

Moxa DA-PRP-HSR Expansion Module Installation Guide

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Moxa DA-PRP-HSR Expansion Module Installation Guide

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Introduction

Thank you for purchasing Moxa's DA-PRP-HSR expansion module for the DA-820 series industrial computers.

This manual includes information on hardware installation and the driver installation for the DA-PRP-HSR. For detailed information about software configuration and management, refer to the *DA-PRP-HSR Expansion Module Software Manual*.

The following topics are covered in this chapter:

- ❑ **Overview**
- ❑ **Package Checklist**
- ❑ **Appearance**
- ❑ **Dimensions**
- ❑ **Hardware Specifications**

Overview

The DA-PHR-HSR expansion module is compliant with IEC 62439-3 Clause 4 (PRP) and IEC 62439-3 Clause 5 (HSR) to ensure the highest system availability and data integrity for mission-critical applications that require zero-time recovery and redundancy.

With dual Gigabit Ethernet port design, the DA-PRP-HSR provides high performance for redundant network systems. In addition, the DA-PRP-HSR features a built-in native PRP/HSR management middleware with MMS server that allows SCADA to collect IEC 62439-3 registers from multiple devices for easy network diagnosis, troubleshooting, device management, and monitoring.

Moxa's DA-820 series industrial computer with the DA-PRP-HSR expansion module is the ideal solution for power substation automation and process automation systems.

NOTE Throughout this document, the DA-PRP-HSR expansion module is referred to as the DA-PRP-HSR and the DA-820 series industrial computer is referred to as the DA-820 computer.

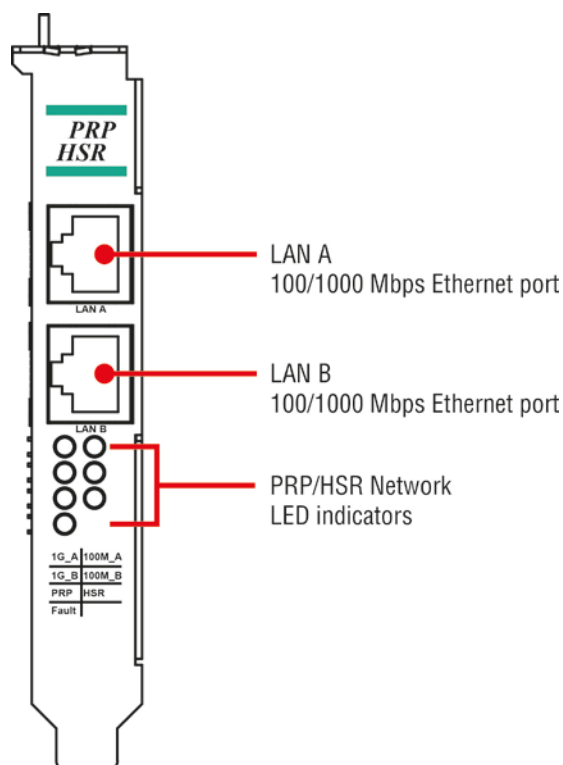
Package Checklist

The expansion module is shipped with the following items:

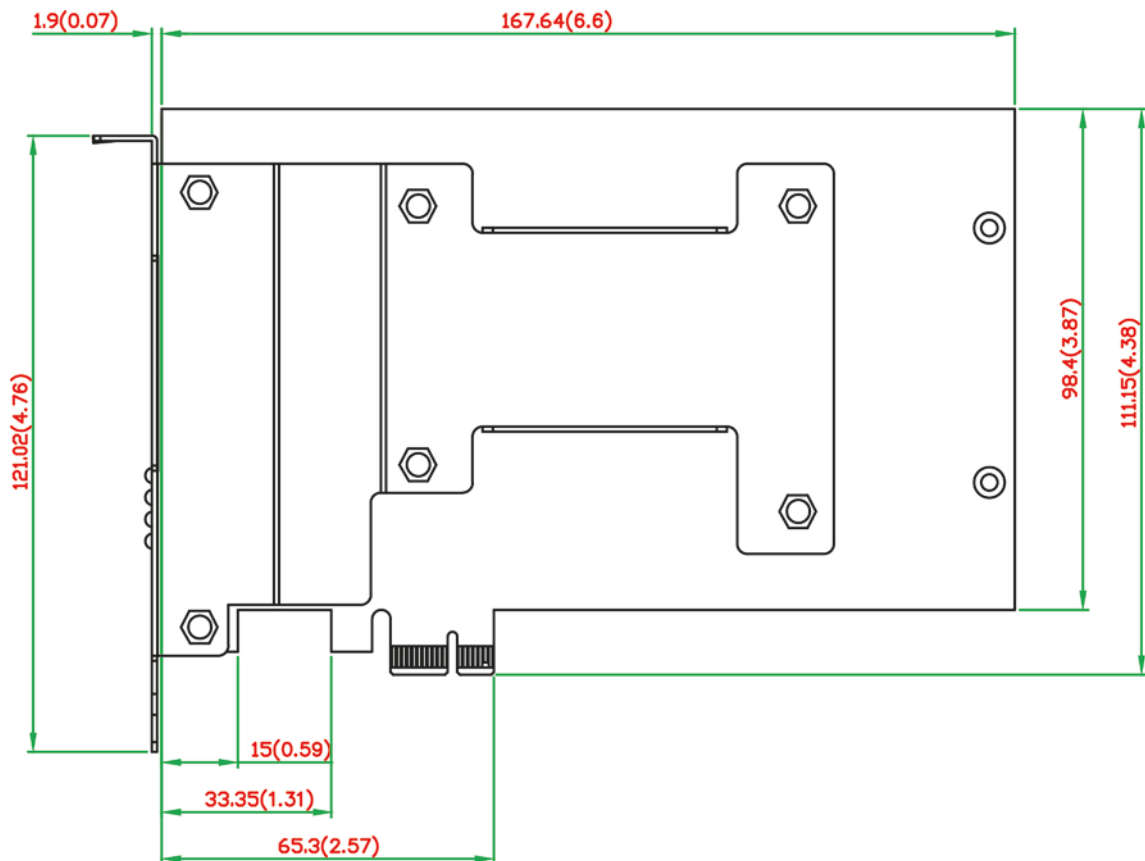
- DA-PRP-HSR expansion module
- Two Ethernet cable: RJ45 to RJ45 cross-over cable, 100 cm
- Documentation CD or DVD
- Quick Installation Guide (printed)

NOTE If any of the above items are missing or damaged, please contact your sales representative.

Appearance



Dimensions



Hardware Specifications

Ethernet Interface

LAN: 2 auto-sensing 100/1000 Mbps unmanaged Ethernet switch ports (RJ45)

Magnetic Isolation Protection: 15 kV built-in

Physical Characteristics

Weight: 225 g

Dimensions: 167 x 111 mm (6.6 x 4.38 in)

Environmental Limits

Operating Temperature: -40 to 60°C (-40 to 140°F)

Standards and Certifications

Safety: LVD, UL, cUL

Electrical Substation: IEC 61850-3, IEC 60255, IEEE 1613

Protection Relay: IEC 60255

EMC: FCC, CE (Class A)

Green Product: RoHS, CRoHS, WEEE

Warranty

Warranty Period: 3 years

Details: See www.moxa.com/warranty

Hardware Installation

This chapter describes the basic hardware installation for the DA-PRP-HSR.

The following topics are covered in this chapter:

- ❑ **Handling Static-sensitive Components**
- ❑ **Installing a DA-PRP-HSR Expansion Module**
- ❑ **Removing a DA-PRP-HSR Expansion Module**
- ❑ **LED Indicators**

Handling Static-sensitive Components

Static electricity can damage electronic components. To avoid damage, keep an electronic component in its anti-static bag until you are ready to use it.

To reduce the possibility of damage to an electronic component from electrostatic discharge, take the following precautions:

- Wear a wrist strap to ground yourself while working with electronic components.
- Limit your movement. Movement can create static electricity around you.
- Hold the component by its edges or frame.
- Avoid touching solder joints, pins, or exposed printed circuitry.
- Do not place the component directly onto a metal surface.
- While the component is still in its anti-static bag, touch it to an unpainted metal part for at least two seconds to discharge any static electricity from the package and from your body.
- Remove the component from its package and install it directly. If it is necessary to put the component down, place it onto its anti-static bag.
- Take additional care when you handle components in air-conditioned rooms or during cold weather because air conditioning and heating reduce indoor humidity and increase static electricity.

Installing a DA-PRP-HSR Expansion Module

NOTE The DA-PRP-HSR expansion module can only be installed in a DA-820 computer.

