

Reflection for the Web Installation Guide

13.2

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Reflection for the Web 13.2 Installation Guide

Reflection for the Web terminal emulation software enables users to access IBM, UNIX, Unisys, OpenVMS, and HP data via a browser. Administrators use Management and Security Server (MSS) to centrally manage, secure, and assign Reflection for the Web sessions.

Your Reflection for the Web license also entitles you to the **Security Proxy** (*except the Limited Edition*) and the **Terminal ID Manager**.

Reflection for the Web 13.2 includes **Management and Security Server** version **12.8**.

NOTE: In **MSS 12.8**, Reflection for the Web sessions are launched via the **MSS Assigned Sessions** list, which requires installation of the **Reflection for the Web Launcher**. This HTML-based feature replaces the Oracle JRE and the Java browser plug-in.

If, however, you need to continue using Oracle JRE or the browser plug-in, contact [Customer Support](#) for assistance.

This guide walks you through the steps to install or upgrade to Reflection for the Web 13.2.

[What's New](#)

[As a reminder](#)

[If you are evaluating](#)

What's New

At a glance, here's what's new in Reflection for the Web version 13.2:

- ♦ Updated **Management and Security Server** to **12.8**.
- ♦ With MSS 12.8, Reflection for the Web sessions are launched using the HTML-based **MSS Assigned Sessions** list, which requires the latest version of the **Reflection for the Web Launcher** to be installed.

These technologies replace the Oracle JRE and the JRE's browser plug-in, thereby enabling you to stay current with security updates while removing the need to pay Oracle for licensing. For more information, see [Reflection for the Web Launcher: a Web Start \(JNLP\) solution](#).

If you need to continue using the Oracle Java plug-in, contact [Customer Support](#) for assistance.

See also Reflection for the Web 13.2 [Release Notes](#).

As a reminder

As you begin to use Reflection for the Web, note these requirements.

- ♦ **Reflection for the Web Launcher** version 13.2 is required with MSS 12.8.
- ♦ **Compatibility requirements.** Be sure to upgrade components and add-on products.
The **Security Proxy** (and any MSS Add-on product) must be the same <major>.<minor> version as Management and Security Server (MSS).
For example, when you upgrade to Reflection for the Web 13.2, which uses MSS version 12.8, be sure to upgrade the Security Proxy to version 12.8.
- ♦ **TLS** is required for security.
- ♦ **Cumulative changes.** Reflection for the Web 13.2 includes the changes released in the [Reflection for the Web 13.1 hotfixes](#).
- ♦ The [Reflection for the Web Reference Guide](#) includes scripting, HTML examples, and other advanced topics.

If you are evaluating

If you are running an evaluation copy, the product will be fully functional for 120 days. During that time you can install, configure, and test Reflection for the Web.

Follow the installation steps in this guide, and then walk through the evaluation scenario presented in [Evaluating Reflection for the Web](#).

Please contact [Micro Focus](#) or your authorized reseller to obtain the full-use version of the software.

Related topics

- ♦ [About Reflection for the Web 13.2](#)
- ♦ [Preparing to Install](#)

1 About Reflection for the Web 13.2

Reflection for the Web is a web application that requires **Host Access Management and Security Server (MSS)**.

Administrators use the **MSS Administrative Console** to create, secure, assign, and manage **Reflection for the Web** sessions. The web-based sessions enable users to access IBM, UNIX, Unisys, OpenVMS, and HP data via a web browser.

NOTE: When you install or upgrade to Reflection for the Web **13.2**, which includes Management and Security Server (MSS) version **12.8**, you will no longer be able to launch Reflection for the Web using the Oracle Java browser plug-in. Instead, you must use the **MSS Assigned Sessions List** and the **Reflection for the Web Launcher**.

If you need to continue using Oracle's JRE or the browser plug-in, contact [Customer Support](#) for assistance.

In this guide

Use this guide to install or upgrade to Reflection for the Web 13.2.

- ◆ [Preparing to Install](#)
- ◆ [Installing Reflection for the Web](#)
- ◆ [Installing and Distributing the Reflection for the Web Launcher 13.2](#)
- ◆ [Upgrading to version 13.2](#)
- ◆ Technical Reference: [Reflection for the Web Launcher: a Web Start \(JNLP\) solution](#)
- ◆ Technical Reference: [Reflection for the Web Overview](#)

2 Preparing to Install

Reflection for the Web 13.2 includes Management and Security Server (MSS) version 12.8.

During installation, the Reflection for the Web automated installer looks for a compatible installation of Management and Security Server on the same machine. If detected, you can use the existing one. If a compatible version is not detected, you can install MSS along with Reflection for the Web or use a remotely-hosted installation of MSS.

NOTE: When MSS 12.8 is installed, you will no longer be able to launch Reflection for the Web using the Oracle Java browser plug-in. Instead, you will use the [MSS Assigned Sessions](#) list and the [Reflection for the Web Launcher](#). If you must use the Oracle Java browser plug-in to launch Reflection for the Web, contact [Customer Support](#) for assistance.

The Reflection for the Web automated installer presents these options:

- ◆ Install both products on the same machine as a chained installation: MSS 12.8 first, and then Reflection for the Web 13.2.
- ◆ Use the *existing* [compatible] installation of MSS on your system.
- ◆ Use a *remotely hosted* [compatible] installation of MSS.

For initial testing, you can install Reflection for the Web and Management and Security Server on a workstation; however, we recommend installing on a server operating system for production.

Be sure to check:

- ◆ [Prerequisites](#)
- ◆ [System Requirements](#)
- ◆ [When using a web proxy](#)

Prerequisites

NOTE: *MSS 12.8, which is provided with Reflection for the Web 13.2, uses the Reflection for the Web Launcher—instead of the Oracle Java browser plug-in—to launch sessions. If you must use the Oracle Java browser plug-in, contact [Customer Support](#) for assistance.*

Before installing Reflection for the Web 13.2, be sure that:

-
- Your version of Management and Security Server is upgraded to 12.8 or higher.

The Reflection for the Web automated installer provides the option to upgrade MSS when both products are on the same machine.

