3 System information for this connection. 5. Enter (or update) the values in these fields, as desired. – *Description* – *System Number* 6. Choose *OK*.

Specifying File Viewers

The SAP@Web Studio allows you to select a file viewer for displaying files. This is useful if, for example, you want to display graphics in a particular graphics viewer.

If you predefine the applications you want to use as file viewers, you do not have to navigate to an application each time you want to use it to view a file.

Procedure

You can add a file viewer, change its properties, or delete it, as described in the following table:

Function	Procedure	Result
Add file viewer	1. Select *Options → Studio Properties.* 2. Select the *Send To:* tab page. 3. Find the file viewer you want to add to the list of known file viewers: a. Choose *Add*. b. Navigate to directory that contains required file viewer. c. Select program name, and choose *Open*. d. In the *Shortcut* tab page, enter an application name, and any command line arguments. For information about command line arguments, see the documentation fo the file viewer. 4. Choose *OK*.	The SAP@Web Studio adds the selected file viewer to its list of known viewers. You can also choose *Apply* instead of *OK*. *Apply* saves your settings, but leaves the *Studio Properties* dialog open.
Change file viewer properties	1. Select *Options → Studio Properties.* 2. Select the *Send To:* tab page. 3. Select the file viewer you want to change. 4. Choose *Properties*. 5. Change the entry as desired, and choose *OK*.	The SAP@Web Studio updates the properties of the selected file viewer. You can also choose *Apply* instead of *OK*. *Apply* saves your settings, but leaves the *Studio Properties* dialog open.
Delete file viewer	1. Select *Options → Studio Properties.* 2. Select the *Send To:* tab page. 3. Select the file viewer you want to delete. 4. Choose *Delete*.	The SAP@Web Studio deletes the selected file viewer. You can also choose *Apply* instead of *OK*. *Apply* saves your settings, but leaves the *Studio Properties* dialog open.

Native Language Support (NLS)

Purpose

This process describes how you can set options in the SAP@Web Studio to support HTML^{Business} templates that contain texts in virtually any language.

Since most western languages are represented by a single-byte character set, this is the default in the SAP@Web Studio. However, many Asian languages require a double-byte character set to be displayed properly. If, for example, you have templates that contain Japanese texts, they cannot be read by the default character set.

Process Flow

To internationalize the SAP@Web Studio, you need to:

1. Install the National Language Pack for Windows NT on your system.

   See the Microsoft Web site for details.

2. Specify the default language [Seite 26].
3. Specify the character set or font [Seite 27] that corresponds to your locale.

Specifying a Default Language

In the SAP@Web Studio, you can specify a default language to be used for displaying all your files. This determines the character set used to display your code.

Prerequisites

You must install the National Language Pack for Windows NT.

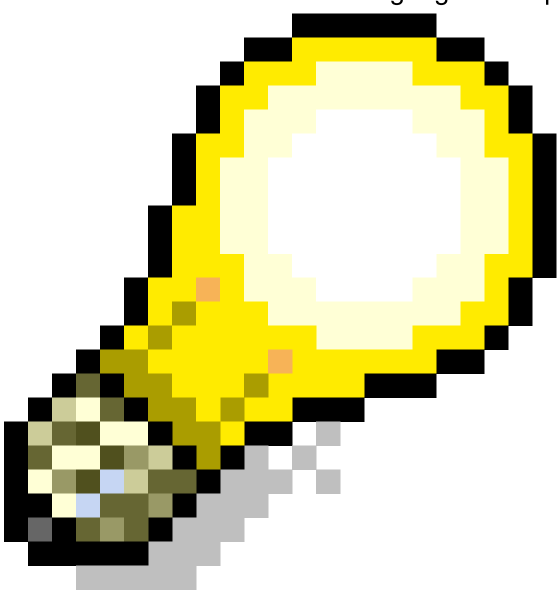
Procedure

To specify the default language centrally:

1. Choose *Options* → *Studio Properties*.
2. Select the *Fonts* tab page.
3. Select the language you want to use as the default language.

Result

The SAP@Web Studio uses the selected language for displaying all files.



The character set used is important only for language-specific texts that you code explicitly in your HTML^Business templates. If the templates contain language resource keys, you always see these in the HTML^Business editor. Text substitution does not occur until the Internet Transaction Server (ITS) interprets the keys at runtime.

Remember also that the length of the language key depends on the release of your R/3 System:

- One character for R/3 releases prior to 4.0 (for example, `e` for English)
- Two characters for R/3 releases from 4.0 (for example, `en` for English)

Specifying a Default Character Set and Font

In the SAP@Web Studio, you can specify a default character set and font to be used for displaying all your files.

The HTML^{Business} editor supports all proportional and fixed fonts that are available for a particular character set.

Prerequisites

You must install the National Language Pack for Windows NT.

Procedure

1. Choose *Options* → *Studio Properties*.
2. Select the *Fonts* tab page.
3. In the *Language* group box, select a language.
4. In the *Character Sets* group box, select a character set for your language.
5. Select a font for your character set from the dropdown list box.
6. Choose OK.

   You leave *Studio Properties*.
7. Click the globe button in the status bar.

   You get a list of character sets.
8. Select the character set you want.

   Your selection is activated in the HTML^{Business} editor.

Result

The SAP@Web Studio uses the selected character set and font for displaying all files.

Specifying a Default Project Directory

The default project directory is the default location for all projects created in the SAP@Web Studio, but you can specify any directory you like. The default path is:

```
C:\Program Files\SAP\Studio\2.0\bin\<project>
```

You can also specify that files you remove from the project hierarchy in the project workspace should also be deleted from the hard disk.

Procedure

Function	**Procedure**	**Result**
Specify default project directory	1. Choose *Options* → *Studio Properties*. 2. Select the *Directories* tab page. 3. Enter a directory name in the *Default Project Dir*: field.	The SAP@Web Studio uses the selected directory to store all projects.
Delete files from hard disk as well as from project hierarchy	Check the box *Delete files from disk, if removed from project*.	

The project directory is always located on your host machine, so you can set the default project directory to any local directory you like.

Opening a Web Browser in the SAP@Web Studio

When you test a service, the SAP@Web Studio automatically opens a Web browser on your machine.

By default, the Web browser runs outside the SAP@Web Studio. Sometimes, however, it is useful to open the Web browser inside the SAP@Web Studio.

Procedure

To specify that you want the Web browser to open inside the SAP@Web Studio:

1. Choose *Options* → *Studio Properties*.
2. Select the *Web Browser* tab page.
3. Ensure that *Open Browser window in Studio* is selected.

Opening a Web browser inside the SAP@Web Studio works only for Microsoft Internet Explorer 4.0 (or higher).

All other browsers must be opened outside the SAP@Web Studio.

Setting HTML$^{\text{Business}}$ Editor Options

To support the development of HTML$^{\text{Business}}$ templates, the HTML$^{\text{Business}}$ editor displays the various elements of HTML$^{\text{Business}}$ code in different colors. This makes the code more easily readable, and distinguishes it from standard HTML code.

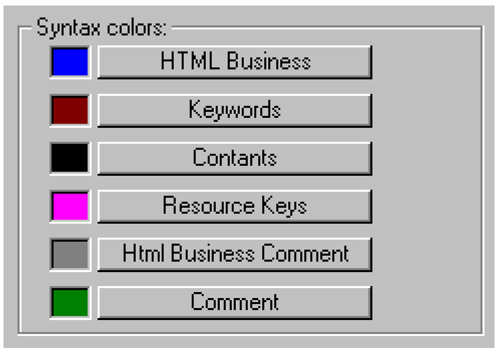
You can change the default colors for each element of HTML$^{\text{Business}}$ to suit your needs.

Procedure

To set colors for displaying HTML$^{\text{Business}}$ code in the HTML$^{\text{Business}}$ editor:

4. Select *Options → Studio Properties.*
5. Select the *Editor* tab page.

   You see a list of HTML$^{\text{Business}}$ elements with their HTML$^{\text{Business}}$ editor default colors:



6. Choose the element you want to customize, select a color from the palette, and choose *OK*.

Result

The SAP@Web Studio resets the default color for the element.

ITS Project Management

Purpose

This process describes how to manage Internet Transaction Server (ITS) projects in the SAP@Web Studio.

Process Flow

Before you start to develop an Internet application in the SAP@Web Studio, you should create a project. This is a convenient way of grouping the constituent ITS files, because it allows you to define which service you want to work on, and keeps the number of files small and focused.

The default project directory for all projects created in the SAP@Web Studio is:

```
C:\Program Files\SAP\Studio\2.0\bin\<project>
```

When you first create a project, it opens automatically. To maintain this project subsequently, or maintain any existing project, you must first open it.

When a project is open, the *File View* tab page displays the files in the current project:

- Each project can contain one or more services.
- Each service can contain one or more themes.
- Each theme can contain one or more HTML[Business] templates, flow files, language resources, and Multipurpose Internet Mail Extension (MIME) files.

In the SAP@Web Studio, you can:

- Create [Seite 32] projects
- Open [Seite 33] projects
- Close [Seite 34] projects
- Add [Seite 35] files to projects
- Import [Seite 36] files into projects
- Delete [Seite 85] files from projects
- Change the default project directory [Seite 28]

Always use the appropriate file management function in the SAP@Web Studio. Do not manipulate the underlying project directory directly.

Creating ITS Projects

To develop Internet applications in the SAP@Web Studio, you must create a project.

Procedure

1. Choose *File* → *New* and select the *Projects* tab.
2. Enter a project name.
3. If necessary, go to the *Project Location* field and browse to the place where you want the SAP@Web Studio to create the new project.
4. Choose *OK*.

Result

Unless you have specified a different default project directory [Seite 28], the SAP@Web Studio creates a project directory called **<project>** and a project file called **<project>.itsp** under:

```
C:\Program Files\SAP\Studio\2.0\bin\<project>\<project>.itsp
```

Opening ITS Projects

To work on a project in the SAP@Web Studio, you must open it first.

When you open a project, it becomes the currently active project. Any previously opened project is closed, and all subsequent actions apply to the most recently opened project.

The SAP@Web Studio maintains a list of the most recently opened projects, so you can open them directly without having to browse through the file system.

Prerequisites

You must have created at least one project.

Procedure

You can either select a recent project from the list of recently maintained projects or search for one in the file system, as described in the following table:

Function	**Procedure**
Open a recent project	1. Choose Choose *File* → *Recent Projects*. 2. Select a project.
Open a project from the file system.	1. Choose *File* → *Open Project*. 2. Navigate to your project directory, if necessary. 3. Double-click on the project file name.

Result

The SAP@Web Studio opens the selected project and displays the project name in the project workspace.

Closing ITS Projects

When you close a project, all the subdirectories and files are no longer directly available.

Procedure

To close the currently active project, do one of the following:

- Choose *File* → *Close Project*.
- Open another project.

Result

The SAP@Web Studio closes the project by removing all the subdirectories and files from the project workspace.

To work on this project again, you must open [Seite 33] it again.

Adding Files to ITS Projects

There are two ways you can add files to a project:

- To add files to a project from the file system, use this procedure.
- To add files to a project from an ITS site or ITS source control, import [Seite 36] them.

