

Honeywell

WEBs-N4 Java-based Web Clients

Guide

INSTALLATION INSTRUCTIONS

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About this guide

This topic contains important information about the purpose, content, context, and intended audience for this document.

Document Content

This document describes how to use the Niagara 4.2 Java Web Start feature which provides an applet-like Workbench environment that runs completely outside of a web browser. Sections in this guide include chapters about common tasks, concepts, and reference information. Also included are images and descriptions of the primary software user interface windows involved when working with Web Start.

Product Documentation

This document is part of the Niagara technical documentation library. Released versions of Niagara software include a complete collection of technical information that is provided in both online help and PDF format. The information in this document is written primarily for Systems Integrators. In order to make the most of the information in this book, readers should have some training or previous experience with Niagara 4 or NiagaraAX software, as well as experience working with WEBs network controllers.

Document change log

The following list describes significant documentation changes.

June 7, 2019

Initial release

Related documentation

- [Getting Started with Niagara](#)
- [Niagara Station Security Guide](#)

Chapter 1 Java-based web clients

Topics covered in this chapter

- ◆ Niagara Java-based Web Clients
- ◆ More on the changes in Oracle Java 8
- ◆ Frequently Asked Questions

While web server software typically is used to deliver content, web client software running on a local device is used to access and interact with web servers. Java-based web client software is an Oracle technology that comes as part of the Java Runtime Environment.

Niagara Java-based web client software, such as Niagara Web Start, offers an alternative to running the Workbench applet in a web browser by providing an application which can be launched in a separate window by the web client. A significant advantage that Workbench launched by this method has over launching as a browser applet is that it overcomes typical compatibility problems with browsers' Java plugins. For example, many late version browsers have disabled support for NPAPI which prevents the Java WbApplet from running in a browser. So the importance of Java-based web client software is that it removes the need for the use of the Java plug-in. However, it does not remove the need for a suitable Java Runtime Environment on the client's PC.

IMPORTANT: Oracle has announced the pending end-of-life of Java SE 8 (Standard Edition). As of January 2019, free public updates are no longer available. Customers accessing Niagara with the Java Applet/Web Start will be impacted by this change as they will no longer receive free security updates to their Java installation from Oracle. Customers who have upgraded to full HTML5 versions for their browser front-end will not be affected. For customers who use the Java VM and Java Web Start for their legacy systems, Tridium has developed a suitable alternative and those users can begin utilizing the Niagara alternative, Niagara Web Launcher

Niagara Java-based Web Clients

Both Niagara Web Start and Niagara Web Launcher are Java-based web client applications which provide an applet-like Workbench environment that runs completely outside of a web browser.

Although, Web Start will continue to function and be supported (AX-3.8 and forward; Niagara 4.4U1 and forward) for some period of time. The complication for customers using Web Start is that there are no more free auto-updates available for Java 8 JRE; i.e., keeping their systems up-to-date with the latest security fixes from Oracle.

To support customers affected by this change, in Niagara 4.8 and later, Niagara Web Launcher is provided as an alternative to Web Start. Niagara Web Launcher will not be affected by the pending end-of-life of Java 8. The solution provided with Web Launcher is that it actually contains an up-to-date version of the Java 8 JRE (licensed and distributed by Tridium). Web Launcher supports the following Niagara releases:

- WEBs-AX-3.8u4
- WEBs-N4.4u3
- WEBs-N4.7u1
- WEBs-N4.8

For users, the transition from Web Start to Web Launcher should be easy since the two web client applications function in the same way. Each provides an installer which downloads and launches a program that opens the application in a separate window instead of in a browser.

Usage information for both features, Niagara Web Launcher and Niagara Web Start, is provided in this guide.

More on the changes in Oracle Java 8

Oracle has announced their plans to end support for auto-updates (for Java 8 to Java 9, and later). As of January 2019, Oracle ended free public updates for Commercial End Users, and intends to end free updates for Personal End Users after December 2020. Customers accessing Niagara with the Java Applet/Web Start will be impacted by this change.

Figure 1 Oracle Java 8 Updates warning



Most Niagara and Web Start end users fall under the Commercial End User category. They will not be auto-updated to Java 9 (or later) as Oracle intends to remove their web deployment stack with Java 11. This means that commercial end users may have to pay Oracle for support (perhaps a certain dollar figure per license) in order to keep their systems up-to-date with the latest security fixes for the JRE.