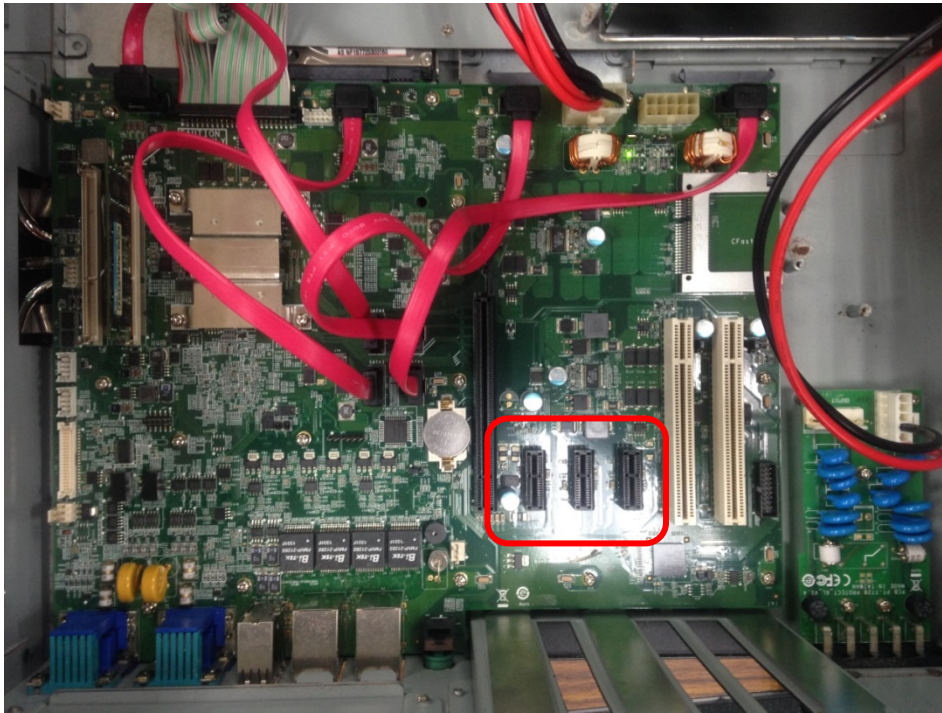
You can install up to three DA-PRP-HSR expansion modules in a DA-820 computer.

To install the DA-PRP-HSR, complete the following steps:

1. Turn off the DA-820 computer and disconnect it from the power source.
2. Loosen the screws on the rear of the DA-820 computer and remove the top cover.

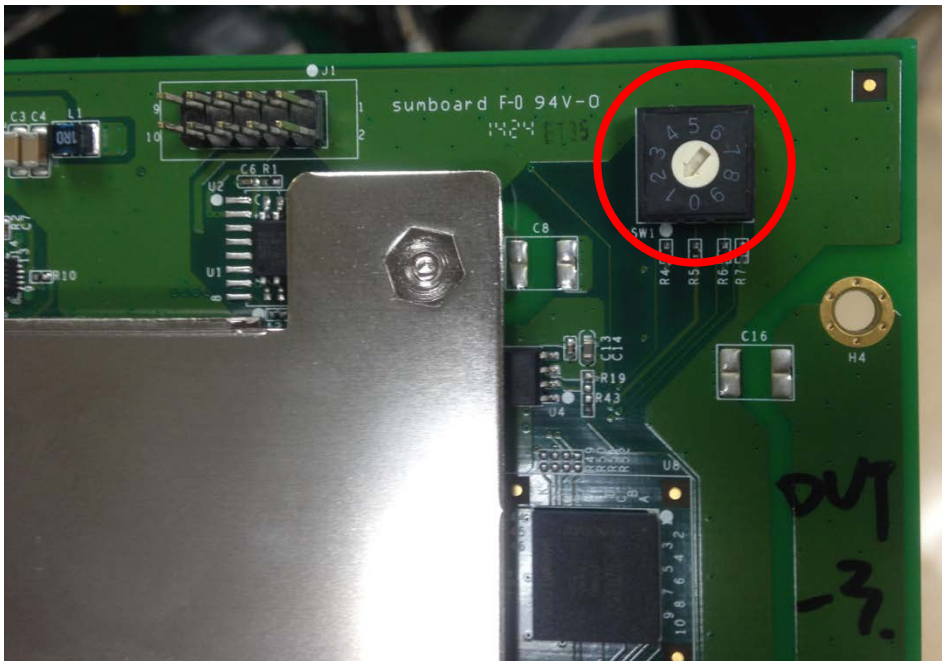


3. Remove the slot cover from a PCI slot on the rear panel.
You can install the DA-PRP-HSR in any of the three PCI slots in the DA-820 computer.
The following figure indicates the PCI connectors on the system board.