If MSS is installed on a different machine (remotely hosted), be sure to upgrade it to version 12.8 or higher.

Note: If you need or prefer to use the Oracle JRE or Java plug-in, contact [Customer Support](#) for assistance.

- Any Reflection for the Web or MSS component currently running is shut down.

If an earlier version was installed with an automated installer, the Reflection for the Web 13.2 automated installer will close the components for you.

- The necessary account permissions are available to install components on the target server.

If you plan to use X.509 client certificates or secure LDAP access control, make sure the account used to run the Administrative Server has permission to write to the Java SDK certificate authority certificates file (`cacerts`). The default location in Windows is:

```
C:\Program Files\Micro Focus\MSS\jre\lib\security
```

NOTE: Optional components, including the [Security Proxy Server](#) and [Terminal ID Manager](#), can be installed along with Reflection for the Web or added later.

Related topics

- ♦ [System Requirements](#)
- ♦ [When using a web proxy](#)

System Requirements

Reflection for the Web components can be installed on a single server or on separate servers.

NOTE: Security updates for JREs that are used by [Reflection for the Web](#) and [Management and Security Server \(MSS\)](#) are made available through product updates.

Check the requirements for each component:

- ♦ [Server requirements](#)
- ♦ [Administrator workstation](#)
- ♦ [Terminal session \(client\)](#)

Server requirements

The server requirements are based on the requirements for **Management and Security Server:**

- ♦ 3.40 GHz (4 cores) and 8GB of RAM

- ♦ Server-class 64-bit operating system (Windows, Linux, or UNIX)
For production, a server-class system is required. However, a workstation could be used for initial testing or evaluation.
- ♦ A private OpenJDK (non-Oracle) JRE 1.8.0_<nnn> is installed by the Reflection for the Web automated installer, where <nnn> is the most recent security release as of this product release date.

See the [MSS Installation Guide](#) regarding the requirements for specific server components, such as the Security Proxy Server.

Administrator workstation

To be able to configure and manage Reflection for the Web in the MSS Administrative Console, the administrator needs:

- ♦ Microsoft Windows
- ♦ Any current browser
- ♦ Reflection for the Web Launcher 13.2

Terminal session (client)

The client requirements support the use of the **MSS Assigned Sessions** list, which uses the **Reflection for the Web Launcher** to launch Reflection for the Web sessions.

- ♦ Microsoft Windows
- ♦ Any current browser
- ♦ Reflection for the Web Launcher 13.2

If you need to continue using Oracle JRE or the browser plug-in, contact [Customer Support](#).

Related topics

- ♦ [When using a web proxy](#)
- ♦ [Installing Reflection for the Web](#)
- ♦ [Installing and Distributing the Reflection for the Web Launcher 13.2](#)

When using a web proxy

You can use your web proxy along with the Reflection for the Web Launcher to launch Reflection for the Web sessions. To configure web proxy settings centrally, you may use the provided PowerShell script.

The PowerShell Script

Reflection for the Web installs a PowerShell script to <installation directory>/server/web/webapps/rweb-client/utilities/rweb-launcher-msi-transformer/. The script generates a transform (*.mst) file that can be used to customize your installation.

The script enables you to manage the settings that would otherwise need to be accessed on each workstation. While the default network settings for the Reflection for the Web Launcher may work, they may need to be adjusted for a more complex network environment, such as with a web proxy.

Run the script to centrally manage your network settings

Follow these steps:

- 1 Launch **PowerShell** using **Run as Administrator**.
- 2 Type the name of the script: `InstallerTransformer.ps1` and press **Tab**.
- 3 Enter `[y]` to continue.
- 4 Follow the prompts to specify the required network settings.

The Result

The script confirms that the transform was successfully created in this directory: `<installation directory>\server\web\webapps\rweb-client\ex\RWebLauncherEx.mst`

After you deploy the transform file (`RWebLauncherEx.mst`) along with the Reflection for the Web Launcher, (`RWebLauncher.msi`) your custom network settings will be deployed to the user's workstation the next time the user opens a Reflection for the Web session. For deployment options, see [Distribute the Reflection for the Web Launcher Installer](#).

Related topics

- ◆ [Distribute the Reflection for the Web Launcher Installer](#)
- ◆ [Installing Reflection for the Web](#)
- ◆ [Installing and Distributing the Reflection for the Web Launcher 13.2](#)

3 Installing Reflection for the Web

Use the automated installer to install both **Reflection for the Web** and **Management and Security Server (MSS)** and get them up and running. You can use the automated installer on Linux and Windows. For Solaris, use the [Installing with no JRE](#) option.

Follow these steps to install Reflection for the Web with either a *new* or *existing* installation of MSS.

- 1 From the Micro Focus Downloads site, download and extract the `.zip` file for your edition of Reflection for the Web. The package includes all supported platforms.
- 2 Run the Reflection for the Web automated installer for your edition and platform. For example:

```
rwebenterprise-<version>-prod-wx64.exe  
— or —  
rwebenterprise-<version>-prod-linuxx64.sh
```

NOTE

- ♦ To install on Solaris, use the “no JRE” installer: `unix-nojre-automated.sh`. See [Installing with no JRE](#).
- ♦ You can run the automated installer in **console mode**, using a `-c` parameter.
This option, frequently for non-Windows systems, uses a command line for input and output rather than a graphical interface. All screens present the information on the console and allow you to enter the same information as in the automated installer.

-
- 3 Click **Next** to install Reflection for the Web.
 - 4 The Reflection for the Web automated installer detects whether MSS is installed on the same machine and provides the installation options.

Continue with the instructions for your installation scenario: A, B, or C.