Procedure

To add files to a project from the file system:

1. In the project workspace *File View*, select the project to which you want to add files.
2. Choose *Project → Add to Project → Files.*

   You see the *Add Files to Project* dialog box where you can access files in any directory.
3. Navigate to the directory containing the files you want to add.
4. Select the file(s).
5. Choose *Open*.

Result

The SAP@Web Studio adds the files to the project directory.

To add files to a project, you can also use the *Copy, Cut*, and *Paste* functions in the standard toolbar.

If you delete files, they are removed from the project, but not from the underlying directory.

Always use the SAP@Web Studio interface to add files to a project. Adding files directly to the underlying project directory may result in inconsistent services.

Importing Files Into ITS Projects

There are two ways you can add files to projects:

- To add files to a project from an ITS site or ITS source control, use this procedure.
- To add files to a project from the file system, add [Seite 35] them.

Procedure

To import files into a project from an ITS site or ITS source control:

1. Select the service name to which you want to add the files.
2. Choose *Project → Add to Project → Import.*

   You see the *Add ITS Service Wizard* dialog box where you can access files in any directory.
3. Follow the appropriate procedure, depending on what you want to do:

Function	**Procedure**
Import files from ITS site	1. Choose *Next*. 2. Select *Import Service from Site* and choose *Next*. 3. Select a site, and choose *Next*. 4. Select the ITS service name, and choose *Next*. 5. Select the desired service files, and choose *Next*. 6. Choose *Finish*.
Import files from ITS source control	1. Choose *Next*. 2. Select *Add Service from R/3 Source Control* and choose *Next*. 3. Select an R/3 System, and choose *Next*. 4. Enter the logon information, and choose *Next*. 5. Select the desired service, and choose *Next*. 6. Select the desired service files, and choose *Next*. 7. Choose *Finish*.

Result

The SAP@Web Studio imports the files into the current project directory.

Importing files from ITS source control is a GET operation. This means that if you modify the files, you cannot return them to ITS source control afterwards. If you want to change the files, check them out [Seite 97].

To add files to a project, you can also use the *Copy*, *Cut*, and *Paste* functions in the standard toolbar.

If you delete files, they are removed from the project, but not from the underlying directory.

Always use the SAP@Web Studio interface to import files to a project. Adding files directly to the underlying project directory may result in inconsistent services.

ITS Site Management

Purpose

This process describes how to define an Internet Transaction Server (ITS) site, which is the server location of the files required by the ITS to start a service.

Since some files are stored on the ITS server, and others on the Web server, an ITS site is really a combination of these two components. The ITS server and the Web server can reside on different systems, so an ITS site must contain information about the system and the data location.

- During development, all the files that make up an ITS service are assigned to a project in the SAP@Web Studio.
- At runtime, all the files that make up an ITS service files must be located at the ITS site, either on the ITS server or the Web server.

The mechanism used to transfer files from the SAP@Web Studio to the ITS site (runtime environment) is known as publishing.

The following table lists the different ITS service files and specifies whether they reside on the ITS server or on the Web server:

ITS File	Location
Services	ITS server
HTML^{Business} templates	ITS server
Flow files	ITS server
Language resources	ITS server
MIME files	Web server

In the SAP@Web Studio, the procedure for defining ITS sites – including the ITS server and the Web server – supports different protocols such as NT NetBIOS and FTP.

Process Flow

To publish all the files required by the ITS to drive an Internet application, define an ITS site [Seite 39].

If you have defined more than one ITS site, specify the currently active site [Seite 41].

Defining an ITS Site

To define an Internet Transaction Server (ITS) site, you need to specify the ITS server and Web server locations of all the ITS files – services, HTML[Business] templates, flow files, language resources, and Multipurpose Internet Mail Extension (MIME) files – that make up a service.

Procedure

To define an ITS site, you use the SAP@Web Studio site wizard:

1. Choose *Project* → *Site Definition*.

   You see the *Site Definition* dialog box.

2. Choose *New*.

   You see the *Site Wizard*.

3. Enter a site name, and choose *Next*.
4. Enter the Web server host name, and choose *Next*.
5. Enter the ITS server host name, and choose *Next*.
6. Define the shared directories on the Web server and the ITS server.

   What you have to do here depends on whether you allow the SAP@Web Studio to determine the location of the ITS files (*ITS Virtual Shares*) or whether you want to define your own (*Custom Shares*):

   – *ITS Virtual Shares*

ITS Version	Procedure
2.0 and later	Enter an ITS virtual instance name. The SAP@Web Studio automatically defines the following shared directories: • **<ITS instance>_ITS** for non-MIME files stored on the ITS server. • **<ITS instance>_WWW** for MIME files stored on the Web server.
1.0/1.1	In these earlier ITS versions, you need to define the shared directories for the Web server and ITS server **explicitly**.

   – *Custom Share*

   This option allows you to determines the shared directories and their location yourself by entering the Web server URL and ITS server URL. You can use both NetBIOS or FTP connections.

Connection	Procedure
NetBIOS	1. Create shared directories on the Web server and ITS server. 2. Enter the Web server URL. This determines the location of the MIME files. Example: **//<host name>/<Web share>/<dir>** 3. Enter ITS server URL This determines the location of all other ITS files Example: **//<host name>/<ITS share>**

FTP	1. Set up an FTP server and an FTP root directory with write access, so you can publish the files. 2. Enter Web server URL This determines the location of the MIME files. Example: **`ftp://<host name>:<port number>/<dir>`** 3. Enter ITS server URL This determines the location of all other ITS files Example: **`ftp://<host name>:<port number>`**

7. Choose *Next*.
8. Choose *Finish* to confirm
9. Choose *OK* to exit.

Specifying the Active ITS Site

If you have defined more than one ITS site, you must specify one as the currently active site.

Procedure

Go to the publish toolbar, and select the desired site name in the ITS site list box.

Result

When you publish files, the SAP@Web Studio uses this site to determine the locations of the ITS server and Web server directories.

ITS Service Creation

Purpose

This process describes how to create all the files required by the Internet Transaction Server (ITS) to run an Internet application from a Web browser. This set of files is known as a service.

Process Flow

To create an ITS service to run your application, you must:

1. Create a service file [Seite 43].

   Each service must contain one service file.

2. Create HTMLBusiness templates [Seite 48].

   Each service must contain at least one HTML$^{\text{Business}}$ template.

3. If you are developing a flow file application, you also need to create flow files [Seite 52].

   In applications based on the flow file implementation model, you must attach one flow file to each HTML$^{\text{Business}}$ template.

4. Create language resources [Seite 53].

   Unless you intend to use language-specific HTML$^{\text{Business}}$ templates, you must create at least one language resource file for the language in which the transaction is being developed and tested.

5. If you want to create instances of the same service that differ only in look and feel, you need to create multiple themes [Seite 55].

   You can create several themes for one service. Themes are instances of services that differ only in look and feel. Each theme has its own set of templates and other service files, but the functionality of the service is the same for all themes.

   If you are developing applications using the Web transactions implementation model, it is best to create services, HTML$^{\text{Business}}$ templates, and language resources with the SAP@Web Studio wizards, but you can also create files manually [Seite 57].

   If you are developing applications using the flow file implementation model, you **must** create files manually [Seite 57].

Creating ITS Service Files

To create an Internet Transaction Server (ITS) service, you must create a service file.

The service file contains the service description, which is the set of parameters that determines how a service runs. If this information is incomplete at runtime, the ITS may derive some details from the global service file, or require the user to enter logon information. In any case, there must be one service file for each application.

If you are developing applications using the Web transactions implementation model, it is best to create services with the SAP@Web Studio service wizard, but you can also create the files manually [Seite 57].

If you are developing applications using the flow file implementation model, you must create the files manually [Seite 57].

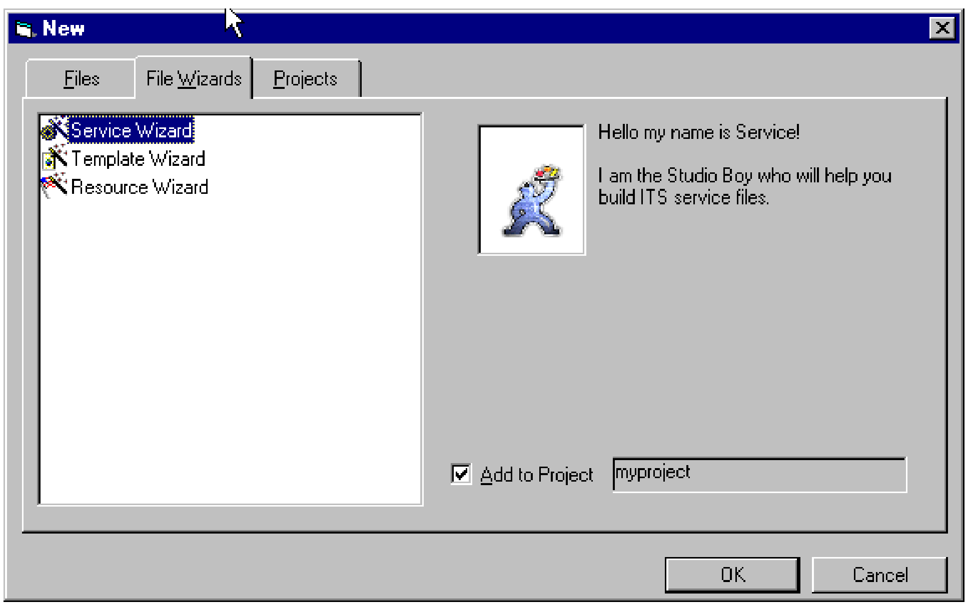
Prerequisites

There must be a user in the R/3 System which your service is using.

Procedure

To create a service file using the service wizard:

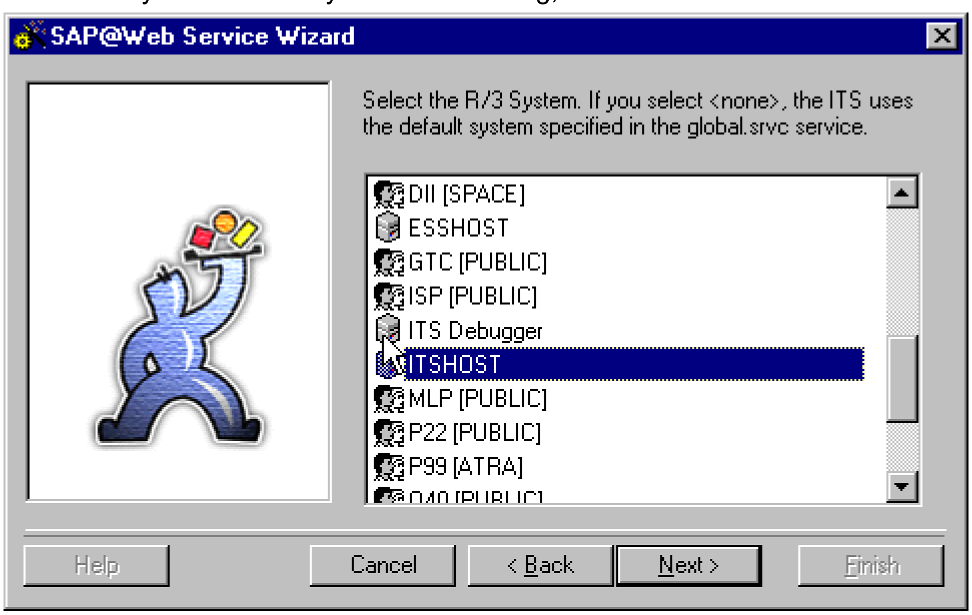
1. Choose *File* → *New* and select the *File Wizards* tab.
2. Select *Service Wizard*.



