Web-to-Host 6.9.4

Web-to-Host 6.9.4 Administrator Guide

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Contents

Product Overview

OnWeb Web-to-Host is a server-based Web application that publishes your existing legacy applications in intranet, extranet, and Internet environments. It includes host display, printer, and file transfer features that enable end users to work productively with host-based information in a familiar Windows or Web browser environment. Web-to-Host provides access to a broad range of host types, including IBM mainframe, IBM AS/400, DIGITAL VAX, UNIX, and HP systems.

System administrators can use the Session Configuration Manager tool to easily configure client sessions that can be published to end users.

For more information on Micro Focus Solutions, visit the Micro Focus web site (*http://www.microfocus.com*).

Features

Designed for use in an intranet environment, the Pro component offers the richest feature set and consists of ActiveX controls that give users access to mission-critical host applications and data. Pro provides these client session types:

- Mainframe Display, Mainframe Printer
- AS/400 Display, AS/400 Printer, AS/400 File Transfer
- UNIX Display
- HP Display

Pro client sessions include these advanced features and options:

- Mainframe file transfer (can include SimXfer tables)
- AS/400 File Transfer
- AS/400 batch file transfers
- Macros
- Hotspots
- User profile enhancements
- Restricted user support
- An MSI packaging utility for automatically installing Pro components
- A distribution utility
- A download and install service
- VBA-type scripting
- Customizable menus and toolbars
- End-user keyboard mapping
- Administrator keyboard mapping
- Tracing

Hotspots, a word or set of characters on the host screen, activate a function when clicked. Using the **Hotspots Configuration** dialog box, you can enable/disable, show/hide, create, and modify both default and user-created hotspots. Default hotspots are host commands displayed on-screen. User created hotspots are custom macros you assign to selected on-screen text. You can also use hotspots and macros to log on to and run host applications automatically. Any protected text on your host screen can be turned into a hotspot. In mainframe displays, you can also configure hotspots for non-protected text.

Pro AS/400 File Transfer moves files and data between the host and the PC using either the menu bar or toolbar options of the AS/400 display. A customized toolbar button activates a pre-configured FTX file and starts the AS/400 FTX application. A new AS/400 emulation type has been added to the Session Configuration Manager. It opens the AS/400 FTX application and loads an existing FTX configuration on the client. Your users can customize the file transfer session, configuring options such as the data format for sending and receiving, file locations, application behavior both during and upon completion of the transfer, security settings, and host connection.

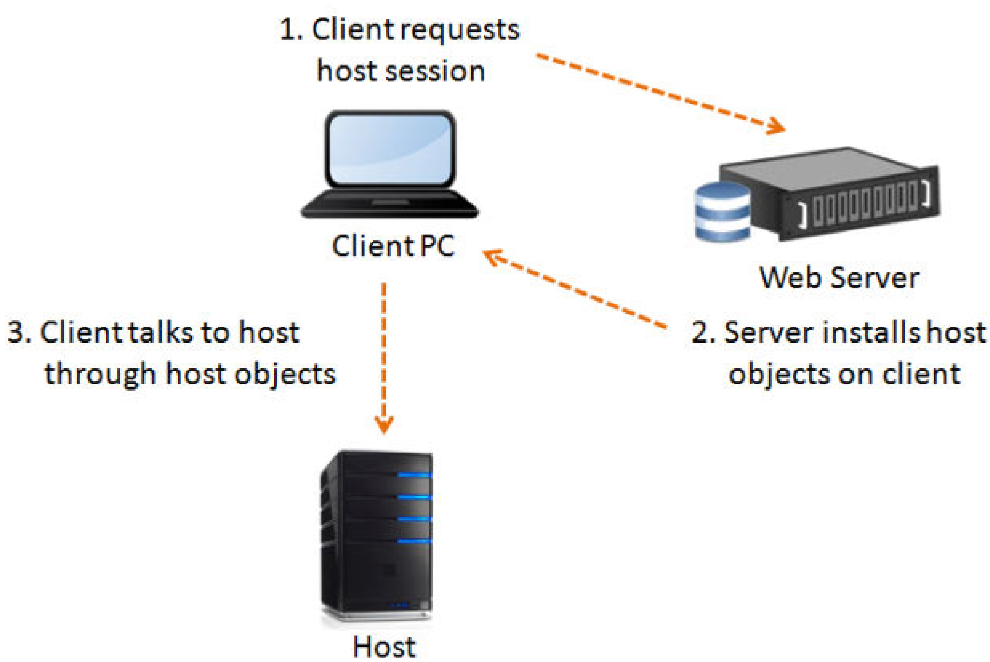
With enhanced user profiles, user configuration files (`.cph`) are no longer deleted automatically when changes are made in the HTML files for configurable options. For more information, see *User Profile Configuration*.

Pro ActiveX components are downloaded to the client once, during the first login. A new download service is first installed on the client workstation. Once the service is installed on the client, all users (including restricted users) can work with the Pro ActiveX controls. The service handles all installs, upgrades, and downloads of Pro ActiveX components.

The Web-to-Host Distribution Packager enables you to bundle multiple Web-to-Host configuration and data files into a single, easily distributed package. Users can run sessions that include a complete work environment with components such as pre-defined scripts, macros, hotspots, custom toolbars, background images, icons, screen/font colors, AS/400 File Transfer and Batch File Transfer profiles. The Web-to-Host Distribution Packager helps you provide standardized functionality and a single look and feel for all users. For more information, see the online Help.

Architecture

The figure below shows how Web-to-Host works once the system administrator has created the host sessions and published them to users. The following sections describe how this architecture is applied to each of the component types.



The ActiveX objects are downloaded to the client the first time a user opens a session. When you install updates on the server, they are downloaded automatically to the client the next time a user opens a session. This architecture enables the client to communicate directly with the host, as shown in the figure above.

Security

Web-to-Host maintains persistent client-to-host sessions. It is important that users be aware of session persistence in relation to information security, especially when sessions are configured to run inside a browser window. In this mode, only one session is visible on the screen at a time, though other sessions could be running in the background.

Users who have access to sensitive information on host systems should consider running each session in a separate window to keep all concurrent sessions visible on the screen. Users can also ensure that all connections are severed by closing their browser when they leave their work area. For details on configuring sessions to run in a separate window, see *Start options*.

Web-to-Host supports:

- SSL (Secure Socket Layer) for IBM mainframe, AS/400, and UNIX hosts.
- SSH (Secure Shell) for Pro UNIX display.
- Kerberos authentication for AS/400.

With this security support, users can securely access applications and transfer data between their desktops and mainframe, AS/400, and UNIX systems, encrypting the session data stream to a host capable of supporting these protocols.

Finding information

Web-to-Host product documentation includes:

- This Administrator Guide, which explains how to install, uninstall, configure, and deploy the product.
- The Readme file, which contains information about new features, late-breaking changes, and known issues.

  The **Help** page of the Session Configuration Manager contains links to the Readme file and this Administrator Guide.
- Context-sensitive Help for the Session Configuration Manager, a tool for configuring Pro client sessions.
  - User guide for Pro client. This Help for end users explains how to configure and run features and options in the client session.

Server Installation

Installing Web-to-Host Server on a Windows platform

Note: Web-to-Host Server can be deployed only on a 64-bit Windows platform.