A. Install MSS on the *same* machine where Reflection for the Web will be installed.

B. Use an existing installation of MSS on the *same* machine where Reflection for the Web will be installed.

C. Use an existing installation of MSS on a *different* machine.

A. Install MSS on the *same* machine.

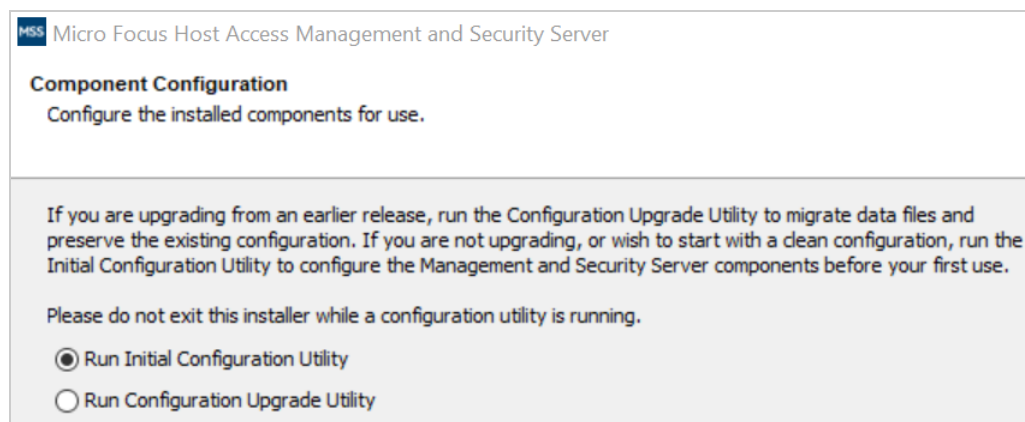
This scenario is for a new installation of both Reflection for the Web and MSS on the same machine. When the automated installer does not detect an installation of MSS on the machine where you are installing Reflection for the Web, this prompt displays:



1 Select **Install MSS**.

2 Click **Next** to start the installation of Management and Security Server (MSS).

When prompted, run the **Initial Configuration Utility** to configure Management and Security Server.



3 Proceed through the **Initial Configuration Utility** until **Done**.

4 When prompted, you have the option to **Start the services** that were installed.

5 When the MSS Installation is Complete, the installed components are listed. Click **Finish** and return to the Reflection for the Web installer.

6 Next, the Reflection for the Web application will be installed into Management and Security Server. The default [Windows] location is

```
C:\Program Files\Micro Focus\MSS\server\web\webapps\rweb-client
```

7 If prompted, restart the MSS server.

8 When the Reflection for the Web installation is Complete, click **Finish**.

9 Continue with [Download and install the Launcher to the administrator's workstation](#) .

The Launcher must be installed before you can launch and configure Reflection for the Web sessions.

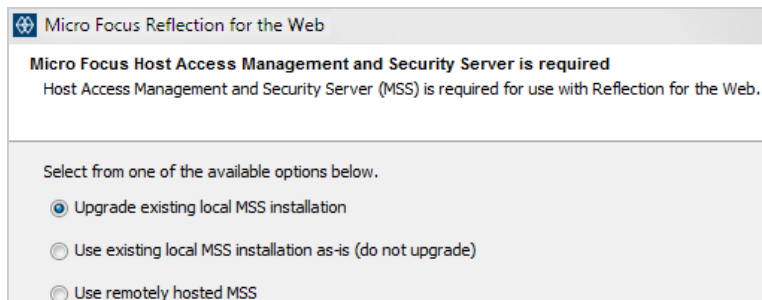
Next step

Continue with [Download and install the Launcher to the administrator's workstation](#).

When the Reflection for the Web Launcher is installed on the administrator's workstation, you can launch, configure, and assign sessions. Then you can distribute the Launcher to users' workstations.

B. Use an existing installation of MSS on the *same* machine.

When the automated installer detects an installation of Management and Security Server, you are prompted as follows:



NOTE: If you need to use the Oracle Java browser plug-in or do not want to use the Reflection for the Web Launcher on client workstations, then contact [Customer Support](#) for options.

Continue with the automated installer.

- 1 Select **Use existing local MSS installation**. Click **Next**.

The upgraded version of MSS will be installed first. Follow the prompts to install Host Access Management and Security Server.

- 2 When the MSS installation is complete, click **Finish** to proceed with the Reflection for the Web installation. (The MSS dialog closes.)
- 3 Click **Next** to install Reflection for the Web. The default [Windows] location is
`C:\Program Files\Micro Focus\MSS\server\web\webapps\rweb-client`
- 4 If prompted, restart the MSS server.
- 5 When the Reflection for the Web installation is complete, click **Finish**.
- 6 Continue with [Download and install the Launcher to the administrator's workstation](#).

The Launcher must be installed before you can launch and configure Reflection for the Web sessions.

Next step

Continue with [Download and install the Launcher to the administrator's workstation](#).

When the Reflection for the Web Launcher is installed on the administrator's workstation, you can launch, configure, and assign sessions. Then you can distribute the Launcher to users' workstations.

C. Use an existing installation of MSS on a *different* machine.

If you want to **Use a remotely hosted MSS** with a new installation of Reflection for the Web, be aware of these requirements:

- ♦ Management and Security Server version **12.8** is required. Any earlier version must be upgraded.
- ♦ **CAUTION:** If you use MSS to manage multiple Micro Focus products that run on remote servers, be sure to check the MSS version requirements for *all* of those products before upgrading MSS. MSS must be version-compatible with all of the client products being managed.
- ♦ When Reflection for the Web and MSS are installed on separate machines, we recommend that all web applications are accessed through the machine running Reflection for the Web.

For example: `https://rwebhost/mss`

When ready, proceed with [Step C-1. Install Reflection for the Web on a different machine.](#)

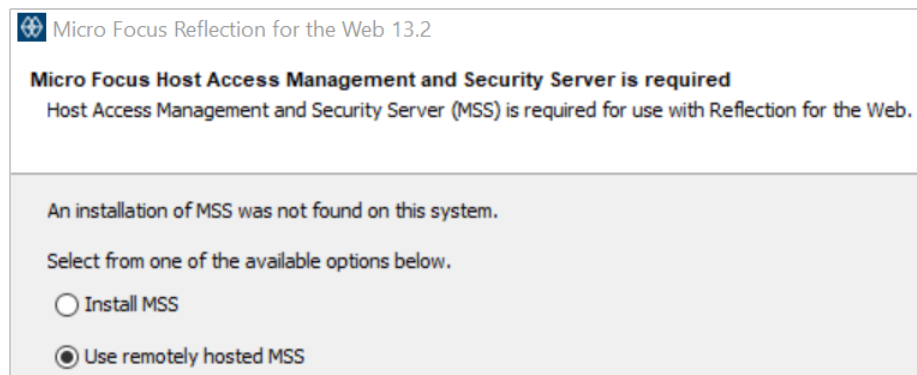
NOTE: If you are upgrading from **Reflection for the Web 12.2** and want to switch to a multi-server solution (where MSS and Reflection for the Web are on separate servers), proceed as follows:

- 1 On the machine where Reflection for the Web 12.2 is installed, upgrade to MSS 12.8:
 - 1a Run the MSS installer, found in the `mss` directory where you downloaded your product.
 - 1b For assistance, see the [MSS Installation Guide](#).
 - 2 Continue with [Step C-1. Install Reflection for the Web on a different machine.](#)
-

Step C-1. Install Reflection for the Web on a different machine.

