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NiagaraAX JACE WiFi option

Starting in AX-3.6, NiagaraAX support was added for wireless 802.11b/g JACE connectivity (WiFi). At the time of this document, this applies only to a JACE-700 with an installed Mini-PCI WiFi adapter card (T7-WIFI option). This JACE 7 option became available in the AX-3.6 software release timeframe.

Note: See the “install sheet” document that ships with this WiFi adapter option card, for physical mounting details. This document summarizes usage scenarios and software configuration details of the WiFi option.

The following sections provide more details:

- “JACE WiFi usage scenario” on page 1
 - “Requirements for WiFi JACE support” on page 2
 - “Operation notes for a WiFi JACE” on page 2
- “Configuring the JACE for Wifi” on page 3
 - “Install the WiFi adapter card” on page 3
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- “About the WiFi Configuration view” on page 6
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 - “About a new (undiscovered) wireless network”
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JACE WiFi usage scenario

The primary use case for JACE WiFi connectivity is when, for whatever reason, the JACE cannot be directly Ethernet “patch cabled” to the desired IP LAN. However, that LAN provides a wireless WiFi router or access point (it is a “WLAN”). The JACE’s WiFi adapter effectively adds a “third” WLAN choice for this IP connectivity, apart from its LAN1 and LAN2 Ethernet ports.

Note: Please note that WiFi support does not enable the JACE to operate as a Wifi “hotspot” or access point, nor does it enable the JACE to provide routing functions between different LAN or Interface connections.

Two possible usage scenarios are:

- The only (primary) LAN connection needed to the JACE cannot be done using Ethernet cabling, perhaps for some physical reason that making it too expensive. In normal daily operation, neither physical (RJ-45) LAN port is used, meaning no cable is attached.
- The JACE is already (primary) LAN1 connected with a patch cable, but a separate, isolated WLAN has devices that need to be integrated in the station with a driver. This other WLAN provides a near-by wireless router that would save the expense of pulling more cable.

In any case, note that you need normal LAN connectivity to the JACE for the initial NiagaraAX configuration of this WiFi option.

Requirements for WiFi JACE support

No JACE licensing feature specific to WiFi is needed. Other requirements for a WiFi JACE are as follows:

JACE WiFi platform

At the time of this document, a JACE 7 series controller (JACE-700), running AX-3.6 or later is required, with a Tridium JACE 7 WiFi adapter card option (T7-WIFI) installed in that controller's MiniPCI slot.

NiagaraAX software module

The "platWifi" software module must be installed in the JACE. Note you can do this either before or after physically installing the WiFi adapter card option.

WiFi (802.11b/g) router or access point information

To configure the JACE for WiFi access, you must know the SSID of your site's local 802.11b/g WiFi router (or access point), as well as its network key, that is its security password.

If the router or access point is configured to use MAC address filtering, note you can find the WiFi adapter's MAC address (physical address) in the platform **TCP/IP Configuration** view, under the "Interface 3" area. You will need to enter that MAC address into your router's MAC address filter table.

Operation notes for a WiFi JACE

Operation of the WiFi-equipped JACE allows it to be accessed via a wireless 802.11 connection, for example, a station (fox) connection from Workbench, or a station-to-station fox connection, or a Workbench platform connection, or a browser connection, all from a host on that same network. You specify that network in the TCP/IP platform configuration of the JACE, under the "Interface 3" section of the platform TCP/IP Configuration view, or in the station's equivalent TcpIpPlatformService view.

By default, the Interface 3 (bc0) adapter is not enabled—you need to enable it and then specify the appropriate network serviced by the target WiFi router/access point. Just as when enabling both Ethernet LAN ports on the JACE, the Interface 3 bc0 wireless adapter must specify a different network (subnet) than either LAN1 or (if enabled) LAN2.

Note: *A JACE does not provide IP routing or bridging operation between different Interfaces (LAN ports, WiFi, GPRS, dialup).*

Even if no permanent LAN1 connection is made to the WiFi-equipped JACE, it may be typical to leave it (Interface 1) enabled and configured to a known static IP address. This could help facilitate on-site NiagaraAX maintenance, for example, by connecting an Ethernet cable directly between its LAN1 port and an engineering workstation laptop, and then accessing it using this separate network.

Be aware that any QNX-based JACE has only a single IPv4 TCP/IP gateway and (potential) set of IPv4 DNS servers, which apply to all Eth/IP interfaces (en0, en1, bc0). If the WiFi network (Interface 3, bc0) is the primary operating network for the JACE, you should specify IP address values for the JACE's IPv4 gateway and DNS servers accordingly. Often the IP address of the target WiFi router/access point is used as the "IPv4 Gateway", and its DNS server addresses are reused in the JACE's TCP/IP setup. Otherwise, outbound operations from the JACE's station, e.g. IP-based discover operations, or WeatherService or other customized applications, may fail because a route or host was not found.