1. Either activate Internet Information Server (IIS), or install any other Web Server.
2. Install Web-to-Host Server under the root directory of an installed Web server.
3. Run the Session Configuration Manager to create and configure (or migrate) session profiles.
4. Publish session profiles to clients.

Web-to-Host files are installed into a `w2hlegacy` directory (created during installation) that must reside under the root, or in the subfolder of the root directory of the installed Web server.

Installing Web-to-Host Server on a non-Windows platform

1. Install Web-to-Host Server to any place on any machine. Web-to-Host files are installed into a `w2hlegacy` directory (created during installation).
2. Install or run a Web server on the target non-Windows platform.
3. Copy the `w2hlegacy` directory to any location under the root directory of the Web server running on the target non-Windows platform.
4. Run the **Session Configuration Manager** to create and configure (or migrate) session profiles.
5. Publish session profiles to clients.

Installing

Web-to-Host Server setup exists in four variants show below in increasing features set order:

`Web-to-HostSetup.msi` - standard setup.

`Web-to-HostSetup-RDE.msi` - RDE-enabled setup.

`Web-to-HostSetup-Citrix.msi` - Citrix-enabled setup.

`Web-to-HostSetup-Eval.msi` - fully featured 30 days evaluation setup.

Installing on a Web server running Windows

Using Setup

1. Run one of the appropriate MSIs listed above.

   This installs a default instance of Web-to-Host Server (see the next section about installing multiple instances).
2. Click **Next** in the **Welcome** dialog.
3. Read the End-User License Agreement, select the option to accept it, then click **Next**.
4. Specify the Web Server Root directory (this can be the root publishing directory of your Web server or any subdirectory under the Web root), then click **OK**.
5. To install to a subdirectory, select **Enable subdirectory support**, then type the path in the box provided.
6. The setup program creates a new `w2hlegacy` directory in either the specified Web Server Root directory or in its subfolder, which is specified by the path under **Enable subdirectory support**.

7. When setup finishes, click **Finish** button to exit.

Using the command line

Web-to-Host Server Setup allows you to install up to five instances side-by-side using command line options in addition to the default instance. In addition, for any instance of Web-to-Host Server, both the Web Root directory and Web Root subdirectory can be specified in the command line.

Installing a default instance

To install a default instance, run the following command. Square brackets [ ] enclose optional attributes and angle brackets <> enclose parameters values.

```
msiexec /i <full_path_to_msi> [INSTALLDIR=<Web_Root_directory_path>]
[ENABLE_WEB_SUBDIR=1 WEB_SUBDIR=<Web_Root_directory_path>]
```

Values containing spaces must be enclosed in quotation marks ("). For example:

```
INSTALLDIR="C:\Program Files\wwwroot"
```

Example:

```
msiexec /i C:\temp\Web-to-HostSetup.msi INSTALLDIR=C:\inetpub\wwwroot
ENABLE_WEB_SUBDIR=1 WEB_SUBDIR=w2hServer
```

Installing a non-default instance

Web-to-Host Server Setup multi-instance functionality allows to install up to five instances of the same Web-to-Host Server version on the same machine.

The difference between the instances is up to you. For exmple, you might want different fixes to be applied to different instances, or you might want to install particular instances outside the Web Root directory as templates to be used later on a variety of other operating systems on other machines.

To install a non-default instance, two mandatory command line options are necessary in addition the optional ones in the command line above (the pipe sign | denotes mutually exclusive values):

```
msiexec /i <full_path_to_msi> MSINEWINSTANCE=1 TRANSFORMS=":_<1|2|3|4|5>"
[INSTALLDIR=<Web_Root_directory_path>] [ENABLE_WEB_SUBDIR=1
WEB_SUBDIR=<Web_Root_directory_path>]
```

Here, `TRANSFORMS` must have one of the values `":_1"`, `":_2"` and so on, which can be arbitrarily picked from the five values allowed.

Values containing spaces must be enclosed in quotation marks ("). For example:

```
WEB_SUBDIR="w2h Server"
```

Example:

```
msiexec /i C:\temp\Web-to-HostSetup.msi MSINEWINSTANCE=1 TRANSFORMS=":_5"
INSTALLDIR=C:\inetpub\wwwroot ENABLE_WEB_SUBDIR=1 WEB_SUBDIR="w2h Server"
```

Any attempt to install the same instance twice would cause an error message.

Installing by copying

1. According to the instructions in the sections above, install a Web-to-Host Server instance - the default, or otherwise - into the instance parent folder on a Windows machine, regardless of the Web server on that machine.
2. Install and activate a Web server on the target machine, which can run any operating system - Windows or otherwise.
3. On the target machine, prepare the Web-to-Host Server location.

If you decide to set up Web-to-Host Server in the `Web Root` subdirectory, create the subdirectory.

4. Copy the `w2hlegacy` folder from the instance parent folder on the Windows machine to Web-to-Host Server location on the target machine.

Session Configuration Manager

After installing Web-to-Host on your Web server, the next task is to use the Session Configuration Manager to create, edit, and migrate client profiles.

1. To run the Session Configuration Manager for Web-to-Host Server instance, which is installed by running a `.msi` file, from the Windows **Start** menu, select **All Programs** > **Micro Focus** > **Micro Focus OnWeb 6.9.4**.
2. To run the Session Configuration Manager for the Web-to-Host Server instance installed by copying, navigate to the following address with your browser: *http://<Web-to-Host-Server-location>/w2hlegacy/config/hostwizard*.

   For example:

   http://localhost/w2h6.9.4/w2hlegacy/config/hostwizard/

Uninstalling

When removing Web-to-Host Server, you should also uninstall the Web-to-Host Pro Client from any client machines it might have been installed on. See *Client uninstall*.

Uninstalling Web-to-Host Server instance installed by .msi

1. Select **Control Panel** > **Programs and Features**.
2. Select **Micro Focus OnWeb Web-to-Host Server6.9.4**, then click **Uninstall**.

Uninstalling Web-to-Host Server instance installed by copying

Remove the `w2hlegacy` folder from the Web-to-Host Server location on the target machine

Creating and Migrating Client Profiles

After installing Web-to-Host on your Web server, the next task is to create or migrate client profiles. You may also want to edit client profiles to configure new options, such as security, distribution packages, Pro toolbars and menus, and Pro watermarks.

This chapter explains how to use the Session Configuration Manager to create, edit, and migrate client profiles and how to deploy client profiles to your users.

Migrating client profiles from a previous version

After updating Web-to-Host product by installing a new version or upgrade, you must migrate all session profiles created in the previous version by running the Session Configuration Manager in server mode. If you do not update the session profiles, Pro client sessions do not open. An error message appears, prompting you to contact your system administrator.

For details on running the Session Configuration Manager in server mode, see *Creating client profiles*.

Migrating profiles after upgrading

1. Run the Session Configuration Manager on the server by typing the following in the address bar of your browser:

   `http://<webserver_name>/<subdirectory>/w2hlegacy/config/hostwizard`
2. Click the **Convert** tab.
3. Load sessions by clicking **Load Session**.
4. Click **Convert**

This ensures that your Web-to-Host installation incorporates the most recent version numbers in the session HTML files. Once new software is downloaded to the client workstations, the version numbers on client workstations and session files must match. If new parameters exist in the current product version that were not defined in the migrated profile, Web-to-Host uses the default values.