On a different machine from where MSS is installed, install Reflection for the Web 13.2, using the automated installer. The automated installer installs a default web application container and performs some basic configuration.

- 1 Run the automated installer for your Reflection for the Web edition.
- 2 When prompted, select **Use remotely hosted MSS**.



- 3 Click **Next** and enter the location where MSS is installed.

- 4 The Reflection for the Web automated installer installs:
 - ◆ an OpenJDK JRE
 - ◆ Server-side components, including a web proxy for handling /`mss` URLs, a redirector for handling /`rweb` URLs, and the rweb emulator client
- 5 Secure the connection between Reflection for the Web and MSS. Enter your settings:
 - ◆ Host or DNS name, or IP address.
 - ◆ Port. The default is 443.
 - ◆ Management Servlet context.
 - ◆ Protocol. The default is HTTPS.
- 6 When the Reflection for the Web installation is complete, click **Finish**.
- 7 Continue with [Step C-2. Install the Reflection for the Web activation file](#).

Step C-2. Install the Reflection for the Web activation file.

The Reflection for the Web activation file is required for MSS to interact with Reflection for the Web on a different machine.

To install the activation file:

- 1 Open the **MSS Administrative Console to Configure Settings - Product Activation**.
- 2 Click **Activate New** and Browse to the location where you downloaded the Reflection for the Web automated installer. (Or, download the activation file from the site where you downloaded Reflection for the Web, and Browse to that location.)

The activation file has this format:

```
activation.rweb_<product>_edition-13.2.jaw
```

- 3 Click the file. It is automatically uploaded to Management and Security Server.
- 4 Then refresh or restart your browser.

The **Product Activation** panel lists your Reflection for the Web edition and version.
- 5 Continue with [Download and install the Launcher to the administrator's workstation](#).

The Launcher must be installed before you can launch and configure Reflection for the Web sessions.

Next step

Continue with [Download and install the Launcher to the administrator's workstation](#).

When the Reflection for the Web Launcher is installed on the administrator's workstation, you can launch, configure, and assign sessions. Then you can distribute the Launcher to users' workstations.

4 Installing and Distributing the Reflection for the Web Launcher 13.2

The **Reflection for the Web Launcher** must be installed on *both* the administrator and client machines.

Reflection for the Web Launcher is a private client-side application that installs an OpenJDK 8 JRE with Web Start (JNLP) to launch Reflection for the Web sessions. OpenJDK eliminates the need for Oracle's JRE and the Java browser plug-in, which is no longer supported.

Reflection for the Web Launcher can be used with any browser.

Follow these steps to download and install the Launcher to the administrator's and users' workstations.

- ◆ [Download and install the Launcher to the administrator's workstation](#)
- ◆ [Configure and assign a session](#)
- ◆ [Distribute the Reflection for the Web Launcher Installer](#)
- ◆ [Troubleshooting the Reflection for the Web Launcher](#)

Download and install the Launcher to the administrator's workstation

As the administrator, you can download and install the Reflection for the Web Launcher when you add a session.

In MSS, add a Reflection for the Web session and follow the prompts to download the Reflection for the Web Launcher Installer. Follow these steps.

- 1 On the MSS Administrative Console - **Manage Sessions** panel, click **+ ADD**.
- 2 Select your **Product** — **Reflection for the Web**.
- 3 Select the **Session type**, such as IBM 3270.
- 4 Enter a unique **Session name** that does not exceed 64 characters.
- 5 Click **LAUNCHER**.
- 6 Click **DOWNLOAD** to download the Reflection for the Web Launcher, packaged as `RWebLauncher.msi`. When prompted, click **Save File**.
- 7 From your **Downloads** location, click and open `RWebLauncher.msi`.
- 8 Proceed through the **RWebLauncher Setup** wizard and click **Finish**.

At this point, the **Reflection for the Web Launcher** is installed, and you are able to add and launch sessions without being interrupted by dialog prompts to install the Launcher.

Unfortunately, the session you began adding above was not saved.

- 9 Return to **Manage Sessions** to repeat the steps to add and then launch the session.

Next step

Configure the launched session and assign it to the authorized users.

Related topics

- ◆ [Configure and assign a session](#)
- ◆ [When using a web proxy](#)
- ◆ [Troubleshooting the Reflection for the Web Launcher](#)

Configure and assign a session

Once the Reflection for the Web Launcher is installed on the administrator's workstation, you can launch a session, configure it, and assign it to authorized users.

- 1 On the MSS Administrative Console - **Manage Sessions** panel, click a Reflection for the Web session name.
- 2 Click **LAUNCH**. You will be prompted to use **Zulu Platform x32 Architecture** to open the session.
- 3 **Configure the session settings**, such as Profiling (Administration > User Interface Profiler).
- 4 **Save the session**. When you click **Save/Exit**, the session is added to the **Manage Sessions** list in the MSS Administrative Console.
- 5 **Assign the session**. In the MSS Administrative Console, click **Assign Access**.
- 6 If LDAP authorization is enabled, you can search for a particular user or group. Select a user or group and check the session(s) you want to assign.
If LDAP is not enabled, you can assign sessions to All Users.
- 7 Click **APPLY**.
In the MSS Administrative Console, click **Currently Assigned** to see that the session is assigned to the user or group.
- 8 In the **Manage Sessions** list, click the session name and scroll to see the direct URL for the direct link to the session.
- 9 Deploy the session and—the Reflection for the Web Launcher—by choosing a distribution option.