Finally, note these two differences between Interface 3 (bc0) and the two onboard LAN ports (en0, en1):

- System shell access (serial shell or Telnet JACE) to the JACE does not provide TCP/IP configuration of the WiFi adapter, via its "Update Network Settings" menu selection. This is for the JACE onboard LAN ports only. However, you do see some configured values for the "bc0" adapter atop the menu.
- When performing a discover operation in the Niagara **Station Manager** view from *another* remote NiagaraAX host like a Supervisor or other JACE, the JACE's reported IP address can be *wrong*. In this case, the Supervisor is on the same network served by the WiFi router/access point connected to the JACE. The NiagaraStation for the WiFi JACE will appear discovered showing its *LAN1 (en0) IP address*—and *not the IP address* for Interface 3 (bc0) that was actually used.

In this case, to successfully add the discovered station to the Supervisor station's NiagaraNetwork, you need to know what its Interface 3 IP address is, and replace the incorrect reported address.

Note a similar issue occurs when your Workbench host is connected on the WiFi-equipped network, and you issue the "Find Station" command (from File menu: **File > Open > Find Stations**). Again, the discovered entry for the WiFi JACE is likely to show its LAN 1 IP address, and will be unreachable if selected for station connection in that dialog.

Configuring the JACE for Wifi

This section provides a summary of the necessary steps to configure a JACE-700 for WiFi access.

1. [Install the WiFi adapter card](#)
2. [Install the platWifi software module](#)
3. [Discover and add a wireless network](#)
4. [Enable and configure TCP/IP settings for the WiFi interface](#)

Install the WiFi adapter card

Installation requires removing the controller from any mounting and working on a static-free, well-lit work surface. For specific details, refer to the *WiFi Option Install Guide* document that ships with the WiFi adapter card.

Install the platWifi software module

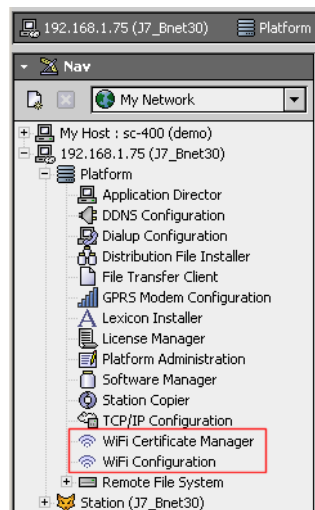
Open a NiagaraAX platform connection to the JACE. Use the platform **Software Manager** to install the platWifi module, if not already installed.

For related details, see “Software Manager” in the *NiagaraAX Platform Guide*.

Discover and add a wireless network

After rebooting with the WiFi adapter card in the JACE, you may have noticed two new platform views when you opened a platform connection, shown in [Figure 1](#).

Figure 1 Platform tools WiFi Configuration view and WiFi Certificate Manager view



These two platform views are:

- **WiFi Certificate Manager** - typically not applicable, unless authentication on the target network requires you to have a CA certificate. See the local network administrator to request the necessary certificate file(s) to import using this view.
- **WiFi Configuration** - the *main view* used to discover and connect to a wireless network. Unlike some other specialized platform views (Dialup Configuration, GPRS Modem Configuration), these WiFi platform views appear *only* if the WiFi adapter option is physically installed in the JACE.

Note: Providing that the platWifi module is installed in the JACE, its running station should also show a new **WiFiPlatformService** too—it provides identical functions as the two WiFi platform views.

Discover and add a wireless network

Perform the following steps with the JACE installed at the job site, with an opened platform connection.

- Step 1 Double-click **WiFi Configuration** to open the platform WiFi Configuration view.
- Step 2 Click the **Discover** button.

This launches a discovery process, with an “Discovering Wireless Networks” popup dialog. When finished, one or more 802.11 wireless networks should appear in the (top) **Discovered** pane.

Note: A router/access point that does not broadcast its SSID will need to be added manually. See [“About a new \(undiscovered\) wireless network”](#) on page 8.


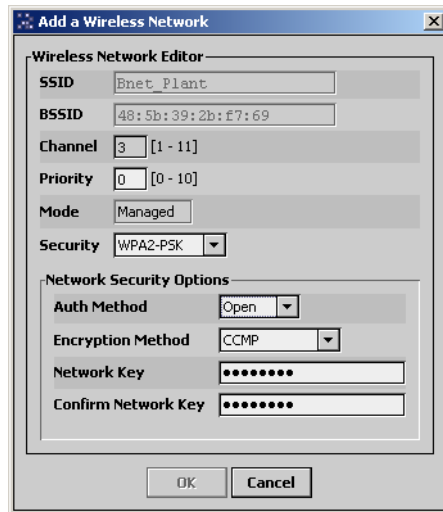

- Step 3 Double-click the desired network (or click and select  **Add Network**) for the **Add a Wireless Network** dialog. An example dialog is shown below.