When the user opens a migrated profile, the browser displays a standard security dialog box asking if the user wants to install and run software from Micro Focus. Administrators should tell their users to click **Yes**.

Running the Conversion Utility

1. Click the **Convert** tab.
2. Click **Load Sessions** to load Web-to-Host HTML sessions from previous versions.
3. Click **Convert**.

   A result is shown for each file. If the conversion is successful, the converted file is added to a `.zip` file which is downloaded to your computer.
4. At the end of the conversion process, a `.zip` file containing the converted sessions will be downloaded to your computer.

Creating client profiles

This section describes how to use the Session Configuration Manager to create a new Web-to-Host client session for your users. The Session Configuration Manager utility saves your client configuration settings in an HTML file that invokes a named Web-to-Host client session.

To run the Session Configuration Manager for Web-to-Host Server instance installed by running a `.msi`, from the Windows **Start** menu, select **All Programs** > **Micro Focus** > **Micro Focus OnWeb 6.9.4**.

To run the Session Configuration Manager for a Web-to-Host Server instance installed by copying, navigate to the following address with your browser: *http://<Web-to-Host-Server-location>/w2hlegacy/config/hostwizard*.

For example:

http://localhost/w2h6.9.4/w2hlegacy/config/hostwizard/

Creating or editing a client profile

To use the Session Configuration Manager to create or edit client profiles:

1. Run the Session Configuration Manager on the server or on your local workstation.
2. Optional: For general instructions on using the Session Configuration Manager, click the **Help** icon at the top right of the screen. This menu also contains links to the *Readme* file and this *Administrator Guide*.
3. Click the **Create** tab, then do one of the following as needed:
   - Create a new session. Select the session type, then click **Create**.
   - Edit an existing session. Under **Open an Existing Session**, click **Open**, then specify the full path of the HTML session configuration file to edit. The **Browse** utility defaults to the location of the last saved configuration file.

   The tabs for the selected host type appear.
4. Optional: Click each tab, click **?** at each section, then print the help pages for each tab.
5. Configure the settings on each page as needed:
   - For details on each field, see the online help. For details on configuring client start options, concurrent sessions, and multiple language support, see *Configuring client profiles*.
   - The Session Configuration Manager displays an asterisk next to required settings, and provides many default settings. You need to enter only a few unique settings to make your connections work correctly. However, you should check each page to be sure you select the appropriate options for your needs.
6. To save the profile, click **Create** the bottom of the Session Configuration Manager.

   Web-to-Host generates the HTML file and instructs the browser to download the file to your computer.

   The browser prompts you for the download location.
7. Specify an appropriate folder in which to save the profile.

   You must save the profile in a Web-published folder. Otherwise, client sessions do not receive automatic updates from the Web server.

Configuring client profiles

This section describes some of the common options you can configure when creating or editing client profiles in the Session Configuration Manager. For a list of options related to each technology, see the Session Configuration Manager Help .

Start options

The following options are located on the **Session Options** page when creating or editing client profiles in the Session Configuration Manager:

Run in a Separate Window

This option applies to Pro display profiles.

The **Run in a Separate Window** option opens the client session in a separate browser window.

You can also use this option to configure a Pro display profile to launch multiple standalone sessions using the same configured connection. For details, see *Multiple sessions*.

The default is **Clear**. The host session runs inside the browser.

Server URL

With this option, you have the ability to run sessions from a web server other than the default Web-to-Host server. The URL you enter indicates the location of the alternate Web-to-Host server.

Enable Local Start

The **Enable Local Start** option allows users to run host sessions when the web server is unavailable. With this option, whenever the user opens a client profile stored on the web server, Web-to-Host copies that profile to the client workstation. The profile resides on the web server as an HTML file that is named after the client session:

```
%LOCALAPPDATA%\Micro Focus\Rumba\LocalStart
```

It is best to run client profiles from the server to ensure that users have the most up-to-date configuration and software.

When running Local Start profiles, help files are only available if, during configuration, the administrator selected **Install User Guide locally**. Auto macro files and keyboard map files configured by the administrator are cached on the client workstation when the session is downloaded from the server, so these local copies are accessible to the client session when the originating server is down. By default, Local Start is not selected.

Multiple sessions

Users can run concurrent Web-to-Host sessions and switch between session windows to perform tasks. How users initiate multiple sessions and navigate between them depends on how you configure the session profiles. There are three scenarios:

- Multiple sessions running in separate browser windows

  By default, users must open multiple instances of the browser to start multiple client sessions. Users can run concurrent host sessions and switch between sessions by clicking each browser window in turn.
- Multiple sessions running outside the browser

  Administrators can configure Pro display profiles to run in a separate window outside the browser (see *Start options*). The user must open a new instance of the browser to launch another host connection but, once the new session is connected to the host, the browser can be closed without losing the connection.
- Multiple Pro standalone sessions

  Administrators can configure a Pro display profile to launch multiple standalone sessions using the same configured connection. For example, a user can run two or more MyRumbaHost sessions, each in its own window.

  With this configuration, a new session opens in a separate window outside the browser whenever the user accesses a session URL through the browser window. After launching one or more session windows, users can close the browser without losing the host connection.

Configuring multiple Pro standalone sessions:

1. Create or edit or the Pro session profile in the Session Configuration Manager, then click the **Session Options** tab.

2. Check **Run in a Separate Window** and **Allow Multiple Standalone Sessions**.

When you enable these two options, users can launch a new session window using any method that requests the session URL. For example, if your Web site includes a Pro display session called `Display.html`, users can open multiple sessions by:

- **Clicking a link on a Web page**

  If the Web page includes a link to `http://<yoursite>/Display.html`, users can click this link to launch a new session window.
- **Refreshing the browser with the session URL listed in the address bar**

  When the browser's address bar contains the session URL, users can click the **Refresh** (or **Reload**) button on the browser toolbar to launch a new session.
- **Typing the address in the address bar**

  If users have browsed to another location after opening the session, they can enter the session URL in the address bar to launch another session window.
- **Recalling the address from history**

  If users cannot remember the URL, they can open the browser's history list and then select the session URL to launch a new session window.

Users can switch between sessions by clicking each of the windows in turn, or by using the taskbar. If the browser closes, the session windows remain open.

International client sessions

When using the Session Configuration Manager to create or edit client profiles, configure the following multi-lingual options to meet the language needs of your users:

You can set these options to use different languages if necessary. For example, you can set the user interface to English and set the keyboard map and host character set to German.

Host Character Set

This option sets the host language (also known as the codepage). When configuring Pro and Java AS/400 and mainframe display or printer profiles, the option appears on the **Connection** page.

To specify the **Host Character Set**, select the language character set (or codepage) for the client session. If the host uses a non-English (United States) language, select the language used by the host.

The host character set includes commonly used marks, accents, letters, and symbols of a specific language. For example, if the host language is French, the host character set must also be French to ensure that French special characters are transmitted to the host correctly and that the characters received from the host display in the client session correctly.

The default setting is English (United States) - 37.

Keyboard mapping options

These options set the country or custom keyboard map for Pro display sessions.