Next step

[Distribute the Reflection for the Web Launcher Installer](#) to end users.

NOTE: After the Reflection for the Web Launcher is installed on the users' workstation, you can return to the MSS Administrative Console to refine session settings. Refer to the [MSS Installation Guide](#) to set up [Metering](#), the [Security Proxy](#), [Terminal ID Manager](#), and other features.

Distribute the Reflection for the Web Launcher Installer

The Reflection for the Web Launcher is installed on the administrator's workstation and now you need to distribute the Reflection for the Web Launcher Installer to users' workstations. The users need the Launcher to launch their assigned Reflection for the Web sessions.

The **Reflection for the Web Launcher Installer**, packaged as `RWebLauncher.msi`, can be distributed either by [using a software deployment system](#), such as Microsoft Group Policies, or by [enabling individual downloads](#). With either method, be sure to apply the [security updates](#) as they become available.

NOTE: With either method, be sure to apply the security updates as they become available.

- ◆ [Using a software deployment system](#)
- ◆ [Enabling individual downloads](#)
- ◆ [JRE security updates](#)

Using a software deployment system

Deploy the Reflection for the Web Launcher Installer (`RWebLauncher.msi`) file using the system of your choice, such as Microsoft Group Policies.

For reference, the Reflection for the Web Launcher Installer, packaged as `RWebLauncher.msi`, can be accessed from the MSS server:

```
MSS\server\web\webapps\rwebclient\ex\RWebLauncher.msi.
```

NOTE: If you are using a web proxy, use the provided PowerShell script to generate a transform (`*.mst`) file that customizes `RWebLauncher.msi` with your preferred networking settings. Then, deploy the transform file (`RWebLauncherEx.mst`) along with the Reflection for the Web Launcher (`RWebLauncher.msi`), and install them together on the client machines. See [When using a web proxy](#).

Enabling individual downloads

Or, users can download and install the Reflection for the Web Launcher the first time they open a Reflection for the Web session.

After you assign sessions to users, you need to distribute the session URL so an authorized user can access their **Assigned Sessions** list and launch a Reflection for the Web session directly.

When a user clicks a session link—before the Reflection for the Web Launcher is installed—they will be prompted to download and install the Launcher.

- 1 Provide each user with this link to their Assigned Sessions list:

`http://hostname[:port]/sessions`, where `<hostname>` is the name of the host where MSS is installed.

The list contains the sessions that were assigned to that authorized user.

- 2 The user clicks a link to launch a Reflection for the Web session.

When a Reflection for the Web session is launched, a transient dialog appears that provides the user with the ability to download the MSI installer directly. The dialog is automatically dismissed after a few seconds.

- 3 After the Reflection for the Web Launcher is installed on the users' workstations, their sessions launch directly. The Download button can be ignored.

JRE security updates

JRE security updates are provided for the Reflection for the Web Launcher (in the `RWebLauncher.msi` file) and for stand-alone operation of Reflection for the Web.

When product updates are available, the Reflection for the Web automated installer updates the Reflection for the Web Launcher file on the MSS server: `MSS\server\web\webapps\rweb-client\ex\RWebLauncher.msi`.

IMPORTANT: Make sure the end-user workstations run the updated `.msi` file.

Related topics

- ♦ [Troubleshooting the Reflection for the Web Launcher](#)
- ♦ [Reflection for the Web Launcher: a Web Start \(JNLP\) solution](#)

Troubleshooting the Reflection for the Web Launcher

If you encounter issues with the Reflection for the Web Launcher, troubleshoot as follows.

- ♦ [Error: "The system administrator has set policies to prevent this installation."](#)
- ♦ [Use the Java Console](#)

Error: "The system administrator has set policies to prevent this installation."

A Group Policy can be enabled that prohibits a Standard User in Windows from running the "msiexec" application.

When this policy is enabled, the user will see this error message when running the `RWebLauncher.msi` file: "The system administrator has set policies to prevent this installation."

Workaround: Use the "Run As..." feature in Windows, and run the `RWebLauncher.msi` file using the built-in "Administrator" account in Windows.

Use the Java Console

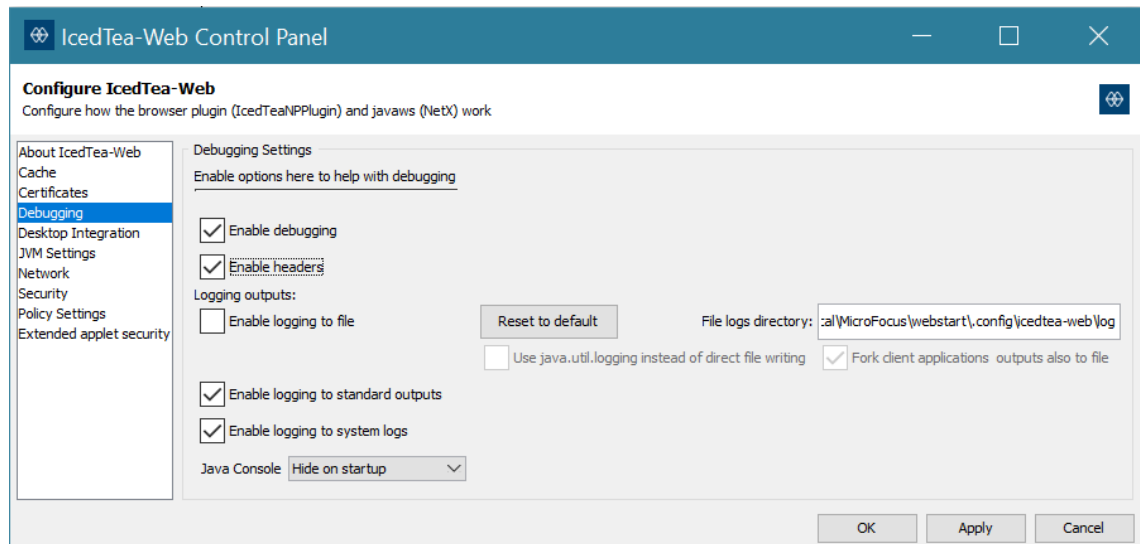
To troubleshoot the Reflection for the Web Launcher, open the [Reflection for the Web Launcher Settings](#) application to configure Java Console output, logging, caching, etc.

