

# Fixed Readers

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# Fixed Reader Overview

Our [Fixed Reader setup guide](#) provides complete instructions on installing the Fixed Reader Client, configuring, and connecting to the web portal.

After the fixed reader has been configured, if the reader goes offline you can restart it by [restarting the services](#).

Get the latest firmware from the Impinj website [here](#).

# Impinj R220

The Impinj R220 is a two port reader designed for applications that require 2 antennas (or fewer), such as choke-points, overhead readers, or smart shelving.

## Updating Firmware

To update the firmware on an Impinj Speedway Revolution R220 reader, you can use either the Web UI or a USB flash drive. The Web UI method involves connecting the reader to your network, logging in, and selecting the "Reader Upgrade" option to upload the firmware. The USB flash drive method requires formatting the drive to [FAT](#), placing the firmware file on the drive, and inserting it into the reader's USB HOST port.

Web UI Method:

1. **Connect to the reader's Web UI:** You can access the Web UI by connecting your computer to the same network as the reader and accessing the reader's IP address in a web browser. The default IP address is typically `http://169.254.1.1`.
2. **Log in:** Use the default credentials: username "root" and password "impinj".
3. **Navigate to Reader Upgrade:** In the Web UI, locate and select the "Reader Upgrade" section.
4. **Upload the firmware:** Browse for the firmware file on your computer and upload it.
5. **Upgrade and Reboot:** Select the "Upgrade" button and then "Reboot" to apply the new firmware.

USB Flash Drive Method:

1. **Prepare the flash drive:** Format the USB drive to the FAT file system and create the following folder structure: `\impinj\revolution\upgrade\images\``.
2. **Place the firmware file:** Download the firmware file and place it in the `\impinj\revolution\upgrade\images\`` folder on the flash drive.
3. **Insert the flash drive:** Insert the flash drive into the reader's USB HOST port.
4. **Wait for the upgrade:** The firmware will automatically upload to the reader.
5. **Reboot the reader:** Manually reboot the reader to complete the firmware update.

# Impinj R420

## Update Firmware

To update the firmware on an Impinj R420 reader, you can use either the Web UI or a USB flash drive. The Web UI method involves connecting to the reader's IP address, logging in with the default credentials, and selecting the "Reader Upgrade" section to upload the firmware file. Alternatively, you can format a USB flash drive to FAT, copy the firmware file to it, and insert it into the reader's USB HOST port, where it will automatically upload the firmware.

Using the Web UI:

1. **Connect to the Reader:** Ensure the reader is powered and connected to your network.
2. **Locate the IP Address:** Find the reader's IP address (it may be a default address like `http://169.254.1.1`).
3. **Log In:** Access the reader's Web UI, and log in using the default credentials: username `root` and password `impinj`.
4. **Select Reader Upgrade:** Navigate to the "Reader Upgrade" section within the Web UI.
5. **Browse and Select:** Click "Browse" to locate the firmware file (.upg) on your computer and select it.
6. **Upgrade and Reboot:** Click "Upgrade" to start the upload. Once complete, click "Reboot" to apply the new firmware.

Using a USB Flash Drive:

1. **1. Format the Drive:**  
Format a USB flash drive to FAT.
2. **2. Copy Firmware:**  
Download the firmware file (e.g., .upg) and place it on the flash drive, preferably in a directory structure like `impinj\\revolution\\upgrade\\images\\`.
3. **3. Insert and Wait:**  
Insert the flash drive into the reader's USB HOST port while the reader is powered on. The power LED will flash amber during the upload.
4. **4. Reboot:**  
Once the power LED turns solid green, manually reboot the reader to apply the new firmware.

Impinj xSpan

# Impinj xSpan - Update Firmware

To update the firmware on an Impinj xSpan reader, you can use either the Web UI or a USB flash drive. The [Impinj Support Portal](#) outlines both methods, including steps to download the firmware, prepare the USB drive, and initiate the upgrade.

## Method 1: Web UI

1. **Connect to the reader's Web UI:** Access the xSpan reader's web interface using a web browser and its IP address.
2. **Log in:** If prompted, enter the administrator credentials.
3. **Navigate to the Firmware Upgrade section:** Look for a section related to reader upgrades, firmware updates, or software updates.
4. **Browse and select the firmware file:** Use the browse button to locate and select the .upg firmware file you downloaded.
5. **Initiate the upgrade:** Click the upgrade or install button.
6. **Reboot the reader:** Once the firmware upgrade is complete, reboot the reader to activate the new firmware.

## Method 2: USB Flash Drive

1. **1. Prepare the USB drive:**  
Format the USB drive to FAT32 and create the necessary directory structure:  
``impinj\revolution\upgrade\images``.
2. **2. Download the firmware:**  
Place the firmware image file (.upg) within the `images` folder on the USB drive.
3. **3. Connect the USB drive:**  
Plug the USB drive into the xSpan reader's USB Host port while the reader is powered on.
4. **4. Initiate the upgrade:**  
The reader will automatically detect the firmware and begin the upgrade process.
5. **5. Monitor the upgrade:**  
The reader's power LED will flash amber during the upgrade and become solid green upon completion.
6. **6. Reboot the reader:**  
Manually reboot the reader to activate the new firmware.

# Impinj xSpan - Troubleshooting Connection

The xSpan reader should by default have DHCP enabled, allowing you to connect via:

- `http://xspan-XX-XX-XX.local` (where the X values are the last 3 bytes of the MAC address)
- `http://<ip-address>`
- username: `root`
- password: `impinj`

However, if you're unable to connect, DHCP may be disabled, in which case you need to connect to the device on its local link address (most likely `169.254.1.1`) and use RShell to enable DHCP.

1. Determine the reader's self-assigned IP address by pinging the hostname:
  - Windows (PowerShell):
    - `ping xSpan-XX-XX-XX.local`
    - You should see something like this: `Pinging xSpan-13-68-53.local [fe80::216:25ff:fe13:6853]%11 with 32 bytes of data:`
    - The address in [brackets] is the address of the reader.
  - macOS (Terminal):
    - `ping -c 1 xspan-XX-XX-XX.local`
    - You should see something like this: `PING xspan-13-69-b9.local (169.254.1.1): 56 data bytes`
    - The address in (parentheses) is the address of the reader.
2. Log in via ssh and enable DHCP using RShell:
  - `ssh root<ip address>`
  - password: `impinj`
  - `> show network summary`
    - You'll likely see `ipAddressMode='Static'`. This confirms that DHCP is disabled.
  - `> config network ip dynamic`
    - This will enable DHCP and reboot automatically.

After completing these steps, you should be able to access the reader on your LAN.