Web-to-Host supplies numerous country keyboard maps to accommodate the special characters and symbols used in various languages. You can deploy country keyboard maps in several ways. For example, you can:

- Standardize all the sessions on one country keyboard.
- Base the keyboard map on the client workstation's regional settings.
- Enable the user to specify their own keyboard mappings.

When using the Session Configuration Manager to configure Pro AS/400, mainframe, UNIX, and HP display profiles, the following options appear on the **Keyboard Map** page:

Keyboard Map

You can select a standard country keyboard map or specify a custom keyboard map (`.map` file) for the client session. For information on how to do this, see the Help. The default keyboard map is **U.S.A.**

Custom Keyboard Map

The default is blank.

Note: To enable users to specify their own Pro keyboard map files, which override the administrator-specified keyboard map, see the Session Configuration Manager Help on the **Client Options** page when configuring Pro display profiles.

Client Locale

This option sets the language of the Web-to-Host client user interface for display and printer sessions.

When using the Session Configuration Manager to create or edit any profile, this option appears on the **Client Options** page.

For Pro sessions, the Client Locale specifies the language for the Web-to-Host client user interface, which consists of the session window (including tool tips and the status bar), dialog and message boxes, error messages, and Help.

The default value is English.

Multiple language scenarios

When running client sessions, users may need to view applications on an international host, require a different country keyboard map, or require the Web-to-Host client user interface in another language. This can be done by configuring the **Host Character Set**, **Keyboard Mapping**, and **Client Locale** options.

Different companies have different international language environments and require different display and/or printer configurations. As such, it is impossible to provide a single procedure. This section lists possible multi-language scenarios to help you determine how to best configure the options for your international language environment.

In the following table, the first column lists the multi-lingual option, the second lists language scenarios, and the third lists the suggested Web-to-Host settings.

Note: There are multiple keyboard listings because Web-to-Host provides several keyboard mapping options. For information on individual settings, see the Help associated with the page in the Session Configuration Manager.

Option	If	Then
Host language	The host uses a language (codepage) other than English (United States).	In the **Host Character Set** option, select the language of the host.
Keyboard	All clients are localized on one language.	In the **Keyboard Map** option, select the country keyboard map or specify the full path of the **Custom Keyboard Map** file.
	Clients are localized on different languages as indicated by different regional settings (**Control** page) on the client workstations.	Select **Use Client Regional Settings** from the **Keyboard Map** option **Keyboard Locale** (default). Each client uses the keyboard map based on its regional settings.
	Users need or want control over their own keyboard maps.	Enable end-user keyboard mapping. User-created keyboard maps override any country

Option	If	Then
		keyboard map specified in the **Keyboard Map** option.
Client user interface	The client user interface uses a language other than English and you want Web-to-Host to use the same language.	Select the appropriate language from the **Client Locale** option. **Note:** Web-to-Host supports English, French, and German.

The following are some other multi-language environments and suggested configurations:

- Clients connect to a host using the German language (codepage) and their regional settings are set to German. In this scenario, you would set the client host character set, country keyboard map, and client user interface language to German.
- Clients connect to a host using the English (United States) language (codepage), but their regional settings are set to French (Canadian). In this scenario, you would set the client host character set to English (United States), but the country keyboard map and client user interface language to French (Canadian).
- Clients connect to a host using the English (United States) language (codepage), but some client regional settings are set to French (Canadian) and others to German. In this scenario, you would want to set the client host character set to English (United States), deploy a country keyboard map based on the client regional settings, and set the language of the client user interface to either French or German.
- Clients connect to a host using the Spanish language (codepage) and their localization settings are set to Spanish. In this scenario, you would set the Web-to-Host host character set and the country keyboard map to Spanish. However, because Web-to-Host does not provide a Spanish client user interface, the client user interface language must be set to English, French, or German.

Defining password level caching policy

Password level caching is involved with the AS/400 display or AS/400 file transfer.

On AS/400 hosts, password protection capabilities can be set to different levels, such as short or long passwords. Client applications connecting to a AS/400 host must first query the password level set on the host. This slows down overall system performance, increasing both connection time and network traffic.

To save time, Web-to-Host caches password-level data, by default. The first time the password level is queried, the data is saved on the client PC. Afterwards, to avoid performance degradation, the cached password level value is used for each connection.

Cached data is host specific. Once the password level has been cached for a particular host, it is used by all sessions connecting to that host.

The following changes should be performed on the Java Script parts of the HTML session configuration files:

AS/400 Printer Pro Client

Comment out the old `HostPwdLevel` property setting.

AS/400 Display Pro Client

- Comment out the old `HostPwdLevel` property setting.
- Add the `this.ResolvePwdLevelPolicy` property setting to the `stAS400DisplayProps()` function:

Property setting	Description
`this.ResolvePwdLevelPolicy = 0`	Query and cache the password level value once and use it from now on. Default value.
`this.ResolvePwdLevelPolicy = 1`	Always query and cache the password level value on each connection.
`this.ResolvePwdLevelPolicy = 2`	Never query the host for the password level value and use the lowest password level value on each connection.

Example:

```
function stAS400DisplayProps()
{
        this.SetMinFontSize = false;
        this.FontPointSize = 0;
        this.TypeAhead = true;
        this.AutoReset = false;
        this.StartupModelType = 2;
        // HostPwdLevel is now deprecated. It should be cleared from old 
sessions.
        //this.HostPwdLevel = false;
        this.SuppressDialogs = false;
        this.ResolvePwdLevelPolicy = 2;     // (0=Once, 1=Always, 2=Never)
}
```

Publishing client profiles to users

You can use any usual Web publishing method to publish session profiles created by running the Session Configuration Manager in server mode to users. For example, you can:

- Provide the URLs of the session profiles for users to enter in the address bar of their browsers.
- Create an HTML page containing links to the sessions and organize these links by host type or other useful groupings.

Web-to-Host Client Installation

This chapter describes procedures that users must follow when installing, updating, or removing Web-to-Host files on the client workstation. If Rumba+ is also installed on the client workstation, users should follow the procedures described in *Coexistence: Pro and Rumba+* instead, to ensure successful coexistence with Web-to-Host.

System requirements

This section describes the minimum system requirements and configurations required for client workstations to run Web-to-Host components.

Client operating system

Web-to-Host supports these client operating systems:

- 64-bit Windows 10 and 11

Client browser

Web-to-Host supports:

- Google Chrome
- Internet Explorer 11
- Microsoft Edge
- Mozilla Firefox

Preparing to install the software

The following software needs to be installed on both client and server machines.

Server

- Web-to-Host Server

Client

Install the software in the following order:

1. .NET Framework 4.8 (if not already installed): Requires administrator rights.
2. `NMServiceManager.msi` taken from the server machine in `\w2hlegacy\pro`, if Google Chrome, Microsoft Edge, or Mozilla Firefox are to be used. With Internet Explorer 11, this service is installed when the first session is launched. Requires administrator rights.

Client install and upgrade

This section describes how users install and update Web-to-Host when the client does not also have Rumba+ installed. Users must follow these procedures the first time they open a Web-to-Host session, and repeat these procedures each time Web-to-Host is updated.

Installing Pro

Web-to-Host Pro components can be installed automatically using either the MSI Packager or the Service Manager.