- 1 From the Start menu, select **Reflection for the Web Launcher Settings**.

The **Iced Tea Web Control Panel** opens.

- 2 Once launched, look at the **Debugging** section for options to troubleshoot Web Start and Reflection for the Web.

This screenshot shows the **Debugging Settings** after they have been enabled.



5 Installation Variations

The *manual installation files are no longer available* for the Reflection for the Web product or the individual components. If you are upgrading a manual installation, choose from these options.

- ♦ **Solaris.** Use the `nojre` automated installer on a Solaris platform. See [Installing with no JRE](#).
- ♦ **Individual components.** The Metering Server, Security Proxy Server, and Terminal ID Manager are part of Management and Security Server and are installed by the MSS automated installer. Manual installation is *no longer* an option for individual components.
- ♦ If you cannot use a Reflection for the Web automated installer, contact [Customer Support](#) for assistance.

Installing with no JRE

If you prefer to use your existing Java Runtime Environment (JRE), or if you are installing Reflection for the Web on Solaris, use the `nojre` installation package. The JRE must be Java 1.8 or higher.

- 1 To use any of the `-unix-nojre-` installation packages, confirm that a JRE appropriate for your platform is already installed.

For example, to install Reflection for the Web on a z/Linux machine, download the JRE from this location: <http://www.ibm.com/developerworks/java/jdk/linux/download.html>

- 2 Expand the package you want to use, such as

```
rwebenterprise-prod-unix-nojre-manual.tar.gz
```


6 Upgrading to version 13.2

In addition to the Reflection for the Web product, be sure to also upgrade these components.

- ❑ **Management and Security Server** (to a compatible version)

The Reflection for the Web automated installer provides the option to upgrade both products seamlessly.

- ❑ **Reflection for the Web Launcher** on user workstations
See [Distribute the Reflection for the Web Launcher Installer](#)

- ❑ **Activation files** for components and add-on products
See [Update the Activation Files for Components and Add-On Products](#)

NOTE: *Reflection for the Web 13.2 includes Management and Security Server (MSS) version 12.8, which no longer uses the Oracle Java browser plug-in to launch sessions. If you need to continue using Oracle's JRE or the browser plug-in, contact [Customer Support](#) for assistance.*

To prepare for your upgrade, refer to the appropriate section:

- ♦ [Upgrading Reflection for the Web](#)
- ♦ [Update the Activation Files for Components and Add-On Products](#)
- ♦ [Use of JSP templates to customize pages or sessions](#)
- ♦ [Upgrading custom static sessions](#)

Upgrading Reflection for the Web

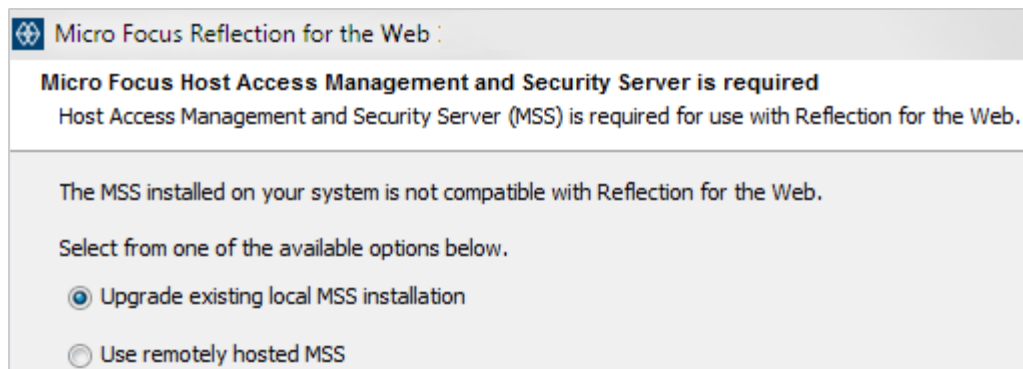
NOTE: *If you are upgrading from **version 12.0 or earlier**, you must first upgrade to 12.2. See [Upgrading from version 12.0 or earlier](#), and then upgrade to version 13.2.*

Upgrading to version 13.2

Follow these steps.

- 1 Run the Reflection for the Web 13.2 automated installer.

The installer detects the existing Management and Security Server installation and provides the option to upgrade.



- 2 When selected, the Reflection for the Web installer launches the Management and Security Server installer, which upgrades Management and Security Server to version 12.8.
- 3 When the Management and Security Server installation is complete, you are returned to the Reflection for the Web installer to complete the installation of Reflection for the Web.
- 4 Remember to [update the activation files for the components and add-on products](#).

Upgrading from version 12.0 or earlier

Upgrading from Reflection for the Web 2014 R1 (version 12.0) or earlier requires a multi-step upgrade:

- 1 First, you must upgrade to Reflection for the Web 12.2, which includes Management and Security Server 12.2. For assistance, see Knowledge Base article [7022345](#).

NOTE: Changes since version 12.2 include the renaming of several components:

- ♦ **Administrative Server** replaces Management Server
- ♦ **MSSData** replaces ReflectionData
- ♦ **Terminal ID Manager** replaces ID Manager

The default installation path on Windows is C:\Program Files\Micro Focus\MSS.

- 2 Then, proceed with [Upgrading to version 13.2](#).

Related topic

- ♦ [Update the Activation Files for Components and Add-On Products](#)

Update the Activation Files for Components and Add-On Products

After installing Reflection for the Web, you need to update specific activation files to ensure continued operation of your installed components and add-on products. Management and Security Server checks for version compatibility and may block operation until the activation files are updated.

The Reflection for the Web components and the Management and Security Server add-on products include:

- ♦ Security Proxy
- ♦ Terminal ID Manager
- ♦ Automated Sign-On for Mainframe Add-On
- ♦ Micro Focus Advanced Authentication Add-On

To upgrade:

- 1 From your download location, download the current activation files for your components and add-on products.
- 2 Place the activation files in the same directory as the Reflection for the Web installer.
- 3 Run the Reflection for the Web installer.