4. On the DA-PRP-HSR, turn the card index selection switch to **1** if this is the first DA-PRP-HSR you are installing in the DA-820 computer. Similarly, turn the card index selection switch to **2** for the second DA-PRP-HSR and turn the card index selection switch to **3** for the third DA-PRP-HSR.

The following figure shows the location of the card index selection switch on the DA-PRP-HSR.



5. Align the PCI connector on the DA-PRP-HSR with the PCI connector on the system board; then, press to insert the DA-PRP-HSR.
6. Fasten the screw on the PCI slot to secure the DA-PRP-HSR to the system chassis.
7. Reinstall the top cover on the DA-820.
8. Install the driver to start using the DA-PRP-HSR and configure the PRP/HSR settings. For more information, see the **Driver Installation** chapter.

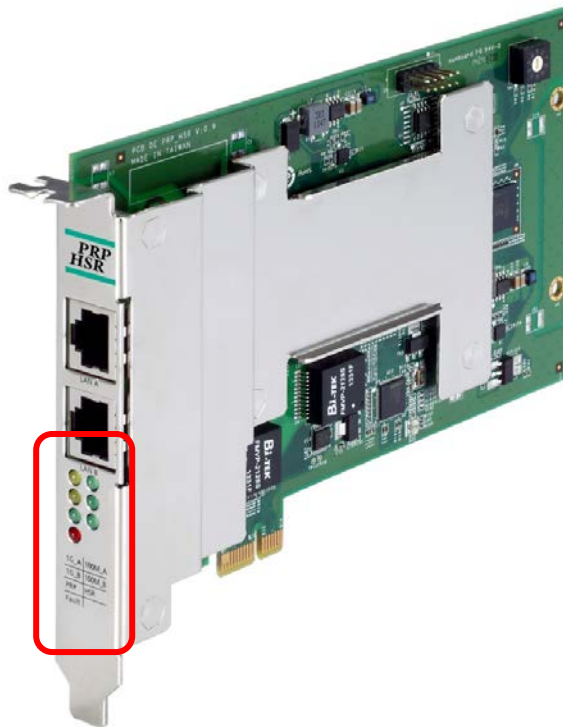
Removing a DA-PRP-HSR Expansion Module

To remove a DA-PRP-HSR from a DA-820 computer, complete the following steps:

1. Turn off the DA-820 computer and disconnect it from the power source.
2. Loosen the screws on the rear of the DA-820 computer and remove the top cover.
3. Loosen the screw that secures the DA-PRP-HSR to the system chassis.
4. Pull to remove the DA-PRP-HSR from the system board.
5. Reinstall the PCI slot cover.
6. Reinstall the top cover on the DA-820 computer.

LED Indicators

The following figure shows the LEDs on the DA-PRP-HSR.



The following table describes the LEDs.

LED Name	LED Color	LED Function
1G_A	Yellow / Blinking	1000 Mbps (Gigabit) Ethernet mode.
	Off	No link.
100M_A	Green / Blinking	100 Mbps Ethernet mode.
	Off	No link.
1G_B	Yellow / Blinking	1000 Mbps (Gigabit) Ethernet mode.
	Off	No link.
100M_B	Green / Blinking	100 Mbps Ethernet mode.
	Off	No link.
PRP	Green	The DA-PRP-HSR is operating in PRP mode.
HSR	Green	The DA-PRP-HSR is operating in HSR mode.
Fault	Red	The DA-PRP-HSR is not functioning properly.

Driver and Utility Installation

The DA-PRP-HSR driver and utility are supported on Windows 7 and Windows Embedded 7 (32-bit or 64-bit).