The MSI Packager provides complete local start capabilities. You create custom installations that can be deployed on restricted-user systems. You can add all of the Pro emulation types, SimXfer tables for AS/400 file transfer, RSS Client security, a VBA-type script engine, localized client Help, and distribution packages. For more information on MSI Packager, see the online *MSI Packager User Guide* supplied with the product.

Service Manager is installed on client workstations by a user with administrator rights. Once the Service Manager has been installed, it downloads and installs all Pro components regardless of user rights. The rest of this section describes installation using this component.

Note: Web-to-Host Pro 6.9.4 is compatible with Rumba+ version 10.2 only. All other Web-to-Host components work with all versions of Rumba+. For details on co-existence restrictions for the Pro component and Rumba+ , see *Coexistence: Pro and Rumba+* on page 20.

Install procedure with Internet Explorer 11

1. From the browser, run the session HTML created by the Session Configuration Manager. As Web-to-Host downloads and installs, a progress dialog is displayed.
2. Depending on your browser security settings, the **Security Warning** dialog box may appear asking if you want to install the Service Manager. Click **Yes** to run the install. Once the Service Manager is installed, all necessary Pro ActiveX controls are installed and the session opens.

Note: There may be instances where a message appears in the browser window telling you to restart the computer. If it appears, click **OK**. After restarting, open Internet Explorer, click the extension you want to connect to, then proceed with your host session.

Install procedure with Google Chrome, Microsoft Edge, or Mozilla Firefox

1. On the client machine, run `nmservicemgr.msi`, located on the server machine in `\w2hlegacy\pro`.
2. From the browser, run the HTML session created by the Session Configuration Manager.

   As Web-to-Host downloads and installs, a progress dialog is displayed.

Silent Install procedure

As mentioned above, the standard Web-to-Host Pro installation displays a progress dialog while downloading and installing. However, it is possible to run a silent installation. That is, an install and download with no progress dialog displayed. To do this:

1. Navigate to `\w2hlegacy\config\productcfg.xml`. This file contains component descriptions and version numbers.
2. In the `<product_info>` section, change the `silent_install` property to `true`. By default it is set to `false`. After editing, `silent_install` should be:

   ```
   <silent_install value="true"/>.
   ```
3. After making the necessary change to `productcfg.xml`, follow the standard installation procedure.

Uninstalling the Pro client

1. From the Windows Control Panel, go to **Programs and Features**, select **Micro Focus OnWeb Web-to-Host Pro Client 6.9.4**, then click **Uninstall**.

2. Click **OK** in the Web-to-Host Pro Client **Uninstall** message box.

Coexistence: Pro and Rumba+

Rumba+, a traditional desktop host emulation application that runs on Windows clients, and Web-to-Host Pro have shared executable files. Consequently, certain conditions must be met for both products to coexist on the same client workstation.

Web-to-Host Pro 6.9.4 is compatible with Rumba+ 10.2.

Coexistence with Rumba+

On the client workstation, the Rumba+ version must be 10.2. The language and the installation location of Rumba+ and Web-to-Host Pro client are defined by the product, which is installed first.

If an incompatible version of either Rumba+ or Web-to-Host is installed, an error message appears.

Setting a custom install path

When Web-to-Host installation comes first, and its installation location must be customized, use the MSI Packager tool located in `\utils\MSIPackager`. For more information on MSI Packager, see the Help supplied with the tool.

Upgrading Pro and Rumba+

When you install a new Web-to-Host version or Service Pack, the new Pro software automatically downloads to the client workstation when the user opens a Pro session. The start-up program compares the Pro and Rumba+ desktop versions. If the versions are not compatible, the user receives a message.

User Profile Configuration

There are two types of Pro configuration settings in Web-to-Host:

- Administrator settings - created by Web-to-Host administrators using the Session Configuration Manager and deployed to the users as HTML session files.
- User settings - stored in a local configuration file (`.cph`). If the administrator has enabled editing specific options in the Session Configuration Manager, users create their own customized local configurations settings for options, such as interface color, toolbars, menus, keyboard map or logon script.

In some previous versions of Web-to-Host, when the administrator made changes to Pro HTML session files, all user changes were reset (deleted).

Web-to-Host 6.9.4 provides a mechanism that preserves user changes. The SCM Wizard changes do not automatically delete the user's `.cph` file. Settings which only the user can set are not deleted when you, the administrator, change the HTML session files. This means users do not lose their customized environment with its colors, toolbars, and keyboard mappings.

This chapter lists the conditions that determine which configuration file takes precedence, if both an HTML session files and a user `.cph` file exist. It also explains how the configuration file is handled when included within a distribution package.

Rules defining Pro behavior

This section lists the rules for determining the settings implemented - default settings in HTML session files or user customized `.cph` settings.

No user configuration (.cph) file exists

The first time the user opens a session no user `.cph` file exists. Consequently, the user receives the options defined in the Session Configuration Manager.

Existing user configuration (.cph) file

When a user `.cph` file exists, the following rules apply:

- If a `.cph` file exists, but no particular option is enabled, the user receives the default options set in the Session Configuration Manager. This is because you have not given the user permission to modify options. For example, if a user `.cph` file exists but you did not select **Enable Edit Options**, the user cannot create a customized configuration with features, such as word wrap or type ahead. The user is required to use the values set in the HTML session file.
- If a `.cph` file exists and a particular option is enabled, the user can customize the configuration. For example, if **Enable Edit Options** is selected, the user can create a personalized environment that allows features, such as word wrap, type ahead, and keyboard auto reset. In this case, if you make changes to the HTML session file including those features which the user has customized, the user `.cph` file is not deleted and the customized environment remains in effect.

  To enforce the use of the default HTML settings, you should disable the relevant option, for example, **Enable Edit Options**. Then the HTML settings override user settings for those options only. All other user configurations remain in effect.

User configuration files in a distribution package

As an administrator you can create a user `.cph` file from the session's HTML configuration and include it in a distribution package. This means the user starts with a customized, pre-configured session. It also means that you can provide the user with more configurable client options than you can assign using the Session Configuration Manager.

You can enable a particular client option, modify its settings using the option dialog, insert the session configuration file into a distribution package, then optionally disable the option (depending on whether you want to allow further user editing).

For example, selecting **Enable Edit Options** in the Session Configuration Manager allows you to open the **Edit Options** dialog box within a session and choose clipboard and parsing options that are not part of the Session Configuration Manager. The additional settings are added to the user `.cph` file. Then you can associate the session `.cph` file to a distribution package. If you want to maintain standardization, you can disable edit options.

In all cases, if you modify the distribution package, the new user configuration replaces the user's previous file, deleting all user settings.

User Data File Locations

Web-to-Host stores user data on the client in a location specified by the user's environment. This location is determined by several environmental variables, such as the client operating system and browser, and whether roaming user profiles are enabled.

Roaming profile support for Pro sessions

While normal Windows profiles store user environment settings on the client workstation, roaming user profiles store this information on their server. When a user logs on to the server, the roaming profile is downloaded to the client workstation. When the user logs off the server, the roaming profile (along with any changes) is uploaded back to the server. This scenario enables the user to work on different client workstations while using the same environment settings.

Web-to-Host supports roaming user profiles for Pro sessions. Users with roaming profiles can access their custom settings (such as keyboard maps and macros) when running Pro sessions on various workstations.