Many Niagara sites (especially WEBs-AX and WEBs-Enterprise Security sites) rely on Java Applet/Web Start functionality in JAVA 8 JRE.

Frequently Asked Questions

This topic provides frequently asked questions and answers to assist you in understanding the potential impact to your system resulting from the pending end-of-life of Java SE 8.

Will my system stop working?

No, your application will continue to work as long as you have your Java Run-Time Engine (JRE) installed. However, you will not receive future security updates after the January 2019 update.

Does this affect Niagara Workbench?

No, this does not affect Workbench users.

Does this affect my Niagara Supervisor or JACE?

No, Tridium is still providing security updates for these platforms.

Does this affect the web browser I use to access my Niagara system?

Yes, this impacts the JRE used in your browser if you are still using Java based views.

Do I need to upgrade my installed version of Java?

Our replacement product will not use the version of Java currently installed on your system. Tridium will provide an up-to-date version for use by our application. Please consult with your IT department about updating your locally installed version as changes may impact products from other vendors.

Which version of Java does the Niagara Web Launcher support?

Java 8.

Will there be a cost for this new application?

At this time, there will not be a cost for this new application. This is subject to change.

Which versions are supported?

AX-3.8 and forward; Niagara 4.4U1 and forward.

Will I have to make changes to my applications?

Yes, you will need to update certain modules to provide end users with an application download and start-up link. More information will be provided once the alternative is available.

How will I get the Niagara Web Launcher?

Contact your Niagara partner to get the appropriate JAR files.

Will the JRE for Niagara Supervisor and JACEs still be Oracle J2SE?

The Supervisor and JACE JRE will not be changed as a part of releasing the Niagara Web Launcher.

Will there be some impact (specific bugs, performance, memory) in running two different JREs?

We do not expect any issues.

For additional information from Oracle, check out the Java SE Support Roadmap and the Oracle Java SE 8 Release Notes at <https://www.oracle.com/technetwork/java/index.html>.

Chapter 2 Using Niagara Web Launcher

Topics covered in this chapter

- ◆ Downloading the installer
- ◆ Installing Web Launcher
- ◆ Web Launcher limitations

When using this feature, just as with Web Start, the web browser is needed only to download the installer file.

Once the installer file (NiagaraWebLauncher*.msi) is downloaded, it installs the Niagara Web Launcher application on your device. The Niagara Web Launcher file (webLauncher.exe), which is saved to the C:\ProgramFiles\Niagara Web Launcher directory by default, is used to launch the application. After installation has completed, you can configure a Windows shortcut for the file. The browser is not needed again.

Downloading the installer

When you initiate a browser connection to the station the pre-login window provides a link under the login dialog that reads: "To connect using Niagara Web Launcher click here". Clicking this link downloads and auto-runs the installer file.

Figure 2 Example Niagara Web Launcher link that downloads and launches the installer