Figure 2 Example Add a Wireless Network dialog in the WiFi Configuration view, following a Discover



Discovery typically learns most required values, some of which are read-only (SSID, BSSID, Mode). Other settings are often correct as shown, such that you only need to enter the **Network Key** (password).

Note: Under “Encryption Method”, note that “CCMP” is equivalent to “AES”, where the latter term may be used more frequently in router configurations.

- Step 4 Enter the network key in both fields, and if necessary, make any other adjustments. Then click **OK**. The dialog closes and the network is added to the **Database** pane, with a status of either “Disconnected” or “Connecting” during handshaking between the WiFi daemon and the wireless router or access point. Upon successful connection, the network appears with a status of “Connected”.
- Step 5 Click the  **Save** button to save the platform configuration. Next, configure IP settings for the WiFi adapter. See [“Enable and configure TCP/IP settings for the WiFi interface”](#).

Note: For more details on the **WiFi Configuration** view and wireless network properties, see [“About the WiFi Configuration view”](#) on page 6 and [“About a discovered wireless network”](#) on page 6.

Enable and configure TCP/IP settings for the WiFi interface

If a wireless network is configured and connected in the JACE's platform **WiFi Configuration** view (or equivalent view in its station's **Config > Services > PlatformService > WiFiPlatformService**), you can enable its TCP/IP interface and enter IP settings to enable access on that WLAN.

Enable and configure TCP/IP settings for the WiFi interface

Perform the following steps with the JACE installed at the job site, with an opened platform connection.



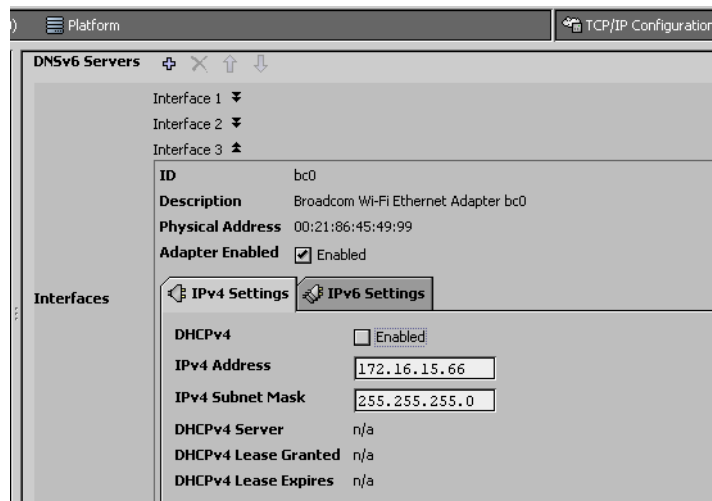
- Step 1 Double-click  **TCP/IP Configuration** to open the platform TCP/IP Configuration view.
- Step 2 Under **Interfaces**, click the **Interface 3**  control to expand the available properties. Interface properties are shown at the top above an **IPv4 Settings** tab, and include the following read only properties (showing example values of the WiFi adapter option for the JACE 7):
- **ID** — bc0
 - **Description** — Broadcom Wi-Fi Ethernet Adapter bc0
 - **Physical Address** — the MAC address for the WiFi adapter, for example 00:21:86:45:49:99
- Step 3 Click the **Adapter Enabled** checkbox to set it Enabled, and in the IPv4 Settings tab enter the appropriate IP address information for the JACE on this WLAN. Example entries are shown in [Figure 3](#).

Figure 3 Example Interface 3 (WiFi Adapter) TCP/IP settings for a JACE-700 in TCP/IP Configuration view



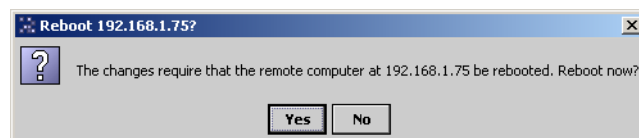
Typically you enter a (unused) static IP address and appropriate subnet mask, as shown above.

Note: This must be a different IP network (subnet) than the currently used LAN1 (Interface 1, en0) or if enabled, LAN2 (Interface 2, en1) port. For related details, see [“Operation notes for a WiFi JACE”](#) on page 2.

