

SAP User Experience –
Accessibility

SAP CUSTOMER
INFORMATION



Front-End Requirements and Infrastructure for Accessibility

Including statements about platforms and
recommended client PC settings

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2 General Statements about Platforms

Our efforts in the accessibility program are currently focused on the following front-end/client-platform environment.

2.1 Operating System

The following operating systems are supported:

- Windows 2000
- Windows XP
- Windows 2003 (also known as Windows XP Server)

2.2 Web Browser

The following Web browser is supported:

- Microsoft Internet Explorer 6

2.3 SAP GUI for Windows

SAP GUI for Windows is the standard GUI for applications based on the ABAP/Dynpro environment. The following SAP GUI version is required for applications based on ABAP Dynpro:

- SAP GUI for Windows 7.10 (or higher)

The latest version of SAP GUI for Windows is available as DVD files on SAP Service Marketplace at <http://service.sap.com/installations> → *Entry by Application Group* → *SAP Frontend Components* → *SAP GUI for Windows* → *SAP GUI for Windows 7.10 Core*. The most up-to-date patches are available at <http://service.sap.com/patches> → *Entry by Application Group* → *SAP Frontend Components* → *SAP GUI for Windows* → *SAP GUI for Windows 7.10 Core*. SAP GUI for Windows 7.10 is also available on DVD through the usual channels. If you want to install a new SAP GUI for Windows on your client PC, you must first download the DVD files, install SAP GUI, and then install the latest patch.

2.4 SAP Interactive Forms by Adobe

To display SAP Interactive Forms by Adobe, you require the latest version of Adobe Reader.

2.5 Screen Readers

SAP does not provide screen readers; these technologies must be acquired separately.

The following screen readers work with SAP GUI for Windows:

- JAWS® for Windows by Freedom Scientific®, Version 9.0

Details about the supported JAWS for Windows versions are available in [SAP Note 988421](#).

- Screen readers certified by SAP (such as Virgo 4.71 by BAUM Retec AG)

More information about screen readers certified by SAP is available at <http://www.sap.com/partners/directories/SearchSolution.epx>. On this page, select the entry "BC-SCR-GUI 6.4W" in the *SAP-Defined Integration Scenarios* field and start a search. Be aware that each screen reader differs in the scope of functions it offers.

By exposing the SAP GUI object model, SAP has met the technical requirements for screen readers to work together with SAP GUI for Windows.

3 Recommendations for ABAP-Based Applications

SAP recommends SAP GUI for Windows 7.10 or higher for ABAP-based applications.

This system landscape covers only some of the accessibility requirements, however, and you also need to perform the further activities described in this document.

3.1 Recommended Settings in SAP GUI for Windows

The settings for the accessible use of SAP GUI for Windows include the accessibility mode setting under SAP Configuration, which you can access in the Windows Control Panel, and some settings in the SAP GUI options dialog.

To support screen readers based on SAP GUI scripting, SAP GUI scripting must be activated on the application server. More information is available in [SAP Note 480149](#). SAP Service Marketplace provides you with more information about SAP GUI scripting and security-related questions at <http://service.sap.com/sapgui> → *SAP GUI Scripting*.

The following table shows you the recommended settings in SAP GUI for Windows according to the type of assistive technology used or the type of disability. The settings are described in more detail further below.

Type of Setting	Screen reader users	Screen magnifier users	Users with visual impairments who do not use assistive technologies	Users with motor impairments
Accessibility mode (SAP Configuration)	Switch on	Switch on	Switch on	Switch on
Notify when a script attaches to a running SAP GUI (SAP Configuration)	Switch off	Not relevant	Not relevant	Not relevant

Type of Setting	Screen reader users	Screen magnifier users	Users with visual impairments who do not use assistive technologies	Users with motor impairments
Include inactive elements in tab chain (SAP GUI options dialog)	Switch on	Switch on only if preferred	Switch off	Switch off
Display list symbols as letters (SAP GUI options dialog)	Switch on	Switch off	Switch off	Switch off
Dialog box for messages (SAP GUI options dialog)	Switch on	Switch on	Switch on only if preferred	Switch off
Set F4 help to modal dialog (SAP GUI)	Switch on	Switch on only if preferred	Switch on only if preferred	Switch off

3.1.1 Settings in the SAP Configuration

For accessible use of SAP GUI for Windows, SAP recommends the following settings in *SAP Configuration*.

1. In Windows Control Panel, choose *SAP Configuration*.
2. In the *SAP Configuration* dialog box, deselect the *Use New Visual Design* flag.
3. In the *SAP Configuration* dialog box, select the *Use Accessibility Mode* flag.
4. If your assistive technology uses a script, deselect the *Notify when a script attaches to a running SAP GUI* flag in the *SAP Configuration* dialog box. (This setting is not relevant if you do not use an assistive technology.)