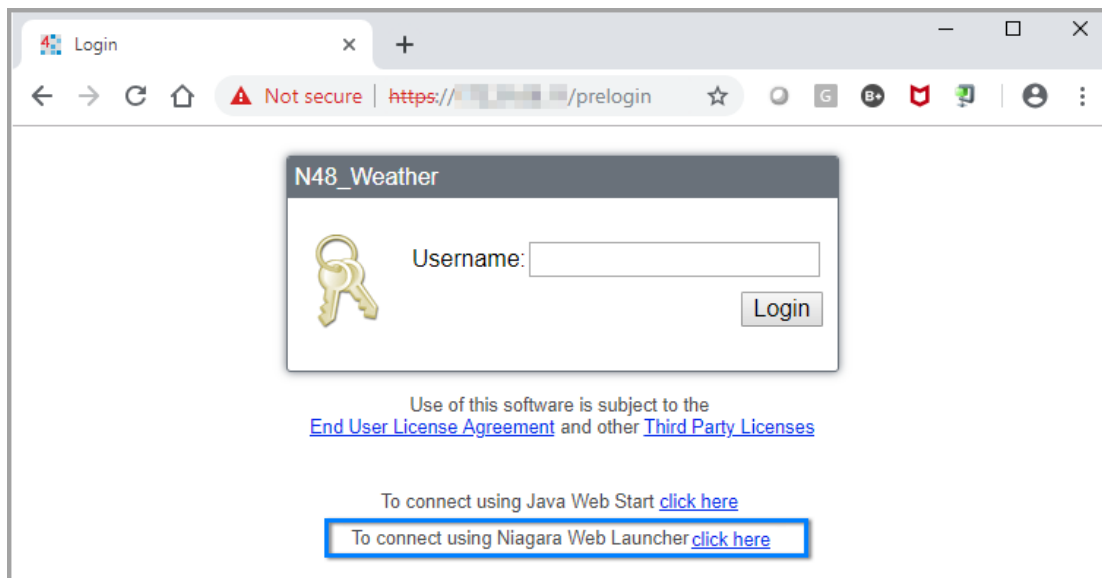
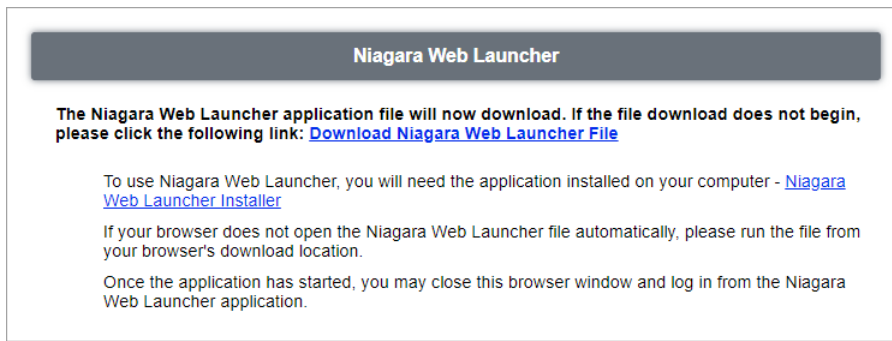
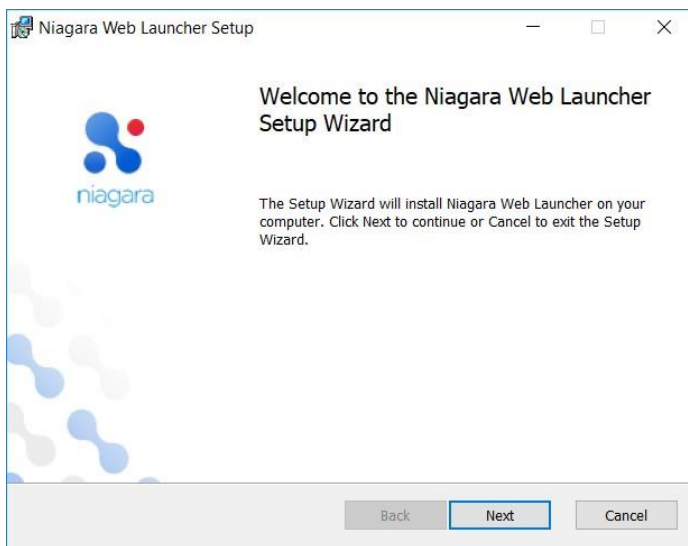


Figure 3 The NiagaraWebLauncher.msi installer file downloads



NOTE: If the installer does not automatically run, access the NiagaraWebLauncher*.msi file in your browser's downloads location and double click the file to run the setup wizard shown below. You may notice another file, <stationName>.nwl is downloaded to the same location. This is a text file containing information that tells Web Launcher how to connect to that particular station. So on subsequent connections, there is no need to download and run the *.msi installer file again. Instead you could double-click the *.nwl file which launches webLauncher.exe.