As an alternative to a static IP address, you could select to enable DHCP. However, as always if configuring for DHCP it is recommended that you reserve a specific, fixed IP address for this JACE host in the network's DHCP server/router configuration, noting the MAC address of this adapter as shown above.

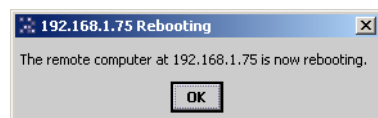
- Step 4 Click the **Save** button to save the platform configuration.
A popup Reboot dialog appears for the JACE, as shown in [Figure 4](#) below.

Figure 4 Example Reboot dialog after making changes from platform TCP/IP Configuration view



- Step 5 Click **Yes** to reboot the JACE.
A popup Rebooting dialog appears, and the opened platform connection (as well as any station connection) to the JACE is dropped.

Figure 5 Example popup Rebooting dialog



After a minute or so you should be able to re-establish a platform connection, and a minute or so after that, a station connection. The JACE should also be available on the newly added WLAN, via its installed wireless adapter.

Note: For more details on the platform **TCP/IP Configuration** view, see [“TCP/IP Configuration”](#) in the *Platform Guide*.

About the WiFi Configuration view

The platform **WiFi Configuration** view (and equivalent station “WiFiPlatformService” under its PlatformServices) lets you discover 802.11b/g networks available to the JACE, and add one or more networks, as necessary.

Figure 6 WiFi Configuration view in platform connection to WiFi enabled JACE (e.g. JACE-700)

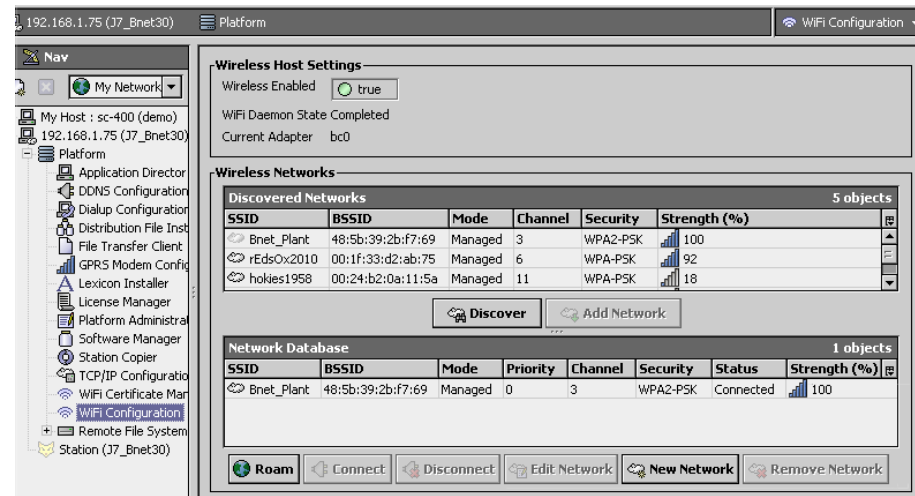


Figure 6 above shows an example view for a JACE-700 with an added network (SSID of “Bnet_Plant”), which is currently connected. This view is split into three main areas, described as follows:

- **Wireless Host Settings**
Read-only status properties as follows:
 - Wireless Enabled — either true (typical) or false
 - WiFi Daemon Status — reflects current status of underlying WiFi daemon, such as “Completed” (typical) or “Scanning”.
 - Current Adapter — the TCP/IP interface name for the WiFi adapter, different from such interface names for the JACE’s Ethernet LAN 1 port (en0) or LAN2 port (en1).
- **Wireless Networks**
Split into two separate panes:
 - **Discovered Networks**
Reflects results of the last Discover, listing available wireless networks, by SSID, BSSID, signal strength, and so on. Buttons below allow you to **Discover** and **Add Network**.
Note: During a discover, any network in the lower Network Database pane that was previously “Connected” becomes “Disconnected”—a popup confirmation dialog appears to warn you of this too. Immediately following a discovery, such a network’s status changes back to “Connecting” and then when handshaking completes, “Connected”. Therefore, keep in mind that any station or platform access connected over wireless (bc0) will be dropped upon a discover.
 - **Network Database**
Lists the wireless network(s) persisted in the platform’s configuration, along with corresponding polled status and signal strength. If more than one network is added, note that only one can be “Connected” at any time. Buttons below provide various functions—see “About Buttons in WiFi Network Database” on page 9.

About a discovered wireless network

In the typical case where the WiFi router /access point broadcasts its SSID (Service Set Identifier), you should use the Discover feature to learn and then add a wireless network. This greatly simplifies setup. Various configuration information is received and automatically seeded in the resulting add dialog, as shown in Figure 7.