Default paths for user data files

This section lists the user data file locations for Pro client workstations with a default Windows installation and using Internet Explorer.

If Rumba+ has been previously installed on the client workstation, Web-to-Host stores user data files in the same location. If not, these locations are read from the Windows registry.

Roaming path:

`C:\Users\<user_name>\AppData\Roaming\Micro Focus\Rumba`

Local path:

`C:\Users\<user_name>\AppData\Local\Micro Focus\Rumba`

You can use the MSI Packager to modify default user data file locations. For more information on the MSI Packager see the online help supplied with the utility.

Creating a Trace

The Trace utility is a diagnostic tool for troubleshooting host communications and connectivity problems. With this utility you can trace activity within host software or other standardized components linked to OnWeb Web-to-Host. This section describes how to use the Trace utility to get a binary trace that can be sent to Micro Focus Technical Support for additional help troubleshooting your problems.

Pro uses the **Rumba+ Desktop Trace** Trace utility that comes with Rumba+ as standard. If Rumba+ is installed, use its trace utility.

If Rumba+ is not installed, you can download the Trace utility from the server hosting Web-to-Host. Type the following URL into the address bar of any Web browser.

http://<*servername*>/w2hlegacy/utils/installrumbatrace.msi

Important: Before starting the procedure, close all applications. If you are using Rumba+, ensure it is closed.

To take a correct binary trace:

1. If Rumba+ is installed, select **Start** > **All Programs** > **Micro Focus Rumba+ Desktop** > **Rumba+ Desktop Tools** > **Rumba+ Desktop Trace**. Otherwise, select **Start** > **All Programs** > **RUMBA Trace** > **RUMBA Trace**.
2. On the menu bar, select **Options** > **Configuration**.
3. On the **API Selection** page, click **Select All**. After all entries have been selected, click **Reset All**.
4. On the **Output** page, in the **Formatted Output** section, select **Display**.
5. In the **Binary Output** section select **Binary File**. The box next to the option becomes available.
6. Enter the full path for the binary file being created (or browse to it). or example, you might assign the file the call log number, `c368758.bin`. All file names should end with the extension `.bin`.
7. Click **OK**.
8. Minimize the **Rumba+ Desktop Trace** window that appears.
9. Run the Rumba+ application that is causing the problem as you normally would, starting from the connection (for example, Rumba+ display, or printer). Let the program run until the problem appears (error message, session hanging, or any other problem).
10. Log off and disconnect from the host.
11. Maximize the **Rumba+ Desktop Trace** window, then select **File** > **Exit**.
12. Send the `.bin` file you created by email to Micro Focus Technical Support.

Contacting Micro Focus

Our Web site gives up-to-date details of contact numbers and addresses.

Further information and product support

Additional technical information or advice is available from several sources.

The product support pages contain a considerable amount of additional information, such as:

- The *Product Updates* section of the Micro Focus Customer Care Web site, where you can download fixes and documentation updates.
- The *Examples and Utilities* section of the Micro Focus Customer Care Web site, including demos and additional product documentation.
- The *Support Resources* section of the Micro Focus Customer Care Web site, that includes troubleshooting guides and information about how to raise an incident.

To connect, enter *https://www.microfocus.com/en-us/support* in your browser.

Note: Some information may be available only to customers who have maintenance agreements.

If you obtained this product directly from Micro Focus, contact us as described on the Micro Focus Web site, *www.microfocus.com*. If you obtained the product from another source, such as an authorized distributor, contact them for help first. If they are unable to help, contact us.

Also, visit:

- The Micro Focus Community Web site, where you can browse the Knowledge Base, read articles and blogs, find demonstration programs and examples, and discuss this product with other users and Micro Focus specialists.
- The Micro Focus YouTube channel for videos related to your product. .

Information we need

However you contact us, please try to include the information below, if you have it. The more information you can give, the better Micro Focus Customer Care can help you. But if you don't know all the answers, or you think some are irrelevant to your problem, please give whatever information you have.

- The name and version number of all products that you think might be causing a problem.
- Your computer make and model.
- Your operating system version number and details of any networking software you are using.
- The amount of memory in your computer.
- The relevant page reference or section in the documentation.
- Your serial number. To find out this number, look in the subject line and body of your Electronic Product Delivery Notice email that you received from Micro Focus.

Contact information

Our Web site gives up-to-date details of contact numbers and addresses.

Additional technical information or advice is available from several sources.

The product support pages contain considerable additional information, including the *Product Updates* section of the Micro Focus Customer Care Web site, where you can download fixes and documentation updates. Go to *Micro Focus Product Updates*.

To connect, enter *https://www.microfocus.com/en-us/home/* in your browser to go to the Micro Focus home page, then click **Support & Services** > **Support**. Type or select the product you require from the product selection dropdown, and then click **Support Login**.

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   B. Waiver of Liability. IN NO EVENT SHALL LICENSOR OR ITS AFFILIATES OR ANY OF ITS OR THEIR RESPECTIVE LICENSORS OR SERVICE PROVIDERS BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR SIMILAR DAMAGES, LOSS OF PROFITS, BUSINESS, DATA, OR PROGRAMS (INCLUDING, BUT NOT LIMITED TO, THE COST OF RECOVERING OR REPLACING SUCH DATA OR PROGRAMS), LOSS, DAMAGE OR ANY COSTS DUE TO INTERRUPTION, DELAY, OR INABILITY TO USE THE LICENSED SOFTWARE, WHETHER ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT, EVEN IF INFORMED OF THE POSSIBILITY OF SUCH DAMAGES IN ADVANCE.

   C. Scope. THE LIMITATIONS AND EXCLUSIONS OF THIS SECTION 7 APPLY TO ALL CAUSES OF ACTION, INCLUDING, WITHOUT LIMITATION, BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, MISREPRESENTATION AND OTHER TORTS. THESE LIMITATIONS AND EXCLUSIONS APPLY COLLECTIVELY TO LICENSOR, ITS PARENTS, AFFILIATES, AND SUBSIDIARIES AND EACH OF THEIR RESPECTIVE EMPLOYEES, CONTRACTORS, AND SUPPLIERS. NOTWITHSTANDING THE FOREGOING, NOTHING IN THIS SECTION 7 EXCLUDES LIABILITY FOR WILLFUL MISCONDUCT OR FRAUDULENT MISREPRESENTATION.

   D. Exclusive Remedy. LICENSEE'S REMEDIES IN THIS AGREEMENT ARE LICENSEE'S EXCLUSIVE REMEDIES. LICENSEE AGREES THAT, IN ENTERING INTO THIS AGREEMENT, IT DID NOT RELY ON ANY REPRESENTATIONS (WHETHER WRITTEN OR ORAL) OF ANY KIND OTHER THAN THOSE EXPRESSLY SET OUT IN THIS AGREEMENT.

   E. Essential Purpose. LICENSEE FURTHER ACKNOWLEDGES THAT THE LIMITATIONS AND EXCLUSIONS OF LIABILITY IN THIS SECTION 7 APPLY TO THE FULLEST EXTENT PERMITTED BY LAW AND ARE AN ESSENTIAL ELEMENT OF THIS AGREEMENT AND THAT, IN THE ABSENCE OF SUCH LIMITATIONS AND EXCLUSIONS, THE PRICING AND OTHER TERMS AND CONDITIONS SET FORTH HEREIN WOULD BE SUBSTANTIALLY DIFFERENT. THE LIMITATIONS AND EXCLUSIONS SET FORTH IN THIS SECTION 7 SHALL APPLY EVEN IF THE LICENSEE'S REMEDIES UNDER THIS AGREEMENT FAIL OF THEIR ESSENTIAL PURPOSE.