Figure 4 Niagara Web Launcher Setup Wizard window



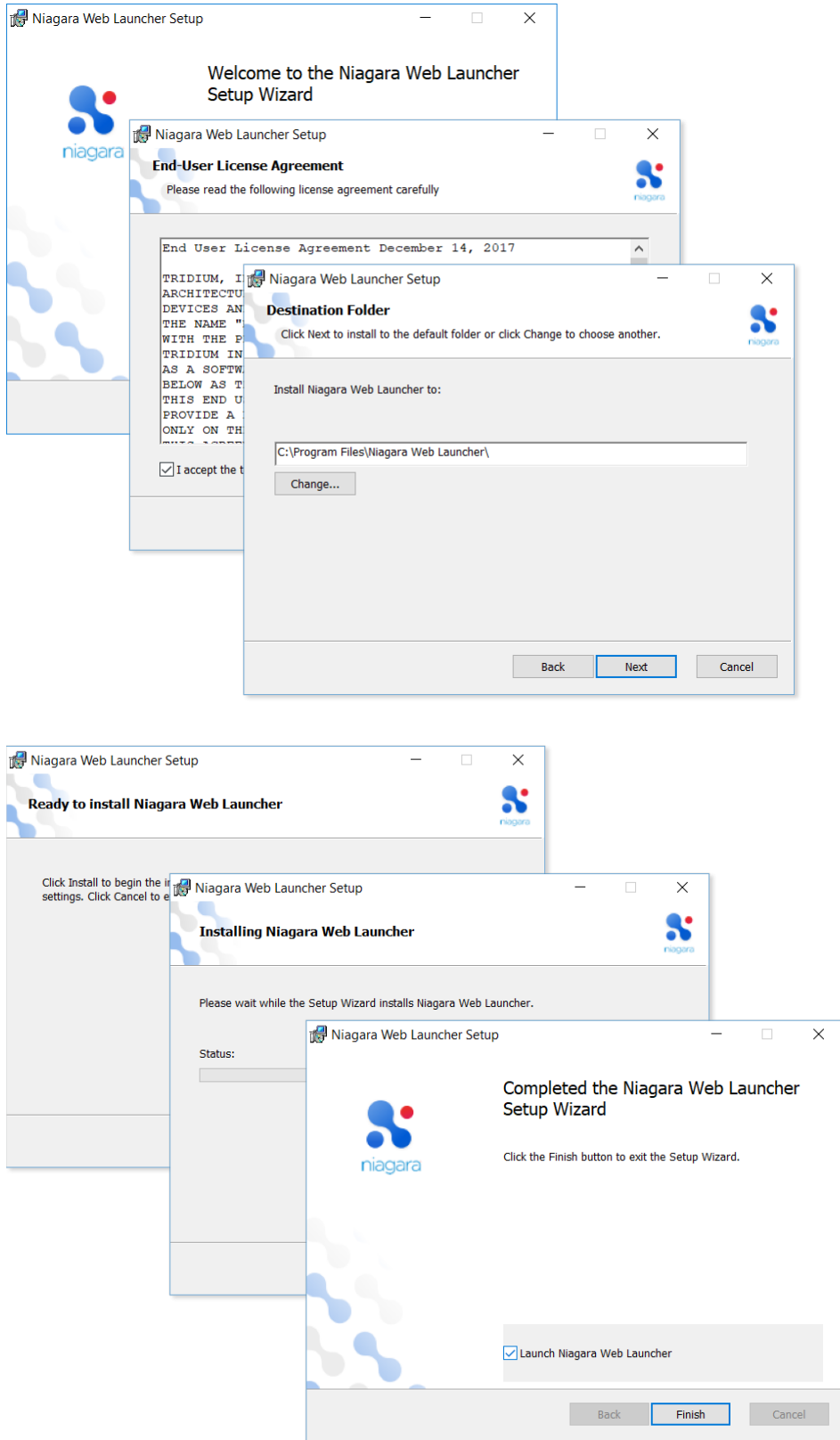
Once the installer launches the Niagara Web Launcher Setup Wizard, you can close the browser or you can go to a different web page while the setup wizard runs and installs the executable file.

Installing Web Launcher

The installer file (NiagaraWebLauncher*.msi) which should auto-run upon downloading, opens the Niagara Web Launcher Setup window. The setup wizard runs and installs the Web Launcher executable file.

As with most installer wizards, on-screen instructions in the subsequent windows walk you through the installation process. Simply click Next to advance to the next window, Back to see a previous window, Install to begin the installation, and on completion click Finish to exit the installer. Click Cancel to exit without completing the installation.