Note: The “Priority” property (0 to 10, default 0) does not reflect any configuration of the router/access point. Instead, it can be used in a “multiple network” setting to specify the preferred network for connection to the JACE, by highest priority number (overriding just “strength”). See the Roam button description in “About Buttons in WiFi Network Database” on page 9.

Figure 7 Example “Add a Wireless Network” dialog for a discovered WiFi router

The screenshot shows a Windows-style dialog box titled "Add a Wireless Network". Inside, there's a section titled "Wireless Network Editor". It contains several fields: "SSID" with the value "rEds0x2010", "BSSID" with "00:1f:33:d2:ab:75", a checked "SSID Broadcasted" checkbox, "Channel" set to 6, "Priority" set to 0, "Mode" set to "Managed", and "Security" set to "WPA-PSK". Below this is a "Network Security Options" section with "Auth Method" set to "Open", "Encryption Method" set to "TKIP", and two masked text boxes for "Network Key" and "Confirm Network Key". At the bottom are "OK" and "Cancel" buttons.

Note: The checkbox “SSID Broadcasted” was added starting in the 3.6.44 maintenance build and later, and for any discovered router/access point will always be checked (set) and read-only.

Typically, this dialog’s **OK** button becomes enabled only after you enter a **Network Key** (password) value in its “Network Security Options” area, which you should re-enter as **Confirm Network Key**.

In the example above, the router was discovered to be using channel 6 along with a security type of “WPA-PSK” with encryption method of “TKIP”. Although the security/encryption settings could be manually overridden in this dialog, in this case it was unnecessary—only the network key required entry (twice) for the network to allow connection.

A router/access point discovered using another security type can require different entries. For example, with WEP security, a hexadecimal numeral “key” must be entered that matches the indexed key.

Figure 8 Example “Add a Wireless Network” dialog for a discovered WiFi router using WEP-40 security

The screenshot shows a similar "Add a Wireless Network" dialog box. The "Wireless Network Editor" section has "SSID" as "Bnet_Plant", "BSSID" as "48:5b:39:2b:f7:69", "SSID Broadcasted" checked, "Channel" as 3, "Priority" as 0, "Mode" as "Managed", and "Security" as "WEP". The "Network Security Options" section has "Auth Method" as "Open", "Encryption Method" as "WEP40", "Key Index" as 1, and four empty text boxes labeled "Key 1", "Key 2", "Key 3", and "Key 4". "OK" and "Cancel" buttons are at the bottom.

In the [Figure 8](#) example for WEP-40 security, you must know and enter the device’s 40-bit (10 hex numerals) key in the “Key 1” field, which in this case was 83EA52F378. Note if WEP-128 security is being used, this key will be much longer—26 hex numerals.

About a new (undiscovered) wireless network

If the WiFi router /access point *does not* broadcast its SSID (Service Set Identifier), you can click the **New Network** button and use the “**Create a New Wireless Network**” dialog (Figure 9).

Figure 9 Create a New Wireless Network dialog in WiFi Configuration view

Nothing is known about an unbroadcasted wireless network, so you must enter the many configuration details about the router/access point—starting with its SSID, and also its BSSID (its MAC address).

Note: Starting in build 3.6.39, a checkbox (SSID Broadcasted) is in the new (Create) or edit dialog for a wireless network. Leave this blank if the router/access point does not broadcast its SSID. Also, in the 3.6.44 or later maintenance build, the Channel property became writable.

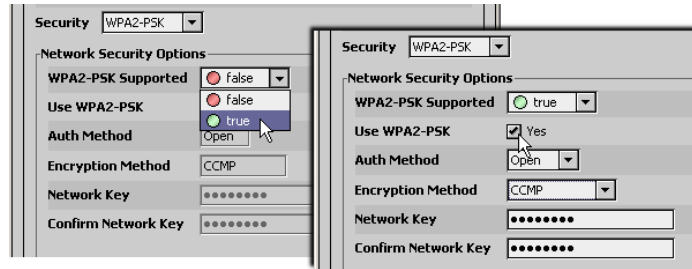
Note the “Priority” property (0 to 10, default 0) does not reflect any configuration of the router/access point. Instead, it can be used in a “multiple network” setting. See the Roam button description in “[About Buttons in WiFi Network Database](#)” on page 9.

Figure 9 above shows a dialog for the default “Security” type of WEP—click the drop-down control for the list of security choices—this changes many fields in the dialog, as appropriate. See Figure 10 below.

Figure 10 Use Security choices to change fields in dialog

In addition to Security type, other selections may further change the dialog with other fields.