More information about this option and about security is available in the Security Guide for SAP GUI Scripting on SAP Service Marketplace under <http://service.sap.com/sapgui> → *SAP GUI Scripting* → *Security Considerations and Requirements*.

3.1.2 Settings in the SAP GUI for Windows Options Dialog

You can make the settings recommended in the table above in the *SAP GUI for Windows* options dialog as follows:

1. Choose *Local Layout* → *Options* in the menu. You can also use the key combination [ALT] + [F12] (for *Local Layout*) and then press the key [o] (for *Options*).
2. On the *Options* tab page, select *Dialog box at error message* and *Dialog box at warning message*. If you also want to display dialog boxes for success messages and play beeps for messages, set the appropriate options. (We recommend that users of screen readers or screen magnifiers use this setting.)
3. You can reset the following accessibility mode properties to their defaults by deselecting the appropriate options on the *Accessibility* tab page in the options dialog:
 - o *Include disabled elements in tab chain*

You use this flag to include inactive elements in the tab chain (which makes them accessible using the tab key).

- *Display list symbols as letters*

You use this flag to specify whether the SAP GUI list symbols (such as the symbol for opening or closing a tree node) are displayed as alphanumeric characters or as symbols. You only need to set this flag if you use an assistive technology that is not compatible with the SAP Symbol font.

Deselect these two options only if you do not need the information they provide. More information is available in [SAP Note 883706](#).

3.1.3 F4 Help Settings in SAP GUI for Windows

In SAP GUI for Windows, choose *Help* → *Settings*. On the *F4 Help* tab page, set the F4 help display to *Dialog (modal)*. This setting displays the input help in SAP GUI in a dialog box instead of in a search help UI element.

3.1.4 Font Settings and Color Customizing in SAP GUI for Windows

In SAP GUI for Windows you can tailor the font, its size and color, and the background color to meet your requirements for specific parts of the application. You must first select accessibility mode for SAP GUI for Windows (as described in section 3.1.1). More information is available in the SAP accessibility documentation under Settings in SAP GUI for Windows for Users with Visual Impairments.

To enable the minimum contrast in SAP GUI for Windows, we recommend to use the color scheme *Windows Classic* within Windows operating system.

Color Customizing in Operating System Windows

Among others, the color display in Accessibility Mode of SAP GUI for Windows depends on the color customizing in operating system Windows.

For users, who need a minimum luminosity contrast 4.5:1, we recommend the usage of the color scheme *Windows Classic* in Windows.

For users, who need a high contrast black display with black background color and white foreground color, we recommend the usage of the color scheme *High Contrast Black* in Windows.

3.1.5 SAP NetWeaver Application Server ABAP (Back End)

Accessibility mode in SAP GUI for Windows is located locally on your host, which means that you do not usually need to make any changes to the server configuration of SAP NetWeaver Application Server ABAP when using assistive technologies.

One exception to this, however, is technologies that are based on the SAP GUI scripting interface, with the underlying security concept of this interface being particularly relevant. The main additional requirement is that the profile parameter `sap-gui/user_scripting` must be set to TRUE in SAP systems. The system administrator can do this in transaction RZ11 (Profile Parameter Maintenance) or in the initialization file of the application server. Documentation about this procedure and the SAP GUI scripting security concept is available on SAP Service Marketplace at <http://service.sap.com/sapgui> → SAP GUI Scripting. Technical details and information about any updates are available in [SAP Note 480149](#).

4 Recommendations for Other Web-Based Applications

For Web applications not based on ABAP technology, HTML output is generated directly using SAP NetWeaver Application Server (Release 2004 or higher).

Alongside the operating system and Web browser mentioned in this document, there are also other recommendations for the front-end infrastructure.

4.1 Web Browser for Portal and Web Dynpro Applications

To support the accessible use of HTML-based applications within SAP NetWeaver (such as the portal, Web Dynpro, BSP, and HTMLB-based applications), we recommend that you make the settings described in this section. The settings involved also depend on the requirements of the individual user.

4.1.1 Special Software Requirements

We recommend Microsoft Internet Explorer 6 as a Web browser. You can keep the defaults in this browser since no further settings are required in Internet Explorer itself.

4.1.2 Activating Accessibility Mode

Either the user or a system administrator can enable support for accessibility mode. All applications and the portal run in accessibility mode once it has been enabled. This setting can also be enabled for applications that do not run in the portal but in their own browser instance. This is done using a URL parameter (as shown in method 3 below).

- Method 1: The portal user activates accessibility mode.

The user can activate or deactivate accessibility mode for the portal and its applications as follows:

In the Portal, choose *Personalize* → *User Profile* and select or deselect the *Activate Accessibility Features (Screen Reader Required)* checkbox.