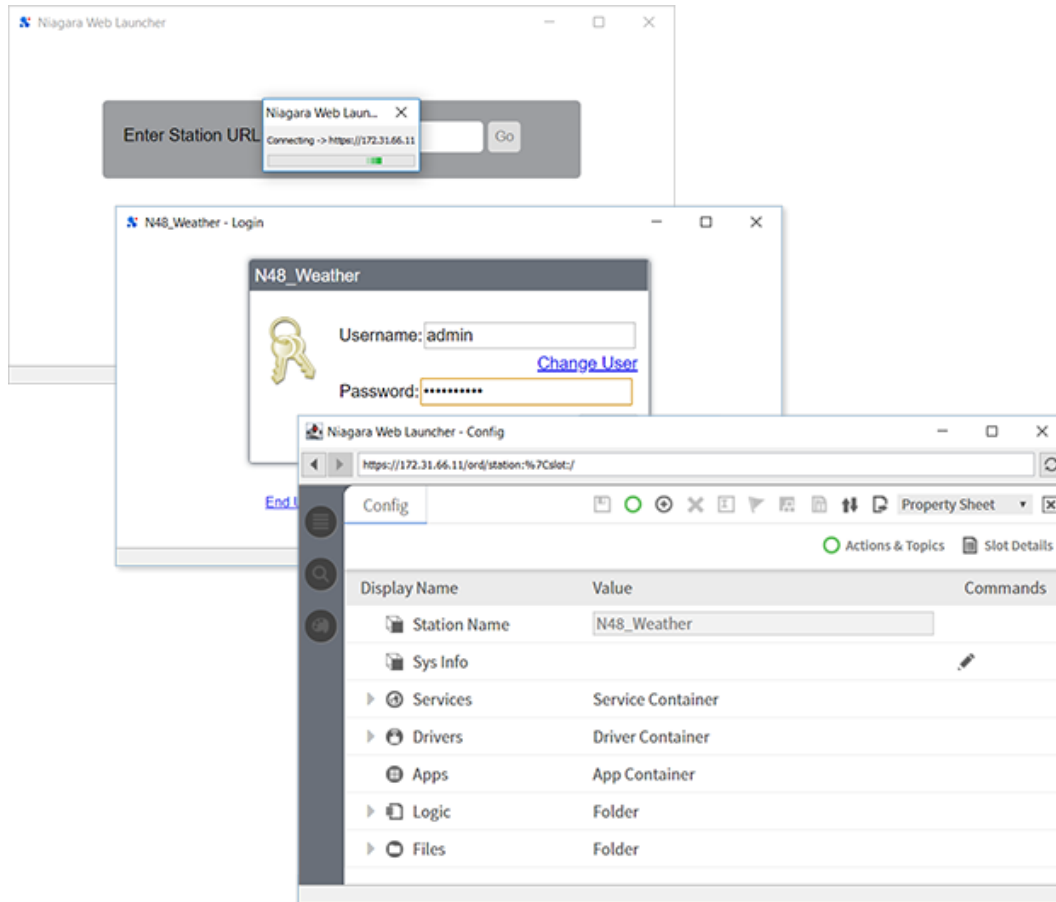
Figure 5 Niagara Web Launcher Setup Wizard



When the installer finishes, if the Launch Niagara Web Launcher checkbox is selected it automatically launches the Niagara Web Launcher application in a separate window.

In the Niagara Web Launcher window, first you are prompted to enter a Station URL, then your Username, and Password credentials to connect to the station.

Figure 6 Opening the station connection via Web Launcher



Once the Web Launcher executable file is installed you only need to run webLauncher.exe to connect to the station. There is no longer any need to access the login page via a browser or to run the installer file again. Optionally, you can create a Windows shortcut for the webLauncher.exe file to use on subsequent connections.

NOTE: The installer also installs webLauncher_debug.exe (in the same location as the Web Launcher executable) which you can run if you need debugging information. Double-clicking the file to opens a Debug window and a Web Launcher window.

Web Launcher limitations

Known limitations of the Web Launcher implementation in Niagara are described here.

When the Niagara Web Launcher application creates the Workbench view, that view is not contained within a web page. The view has no direct relationship to HTML elements in a web page, and the HTML does not know about the view. The view is not displayed as part of the layout of a page. This means that certain things that might have been possible with the applet in a browser will not work in Web Launcher. An applet contained within an HTML frame, for instance, cannot be supported in Niagara Web Launcher.

An Hx view containing an instance of the applet may not display in a browser exactly as it did in a previous release(s). The Niagara Web Launcher application is unable to display the applet in line with the HTML content. Instead, the application positions the HTML and applet next to each other. The application shows the Hx path bar at the top of the view, with the applet below it. HTML content below the applet is not visible.

Additionally, the AX Web Launcher application cannot open an applet view from the Niagara 4 station, and vice versa. In this situation, you must open the Web Launcher application from the other station.