3. Ensure that *Add to Project* is selected, and that the project directory name is correct.
4. Choose *OK*.
5. Enter a service name, and choose *Next*.

The service name can have up to 14 characters. This must be unique and should normally be the same as the corresponding R/3 transaction.

6. Select an R/3 System to which you are connecting, and choose *Next*.



7. Specify how R/3 logon information is to be determined.

Logon information includes the client, user name, password, and logon language.

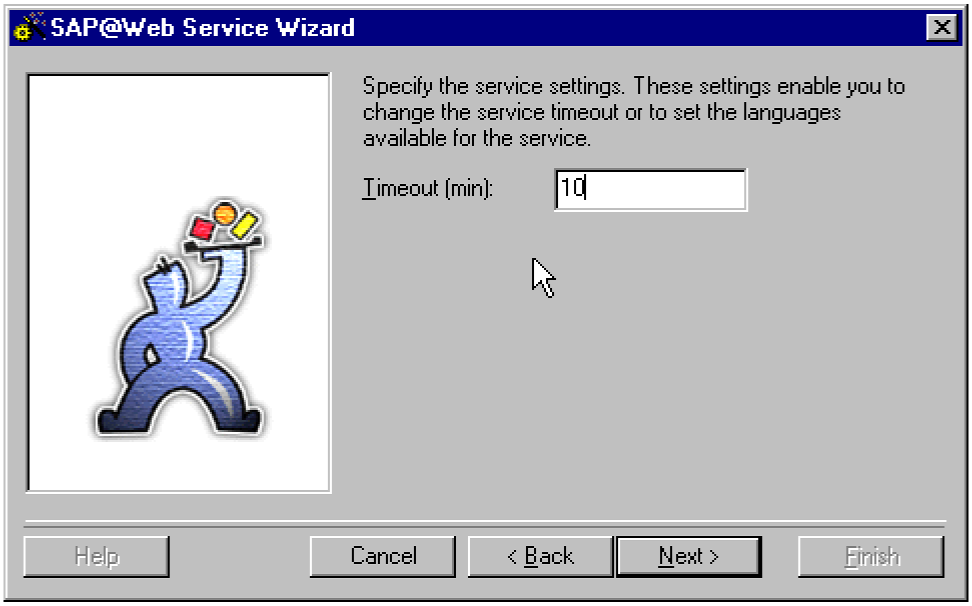
Specify whether you want to use global logon information or define service-specific logon information by selecting the appropriate option:

Option	Procedure
Use global service specification	No action required. The logon information is taken from the global service file **`global.srvc`** at runtime.
Specify a service specific login	Enter service-specific logon information. You may wish to define a special user with limited authorizations for Web transactions. This user must exist in the R/3 System. Alternatively, you can leave these variables blank, and let users enter their own logon information.

If you define service-specific logon information, remember that the language key must be:

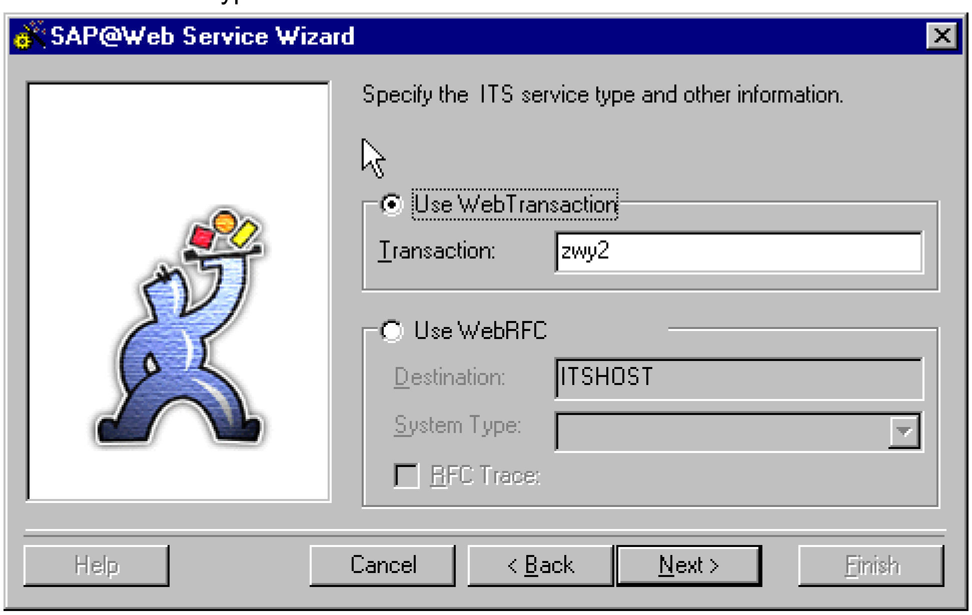
- One character for R/3 releases prior to 4.0 (for example, **`e`** for English)
- Two characters for R/3 releases from 4.0 (for example, **`en`** for English)

8. Enter a timeout value and choose *Next*.



The timeout value defines the time (in minutes) after which the service terminates if no ITS session activity occurs. This is important in case the user branches to another URL without leaving the ITS session.

9. Enter the ITS service type and choose *Next*:



Specify whether you are calling an R/3 transaction or making WebRFC calls by selecting the appropriate option and entering the required information:

Option	Procedure
Use Web Transaction	Enter the R/3 transaction name.

Use WebRFC	Enter the following information: • *Destination* R/3 System to which you are connecting. • *System Type* Target system type. The default is **R/3**. • *RFC Trace* Select this if you want to trace your communication protocol.

10. Choose *Finish* to confirm.

Result

The SAP@Web Studio creates a service file called **<service>.srvc** and displays it in the project workspace.

You edit this service file with the grid control editor [Seite 74]. Remember that parameter values specified here always override the default parameter values in the global service file **global.srvc**.

> The SAP@Web Studio does not automatically create a theme for your new service, and the service file does not contain a theme parameter.
>
> However, the global service file **global.srvc** initially contains contains the default theme parameter **99**. At runtime, this setting causes the system to search for HTML templates in a subdirectory called **99**. If the subdirectory does not exist, an error occurs.
>
> Therefore, when you create HTML[Business] templates for your service, the SAP@Web Studio automatically proposes the default theme **99**.
>
> If you do not intend to use more than one theme for this service, you should accept the default setting. If you change this value, you must also change the value specified in the global service file **global.srvc**.

If you want to use more than one theme for a service, you must create the themes explicitly [Seite 55]

Creating HTML$^{\text{Business}}$ Templates

You must create an HTML$^{\text{Business}}$ template for every screen in an Internet application.

If you are developing applications using the Web transactions implementation model, it is best to create HTML$^{\text{Business}}$ templates with the SAP@Web Studio template wizard, but you can also create the files manually [Seite 57].

If you are developing applications using the flow file implementation model, you must create the files manually [Seite 57].

Prerequisites

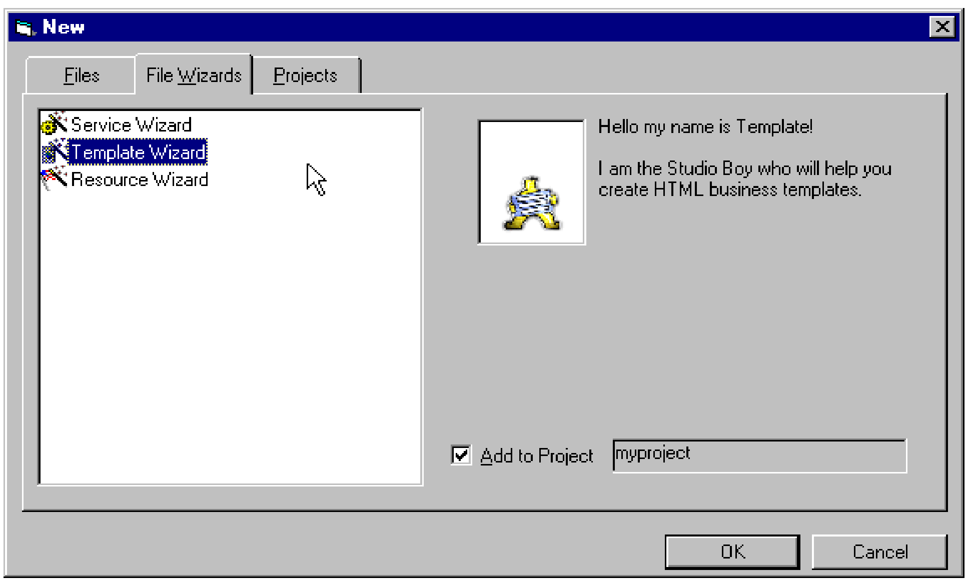
There must be a user in the R/3 System which your service is using.

You must create a service file [Seite 43] first.

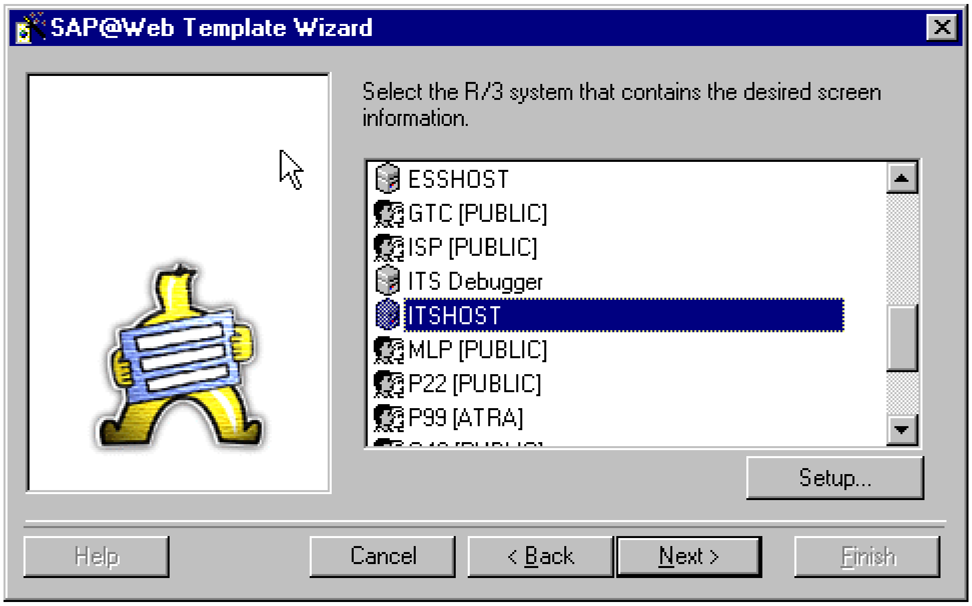
Procedure

To create an HTML$^{\text{Business}}$ template using the template wizard:

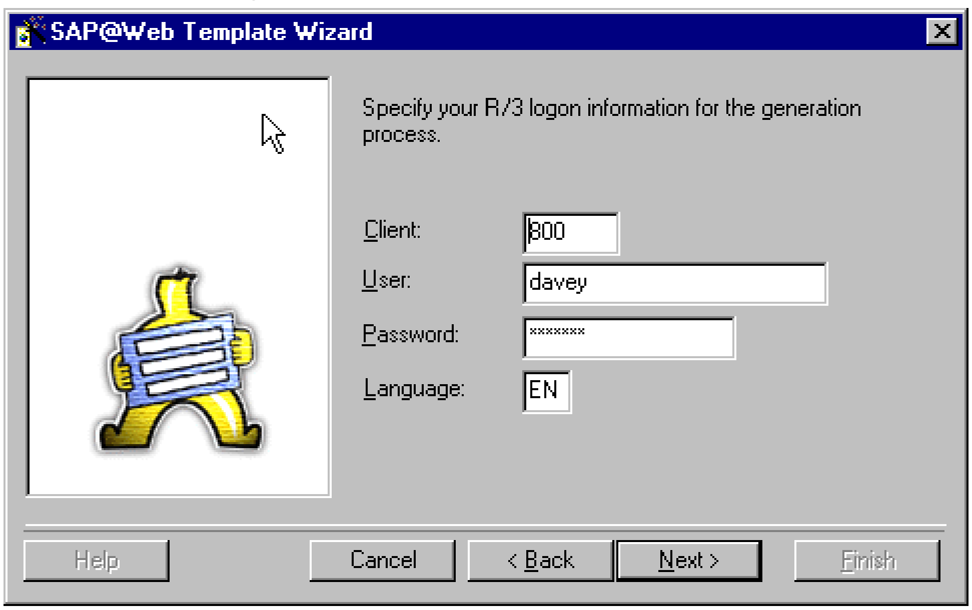
1. Choose *File* → *New* and select the *File Wizards* tab.
2. Select *Template Wizard*.



3. Ensure that *Add to Project* is selected, and that the project directory name is correct.
4. Choose *OK*.
5. Select an R/3 System that contains the required screen information and choose *Next*.



6. Enter the required R/3 logon information and choose *Next*.

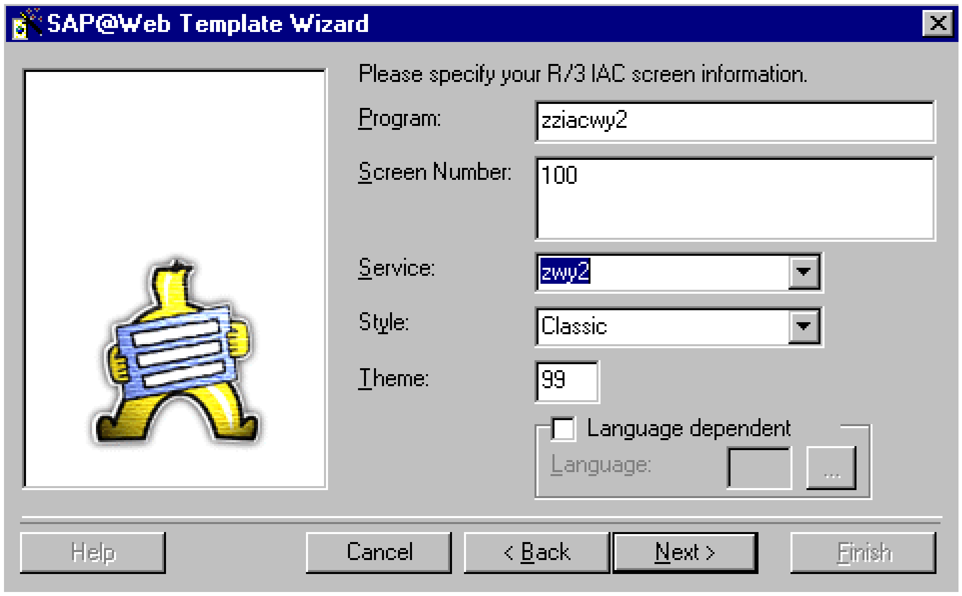


Logon information includes the client, user name, password, and logon language.

If you define service-specific logon information, remember that the language key must be:

- One character for R/3 releases prior to 4.0 (for example, `e` for English)
- Two characters for R/3 releases from 4.0 (for example, `en` for English)

7. Enter the required R/3 screen information and choose *Next*.



Enter values in the fields as described in the following table:

Field	Value
Program	Program name of R/3 transaction.
Screen Number	Screen number of program.
Service	The SAP@Web Studio proposes the current service.
Style	Template style. There are four possible template styles: • `Classic` • `Business` • `WebGUI` • `Mobile Devices` The style you choose depends on the type of application you are developing. When you select a style, a description of the main features is displayed on the left.
Theme	The SAP@Web Studio proposes the default theme `99`. Unless you intend to create more than one theme for your service, or you want to change the name for some other reason, leave the theme unchanged.
Language dependent	• If you want to keep your templates language-independent, ignore the *Language dependent* box. Whenever possible, you should use this option. • If you need to create language-specific templates, check the *Language dependent* box and select a language.

8. Choose *Finish* to confirm.

Result

The SAP@Web Studio:

- Creates the HTML^{Business} template and displays it in the project workspace under the current service and theme.
- Activates the *Editor* menu in the menu bar

  The *Editor* menu contains functions for editing HTML^{Business} templates.

The format of the file name depends whether you have created a language-independent template or a language-specific HTML^{Business} template:

File Type	File Format
Language-independent	**`<program name>_<screen number>.html`**
Language-specific	**`<program name>_<screen number>_<language>.html`**

You edit HTML^{Business} templates in the HTMLBusiness editor [Seite 59].

Creating Flow Files

Use

If you are developing an application based on the flow file implementation model, you must create a flow file for each HTML$^{\text{Business}}$ template that requires a dialog flow definirion, and define the flow logic. To do this, you use the HTML$^{\text{Business}}$ editor.

Prerequisites

You have created the associated HTML$^{\text{Business}}$ template.

Procedure

To create a flow file for an HTML$^{\text{Business}}$ template:

1. If the HTML$^{\text{Business}}$ template for which you want to generate a flow file is not already open in the main work area, open it by double-clicking the file name in the project workspace.

   The SAP@Web Studio opens the template in the main work area.

2. Choose *Add Flow File* or *Edit → Add Flow File*.

   The SAP@Web Studio creates and opens a flow file with initial **`<flow>`** and closing **`</flow>`** tags.

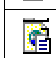
   You can toggle between the HTML$^{\text{Business}}$ code defined in the HTML$^{\text{Business}}$ template and the flow logic defined in the flow file by using the *HTML Source* and *Flow Source* buttons located in the status bar of the HTML$^{\text{Business}}$ editor.

3. Enter the flow logic between the **`<flow>`** and **`</flow>`** tags.
4. Save your work.

Result

The SAP@Web Studio creates a flow file called **`<template>.flow`** and attaches it to the HTML$^{\text{Business}}$ template.

Flow files are not displayed separately in the project workspace, but you can always distinguish whether a flow file exists for a template by looking at the template icon:

Template Icon	Status
	Template has flow file.
	Template has no flow file.

Creating Language Resources

Unless you are working with language-specific HTML[Business] templates, you should create at least one language resource file for the language in which the application is being developed.

If you are developing applications using the Web transactions implementation model, it is best to create language resources with the SAP@Web Studio resource wizard, but you can also create the files manually [Seite 57].

If you are developing applications using the flow file implementation model, you must create the files manually [Seite 57].

Prerequisites

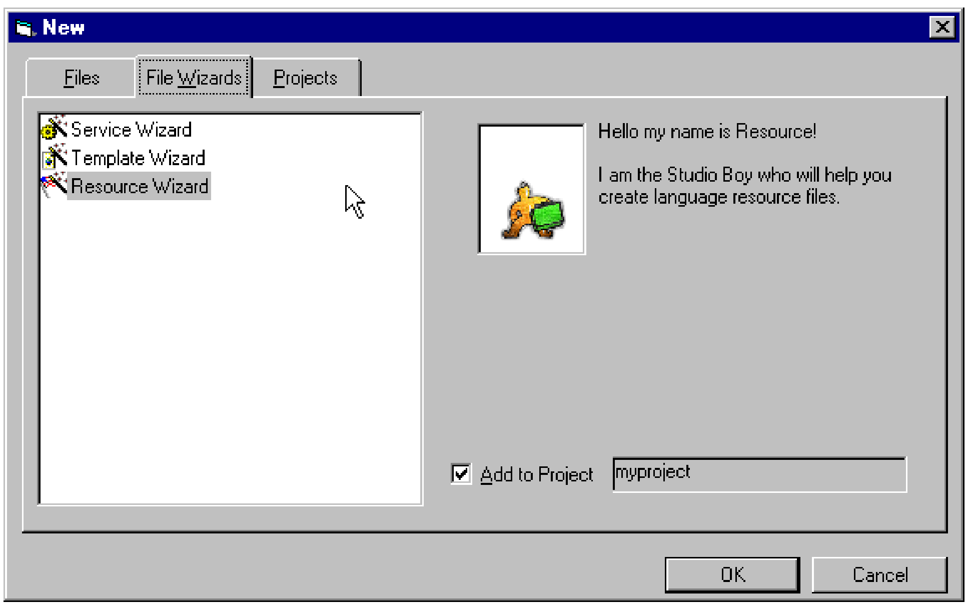
There must be a user in the R/3 System which your service is using.

You must first create a service file [Seite 43] and at least one HTMLBusiness template [Seite 48].

Procedure

To create a language resource file using the resource wizard:

1. Choose *File* → *New* and select the *File Wizards* tab.
2. Select *Resource Wizard*.



3. Ensure that *Add to Project* is selected, and that the project directory name is correct.
4. Choose *OK*.
5. Enter values for service, theme, and language, and choose *Next*.

If you define service-specific logon information, remember that the language key must be:

- One character for R/3 releases prior to 4.0 (for example, **e** for English)
- Two characters for R/3 releases from 4.0 (for example, **en** for English)

You get a dialog window that lists all the language resource files that exist for this service.

6. If language resource files exist for the service and you want to import the language resource keys from these, check the relevant boxes.
7. Choose *Next*.
8. Choose *Finish*.

Result

The SAP@Web Studio creates a language resource file called **`<service>_<language>.htrc`** and displays it in the project workspace under the current service and theme.

You can edit this language resource file in the grid control editor [Seite 74].

Creating ITS Themes

Themes are instances of Internet Transaction Server (ITS) services that differ only in their look and feel (appearance, graphics, layout or language).