   F. Free Software. IF LICENSOR PROVIDES LICENSEE WITH ANY LICENSED SOFTWARE FREE-OF-CHARGE OR UNDER AN EVALUATION LICENSE, TO THE EXTENT PERMITTED BY LAW, LICENSOR SHALL NOT BE RESPONSIBLE FOR ANY LOSS OR DAMAGE TO LICENSEE, ITS

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8. **HIGH-RISK USES.** The Licensed Software is not fault tolerant, nor designed, manufactured, or intended for use in hazardous environments requiring fail-safe performance (including, without limitation, the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines, or weapons systems) in which failure of the Licensed Software could lead directly or indirectly to death, personal injury, or severe physical or environmental damage. Licensor and its suppliers shall have no liability for any use of the Licensed Software in any high-risk situations.
9. **OWNERSHIP.** The Licensed Products are provided under license, and not sold, to Licensee. The only rights in the Licensed Products are the licenses expressly stated in this Agreement and no other rights are implied or granted by estoppel. Licensor (and its affiliates) and its and their licensors and third party suppliers retain ownership of, and reserve all rights in and to, the Licensed Products, including all copies thereof, and all intellectual property rights arising out of or relating to the Licensed Products. Licensee shall use reasonable efforts to safeguard the Licensed Products (including all copies thereof) from infringement, misappropriation, theft, misuse, or unauthorized access. Licensee shall promptly notify Licensor if it becomes aware of any infringement or misappropriation of the Licensed Products and shall fully cooperate with Licensor, at Licensor's expense, in any legal action taken by Licensor to enforce its intellectual property rights.
10. **THIRD PARTY SOFTWARE AND COMPONENTS.** The Licensed Software may come with or require Third Party Software that Licensee shall license directly from the third party licensor pursuant to such third party's terms and conditions and not this Agreement. Additionally, some Licensed Software may include certain Third Party Components and open source software. Such open source software and Third Party Components may also be loaded on the Licensed Software media. Third Party Components are licensed to Licensee under this Agreement; open source software is licensed pursuant to the applicable open source license. To the extent applicable, information about the open source software may be found (i) in a file accompanying the applicable Licensed Software or (ii) in the Documentation or ALA. Licensee shall not directly access any Third Party Components other than with or as part of the Licensed Software. Licensee agrees that to the extent required by a third party licensor or supplier of a Third Party Component, that third party licensor or supplier is an intended third party beneficiary of this Agreement as necessary to protect intellectual property rights in the Licensed Software and limit certain uses thereof.
11. **NOTICE TO U.S. GOVERNMENT END USERS.** The Licensed Products are deemed to be "Commercial Items," as defined at 48 C.F.R. §2.101, consisting of "Commercial Computer Software" and "Commercial Computer Software Documentation," as such terms are used in 48 C.F.R. §12.212 or 48 C.F.R. §227.7202, as applicable. Consistent with such sections, the Licensed Products are licensed to U.S. Government end users (i) only as Commercial Items, and (ii) with only those rights as are granted pursuant to this Agreement.
12. **LICENSE FEES AND PAYMENT TERMS.** Licensee agrees to pay the applicable license fees for the Licensed Products within thirty (30) days of the date of invoice or such other date as agreed in writing by the parties. Software license fees are non-refundable, except as provided in Section 5 above, and shall be paid without any deduction or tax withholding. Software License fees are exclusive of any applicable transportation charges, sales, use, value added tax, and other applicable taxes and duties, and all such amounts shall be paid or reimbursed by Licensee. Licensee shall be liable for all outstanding past due amounts, which shall accrue interest at the rate of 1.5% per month compounded or, if lower, the maximum rate allowed by applicable law, and any collection costs associated with the collection of any past due amounts.
13. **AUDITS.** Licensor or an Auditor (as defined below) has the right to verify Licensee's compliance with the licenses issued under Product Orders, the applicable ALAs and this Agreement (please see Micro Focus License Compliance Charter at *http://supportline.microfocus.com/licensing/licVerification.aspx*, which can also be provided by Licensor at Licensee's request). Licensee agrees to:

    A. Recordkeeping. Keep, and upon Licensor's request, provide records, sufficient to certify Licensee's compliance with this Agreement based on the applicable License Option(s) (including applicable license metric and other terms and conditions) for the Licensed Software, which may include but are not limited to, serial numbers, license keys, logs, the location, model (including quantity and type of processor) and serial number of all machines on which the Licensed Software is installed or accessed or from which the Licensed Software can be accessed, the names (including corporate entity) and number of users accessing or otherwise able to access the Licensed Software, metrics, reports, copies of the Licensed Software (by product and version), and network architecture diagrams as they may relate to Licensee's licensing and deployment of the Licensed Products and associated support and maintenance;

B. Questionnaire. Within seven (7) days of Licensor's request, Licensee shall furnish to Licensor or its designated independent auditor ("Auditor") a completed questionnaire provided by Licensor or Auditor, accompanied with a written statement signed by a director of Licensee certifying the accuracy of the information provided; and

C. Access. Provide representatives of Licensor or Auditor any necessary assistance and access to records and computers to allow an inspection and audit of Licensee's computers and records, during Licensee's normal business hours, for compliance with licenses, the applicable ALAs, and this Agreement, and fully cooperate with such audit.

D. Non-Compliance. In the event that Licensee has, or at any time has had, unlicensed installation, use of, or access to the Licensed Software or has otherwise breached this Agreement or an ALA (a "Non-Compliance"), without prejudice to any other rights or remedies Licensor may have, including, without limitation, injunctive relief, Licensee shall, within thirty (30) days' notice of such Non-Compliance to Licensee, purchase sufficient licenses and/or subscriptions and associated support and maintenance to cure the Non-Compliance, by paying Licensor's current (as of the date of such additional purchase) list license fees and 12-month support and maintenance fees to Licensor for such additional licenses, plus Licensor's current (as of the date of such additional purchase) list term license and support and maintenance fees and interest (compounded at 1.5% monthly or the maximum rate permitted by applicable law if lower) for such additional licenses for the time period from the commencement of the Non-Compliance until payment of the aforementioned fees, with interest payable even if an invoice was not issued at the time the Non-Compliance occurred. For purposes of the foregoing, "list" shall mean Licensor's full list price as set forth in Licensor's standard price list that is current as of the commencement of the audit without any volume or other discount. If Licensee's Non-Compliance results in an underpayment of license fees of 5% or greater, Licensee shall also reimburse Licensor for the reasonable cost of such audit in addition to other amounts due. In the event of a dispute related to a Non-Compliance, Licensor shall have the right to collect from Licensee its reasonable costs and attorneys' fees incurred in enforcing this Agreement.