Chapter 3 Using Java Web Start

Topics covered in this chapter

- ◆ About the JNLP file
- ◆ Web Start Config properties
- ◆ Enabling Web Start
- ◆ Configuring Web Start shortcuts
- ◆ Branding Web Start applications
- ◆ About multi-station navigation
- ◆ Web Start limitations

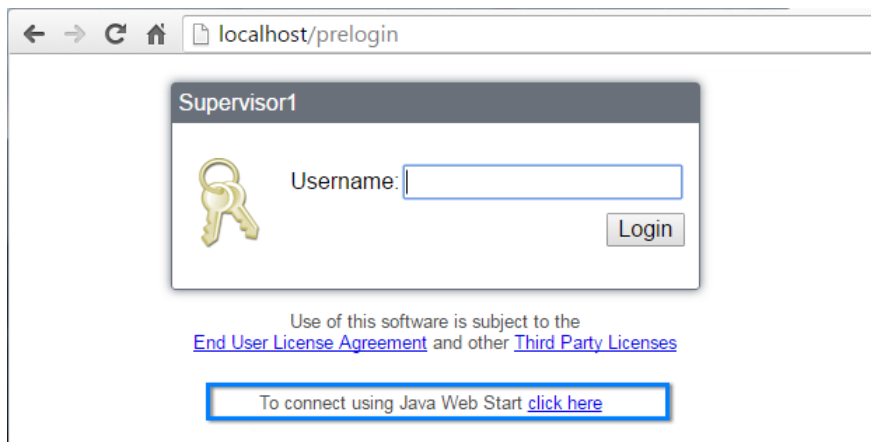
The Niagara Web Start feature provides an applet-like Workbench environment that runs completely outside of the browser.

IMPORTANT: Oracle has announced the pending end-of-life of Java SE 8 (Standard Edition). As of January 2019, free public updates are no longer available. Customers accessing Niagara with the Java Applet/Web Start will be impacted by this change as they will no longer receive free security updates to their Java installation from Oracle. Customers who have upgraded to full HTML5 versions for their browser front-end will not be affected. For customers who use the Java VM and Java Web Start for their legacy systems, Tridium has developed a suitable alternative and those users can begin utilizing the Niagara alternative, Niagara Web Launcher.

The web browser is needed only to download a JNLP file that is used to launch the application. The downloaded JNLP file can be used to launch the application on subsequent occasions (the browser is not needed again). The Niagara Web Start application then checks that a Java 8 JRE is installed, as a minimum. It does not check the update release version of the installed JRE.

In the figure shown here, you would launch the application by clicking the additional link under the login dialog that reads: "To connect using Java Web Start click here". Of course, if you configure Web Start desktop or Start menu shortcuts, Workbench is launched from those. In that case, the link and login page in the web browser are not used. Once the application is downloaded and launched, you can close the browser or you can go to a different web page while the application continues running.

Figure 7 Java Web Start link on a station's login web page



A significant advantage that Workbench launched by this method has over launching as a browser applet is that it overcomes typical compatibility problems with browsers' Java plugins. For example, many late version browsers have disabled support for NPAPI which prevents the Java WbApplet from running in the browser.

Optionally, the Java Web Start application can be branded. You may add brand icons for the window frame and shortcuts. For example, an OEM distributing the Niagara-based application can configure the brand, properties file with their brand defaults, and a Systems Integrator installing that product can optionally modify the default shortcut text to suit the end users via the configuration properties available in the station's Web Services.

Enabled by default, to use Web Start simply decide whether or not you want to install application shortcuts. If you do, use the Web Start Config properties (in the station's Web Services) to enable the shortcuts and modify default shortcut text as needed.

About the JNLP file

Java Web Start applications are launched using the Java Network Launch Protocol (JNLP). The JNLP file is required in order to deploy an application. A web browser is needed only to download a JNLP file that is used to launch the application. On subsequent occasions, you can double-click the JNLP file to relaunch the application. The web browser is not needed. The JNLP file, which is generated by the web server, is an XML text file that describes how the application should be launched. It contains the basic information on the application and host, such as the URL of the hosting station. The file does not contain any user- or session-specific information.