The activation files will be propagated to the expected locations for both Reflection for the Web and Management and Security Server.

NOTE: When the activation files are in the installer directory, you do not need to use the MSS Administrative Console to install the activation file, as described when installing the product.

Use of JSP templates to customize pages or sessions

If you used JSP templates to customize your login page or links list page, or to customize Reflection for the Web embedded sessions, you may need to make some modifications.

NOTE: The ability to configure and use embedded sessions is no longer available. All sessions are framed.

Changes to the applet tag are needed to accommodate the changes to the Reflection for the Web and MSS installation locations.

For more information about syntax changes, see the `templates.txt` file in `<install path>/.../MSS/server/web/webapps/mss/templates`. The `samples` folder contains sample templates.

Other references:

[Reflection for the Web Reference Guide](#)

Knowledge Base article 7022339: [Using Templates in Reflection for the Web](#)

Knowledge Base article 7022214: [Programming with Reflection for the Web](#)

Upgrading custom static sessions

Custom static session pages, which depend on the Java browser applet, are not automatically updated with Reflection for the Web 13.2.

For assistance with upgrading static sessions, contact [Customer Support](#).

7 Uninstalling Reflection for the Web

To uninstall:

- ◆ **On Windows**

Use Control Panel > **Programs and Features** to uninstall Micro Focus Reflection for the Web.

If MSS is on the same machine, you have the option to uninstall it along with Reflection for the Web.

- ◆ **On Linux or UNIX systems**

Run the uninstaller found in the Reflection for the Web installation directory.

If MSS is on the same machine, the Reflection for the Web uninstaller is found in this directory:
`mss/server/web/webapps/rweb-client`.

You also have the option to uninstall MSS.

Terms

Java Cryptography Extension (JCE). The Java Cryptography Extension (JCE) provides a framework and implementations for encryption, key generation and key agreement, and Message Authentication Code (MAC) algorithms.

Java Runtime Environment (JRE). The JRE is a subset of the JDK for end-users. It includes a Java Virtual Machine and a Java interpreter and provides a unified interface to Java programs, regardless of the underlying operating system.

Java Server Pages (JSP). A Java technology that helps software developers serve dynamically generated web pages based on HTML, XML, or other document types.

Java Software Development Kit (JDK). The JDK (previously called the **Java SDK**) is the software development environment for writing Java applets or applications; it is a superset of the Java Runtime Environment and the Java Virtual Machine.

Java Virtual Machine (JVM or VM). The JVM is the part of Java that interprets Java bytecode. Because the JVM is part of the JDK, it has the same version number. When a browser supports a specific version of the JDK, this includes the JVM.

JNLP. The Java Network Launch Protocol (JNLP) enables an application to be launched on a client desktop by using resources that are hosted on a remote web server. A properly configured browser passes JNLP files to a Java Runtime Environment (JRE), which in turn downloads the application onto the user's machine and starts executing it.

OpenJDK. Open Java Development Kit is a free and open-source implementation of the Java Platform, Standard Edition (Java SE). OpenJDK produces a number of components: the virtual machine (HotSpot), the Java Class Library and the Java compiler (javac), and does *not* include the web-browser plug-in or Web Start.

Reflection for the Web Launcher. A client-side application that uses a JNLP implementation, along with Management and Security Server (MSS), to launch the emulator sessions. The Reflection for the Web Launcher does not need Oracle's JRE or the Java browser plug-in.

Reflection for the Web Launcher Installer. The Windows `.msi` file package that installs the Reflection for the Web Launcher.

Web Start (JNLP). Software that enables a user to download and run Java applets or applications from a web server. The Reflection for the Web Launcher installs an OpenJDK JRE with Web Start (JNLP) to launch Reflection for the Web sessions. See also [JNLP](#).

8 Technical References

Technical References supplement the product Help with overviews and detailed articles.

- ◆ [Reflection for the Web Launcher: a Web Start \(JNLP\) solution](#)
 - ◆ [Reflection for the Web Overview](#)
-

Reflection for the Web Launcher: a Web Start (JNLP) solution

The **Reflection for the Web Launcher** is the client-side application that uses Web Start (JNLP) to launch Reflection for the Web sessions. This OpenJDK implementation *eliminates the need* for Oracle's JRE and the Java browser plug-in on either the administrator or client machines.

- ◆ [Why the change?](#)
- ◆ [Our solution: Reflection for the Web Launcher](#)

Why the change?

The **Reflection for the Web Launcher** was developed to provide a means of using JNLP without relying on Oracle's JRE or Java plug-in to launch Reflection for the Web and your emulator sessions.

Since Oracle will no longer provide a free Java (JRE) with Long Term Support for businesses, we are providing the Reflection for the Web Launcher as a solution and cost-savings option.

Highlights of Oracle's policy changes:

- ◆ [End of Public Updates of Java SE 8](#)
- ◆ [Oracle to stop providing a free Java \(JDK\) with Long Term Support \(LTS\)](#)

End of Public Updates of Java SE 8

<https://www.oracle.com/technetwork/java/java-se-support-roadmap.html>

Java SE 8 is going through the End of Public Updates process for legacy releases. Oracle will continue to provide free public updates and auto updates of Java SE 8, until at least the end of December 2020 for Personal Users, and January 2019 for Commercial Users. Personal Users continue to get free Java SE 8 updates from Oracle at java.com (or via auto update). Commercial Users continue to get free updates to Java SE 8 from OTN for free under the BCL license.

Starting with the April 2019 scheduled quarterly critical patch update, Oracle Customers can access updates to Java SE 8 for commercial use from Oracle through My Oracle Support and via corporate auto update where applicable (Visit My Oracle Support Note 1439822.1 - All Java SE Downloads on MOS – Requires Support Login).

Oracle to stop providing a free Java (JDK) with Long Term Support (LTS)

<https://react-etc.net/entry/oracle-to-stop-providing-a-free-java-jdk-with-long-term-support-lts>

Releases of the Long Term Support (LTS) version, known as Oracle JDK, will no longer be free. That is, companies looking to stay on a specific version for more than six months would need to get updates from a commercial operator or apply patches from free OpenJDK versions manually.