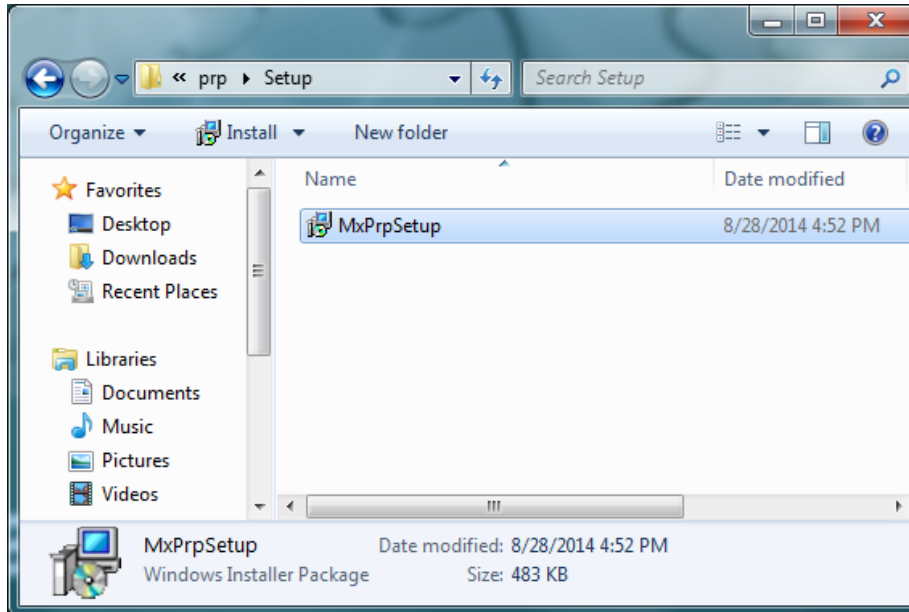
This chapter shows you how to install the DA-PRP-HSR driver and utility in Windows Embedded 7, and includes information on how to configure the DA-PRP-HSR using the utility.

The following topic is covered in this chapter:

- ❑ **Installing the Driver and Utility on Windows Embedded 7**
- ❑ **Configuring the DA-PRP-HSR**

Installing the Driver and Utility on Windows Embedded 7

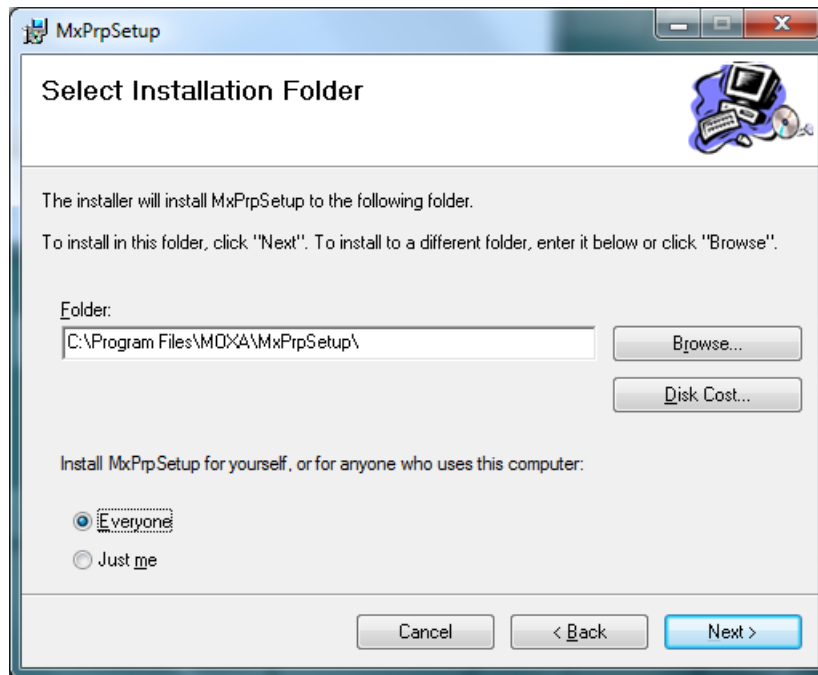
1. Connect a monitor, keyboard, and a mouse to the DA-820 computer.
For more information, see the *DA-820 Series Embedded Computer Hardware Manual*.
2. Turn on the DA-820 computer.
3. Obtain the MxPrpSetup.msi file on the DA-PRP-HSR Software CD/DVD or download the file from Moxa's support website at http://www.moxa.com/support/download_center.asp. Then, save the file on the DA-820 computer.
4. Double-click **MxPrpSetup.msi** to start the installation process.