- Each service can be divided into one or more themes.
- Each theme has its own set of HTML^Business templates, flow files (if applicable), language resources, and Multipurpose Internet Mail Extension (MIME) files, but the functionality of the service is identical. In the SAP@Web Studio, themes are stored in subdirectories of the service directory.

When creating HTML^Business templates, you can accept the default theme **99** proposed by the SAP@Web Studio or rename the theme.

If necessary, you can create further themes for your service and even define a default theme:

- To create a theme for a service, you must create a subdirectory for all the HTML^Business templates and other files associated with the theme. This subdirectory should have the same name as the theme.
- To define a default theme for a service, you add a **~theme** parameter to the service file and specify a value. This default can be overridden at runtime.

Procedure

The procedures in the table below table describe how to:

- Create a theme for a service.
- Specify a default theme for a service.

Function	Procedure
Create a theme	1. Choose the *File View* tab, and select the service. 2. Choose *Project* → *Add to project* → *Theme*, or press the right mouse button and choose *Insert* → *Theme*. The SAP@Web Studio creates a new directory in the *File View*, and places the cursor in the directory name box. 3. Enter a name for the directory and press `Enter`. If you intend to use ITS source control to manage your files, choose a theme name that is no more than two characters long.
Specify a default theme	1. Choose the *File View* and double-click on the service. The SAP@Web Studio displays the service file in the main work area. 2. Find the **~theme** parameter in the file. • If the parameter already exists, select it. • If the parameter does not exist: a. Place the cursor in the bottom (blank) field in the *Name* column. b. Enter **~theme** in this field. 3. Click on the *Value* part of the same row, and enter a two-character theme name.

Result

When you have created a new theme, you can add HTML^{Business} templates and other ITS files, or copy existing files from another theme to the new theme.

Creating ITS Files Manually

When developing Internet applications driven by the Internet Transaction Server (ITS), you can create some of the files either with the SAP@Web Studio wizards or manually.

- If you are developing an application based on the Web transactions implementation model, it is best to create the service file, HTML^{Business} templates, and language resources with the wizards designed for the purpose, but you can also create the files manually.
- If you are developing an application based on the flow file implementation model, you must create the files manually. **Do not use the wizards**.

When you create ITS files manually, the SAP@Web Studio creates an empty file according to the information you provide. If, for example, you are creating HTML^{Business} templates, it does not log on to the R/3 System, and does not generate HTML^{Business} code.

Procedure

To create a service, HTML^{Business} template, or language resource manually:

1. Choose *File* → *New* and select the *Files* tab.
2. Select the type of file you want to create.
3. Enter the service name, and all other required fields.
   - To add the file to a project:
     a. Ensure that *Add to Project* is selected.
     b. If you want to specify a project other than that displayed in the *Location* field, enter the desired project or browse to find a project.
   - To add the file to a non-project location:
     a. Deselect *Add to project*.
     b. If you want to specify a project other than that displayed in the *Location* field, enter the desired project or browse to find a project.
4. Choose *OK*.

Result

The SAP@Web Studio creates the file and opens it in the relevant editor in the main work area:

- Service files and language resource files are opened in the grid control editor [Seite 74].
- HTML^{Business} templates are opened in the HTMLBusiness editor [Seite 59].

ITS Service Maintenance

The SAP@Web Studio provides two editors to maintain the Internet Transaction Server (ITS) files that make up services:

- HTML$^{\text{Business}}$ editor
- Grid control editor

HTML$^{\text{Business}}$ editor

You use this editor to:

- Enter and test HTML$^{\text{Business}}$ and standard HTML code in HTML$^{\text{Business}}$ templates.
- Create flow files.
- Edit flow logic.
- Preview the HTML$^{\text{Business}}$ template layout.
- View context data values.

Grid control editor

You use this editor to:

- Define service parameters in service files.
- Define language-independent text in language resource files.
- Maintain context data values.

> The commands used in the HTML$^{\text{Business}}$ editor and the grid control editor require a file window to be open and selected. If no file window is open, the command is either unavailable, or applies to items selected in the *File View*.

For detailed information about using the HTML$^{\text{Business}}$ editor, see HTMLBusiness Editor [Seite 59].

For detailed information about using the grid control editor, see Grid Control Editor [Seite 74].

HTML^{Business} Editor

You use the HTML^{Business} editor to enter and test HTML^{Business} and standard HTML code in HTML^{Business} templates.

The HTML^{Business} editor can run in four modes:

- *HTML Source*

  This mode displays the HTML^{Business} code that defines the presentation.

  You use this mode to enter and maintain standard HTML and HTML^{Business} code.

  For clarity, you can set specific parts of the code - standard HTML, comments, or HTML^{Business} – to be displayed in a different color.

  The editor mode is the default mode.

- *Flow Source*

  This mode displays the XML code that defines the flow logic in the flow file attached to the HTML^{Business} template.

- *Context Data*

  The context grid allows you to view data values generated for each HTML^{Business} template at runtime. To generate data values, you can choose to record the session when you test a service.

- *Preview*

  The preview displays your template as it will look when displayed as an HTML page in the user's Web browser, but without the data values supplied at runtime.

Starting and Stopping the HTML^{Business} Editor

Use

You use these procedures when you want to start or stop the HTML^{Business} editor.

Prerequisites

You must have created at least one service with one or more HTML^{Business} templates in the project workspace.

Procedure

Use the following procedures to start or stop the HTML^{Business} editor for each HTML^{Business} template:

Function	Procedure	Result
Start HTML^{Business} editor	1. Select a service in the project workspace and expand file hierarchy. 2. Select the template you want to edit. 3. Double-click or press right mouse button and choose *Open*.	The HTML^{Business} editor opens the template in *HTML Source* mode in the main work area. In the main work area, you can have any number of windows open at once.
Stop HTML^{Business} editor	1. Select template you wish to close in the work area. 2. Choose *File* → *Close*.	The HTML^{Business} editor closes.

Using the HTML^Business Editor

The HTML^Business editor offers most standard text editing functions.

Prerequisites

You must have started the HTML^Business editor for the HTML^Business template you want to edit.

Procedure

The standard functions provided by the HTML^Business editor are summarized in the following table:

Operation	Procedure	Result/Remarks
Select text	Drag mouse over text.	
Select a word	Double-click on word	
Select all text	1. Position cursor in editor window. 2. Choose *Edit* → *Select All*.	
Cut text	1. Select text. 2. Choose *Cut* or *Edit* → *Cut*.	Places selected text in buffer. Text remains in buffer until next cut or copy operation.
Copy text	1. Select text. 2. Choose *Copy* or *Edit* → *Copy*.	Places selected text in buffer. Text remains in buffer until next cut or copy operation.
Paste previously cut or copied text	1. Position cursor where you want to paste text. 2. Choose *Paste* or *Edit* → *Paste*.	Pastes text from buffer. A paste operation does **not** empty the buffer.
Delete text	1. Select text. 2. Choose *Delete* or *Edit* → *Delete*.	Deletes selected text. When you delete text with the *Delete* function, it is gone. To rescue deleted text, choose *Undo* immediately.
Undo cut, delete, or other operation	Choose *Undo* or *Edit* → *Undo*.	Reverses previous operation.
Find text	1. Choose *Find* or *Edit* → *Find*. 2. In *Find what* field, enter search string. 3. Choose *Find Next*.	Finds next occurrence of string. To find subsequent occurrences, keep choosing *Find Next*. You can search for whole words only, perform a case-sensitive search, and search up or down.

Replace text.	1. Choose *Edit* → *Replace*. 2. In *Replace with* field, enter replace string 3. To replace first occurrence of find string, choose *Replace*. To replace all occurrences of find string, choose *Replace All*.	Replaces one occurrence of find string or all occurrences. To search for each occurrence of the find string before replacing it, choose *Find Next*. You can search for whole words only, perform a case-sensitive search, and search up or down.
Set marker(s)	1. Place the cursor on the desired line in the code. 2. Select Ctrl + F2	Sets a marker. If you set more than one marker, you can jump between them by pressing F2.
Delete marker(s)	1. Place the cursor on the desired line in the code, where there is already a marker. 2. Select Ctrl + F2	Deletes marker.

If an HTML^{Business} template or other ITS file is open for editing in the main work area, the editor commands apply to the file text.

If no HTML^{Business} template or other ITS file is open in the main work area, the editor commands apply to the file selected in the *File View*.

Inserting Standard HTML Tags

When using the HTML$^{\text{Business}}$ editor to enter standard HTML code, you can:

- Insert HTML tags as you type.
- Insert HTML tag attributes as you type.
- Insert text formatting tags.

Procedure

Inserting Standard HTML Tags as you Type

If you enter **<** to open a standard HTML tag, the HTML$^{\text{Business}}$ editor recognizes this and automatically displays a list of valid tags in a scrollable pop-up window at the cursor position.

As you type, the HTML$^{\text{Business}}$ editor finds, and highlights, the nearest alphabetical match in the list of valid tags. You can select the highlighted tag or any other tag in the list.

If you select a tag from the list of valid tags, the HTML$^{\text{Business}}$ editor inserts it at the cursor position.

When you enter the closing angle bracket for the tag, the HTML$^{\text{Business}}$ editor inserts the closing tag automatically.

> Suppose you intend to use the **`<body>`** tag in your template.
>
> As soon as you enter **<** to open the tag, the HTML$^{\text{Business}}$ editor displays a list of valid tags. To insert the body tag, double-click on it and you see **`<body`** .
>
> When you enter the closing angle bracket, the HTML$^{\text{Business}}$ editor automatically inserts the closing tag **`</body>`**.

If the HTML$^{\text{Business}}$ editor finds no more matches as you type, the window closes automatically.

To close the pop-up window at any time, click elsewhere on the screen.

Inserting Standard HTML Tag Attributes as you Type

If you enter a valid standard HTML tag followed by a blank, and this tag has attributes, the HTML$^{\text{Business}}$ editor recognizes this and automatically displays a list of valid tag attributes in a scrollable pop-up window at the cursor position.

As you type, the HTML$^{\text{Business}}$ editor finds, and highlights, the nearest alphabetical match in the list of valid tag attributes. You can select the highlighted tag attribute or any other tag attribute in the list.

If you select a tag attribute from the list of valid tag attributes, the HTML$^{\text{Business}}$ editor inserts it at the cursor position.

When you type the closing angle bracket, the HTML$^{\text{Business}}$ editor inserts the closing tag automatically.

> Suppose you intend to use the tag **`<select>`** followed by the tag attribute **`name`**.
>
> As soon as you enter a blank after **`<select`**, the HTML$^{\text{Business}}$ editor displays a list of possible attributes. To insert the attribute, double-click on it and you see **`<select name=""`**
>
> When you enter the closing angle bracket, the HTML$^{\text{Business}}$ editor automatically inserts the closing tag **`</select>`**.

If the HTML[Business] editor finds no match as you type, the window closes automatically.

To close the pop-up window at any time, click elsewhere on the screen.

Inserting Standard HTML Formatting Tags

To insert standard HTML formatting tags as you type:

1. Either position the cursor or select some existing text
   - If you position the cursor, the HTML[Business] editor inserts the opening and closing tags there, so you can enter text between them.
   - If you select some existing text, the HTML[Business] editor inserts the opening and closing tags to enclose the selected text.
2. Either click on the right mouse button and choose *HTML Tags* or go to the SAP@Web Studio menu bar and choose *Editor* → *HTML Tags*.
3. Select the desired tag.