"*Screen Reader Required*" just indicates that this setting activates support for screen readers and does not require you to activate any screen reader you have installed. This flag is not just relevant for users who use screen readers, but also for users who want to work in accessibility mode without screen readers.

- Method 2: The portal administrator activates accessibility mode.

The portal administrator can also enable accessibility mode for individual users. This can be done when the administrator creates a new user in *User Management Administration Console* by choosing *User Administration* → *Users* → *Create User*. It is also possible when distributing roles in *SAP User Management Engine (UME)*. More information is available in the SAP portal documentation.

- Method 3: Enabling accessibility mode without the portal

If you want to run, for example, the Web Dynpro application in a Web browser outside of the portal, a dedicated URL parameter exists for enabling accessibility mode. Add the following parameter to the end of the application URL:

```
?sap-accessibility=x
```

Example:

```
http://appserver:50000/webdynpro/dispatcher/myappdir/myapp?sap-accessibility=x
```

4.1.3 Font Settings and Color Customizing for the Portal

Support for different color schemes, fonts, and font sizes is provided by assigning a different visual theme within the portal. A chosen theme also involves the definition of colors, fonts, and font sizes. You can use Theme Editor to modify a theme to meet different user requirements.

You can also set the font size for a theme to one of five levels in the web browser. To do this, choose *View* → *Font Size* in Microsoft Internet Explorer and select one of the options. If you want the font to be larger, we recommend that you use a screen magnifier. Another option is to copy the theme shipped by SAP and modify this copy.

A range of themes are available, including high contrast themes with black backgrounds and white fonts. There are two ways of assigning themes to a user:

- Method 1: The portal user selects the theme.

The user can switch the theme for the portal and any applications running in it. To do this, choose *Personalize* → *Portal Themes* and select a new theme. If a preferred theme is not available, the portal administrator can create an individual theme (as shown in method 2).

- Method 2: The portal administrator assigns the theme or creates a new theme.

The portal administrator can assign a different theme to a user when asked. The new theme is assigned to the user when the portal desktop is assigned and is subject to the display rules from the portal role collection.

If a preferred theme is not available, the portal administrator can create an individual theme in Theme Editor. To do this, choose *System Administration* → *Portal Display* → *Theme Editor* (in the administrator role). To enable the user to select a new theme, the portal administrator must assign this theme to the portal desktop used by the user.

More information is available in the SAP portal documentation.

5 Recommended Settings in Adobe Reader 7

You can configure Adobe Reader to appear in the Web browser (an integrated display) or in its own window (standalone mode). When you work in accessibility mode, you must make one of the following recommended settings in Adobe Reader to preview SAP Interactive Forms by Adobe, depending on the technology you use.

We recommend standalone mode when you use the following technologies:

- SAP GUI for Windows
- Web Dynpro applications, if the forms are not based on ZCI technology. (ZCI stands for Zero Client Installation.)

We recommend the integrated display when you use the following technologies:

- Web Dynpro applications, if the forms are based on ZCI technology. This applies to Release SAP NetWeaver 7.0 Support Package 08 and above.

You can make this setting in Adobe Reader as follows:

1. In the Adobe Reader menu, choose *Edit* → *Preferences*.
2. In the Preferences dialog box, choose the *Internet* category.
3. If you want to display Adobe Reader in your Web browser (integrated display), select the *Display PDF in Browser* flag. Similarly, if you want to run Adobe Reader in standalone mode, deselect this flag.

6 Recommended Settings in JAWS for Windows 9.0

Details about the supported versions of JAWS® for Windows by Freedom Scientific® are available in [SAP Note 988421](#). As an example, the following sections describe the recommended settings for Version 9.0 of JAWS for Windows. Details about the recommended settings for JAWS for Windows when used with SAP products are also available in [SAP Note 995251](#).

6.1 Using JAWS 9.0 with SAP GUI for Windows

To use the JAWS for Windows screen reader with SAP GUI for Windows, you must install the *SAP GUI Screenreader Extension* (provided by SAP) on your client PC. More information is available in [SAP Note 740785](#) and [SAP Note 1023085](#). SAP provides this extension for free and it is included in SAP's standard shipment. The extension is located on Presentation CD 1 in the directory *Screen_Reader_Extension* and is available in Compilation 2 of Release 7.10 and above. You can also download this extension from SAP Service Marketplace at <http://service.sap.com/patches>. On this page, choose *Entry by Application Group* → *SAP Front-end Components* → *SAP Screenreader Extensions* → *SAP Screenreader Extensions* → *Win32*. To install the extension, start the executable file on your client PC. Note that *SAP GUI Screenreader Extension* does not work in a terminal server environment.

To activate *SAP GUI Screenreader Extension* for the screen reader, enable SAP GUI scripting on the application server (see section 3.1.5).

When you use JAWS for Windows with SAP GUI for Windows, we recommend that you set the options listed in the following table in *JAWS Configuration Manager*.