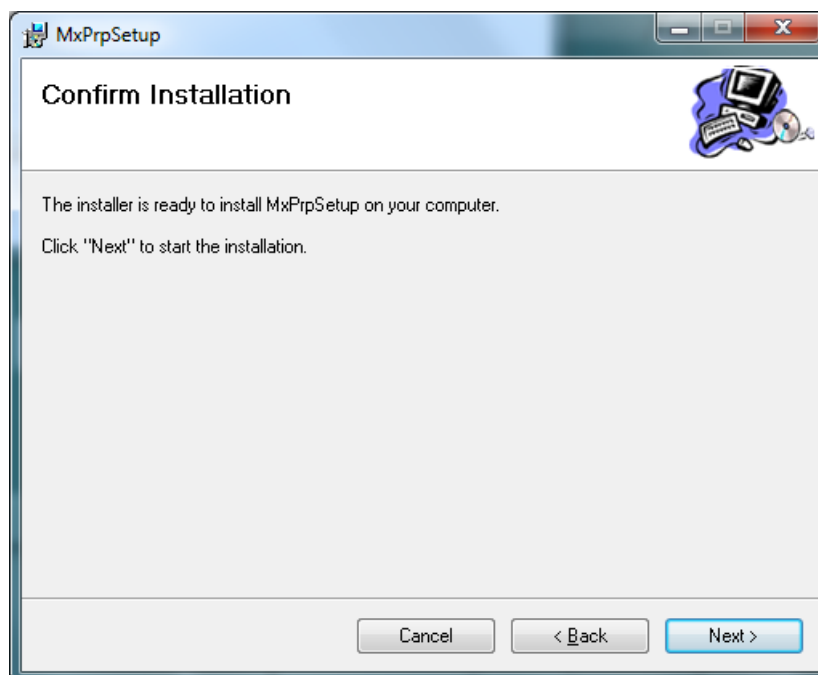
5. A Welcome screen appears. Click **Next**.



- Accept the default installation directory or click **Browse** to select one. Click **Next**.

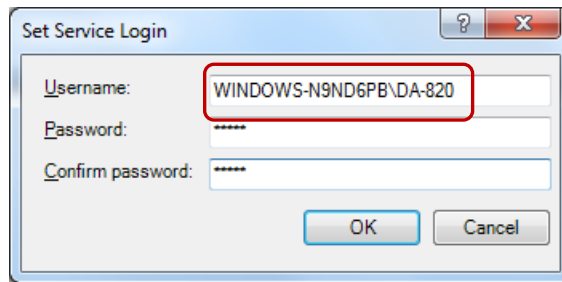


- Click **Next** to continue.

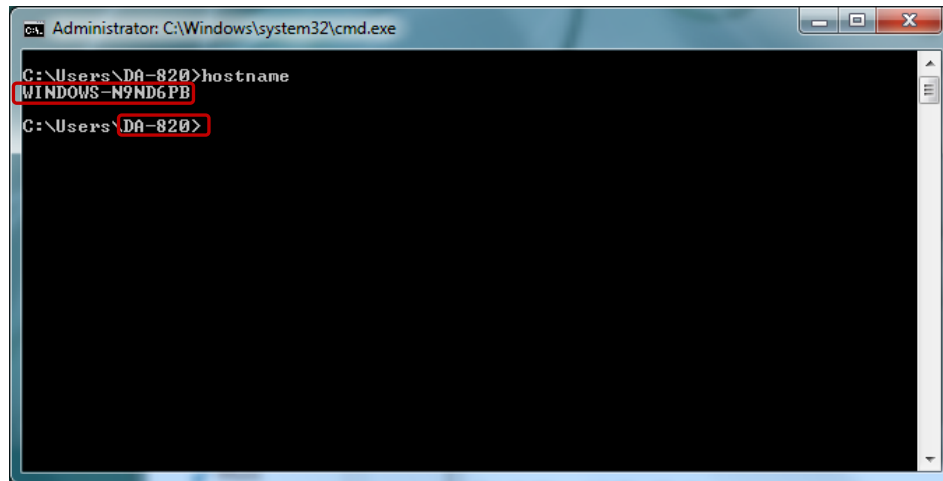


- In the Set Service Login dialog box, create a Windows service account for the Moxa PRP Service. Enter the account username in the format `[hostname/name]` and specify the password; then, click **OK**.