   The HTML[Business] editor inserts the tags as summarized in the table below:

HTML Tag	HTML[Business] Editor Action
Bold	Inserts the tag **** or encloses selected text.
Italic	Inserts the tag **<i></I>** or encloses selected text.
Paragraph	Inserts the tag **<p>** or encloses selected text.
Break	Inserts the tag **<b>** or encloses selected text.
Font dialog	Opens a font dialog, where you can define a font, color, and size tags. Converts your selections to HTML and either inserts it at the cursor position or encloses the selected text. Example of inserted HTML: ****
Header 1	Inserts the tag ** ** or encloses selected text.
Header 2	Inserts the tag ** ** or encloses selected text.
Header 3	Inserts the tag ** ** or encloses selected text.
Header 4	Inserts the tag ** ** or encloses selected text.
Header 5	Inserts the tag ** ** or encloses selected text.

Header 6	Inserts the tag ** ** or encloses selected text.

Result

In all cases, the SAP@Web Studio inserts the desired HTML tag.

Entering HTML^{Business} Code

Use

When entering HTML^{Business} code in the HTML^{Business} editor, you can:

- Highlight HTML^{Business} elements.
- Get parameter information on HTML^{Business} keywords and functions.
- Display the definition of HTML^{Business} functions.
- Insert HTML^{Business} tags.
- Insert language resource keys as you type.

Prerequisites

You must have started the HTML^{Business} editor for the template you want to edit.

Procedure

Highlighting HTML^{Business} Elements

When you are editing an HTML^{Business} template, the HTML^{Business} editor recognizes and highlights HTML^{Business} elements.

The following table lists HTML^{Business} elements and their default colors:

HTML^{Business} Element	Default Color
General HTML^{Business}	Blue
HTML^{Business} keywords	Brown
Constants	Black
Language resource keys	Pink
HTML^{Business} comments	Gray
Developer comments	Green

You can either use the default colors or define your own colors [Seite 30].

Getting Parameter Information on HTML^{Business} Keywords and Functions

You can get full parameter information for any HTML^{Business} keyword or function as you type. To do this, select the text, click the right mouse button, and choose *Parameter information*.

Suppose you want to select parameter information for the **`wgateURL`** function.

If you select the text, you see the following information:

```
wgateURL(parameter = expression {,parameter = expression})
```

Displaying HTML^{Business} Function Definitions

If you write your own HTML^{Business} function, you can go to the definition of that function wherever it is located (it may reside in a different file).

To do this, select the text, click the right mouse button, and choose *Goto definition*.

If you change the definition of a self-written HTML^{Business} function:

- The parameter information is automatically updated and can be viewed from wherever you select *Goto definition*.
- The function is no longer recognized and is not highlighted. However, the HTML^Business editor and all editor instances, which include the current file, recognize the new function created by the modification. This also applies to **`include`** statements.

Inserting HTML^Business Tags as you Type

When you are editing HTML^Business templates, you can insert HTML^Business tags as you type:

1. Either position the cursor or select some existing text.

   If you position the cursor, the opening and closing tags are inserted there, so you can enter text between them.

   If you select some existing text, the opening and closing tags are inserted to enclose the selected text.

2. Either click on the right mouse button and choose *HTMLBusiness Tags* or go to the SAP@Web Studio menu bar and choose *Editor* → *HTMLBusiness Tags*.
3. Select the desired tag.

   The HTML editor inserts the tags as summarized in the table below:

HTML Tag	HTML^Business Editor Action
Backticks	Inserts two backticks `` or encloses selected text.
Server Tags	Inserts the tag **`<server></server>`** or encloses selected text.
MimeUrl	Inserts the tag **`mimeURL()`** or encloses selected text in the parentheses.

Inserting Language Resource Keys as you Type

If you are editing an HTML^Business template and you enter **#** to denote a language resource key, the HTML^Business editor recognizes this and automatically displays a list of language resource keys already defined for the currently active service (and theme, if relevant) in a scrollable pop-up window at the cursor position.

As you type, the HTML^Business editor finds, and highlights, the nearest alphabetical match in the list of language resource keys. You can select the highlighted key or any other key in the list.

If you select a key from the list of keys, the HTML^Business editor inserts it at the cursor position.

When you enter the closing angle bracket for the tag, the HTML^Business editor inserts the closing tag automatically.

If the HTML^Business editor finds no more matches as you type, the window closes automatically.

To close the pop-up window at any time, click elsewhere on the screen.

If you update a language resource file by adding or deleting language resource keys, this is immediately reflected in the pop-up list that appears in the editor.

Maintaining Custom Tag Lists

To support the editing of HTML^{Business} templates in the HTML^{Business} editor, the SAP@Web Studio allows you to maintain your own list of frequently used tags, so that you can access them faster.

When you first start the SAP@Web Studio after installation, the *HTML Tags* window contains a list of standard HTML tags in a layout that resembles a file manager. You can modify the list – and the window itself - to meet your own requirements.

You can:

- Insert tags from the *HTML Tags* window directly into HTML^{Business} templates.
- Add new tags.
- Change, rename, and delete existing tags.
- Create new folders to store groups of tags.
- Move tags between folders.
- Display or hide the *HTML Tags* window.

Procedure

Depending on what you want to do, follow the procedure in the table below:

To	Procedure	Result
Insert a tag into an HTML^{Business} template.	1. In HTML^{Business} template, either position cursor or select text. 2. In *HTML Tags* window, double-click tag you want to insert.	The SAP@Web Studio inserts the tag at the cursor position or encloses the selected text.
Create a tag.	1. Position cursor somewhere in *HTML Tags* window. 2. Select right mouse button. 3. Choose *Add Tag*. 4. In *Custom Tag Name* field, enter a name for your tag. 5. In *Start Text* box, specify a start text for your tag. 6. In *End Text* box, specify an end text for your tag. 7. Choose *OK*.	The SAP@Web Studio adds the tag to the list in the *HTML Tags* window.
Change a tag.	1. Select tag. 2. Select right mouse button 3. Choose *Edit Tag*. 4. Change tag as required. 5. Choose *OK*.	The SAP@Web Studio applies your changes.

Rename a tag.	1. Select tag. 2. Select right mouse button. 3. Choose *Rename*. 4. Specify new name by overwriting old name. 5. Press *Enter*.	The SAP@Web Studio renames the tag.
Delete a tag.	1. Select tag. 2. Select right mouse button. 3. Choose *Delete*.	The SAP@Web Studio deletes the tag immediately.
Create a folder.	1. Select an existing folder. 2. Select right mouse button. 3. Choose *Create Folder*. 4. Enter a name for the folder. 5. Press *Enter*.	The SAP@Web Studio creates a new folder.
Display or hide *HTML Tags* window.	Choose *Editor* → *View HTML Tags*.	The SAP@Web Studio displays or hides the *HTML Tags* window below the project workspace.

Inserting Graphics into HTML^{Business} Templates

When you are editing HTML^{Business} templates in the HTML^{Business} editor, you can insert graphic and other Multipurpose Internet Mail Extension (MIME) files directly by drag and drop.

Procedure

1. In the SAP@Web Studio's project workspace, select the *File View*.
2. Select the file that contains the graphic you want to insert.
3. Drag the file to the HTML^{Business} editor window and drop it at the desired location in the HTML^{Business} code.

Result

The HTML^{Business} editor automatically generates the necessary HTML^{Business} code (and the required parameters).

If you select the image file **`help.gif`** and drag it to an English template under theme 99 in a service called **`myservice`**, the HTML^{Business} editor generates the following code in the template:

```
`mimeURL(~service=“myservice“,~theme=“99“,~language=“en“,~name
=“help.gif“)`
```

Checking HTML$^{\text{Business}}$ Syntax

When you have designed your HTML$^{\text{Business}}$ template, you can use the HTML$^{\text{Business}}$ editor to check the syntax of HTML$^{\text{Business}}$ code.

Procedure

To perform a syntax check on the HTML$^{\text{Business}}$ code in an HTML$^{\text{Business}}$ template:

1. Choose *Syntax Check* or *Tools* → *Syntax Checker*.

   The SAP@Web Studio lists all syntax errors in the lower window.

2. Double-click on an error message.

Result

The SAP@Web Studio places the cursor where the error occurred in the HTML$^{\text{Business}}$ code.

This function checks only syntax errors in HTML$^{\text{Business}}$ code, that is, only errors found in those statements enclosed in backticks.

Errors in standard HTML code are **not** detected.

Previewing HTML$^{\text{Business}}$ Template Layout

When you have designed your HTML$^{\text{Business}}$ template and performed a syntax check, you can use the HTML$^{\text{Business}}$ editor's preview mode to check how the template will look when displayed as an HTML page in the user's Web browser.

Procedure

To preview the layout of an HTML$^{\text{Business}}$ template

1. If the HTML$^{\text{Business}}$ template is not already open in the main work area, open it by double-clicking the file name in the project workspace.

    The SAP@Web Studio opens the template in the main work area.

2. At the bottom of the template window, choose *Preview*.

Result

The SAP@Web Studio displays the HTML$^{\text{Business}}$ template as it will look in the user's Web browser.

Since the preview mode previews the layout of HTML$^{\text{Business}}$ templates without connecting to an R/3 System, templates that rely on R/3 texts for their appearance may look incomplete.

The preview mode is only a dummy display, so pushbuttons and other actions have no effect.

Viewing Context Data Values

When you test a service by running it in the SAP@Web Studio, you can record the operation, so that the data values generated for each HTML$^{\text{Business}}$ template at runtime are stored in a context file. You can then view these values in the HTML$^{\text{Business}}$ editor's, and edit them in the grid control editor.

The data values generated may be runtime variables, R/3 texts used to label buttons, or other screen objects.

Prerequisites

You must run the service and record [Seite 90] the operation for at least one HTML$^{\text{Business}}$ template.

Procedure

To view data values for an HTML$^{\text{Business}}$ template:

1. Start the HTML$^{\text{Business}}$ editor by selecting the HTML$^{\text{Business}}$ template.
2. At the bottom of the template window, choose *Context Data*.

Result

The HTML$^{\text{Business}}$ editor switches to the context grid where you see a list of generated data values.

For information about how to edit these values in the grid control editor, see Using the Grid Control Editor [Seite 75].

Grid Control Editor

You use the grid control editor to:

- Display and edit service files
- Display and edit language resource files
- Edit context data values

  These values are generated at runtime, stored in the context data file, and displayed in the HTML^{Business} editor's context grid.

The grid control editor displays the information in each of these files as a list of name/value pairs in individual cells. The value of the name component for each pair must be unique. To edit the file, you can tab from one cell to the next.

Using the Grid Control Editor

Use

This procedure describes how to use the functions in the grid control editor to maintain:

- Context data values

  These values are generated at runtime, stored in the context data file, and displayed in the HTML[Business] editor's *Context Data* mode.