Figure 11 Other selections in Create a New Wireless Network dialog add/enable new fields



For example, as shown in [Figure 11](#), clicking the “Use WPA2-PSK” checkbox enables four fields, two of which have drop-down selections.

When you get all items in the **Create a New Wireless Network** dialog configured to match the configuration of the non-broadcasting router/access point, click the **OK** button. The wireless network is added to the lower “Network Database” pane in the manager view. Click to select and click **Connect** to make a connection attempt.

Notes on mode and security and authentication types

The following items may help when configuring a JACE for WiFi access:

- “Ad-Hoc” mode is not supported (despite inclusion in the “Mode” selection drop-down menu). However, a discover can show other WiFi-enabled devices operating in Ad-Hoc mode.
- A totally unsecured WiFi network (Security = “None”) is supported, but is *not recommended*.
- WEP security is often considered less desirable than the newer WPA-PSK and WPA2-PSK security methods, supported by most recent WiFi router/access point devices—“PSK” is “Pre-Shared Key”. For this reason, in many job scenarios, a Security type of “WPA-PSK” or “WPA2-PSK” will be used to match the configuration of the WiFi router/access point.
- Do *not* select Security types of “WPA” or “WPA2” unless you have associated files for a CA certificate (Certificate Authority) and private key(s) to load onto the JACE, using the WiFi Certificate Manager view. This type of security/authentication is typical only to “Enterprise class” type networks. For related details see [“About the WiFi Certificate Manager view”](#) on page 11.

About Buttons in WiFi Network Database

Several buttons appear below the **Network Database** pane of the platform **WiFi Configuration** view (or **WifiPlatformService** view).

Figure 12 Buttons below Network Database pane in WiFi Configuration view



Buttons under the Network Database pane provide the following functions:

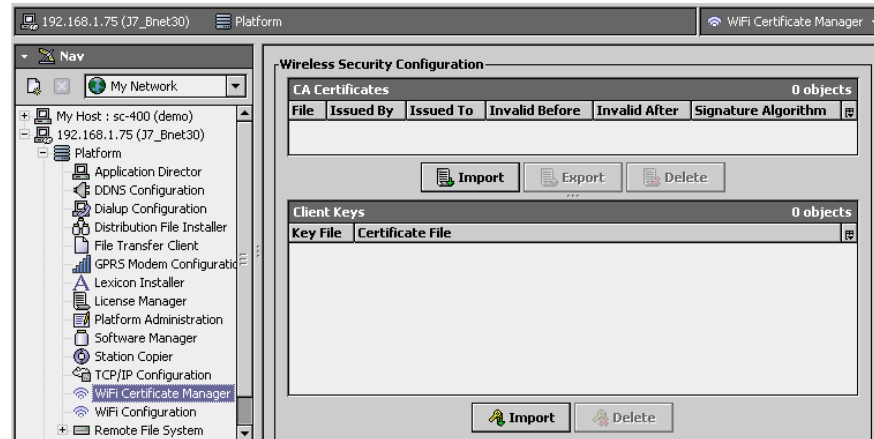
- **Roam**
Applies only if there are more than one wireless network. It tells the WiFi adapter to automatically connect to the highest-ranking network available (rank is by highest “Priority” first, then “Strength”). Usage would be for a “mobile JACE” (unlikely) such that if connectivity is lost because it moved out of the range of one network, it could automatically reconnect to another network closer in range. Roam is mutually exclusive with the Connect command, as “Connect” forces the JACE to the selected network regardless of its availability.
- **Connect**
Available only if the selected (highlighted) network has a “Disconnected” or “Disabled” status. If you click it, any other connected network is then disconnected/disabled, and a connection attempt occurs. In Connect mode, the JACE does not attempt to connect to any other network without further intervention—for example, either by clicking Roam or by “Connect”ing to a different WiFi network.
- **Disconnect**
Available only if the selected (highlighted) network has a “Connected” or “Connecting” status. If you click it, it is immediately disconnected with a “Disconnected” status.
- **Edit Network**
Available only if a network is selected (highlighted). Click it for an **Edit a Wireless Network** popup dialog for that network (or simply double-click a network for that same edit dialog).

- **New Network**
Click for a “**Create a New Wireless Network**” popup dialog, where you typically specify everything, including BSSID (MAC address). In general, this offline approach requires much more configuration knowledge about the wireless router or access point than doing a “Discover”, but may be necessary in cases where the WiFi router or access point does not broadcast its SSID.
- **Remove Network**
Available only if a network is selected (highlighted). Click it to delete the wireless network from the platform configuration (a “Confirm” popup dialog asks if you are sure first).
- **Refresh**
Click to refresh all areas of the view, including signal strength and availability. Note these areas and values all update regularly from polling, too.
***Note:** Refresh clears any wireless networks from the top “Discovered Networks” pane.*
- **Save**
Available only if changes were made that have not been persisted in the platform configuration, such as previously done in an “Edit a Wireless Network” dialog. Click to save.