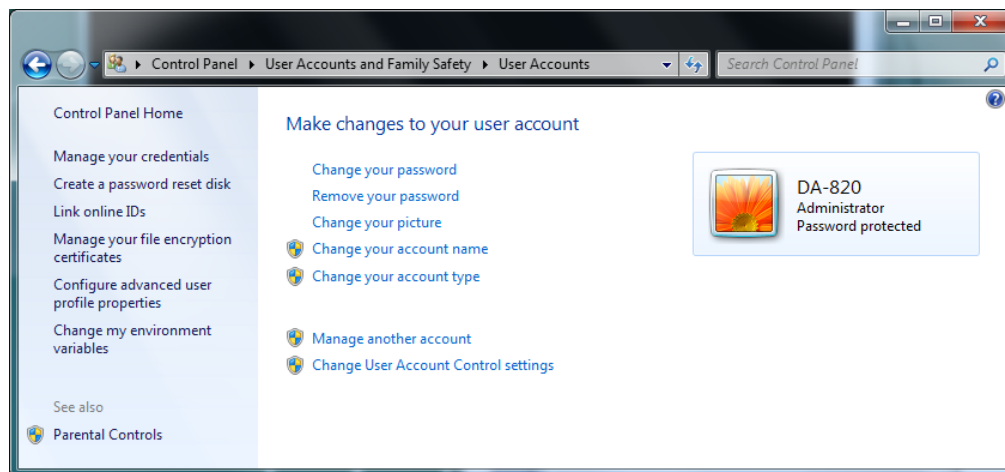
NOTE You must set the password for the Windows service account.



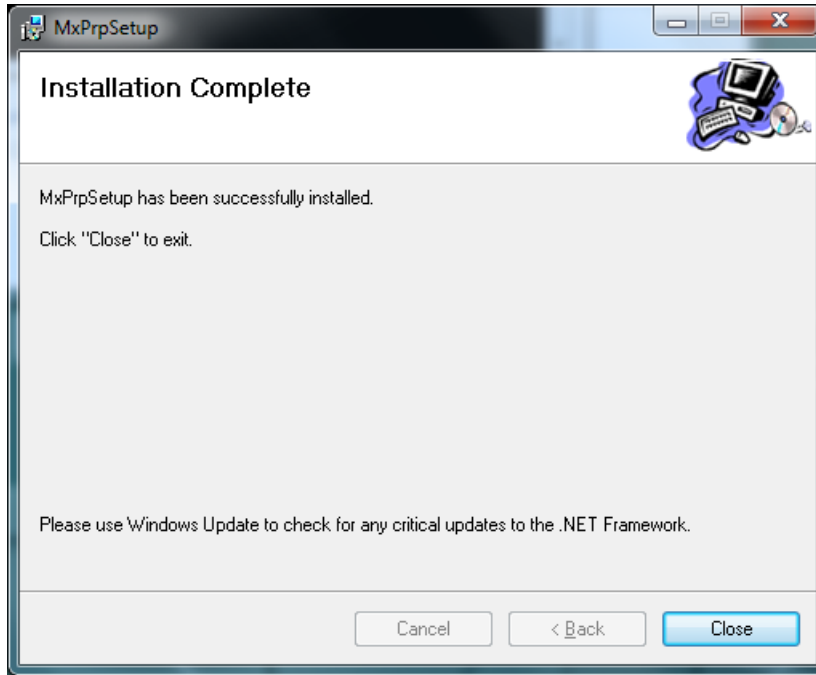
To check the hostname of the computer, enter "hostname" in a command window. Also note the "DA-820" user name in the screen.