Note: When you use the key combination [insert]+[6], to start *JAWS Configuration Manager* from an application, JAWS loads the configuration manager with this application's profile. For this reason, use the key combination [insert]+[6] to start *JAWS Configuration Manager* from the open SAP GUI for Windows window. The profile file for **SAP GUI for Windows** is *SAPFRONT.JCF*.

Options	Settings
Verbosity Options	Tool tips are enabled. Set this option in the beginner, intermediate, and advanced preferences.
Cursor Options	Notify when cursor changes shape If the SAP system is running in the background, the cursor changes its shape to signalize a waiting state. If this setting is activated, you are notified when the SAP system ends its waiting state.
Braille Options	Structured mode is activated. SAP GUI Screenreader Extension supports only structured mode for JAWS.

6.2 Using JAWS 9.0 with the Portal and with Web Dynpro Applications

We recommend the following settings in *JAWS Configuration Manager* when using JAWS for Windows with HTML-based applications in SAP NetWeaver (such as the portal, Web Dynpro, BSP, and HTMLB-based applications). These options are listed in the following table.

Note: When you use the key combination [insert]+[6], to start *JAWS Configuration Manager* from an application, JAWS loads the configuration manager with this application's profile. For this reason, use the key combination [insert]+[6] to start *JAWS Configuration Manager* from the open Web browser window.

Options	Setting
Advanced Options	Virtual PC Cursor is disabled. This setting is mandatory when using JAWS in HTML-based applications in SAP NetWeaver (such as the portal, Web Dynpro, BSP, and HTMLB-based applications).

Options	Setting
HTML Options	<p>Custom search string containing the following is activated for graphics: title alt src</p> <p>Custom search string containing the following is activated for links: title alt src href</p>
Verbosity Options	<p>Tool tips enabled in the beginner, intermediate, and advanced preferences.</p> <p>Set this option in the beginner, intermediate, and advanced preferences.</p>
Cursor Options	<p>Notify when cursor changes shape</p> <p>If the SAP system is running in the background, the cursor changes its shape to signalize a waiting state. If this setting is activated, you are notified when the SAP system enters or ends its waiting state.</p>

The virtual PC Cursor must be disabled when using JAWS in HTML-based applications in SAP NetWeaver (such as the portal, Web Dynpro, BSP, and HTMLB-based applications). The open concept of the portal can require you to navigate to the virtual PC Cursor for other applications or external content. JAWS provides a key combination that quickly enables or disables the virtual PC Cursor: You can enable or disable the virtual PC Cursor for the duration of a JAWS session by pressing the [y] key twice while keeping the [insert] key pressed. This means you do not have to access the advanced options of *JAWS Configuration Manager*. If you are not sure which mode you need, first try your application with the virtual PC Cursor disabled. This is the default mode for navigation.

6.3 Using JAWS 9.0 with SAP Interactive Forms by Adobe

The virtual PC Cursor is of central importance when you use JAWS and PDF forms. You can use *Form Mode* in JAWS to fill out form fields. More information and helpful key combinations are available in the JAWS help documentation. JAWS generally enables the virtual PC Cursor by default when you open a PDF document. We recommend that you start JAWS first and then open a form. The *virtual PC Cursor* in JAWS is enabled as soon as the form is opened.

6.4 Using JAWS 9.0 with SAP CRM

We recommend the following HTML Options settings in *JAWS Configuration Manager* when using JAWS for Windows with SAP CRM 2006s (or higher)

HTML Options	Setting
Graphics > Graphics Options	Use Longest
Link > Text Link Options	Use Longest
Misc > Form Field Prompt Options	Use Both Label And Title If Different
Misc >Button Text Options	Use Longest

7 Recommended Settings in Virgo 4.71

7.1 Using Virgo 4.71 with SAP GUI for Windows

To use the Virgo screen reader by BAUM Retec AG with SAP GUI for Windows, you require Virgo Version 4.71. If you have any questions about Virgo, contact info@baum.de.

Install the latest SAP GUI for Windows patch on your client PC to make sure that you are working with the latest Virgo 4.71 scripts.

SAP GUI scripting must also be enabled on the application server (see section 3.1.5).

If SAP GUI scripting is enabled on the application server, you activate the new scripting in Virgo 4.71 by using the key combination [caps lock] + [shift] + [F5]. Once you have confirmed the prompt, Virgo uses a version that is based on SAP GUI scripting. This is indicated by the speech synthesizer or refreshable Braille display reading out the text "*EF [Erfol] User*" from the SAP Logon (via the screen reader). The text indicates that the object model can be accessed.

If SAP GUI scripting is not activated on the application server, Virgo uses a version that is not based on SAP GUI scripting. We do not recommend this, since Virgo will not then receive the extra information provided by SAP GUI scripting.