- Service files
- Language resource files

Prerequisites

You need to display the file you want to maintain.

Procedure

The functions available in the grid control editor are similar, regardless of the type of file you are editing. They are summarized in the following table:

Function	To	Procedure
Layout definition	Sort column entries.	Click column header. To reverse the order, click column header again.
	Resize columns.	Place cursor between columns until you see a different symbol, and drag in either direction until you achieve the required column sizes.
Navigation	Move from cell to cell.	To go to next cell, use **TAB** key. To go to previous cell, use **SHIFT+TAB**.
	Move from line to line.	Use arrow keys.
	Scroll file up/down.	Use vertical scroll bar or page up/down key.
	Scroll file across.	Use horizontal scroll bar.
Maintenance functions	Edit a cell.	Select cell by double-clicking. This opens an edit box where you can enter data. If the new text is longer than the old text, the cell expands automatically.
	Create an entry.	If the file contains blank lines, double-click on a line and enter data in box. If the file contains no blank lines, choose *Insert → New String* and enter data in box. The cell expands automatically.
	Copy	1. Select cell by double-clicking. 2. Select right mouse button. 3. Choose *Copy* in pop-up window. You can also use keyboard operations.

	Cut	1. Select cell by double-clicking. 2. Select right mouse button. 3. Choose *Cut* in pop-up window. You can also use keyboard operations.
	Paste	1. Select cell by double-clicking. 2. Select right mouse button. 3. Choose *Paste* in pop-up window. You can also use keyboard operations.
	Delete	1. Select cell by double-clicking. 2. Select right mouse button. 3. Choose *Delete* in pop-up window. You can also use keyboard operations.
	Undo	1. Select cell by double-clicking. 2. Select right mouse button. 3. Choose *Undo* in pop-up window. You can also use keyboard operations.

Editing Service and Language Resource Files

You edit service files and language resource files in the grid control editor.

When you open a service file or a language resource file in the grid control editor, you see the defined service parameters as name-value pairs. The procedure for editing these files is similar.

Procedure

Opening a file for maintenance in the grid control editor depends on the file type. Use the appropriate procedure in the following table:

To	Procedure
Display/edit service files	1. Select the service file in the SAP@Web Studio's project workspace. 2. Double-click.
Display/edit language resource files	1. Select the language resource file in the SAP@Web Studio's project workspace. 2. Double-click.
Edit context data values for $HTML^{Business}$ templates	1. Select the template file in the SAP@Web Studio's project workspace. You see the $HTML^{Business}$ editor. 2. Double-click 3. At the bottom of the template window, choose *Context Grid*.

Result

In each case, the SAP@Web Studio displays the grid control editor.

For information about basic grid control editor functions, see Using the Grid Control Editor [Seite 75].

ITS File Management

Purpose

This process describes how to manage Internet Transaction Server (ITS) files in the SAP@Web Studio project workspace.

These ITS files include services, HTML^{Business} templates, flow files, language resources, and Multipurpose Internet Mail Extension (MIME) files. Flow files are attached to HTML^{Business} templates and are not displayed separately in the project workspace.

Process Flow

In the project workspace, the SAP@Web Studio provides basic file management functions that allow you to:

- Open [Seite 79] files
- Save [Seite 80] files
- Print [Seite 81] files
- Close [Seite 82] files
- Copy and move [Seite 83] files
- Drag and drop [Seite 84] files
- Delete [Seite 85] files

Opening ITS Files

You can open Internet Transaction Server (ITS) files from one of the views in the project workspace, or from a dialog box (if the file is not displayed in project workspace).

Prerequisites

You have already opened a project.

Procedure

To open a file displayed in the *File View* of the project workspace:

1. In the project hierarchy, navigate to the file you want to open.
2. Double-click on the file name.

Result

The SAP@Web Studio calls the appropriate editor for the type of file you are opening, and displays the file in the main work area.

Saving ITS Files

You can save an Internet Transaction Server (ITS) file to its current location, to a different location, or to a new name.

Procedure

If you have multiple files open in the main work area, select the file you want to save. Then, follow the appropriate procedure in the following table:

Function	Procedure
Save file to current location	Choose *Save* or *File* → *Save.*
Save file to different name or location	1. Choose *File* → *Save As.* The SAP@Web Studio displays the *Save As* dialog box where you can specify the drive, directory, and file name for saving your file. 2. Navigate to the desired directory. 3. If necessary, enter the new name for the file. 4. If necessary, select the file type for the file (in the *Save as type* field). The SAP@Web Studio saves your file with the file extension for the file type you select.

Result

When you save a file to a different name or location, the SAP@Web Studio closes the original file, and opens the new file.

To continue editing the original file, you have to re-open it.

Printing ITS Files

You can print the text of HTML[Business] templates and flow files.

Procedure

1. In the *File View* of the project workspace, select and open the HTML[Business] template.
2. If you want print the flow file, switch to *Flow Source* in the HTML[Business] editor.
3. Choose *Print* or *File → Print.*

Result

The SAP@Web Studio sends your HTML[Business] code to the defined printer.

Closing ITS Files

The procedure for closing Internet Transaction Server (ITS) files is the same for all file types.

Procedure

1. Select the window of the file you want to close.
2. Choose *File* → Close.

   If you have changed the file contents, but not yet saved the changes, the SAP@Web Studio prompts you to save.

   – To save before closing, choose *Yes*.

   – To close without saving, choose *No*.

   If the file is new, the SAP@Web Studio displays the *Save as* dialog box.

   – Specify a name for the file and choose *OK*.

Result

The SAP@Web Studio closes the file.

Copying and Moving ITS Files

You can copy or move Internet Transaction Server (ITS) files either from the file system or from ITS source control.

To copy or move Internet Transaction Server (ITS) files from the file system:

- Add the files [Seite 35] to the project.
- Drag and drop the files [Seite 84].

To copy or move files from ITS source control:

- Import the files [Seite 36] to the project.

Dragging and Dropping ITS Files

You can copy or move files between directories in a project by dragging and dropping them in the project workspace *File View*.

Procedure

To copy or move files by drag and drop, follow the relevant procedure in the following table:

Function	Procedure	Result
Copy file(s).	1. Select file(s) you want to copy. 2. Drag file(s) to target directory.	The SAP@Web Studio copies file(s) from source directory to target directory. The file(s) now exist(s) in **both** directories.
Move file(s).	1. Select file(s) you want to move. 2. Hold down right mouse button and press Shift key 3. Drag file(s) to target directory 4. Release right mouse button.	The SAP@Web Studio moves file(s) from source directory to target directory. The file(s) now exist(s) **only** in the target directory.

Deleting ITS Files

You can either delete Internet Transaction Server (ITS) files, or move them to another directory.

Procedure

Function	Procedure	Result
Delete files	1. In the *File View*, select the file(s) you want to delete. 2. Choose *Delete* or *Edit* → *Delete*.	The SAP@Web Studio deletes the file(s) from your project directory. Any files you delete remain in the underlying directory in the file system.
Move files	1. Select file(s) you want to move. 2. Hold down right mouse button and press Shift key. 3. Drag file(s) to target directory. 4. Release right mouse button.	The SAP@Web Studio moves the selected files from the source directory to the target directory.

When you delete files with the *Delete* function, the SAP@Web Studio deletes the selected file(s) from the project hierarchy in the project workspace, but **not** from the hard disk. This prevents data loss resulting from accidental deletion.

If you want files that you delete to be removed from the hard disk at the same time, you must select this option explicitly. In this case, see Specifying a default project directory [Seite 28].

You can also delete files by moving them with the *Copy*, *Cut*, and *Paste* functions in the standard toolbar.

To delete files from a project, always use the functions in the SAP@Web Studio user interface. Deleting files from the underlying project directory may result in inconsistent services.

ITS Service Publishing

Purpose

This process describes how to publish the Internet Transaction Server (ITS) files that make up a service.

Publishing a service means copying the current versions of all the relevant files from the SAP@Web Studio on your PC to the ITS site (that is, to the relevant directories on the ITS server or the Web server). At runtime, the ITS uses these files to generate the HTML pages displayed in the user's Web browser.

Prerequisites

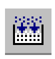
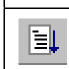
Before you can publish any files in a service, you must first define an ITS site.

Process Flow

When you publish a service, you need to:

1. Specify the active ITS service [Seite 87]
2. Publish the service to an ITS site.

   There are three ways to publish an ITS service. Use the appropriate function in the SAP@Web Studio's publish toolbar, as listed in the following table:

Function	Effect
	*Publish* function. Publishes individual files in a service. This function allows you to select the files you want to publish, and specify the ITS site to which they should be published.
	*Build* function. Builds the service and publishes all the files. This function publishes all the files that make up a service to the currently active ITS site in a single operation. You cannot select individual files or specify an ITS site.
	*Go* function. Builds the service, publishes all the files, and starts the service. This function publishes all the files that make up a service to the currently active ITS site in a single operation, and starts the service at the same time. You cannot select individual files or specify an ITS site.

   – If you want to publish individual files in a service, see Publishing ITS Files [Seite 88].

     Remember that if you want to test the service, you must first publish all the files.

   – If you want publish all the files in a service, see Building ITS Services [Seite 89].

   – If you want to publish all the files in a service, and test the service at the same time, see Testing ITS Services [Seite 90].

Specifying the Active ITS Service

Before publishing an Internet Transaction Server (ITS) service, you must specify the currently active service, because the *Build* and *Go* functions in the SAP@Web Studio publish toolbar always operate on the currently active service:

- The *Build* function publishes the service to the active ITS site.
- The *Go* function publishes the service to the active ITS site, and starts it.

Procedure

To specify the currently active service:

1. Choose *Project* → *Set Active Service*.

   The SAP@Web Studio displays a sub-menu of services in the current project.

2. Select the desired service name.

   The SAP@Web Studio highlights the selected service in the project workspace *File View*.

Result

The SAP@Web Studio applies all subsequent *Build* and *Go* operations to the currently active service.

Publishing ITS Files

Publishing an Internet Transaction Server (ITS) service means copying the current versions of all the relevant files from the SAP@Web Studio on your PC to the ITS site (that is, to the relevant directories on the ITS server or the Web server). At runtime, the ITS uses these files to generate the HTML pages displayed in the user's Web browser.

You can either:

- Publish the entire service to the currently active ITS site.

  If you want to do this, it is easier to use the *Build* function, which builds the service and publishes all the files in a single operation. In this case, see Building ITS Services [Seite 89].

- Publish individual files in a service to a specified ITS site.

  If you want to do this, follow the procedure below.

Prerequisites

To publish individual ITS files, you must first:

- Define an ITS site [Seite 39].
- Specify the desired active service [Seite 87].

  This is important, because the *Publish* function always publishes selected files to the currently active service.

Procedure

1. In the *File View*, select the files (or service) you want to publish.

   You see the *Publish Files* dialog box.

2. Choose *Publish Files* or *Project* → *Publish Files*.
3. Enter the desired site name in the *Publish to Site* field.
4. Ensure that all the files you want to publish are selected.
5. Choose *OK*.