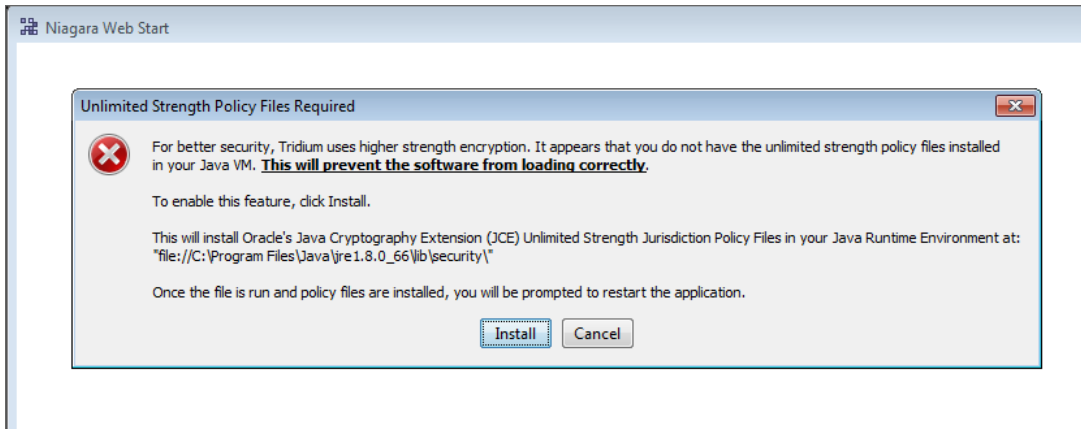
NOTE: Once a JNLP file is obtained, the application then checks that a Java 8 JRE (at a minimum) is installed. However, it does not check the update release version of the installed JRE.

Figure 8 The JNLP file downloads and launches the application



NOTE: If using the Chrome web browser, Chrome is not able to automatically open a JNLP file. The file must first be downloaded and then opened manually.

You may see the following notification that the required JRE unlimited strength policy files must be installed. After the files are installed you must close the application and restart it.



NOTE: If you have difficulty starting the Web Start application it may be due to the presence of a self-signed server certificate in the station. For details on certificates, see the Niagara Station Security Guide.

Web Start Config properties

Web Start Config is a slot in the Web Services Property Sheet view. The Web Start Config properties permit you to enable/disable Web Start functionality and to configure shortcuts.

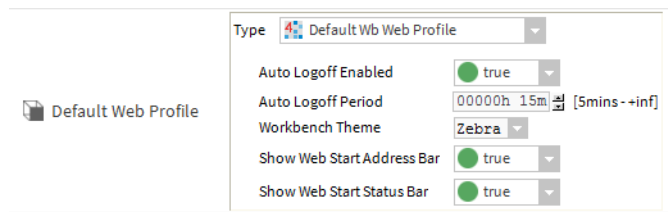
Web Start Config property descriptions

Name	Value	Description
Web Start Enabled	true (default), false	Enables/disables Web Start functionality on the station.
App Title	Format string: %station% - % server%(default)	Format string supports only the BFormat options. Modifies the text that displays with the Start menu shortcut or desktop shortcut. Typically, the default the App Title is the station name, server name, IP address, or localhost. For security reasons, this property supports only a few of the BFormat options: %server%- the host name or IP address of the station. This is the URL used to get the JNLP file. %station%- the station name. %app%- the application name. This value is from the web-start.title property in the brand.properties file or if not specified there, it is "Niagara Web Start" by default. %vendor%- the vendor name. This value is from the webstart.vendor property in the brand.properties file or if not specified there, it is the license brand by default.
Create Start Menu Shortcut	true, false (default)	Configures the application to launch from a Start Menu shortcut. Configuring Web Start shortcuts is optional.
Create Desktop Shortcut	true, false (default)	Configures the application to launch from a desktop shortcut.

Name	Value	Description
		Configuring Web Start shortcuts is optional.
Shortcut Folder Name	Format string: %app% (default)	Configures the application name text for the shortcut. The default option (%app%) uses the value from the webstart.title property in the brand.properties file or, if not specified there, it defaults to the value configured for the Web Start Config AppTitle property. NOTE: Configuring this property is optional.

Default Web Profile properties

The Default Web Profile, in the station’s UserService, includes two Web Start configuration options as well: Show Web Start Address Bar and Show Web Start Status Bar. The new profile options allow profile users to hide those parts of the window if they don’t want to see them.

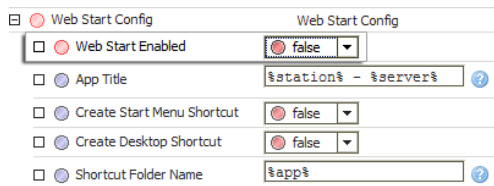


Name	Value	Description
Show Web Start Address Bar	true (default)/false	Allows profile users to configure the window to show or hide the address bar.
Show Web Start Status Bar	true (default)/false	Allows profile users to configure the window to show or hide the status bar.

Enabling Web Start

Typically, Web Start functionality is enabled by default. However, if needed, you can enable it via the station’s WebServices Property Sheet view, as described in this procedure.