14. **RELATED SERVICES.** Licensee shall be responsible for obtaining and installing all proper hardware and other third party support software (including operating systems) for the proper installation and implementation of the Licensed Software. In the event that Licensee retains Licensor to perform any services with respect to the Licensed Software (for example: installation, implementation, maintenance, consulting, or training services), Licensee and Licensor agree that such services shall be provided at Licensor's then- current standard terms, conditions, and rates for such services unless otherwise agreed in writing by Licensor.

15. **PRIVACY AND USE OF LICENSEE INFORMATION.**

A. Responsibility and Compliance with Laws. Licensee is solely responsible for and assumes all liability with respect to its own collection, processing, storage, and transfer of any user data, including, but not limited to, personally identifiable information and personal health and financial information (collectively, "Personal Information"). Licensee shall be solely responsible for notifying its users of proper use of such data. Each party is responsible for complying with its respective obligations under all applicable laws, regulations, and industry standards regarding data collection and data privacy applicable for the use of the Licensed Software by the relevant party. Licensee shall not provide any Personal Information to Licensor for processing by Licensor on behalf of Licensee, unless otherwise agreed by the parties in writing in an applicable transaction document with applicable privacy terms. If the parties agree that processing Personal Information is necessary for the performance of this specific transaction, and when such Personal Information processing falls within the scope of the General Data Protection Regulation (EU) 2016/679 ("GDPR"), before any Personal Information is made available to Licensor, the parties agree that Licensee will be the data controller and Licensor will be the data processor, and when Licensor is processing Personal Information on behalf of Licensee, such processing shall be governed by terms that comply with Article 28 of the GDPR including standard contractual clauses to be included in such transaction document. Licensor will not have access to protected health information unless the parties have an executed business associate agreement in place for this transaction. Licensee is solely responsible for assessing the Licensed Product or any related product or service for compliance with any industry requirements applicable to Licensee.

B. Consent to Use of Licensee Information. To the extent required or permitted by law, Licensee hereby expressly consents to (i) receiving information from Licensor from time to time advertising Licensor's products; (ii) the use of Licensee's name in Licensor customer lists, promotional materials, and press releases; and (iii) the collection and use of information about the computer system on which the Licensed Software is installed (e.g. product version, serial number) for internal security and licensing purposes. Further information about Licensor's processing of personally identifiable data is available at *https://www.microfocus.com/about/legal/#privacy* (click "Privacy Notice" tab) or can be provided by Licensor at Licensee's request.

C. Other Use of Licensee Information. To the extent required or permitted by law, and notwithstanding the terms in Section 15.A, Licensor may also process personally identifiable information of Licensee and Licensee's users (i) in order to comply with a legal obligation to which Licensor is subject; (ii) as is necessary for the performance of this Agreement; and (iii) where necessary for the purposes of Licensor's legitimate interests, except where such interests are overridden by the interests or fundamental rights and freedoms of the Licensee or Licensee's users which require protection of personally identifiable information.

16. **LICENSEE TRADEMARK AND FEEDBACK.** Licensor may use Licensee's name and logo for business development and marketing purposes, including, but not limited to, online and printed sales and marketing materials. Any other use of Licensee's name or logo, or a description of Licensee's use of the Licensed Software, shall be subject to Licensee's prior consent. Any suggestions, ideas for modifications, enhancements, and other feedback from Licensee regarding the Licensed Software provided at any time (collectively, the "Feedback"), including (but not limited to) all intellectual property rights in and to such Feedback, shall be owned exclusively by Licensor. Licensee hereby assigns all right, title and interest in and to such Feedback and all the intellectual property rights therein to Licensor, without the necessity of any further consideration. To the extent any Feedback cannot be assigned to Licensor, Licensee hereby grants to Licensor a perpetual, irrevocable, exclusive, worldwide, royalty-free, fully paid up license, with the right to sublicense through multiple tiers to use, make, sell, distribute, execute, adapt, translate, reproduce, display, perform, modify, create derivative works of and otherwise exploit the Feedback in any manner.

17. **MISCELLANEOUS.**

A. Assignment. Licensor may assign this Agreement, including any rights or obligations under the Agreement (in whole or in part) to a parent or an affiliate. Licensee may not assign or transfer this Agreement or any of its rights or duties hereunder, including (but not limited to) by merger, acquisition by any entity of all or substantially all of Licensee's stock or assets, change of control, operation of law, or otherwise, without the prior written consent of Licensor and payment by Licensee of the applicable assignment fee. Any attempted assignment not in accordance with this Section shall be null and void.

B. Governing Law. If Licensee is located in North America, the laws of the State of California govern this Agreement and the licenses granted hereunder, and the parties hereto consent to the exclusive jurisdiction of the State and Federal courts of the State of California in any action based on this Agreement or the Licensed Software hereunder or any License Option under an ALA. Each party waives any right it may have to object to such venue, including objections based on personal jurisdiction or forum non conveniens (inconvenient forum). The parties agree that the Uniform Computer Information Transaction Act or any version thereof, adopted by any state, in any form ("UCITA"), shall not apply to this Agreement. To the extent that UCITA is applicable, the parties hereby opt out of the applicability of UCITA pursuant to the opt-out provision(s) contained therein. If Licensee is located in France, Germany or Japan, this Agreement is governed by the laws of the country in which Licensee is located. In the rest of the world the laws of England govern this Agreement. In each case, the applicable law shall apply without regard to conflict of laws provisions thereof, and without regard to the United Nations Convention on the International Sale of Goods. Other than for North American transactions, this Agreement, the licenses granted hereunder, and the parties hereto, shall be subject to the exclusive jurisdiction of the courts of the country determining the applicable law as aforesaid.

C. Export Control. This Agreement may be subject to export control laws, regulations, and other restrictions of the United States (including, but not limited to, the U.S. Export Administration Regulations (the “EAR”)), United Kingdom, or the European Union regarding export or re-export of computer software and technology. Licensee agrees to comply with all applicable export control laws, regulations, and restrictions, including the EAR, where applicable.

D. Entire Agreement. The applicable Product Order and this Agreement including the applicable ALA, constitutes the complete and exclusive statement of agreement between the parties relating to the license for the Licensed Products and supersedes all prior proposals, communications, purchase orders, and agreements (including, without limitation, Other Agreements), without need for a mutually executed amendment to any such Other Agreement. Any conflicting terms and conditions shall be resolved according to the following order of precedence: the applicable Product Order, the applicable ALA, and then this Agreement in all other respects.

E. Amendment. No representation, supplement, modification, or amendment of this Agreement will be binding on either party unless executed in writing by duly authorized representatives of both parties (excluding any distributor or reseller of Micro Focus) to this Agreement.

F. Waiver. No waiver of any right under this Agreement will be effective unless in writing and signed by authorized representatives of both parties (excluding any distributor or reseller of Licensor). No waiver of any past or present right arising from any breach or failure to perform will be deemed to be a waiver of any future right arising under this Agreement.

G. Severability. If any provision in this Agreement is invalid or unenforceable, that provision will be construed, limited, modified or, if necessary, severed, to the extent necessary, to eliminate its invalidity or unenforceability, and the other provisions of this Agreement will remain unaffected.

H. No Reliance. Each party acknowledges that in entering into this Agreement it has not relied on any representations, agreements, warranties or other assurances (other than those repeated in this Agreement) and waives all rights and remedies which but for this Section 17 would be available to it.

Micro Focus EULA (1 November 2019)