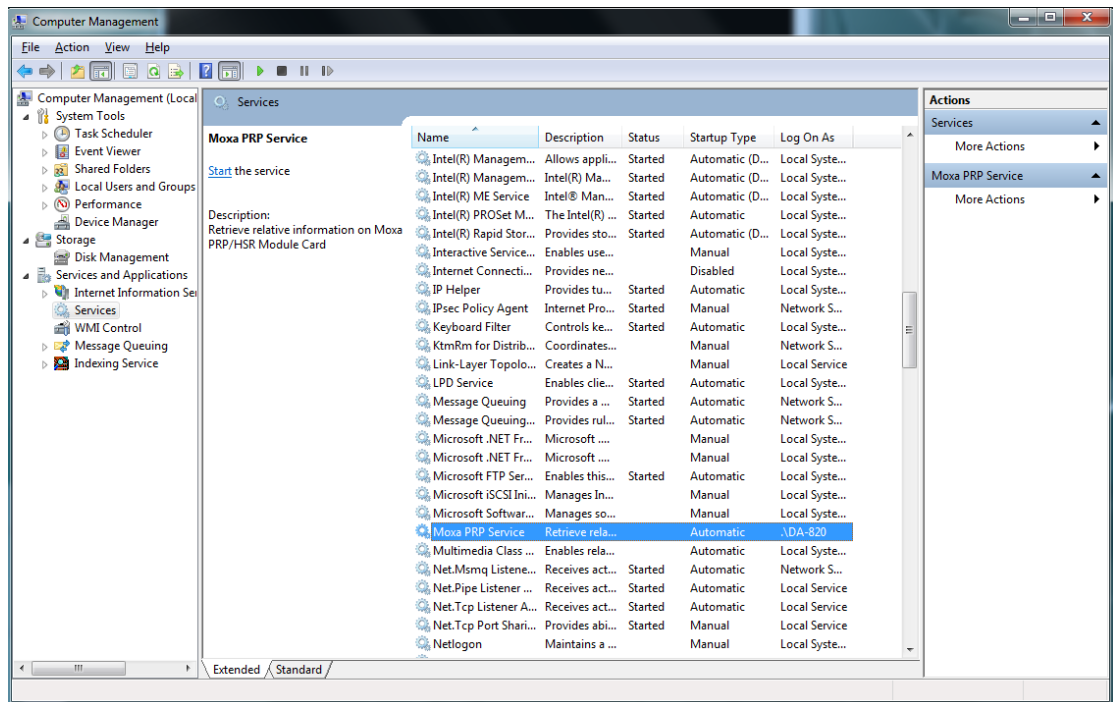
To confirm the service account password, open the Control Panel screen and click **User Accounts and Family Safety > User Accounts**.



- Click **Close** to complete the installation. The Moxa PRP Service is installed on the computer.



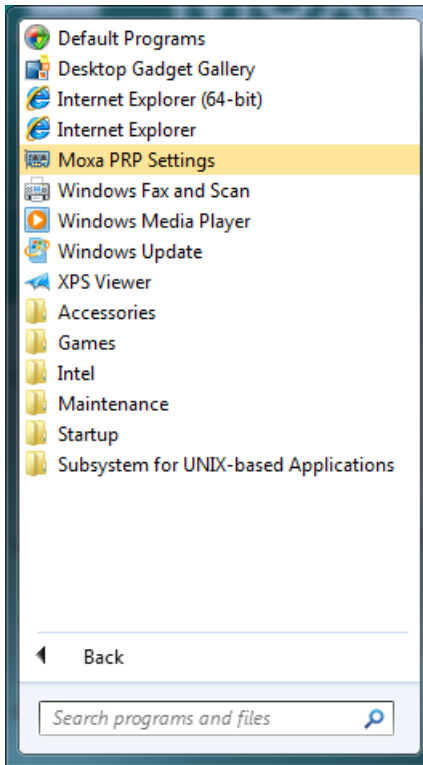
- Restart the computer to start using the Moxa PRP Service.



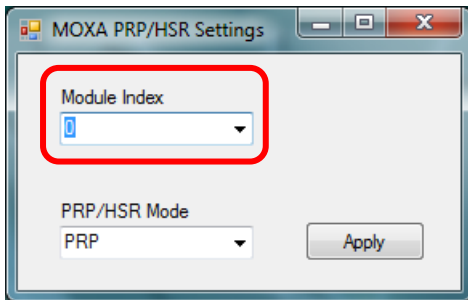
Configuring the DA-PRP-HSR

You can use the Moxa PRP Settings utility to set the operating mode on the DA-PRP-HSR.

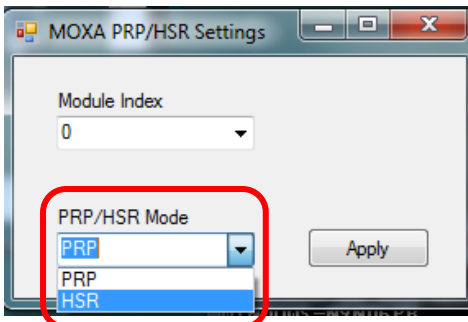
1. Open the Moxa PRP Settings utility from the Start menu.



2. If more than one DA-PRP-HSR is installed in the computer, from the **Module Index** drop-down list, select the index (1 to 3) of the DA-PRP-HSR that you want to configure.



3. From the **PRP/HSR Mode** drop-down list, select an option and click **Apply**.



4. Restart the Moxa PRP Service or restart the computer to make the changes take effect.