About the WiFi Certificate Manager view

The platform **WiFi Certificate Manager** view (and equivalent *secondary view* of a station's "WiFiPlatformService") lets you import "CA certificate" and client "private key" files onto the JACE for use in WiFi security types WPA or WPA2. Usage of these security types with such digital certificates are uncommon, except in an "enterprise level" network scenario.

Figure 13 WiFi Certificate Manager view in platform connection to WiFi enabled JACE



Note: A requirement is that files for all certificates and keys must be in the PEM format.

Figure 13 above shows the WiFi Certificate Manager. This view is split into two areas, as follows:

- **CA Certificates**
Provides buttons to **Import**, **Export** and **Delete** CA certificate files. Any imported certificate is listed in the table, with data columns as shown.
- **Client Keys**
Provides buttons to **Import** and **Delete** private key files. Any imported key is listed in the table, with data columns as shown.

When you click **Import**, the appropriate "file chooser" type dialog opens, so you can navigate to the CA certificate or private key file to select. Figure 14 and Figure 15 show the two respective dialogs.

Figure 14 Default file chooser dialog for Import of CA Certificate file(s)

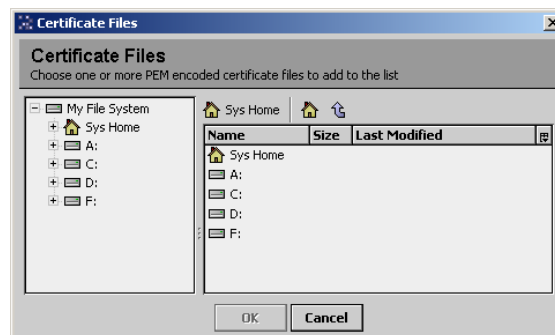
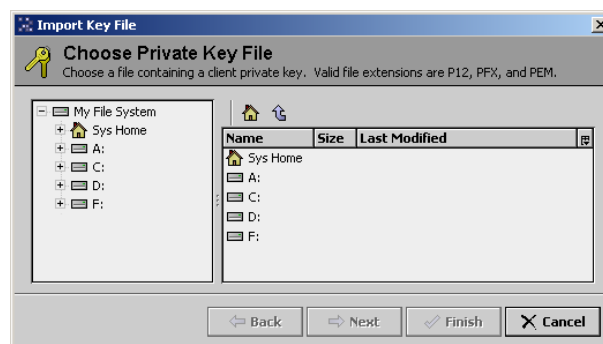


Figure 15 Default file chooser dialog for Import of Client Key file(s)



Use the standard file chooser controls to navigate and select the appropriate CA certificate and private key files for import. Note all digital certificates must be in PEM format, verified by the import dialogs. After importing the CA certificate(s) and client keys, they will be available for selection in the edit dialog for the WiFi wireless network configured for WPA or WPA2 Security type (fields shown in [Figure 16](#)).

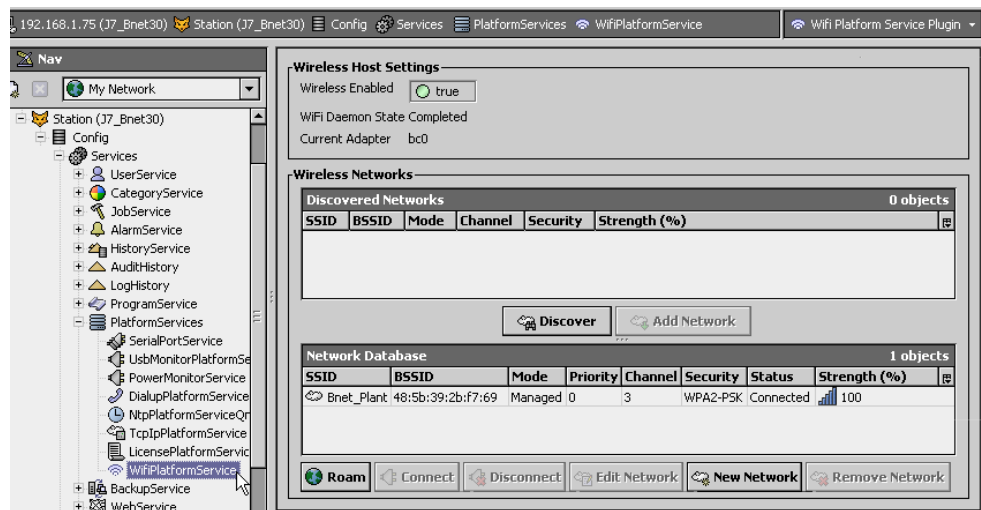
Figure 16 CA Certificate and Client Key fields in wireless network configured for WPA Security



About the WiFiPlatformService

The **WiFiPlatformService** is automatically created in the PlatformServices container of any station running on the JACE with WiFi adapter option, and provides the equivalent functions of the two platform WiFi views. The default view of this service is the **WiFi Platform Service Plugin** ([Figure 13](#)).