Step 1 On the station’s WebServices Property Sheet view, expand the Web Start Config slot (as shown) and click on the Web Start Enabled dropdown to set the value to true.



Step 2 Click Save.

Web Start functionality is enabled on the station.

Optionally, you can click in the text field for the **AppTitle** property to modify the text that displays with the Start menu or desktop shortcuts. Typically, the default app title would be the station name, server name, IP address or localhost.

Configuring Web Start shortcuts

Java Web Start properties allow you to configure the application to launch from a desktop shortcut or a Start Menu shortcut. Note that configuring shortcuts is optional, it is not required.

Step 1 On the station's WebServices Property Sheet view, expand the Web Start Config slot and click on the dropdown list to enable the following shortcut properties:

- **CreateStartMenuShortcut**
- **CreateDesktopShortcut**

Step 2 If desired, click in the text field for the **ShortcutFolderName** property to modify the default text for the shortcut. This step is optional.

NOTE: For security reasons, this property supports only a few of the BFormat options:

- **%server%**- the host name or IP address of the station. This is the URL used to get the JNLP file.
- **%station%**- the station name.
- **%app%** - the application name. This value is from the **webstart.title** property in the brand.properties file or if not specified there, it defaults to the value configured for the Web Start Config **AppTitle** property.
- **%vendor%**- the vendor name. This value is from the **webstart.vendor** property in the brand.properties file or if not specified there, it is the license brand by default.

Branding Web Start applications

This optional procedure may be most useful for an OEM distributing the Niagara-based application. You can brand defaults for your Workbench application launched by Java Web Start by editing the brand.properties file. There are five properties in the brand file relating to Web Start (shown below in step 2).

Prerequisites:

- The image files used for branding must be located on the local station, either in the module space or in the file system space. If using the file system space, the ords must refer to files in the system home /ec- netaxpro/webstart/directory.
- The image files must be either .png, .gif, .jpg, or .ico format.

Step 1 Open the Java Control Panel, view the temporary internet files from the general page, and delete any existing cached instances of the Web Start app

Step 2 In the system home directory, open the /etc/brand.properties file and, if the following settings are present in the file, modify as desired. Otherwise, use a text editor to enter the following settings in the file:

- **webstart.vendor** - you can use this in the format property for the shortcut text. Niagara uses the license brand id when this property is not set.
- **webstart.title** - provides the text for the window title bar. You can also use this as a format value in the shortcut property.
- **webstart.icon** - a file ord referencing an icon image file to be used on the title bar of the application window
- **webstart.shortcut.icon** - a file ord referencing an image file to be used on the start menu and desktop shortcuts)

Step 3 Start the station.

Step 4 In the WebServices Property Sheet view, expand the Web Start Config slot and ensure that the Web Start property is enabled and that the three shortcut properties are enabled.

Step 5 Open the login page from a web browser and click on the Web Start link to download the JNLP file.

The Web Start application opens.

Step 6 Verify that the title and icons specified in the brand.properties file are used for the window frame.

Step 7 Open the Windows Start menu and verify that the shortcut icon specified in the properties file is shown.

Example

Following is an example of brand properties referencing custom images via module ords:

```
webstart.vendor=Initech webstart.title=Initech BAS Appliance
webstart.icon=module://demoAppliance/appliance/ui/initech.png
webstart.shortcut.icon=module://demoAppliance/appliance/
ui/initech.png
```

NOTE: Since the brand properties are cached, subsequent changes require a station restart for the changes to take effect. Brand properties are also written to the JNLP file, so changes require that the file be down-loaded again.

Web Start limitations

Known limitations of the Java Web Start implementation in Niagara are described here.

When the Niagara Web Start application creates the Workbench view, that view is not contained within a web page. The view has no direct relationship to HTML elements in a web page, and the HTML does not know about the view. The view is not displayed as part of the layout of a page. This means that certain things that might have been possible with the applet in a browser will not work in Web Start. An applet contained within an HTML frame, for instance, cannot be supported in Niagara Web Start.

An Hx view containing an instance of the applet may not display in a browser exactly as it did in a previous release(s). The Niagara Web Start application is unable to display the applet in-line with the HTML content. Instead, the application positions the HTML and applet next to each other. The application shows the Hx path bar at the top of the view, with the applet below it. HTML content below the applet is not visible.

Additionally, the AX Web Start application cannot open an applet view from the N4 station, and vice versa. In this situation, you must open the Web Start application from the other station.