   The SAP@Web Studio performs a syntax check on the HTML^{Business} statements in every HTML^{Business} template to be published. If templates contain errors, these are listed in the message area.

   To jump to the location of the error, double-click on an error message

Result

The SAP@Web Studio copies the files to the ITS server directory and Web server directory, as specified by your site definition.

At the site destination, the SAP@Web Studio compares all file versions, and overwrites any old files with new ones, if they have changed.

Building ITS Services

Building an Internet Transaction Server (ITS) service means publishing all the files by copying the current versions of all the relevant files from the SAP@Web Studio on your PC to the ITS site (that is, to the relevant directories on the ITS server or the Web server). At runtime, the ITS uses these files to generate the HTML pages displayed in the user's Web browser.

When building a service, the SAP@Web Studio automatically publishes everything. It does not prompt you for file or site information.

If you want to publish individual files in a service, see Publishing ITS Files [Seite 88].

Prerequisites

To build a service, you must first:

- Define an ITS site [Seite 39].
- Specify the desired active service [Seite 87].

  This is important, because the *Build* function always publishes the currently active service.

Procedure

In the publish toolbar, choose *Build* or *Project* → *Build Service*.

Result

The SAP@Web Studio immediately copies all files that make up the service to the ITS server directory and Web server directory, as specified by your ITS site definition.

At the site destination, the SAP@Web Studio compares all file versions, and overwrites any old files with new ones, if they have changed.

Testing ITS Services

To test an Internet Transaction Server (ITS) service, you can simply start it.

When you do this, the SAP@Web Studio:

- Publishes the service to the currently active ITS site
- Opens a Web browser (either inside or outside the SAP@Web Studio)
- Starts the service in the Web browser

You can also publish a service without calling it.

Prerequisites

To publish a service, you must first:

- Define an ITS site [Seite 39].
- Specify the desired active service [Seite 87].

  This is important, because the *Go* function always starts the currently active service.

You do not need to connect to R/3 first.

Procedure

1. Select the service you want to start.
2. Choose choose *Go* or *Project → Start Service*.

   The SAP@Web Studio opens a Web browser, starts the service, and displays the first screen of the application as an HTML page.
3. If you want to check the data values generated for each template at runtime, choose *Record* in the Web browser window.

   You can switch this option on/off for each template.

   To view the recorded data values, see Viewing Context Data Values [Seite 73].

   By default, the Web browser runs outside the SAP@Web Studio. To change this option, see Opening a Web Browser in the SAP@Web Studio [Seite 29].

Using Web Browser Functions

When you start a service in the SAP@Web Studio, a Web browser opens either inside or outside the SAP@Web Studio environment. Web browsers that run inside the SAP@Web Studio have a simplified user interface that hides the browser toolbars and menu bars.

Use this procedure to access Web browser functions not visible in the SAP@Web Studio main work area.

Prerequisites

You must set the SAP@Web Studio options to open the Web browser inside the Studio [Seite 29].

Procedure

To use Web browser toolbar functions:

1. Position the mouse in the Web browser window.
2. Click the right mouse button.

Result

You get a menu containing the important functions.

ITS Source Control

Purpose

This process describes how you can use source control in the R/3 System to manage versions of all the Internet Transaction Server (ITS) files that make up a service.

When you have created a service and tested it in the SAP@Web Studio, you can store all the files in the R/3 System together with the related ABAP code by adding them to ITS source control. This protects against simultaneous modification of files, because all users have read access to files, but only a single user is allowed to check files out and modify them.

Process Flow

What you can or cannot do with ITS files depends on whether they have been checked into ITS source control and where they currently reside, as summarized in the following table:

Current ITS File Location	**Possible Action**
Not yet in ITS source control	Add the files [Seite 95].
Checked into ITS source control	Either: • Check the files out [Seite 97] for modification. Only allowed for single users for update purposes. • Get files for read-only access [Seite 100]. These files cannot be copied back to ITS source control.
Checked out of ITS source control	Check the files in [Seite 98]. Only the user who has checked the files out can do this.

You can manage source-controlled ITS files in the R/3 System. To do this, log on to the relevant system and choose *Tools* → *Web development* → *Web object administration*.

Working With Source-Controlled ITS Files

Internet Transaction Server (ITS) source control protects files against simultaneous updates by different users.

Prerequisites

To access files in ITS source control, you must connect to the R/3 System [Seite 94].

Procedure

The procedures below summarize what you can do with files in ITS source control:

If you want to	Procedure
Add files to ITS source control for the first time	1. Add the files [Seite 95]. 2. Assign the files to a change request [Seite 96] in the R/3 System.
Update files in ITS source control	1. Check the files out [Seite 97]. 2. Edit [Seite 58] and test [Seite 90] the files. 3. Check the files back in [Seite 98]. You do not need to reassign the files to the change request. The R/3 System does this automatically.
Reassign files in ITS source control to a new change request after transport	Assign the files to a new change request [Seite 96] in the R/3 System. After releasing a change request for transport, you must ensure that the files are assigned to a new change request. If you fail to do this, users cannot check the files in or out.
Get read-only access to files in ITS source control	Get the required file(s) [Seite 100]. This procedure allows you read-only access to ITS files. You cannot copy these files back into source control.

You can manage source-controlled ITS files in the R/3 System. To do this, log on to the relevant system and choose *Tools* → *Web development* → *Web object administration*.

Connecting to the R/3 System

To manage Internet Transaction Server (ITS) files in ITS source control, you must connect to the R/3 System.

Prerequisites

You must have a user in the R/3 System to which you are connecting.

Procedure

To connect to an R/3 System:

1. Choose *Tools → Source Control → Connect to R/3.*

   The SAP@Web Studio displays the *Select R/3 System* dialog box, which displays all the R/3 connections you have defined. You can define more connections using the *New* button.

2. Select an R/3 System, and choose *OK*.
3. If not already displayed, enter logon information such as client, user, password, and language.
4. If you want the SAP@Web Studio to remember and reuse your password, select *Save Password*.

   If you do this, the SAP@Web Studio stores your password internally in encrypted format. On subsequent logons, you do not have to enter your password again.

   If you set up the SAP@Web Studio to maintain all other logon information for you, you do not see a logon screen at all.

5. Choose *OK*.

Result

The SAP@Web Studio logs you on to the R/3 System, and displays all source-controlled services in the *Source Control* view.

Adding Files to ITS Source Control

When you have created and tested an Internet Transaction Server (ITS) service, you can add the files to ITS source control.

Prerequisites

You must connect to the R/3 System [Seite 94] where you want to add the files.

Procedure

1. Select the file(s) you want to add.
2. Click the right mouse button and choose *Add to Source Control.*

   You see the *Source Control Check In* dialog box.
3. Check the files you want, and choose *OK*.

Result

The SAP@Web Studio adds the files to ITS source control in the R/3 System. Users wishing to modify these files must check them out first.

Now, assign the files to a change request in R/3 [Seite 96]. If you fail to do this, ITS source control will not permit any subsequent check-outs.

Assigning ITS Files to Change Requests in R/3

When you add Internet Transaction Server (ITS) files to ITS source control in the R/3 System for the first time, you must assign them to a change request.

At subsequent check-ins, the system remembers the relevant change request and automatically replaces the files. You don't need to specify a change request each time.

If you release a change request for transport, you must create a new change request and reassign the files to it. If you fail to do this, the files cannot be checked out (or in) by other users.

Prerequisites

You must add the files to ITS source control [Seite 95].

Procedure

To assign new files to a change request in the R/3 System:

1. Choose *Tools* → *Web development* □ *Web object administration*.
2. In the *Service name* field, enter the service name.

   You can make generic entries here.
3. Choose *Execute*.

   You see a list of objects for the service.
4. Select the service and choose *Transport*.

   You see the *Change Request Query* dialog.
5. Enter a valid change request number or create a new one.
   - To display a list of your own existing change requests, choose *Own requests*.
   - To create a change request, choose *Create request*.

Result

The R/3 System creates a change request and assigns the files. You can now check the files out [Seite 97] and modify them.

When the R/3 System releases a change request that includes ITS files, it does not check the status of the files. Therefore, it is possible to release a transport for which files are still checked out. If this happens, you cannot check the objects back in until you create a second change request and assign the objects to it.

Checking ITS Files out of Source Control

If you want to modify Internet Transaction Server (ITS) files already added to ITS source control, you must check them out first.

Checking out files means downloading copies of the source-controlled versions from the R/3 System to the SAP@Web Studio.

If you check out files accidentally, or find that you do not want to make any changes, you can also reverse this operation.

Prerequisites

- You must connect to the R/3 System [Seite 94] from which you want to check out the files.
- The files you check out must be assigned to a change request [Seite 96] in the R/3 System.
- The files must not be already checked out to another user.

Procedure

To	Procedure	Result
Check files out	1. In the *File View*, select the files you want to check out. 2. Click the right mouse button and choose *Check Out.*	The SAP@Web Studio downloads the files to your working directory, and marks them as checked out to you.
Undo file checkout	1. In the *File View*, select the files for which you want to undo the check out. 2. Click the right mouse button and choose *Undo Check Out.*	The SAP@Web Studio reverses the checkout operation.

Checking ITS Files Into Source Control

When you have finished modifying source-controlled Internet Transaction Server (ITS) files, you must check the new versions back into ITS source control.

Checking files back into ITS source control means uploading them from the SAP@Web Studio to the R/3 System in order to update the source-controlled versions with your latest changes.

Prerequisites

- You must connect to the R/3 System [Seite 94] where you want to check in the files.
- The files must have been previously checked out [Seite 97] to you.

Procedure

To check files back into ITS source control:

1. In the *File V*iew, select the files you want to check in.
2. Click the right mouse button and choose *Check In.*

Result

The SAP@Web Studio copies the files from your working directory to ITS source control.

If you are checking the files back in and they were already assigned to a change request, they are automatically reassigned to the same change request.

Setting Checkin/Checkout Options

Sometimes, you forget and work on Internet Transaction Server (ITS) files that you have not checked out. This can happen if you have checked the files into ITS source control, but the old versions still reside on the your PC.

You can prevent this by setting the appropriate options in the SAP@Web Studio. ITS source control then does one of the following when you check files in:

- Deletes the files from the source directory
- Sets the read-only attribute on files in the source directory

Procedure

To set checkin/checkout options when you add files ITS source control or check them back in.

1. Choose *Options* → *Check In/Out*.
2. Select an option:

To	Procedure
Delete files on your PC.	Select *Remove local copy after Add or Check In*.
Set files to read-only.	Select *Use read only flag for files that are not checked out*.

Getting Read-Only Access to ITS Files

You can always get read-only access to Internet Transaction Server (ITS) files in ITS source control by copying them from the R/3 System. As long as you don't want to modify them, you don't need to worry about whether another user has exclusive access.

Prerequisites

- You must connect to the R/3 System [Seite 94] from which you want to get the files.
- You must specify a working directory for the files [Seite 28].

Procedure

To copy files from ITS source control to your PC:

1. In the *Source Control* tab, select the files you want to copy.
2. Choose *Tools → Source Control →Get File(s).*

Result

The SAP@Web Studio copies the files from R/3 System to your working directory.