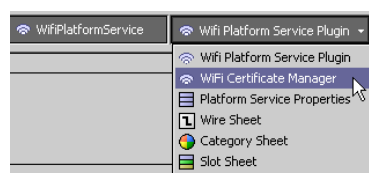
Figure 17 WiFiPlatformService default view



This view works identically to the platform **WiFi Configuration** view. For more details, see [“About the WiFi Configuration view”](#) on page 6.

The *secondary* view on the WiFiPlatformService is the **WiFi Certificate Manager**—again, which works identically to the platform WiFi Certificate Manager. Access it by right-clicking the service and selecting **Views > WiFi Certificate Manager**, or by using the view selector ([Figure 14](#)).

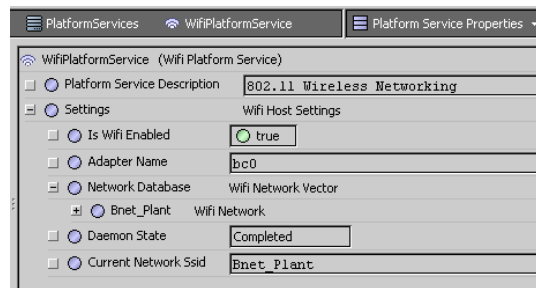
Figure 18 View selector on WiFiPlatformService to access secondary view and property sheet



For more details, see [“About the WiFi Certificate Manager view”](#) on page 11.

The property sheet for the WiFiPlatformService contains a number of read-only properties that reflect the current configuration of the WiFi adapter ([Figure 19](#)).

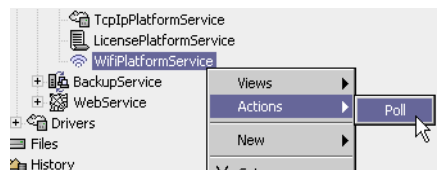
Figure 19 Property sheet of example WiFiPlatformService



Any wireless network included under the “Network Database” container has a number of polled properties (not shown expanded above), including values for network state and signal strength.

A “Poll” action is available on the WiFiPlatformService, which can be accessed by right-clicking the service either in the Nav tree (Figure 20), or on the top node in its property sheet.

Figure 20 Poll action available on WiFiPlatformService



A invoked poll forces immediate updates of values like signal strength and network state, as seen in the default view of the service. Otherwise, these values update periodically from ongoing WiFi daemon activity.

Document change log

Updates (changes/additions) to this *NiagaraAX JACE WiFi Option* Engineering Notes document are listed below.

- Updated: February 9, 2012
Minor update to note a new “SSID Broadcasted” checkbox property added in an AX-3.6 maintenance build. You must make sure this checkbox is cleared if manually creating a new network (for support of a WiFi router/access point that does *not* broadcast its SSID). This change affects screen captures and descriptions in sections “[About a discovered wireless network](#)” on page 6 and “[About a new \(undiscovered\) wireless network](#)” on page 8.
Potential problems with installing a “clean dist” file in a WiFi-equipped JACE 7 are also explained in a new “[Clean dist issue note](#)” section in this change log.
- Publication: January 19, 2011
Initial document.

Clean dist issue note

At the time of this document, installing a “clean dist” file in an existing WiFi-equipped JACE 7 may cause loss of prior network IP addresses for the JACE’s LAN1 port (en0) and/or WiFi adapter (bc0). For example, prior to the install the JACE may have a static IP address assigned to bc0, and DHCP to en0. After the clean-dist install, en0 may have the IP address formerly assigned to bc0, with bc0 now disabled.

A clean dist file expressly for a WiFi-equipped JACE 7 may be developed sometime in the future. Until then, the workaround for this issue is to *avoid installing a clean dist*.

If installed (and if necessary), you can use a serial shell connection to the JACE 7 to re-establish its LAN1 (en0) network address. Then reopen a platform connection to recommission the controller, including setting the IP address for its bc0 WiFi port.

For related details, see “Downgrading a JACE (Clean Dist)” in the *NiagaraAX Platform Guide*, and “System Shell” in the *JACE NiagaraAX Install and Startup Guide*.