<https://www.aspera.com/en/blog/oracle-will-charge-for-java-starting-in-2019/>

While extended support will not be available for free, the two versions (Oracle JDK, OpenJDK) are not expected to branch, and older versions of OpenJDK can be kept up-to-date with patches. Oracle will not make them available for free. There would be no proprietary features.

Our solution: Reflection for the Web Launcher

The Reflection for the Web Launcher is a private client-side application that installs an OpenJDK JRE with Web Start (JNLP) to launch Reflection for the Web sessions. OpenJDK eliminates the need for Oracle's JRE and the Java browser plug-in. And, Reflection for the Web Launcher can be used with any browser.

*Note: **JRE security updates** are provided in Reflection for the Web product updates.*

Reflection for the Web Overview

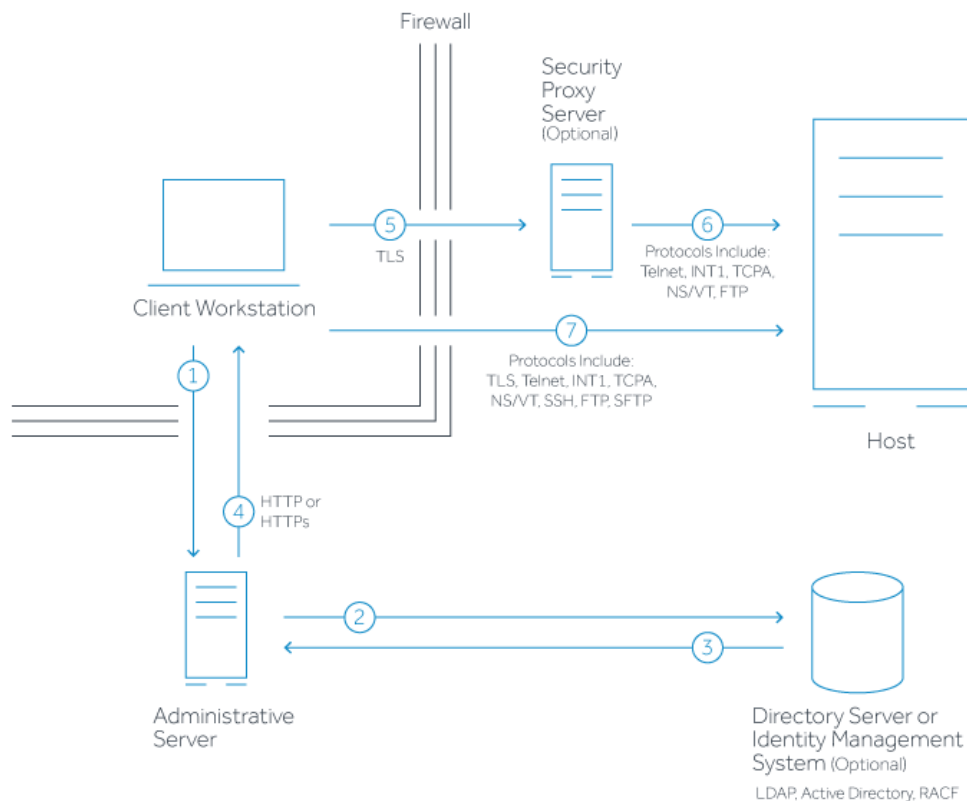
Reflection for the Web provides Java-based applets to deploy web-based terminal emulation sessions to your users. Reflection for the Web's terminal sessions are centrally managed and secured using the Management and Security Server (MSS) Administrative Console.

Using Reflection for the Web and MSS, you can configure secure web-based terminal emulation sessions that connect to host applications located inside or outside the firewall.

Briefly, here's how it works:

- 1 An administrator installs Reflection for the Web on a server and either installs or uses an existing installation of Management and Security Server (MSS).
 - 2 The administrator uses the MSS Administrative Console to create, configure, and secure terminal emulation sessions. Optional security settings can be configured on a per-session basis.
 - 3 A user clicks a link to start a terminal session.
 - 4 The Reflection for the Web session is downloaded to the user's workstation.
 - 5 The user connects to and communicates with the host system using the downloaded emulation applet.
-

The diagram below depicts the interaction between Reflection for the Web, the MSS Administrative Server, and the optional Security Proxy Server to provide enhanced security.



1. Reflection for the Web user connects to the MSS Administrative Server.
2. User authenticates to a directory server (LDAP/Active Directory) or other identity management system — optional.
3. Directory server provides user and group identity — optional.
4. The Administrative Server sends a list of **Assigned Sessions** to the authenticated client. The user clicks a session.
5. When the optional Security Proxy Server is configured for use by a session, emulation applet makes a TLS connection to Security Proxy Server and sends it a signed token.
6. When present, the Security Proxy Server validates session token and establishes a connection to the host:port it specifies.
7. When no Security Proxy Server is present or a session is not configured to use it, an authenticated user connects directly to the host.

Administrative Server

The Management and Security Server *Administrative Server* includes the **MSS Administrative Console** and terminal emulation files, which are installed together on a web server.

After you install (or point to an existing) Management and Security Server, you can open the Administrative Console, which is a self-contained web application. Use the Administrative Console to manage and configure web-based terminal sessions. With Reflection for the Web, Java-based applets deploy terminal emulation sessions to your users.

Optional Components

Your Reflection for the Web license entitles you to these optional components in Management and Security Server:

- ◆ **Metering Server** monitors the use of terminal sessions.
- ◆ **Security Proxy Server** *acts as a proxy for terminal sessions, routing encrypted network traffic to and from user workstations.
- ◆ **Terminal ID Manager** *spools terminal IDs, tracks ID usage, and manages inactivity timeout values for specific users.

* Your Reflection for the Web license (except the Limited Edition) includes the **Security Proxy** and **Terminal ID Manager**, which are Add-On Products to Management and Security Server.

For information about installing, configuring, and using these components, see the [MSS Installation Guide](#).

Related topics

- ◆ [Preparing to Install](#)
- ◆ [Installing Reflection for the Web](#)