

Dell PowerConnect W-IAP90 Series Instant Access Point

Installation Guide

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The Dell PowerConnect W-Series W-IAP92 and W-IAP93 are single-radio, dual-band Instant access points that support the IEEE 802.11n standard for high-performance WLAN. The W-IAP90 Series Instant access points use MIMO (Multiple-in, Multiple-out) technology and other high-throughput mode techniques to deliver high-performance, 802.11n 2.4 GHz or 5 GHz functionality while simultaneously supporting existing 802.11a/b/g wireless services.

The Dell W-IAP90 Series Instant access point provides the following capabilities:

- Virtual Controller technology
- Wireless transceiver
- Protocol-independent networking functionality
- IEEE 802.11a/b/g/n operation as a wireless access point
- IEEE 802.11a/b/g/n operation as a wireless air monitor
- Compatibility with IEEE 802.3af PoE

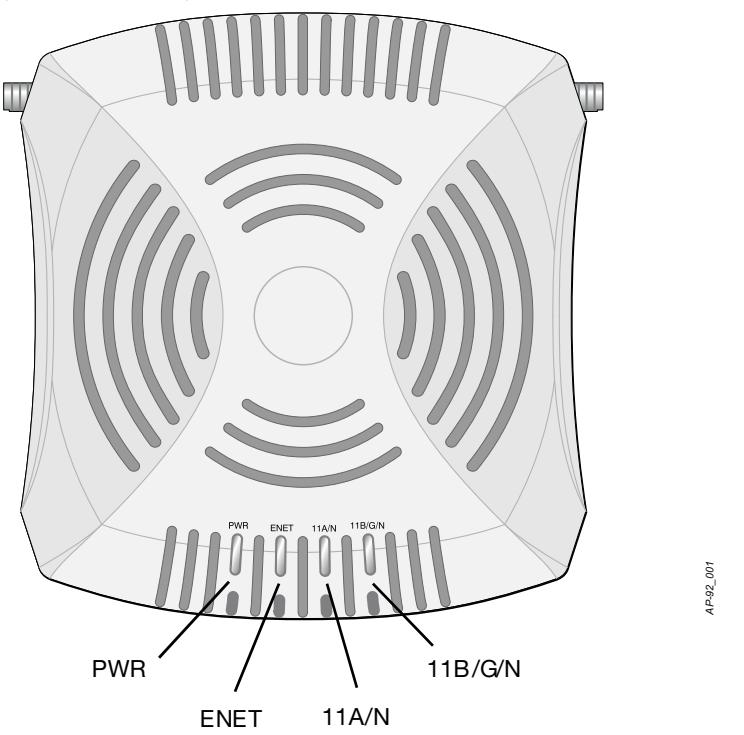
Package Contents

- W-IAP92 or W-IAP93 access point
- Installation Guide
- Dell PowerConnect W-Instant Quick Start Guide
- Professional Install Guide (W-IAP92 only)

Note: Inform your supplier if there are any incorrect, missing, or damaged parts. If possible, retain the carton, including the original packing materials. Use these materials to repack and return the unit to the supplier if needed.

W-IAP90 Series Hardware Overview

Figure 1 Front (W-IAP92 Shown)

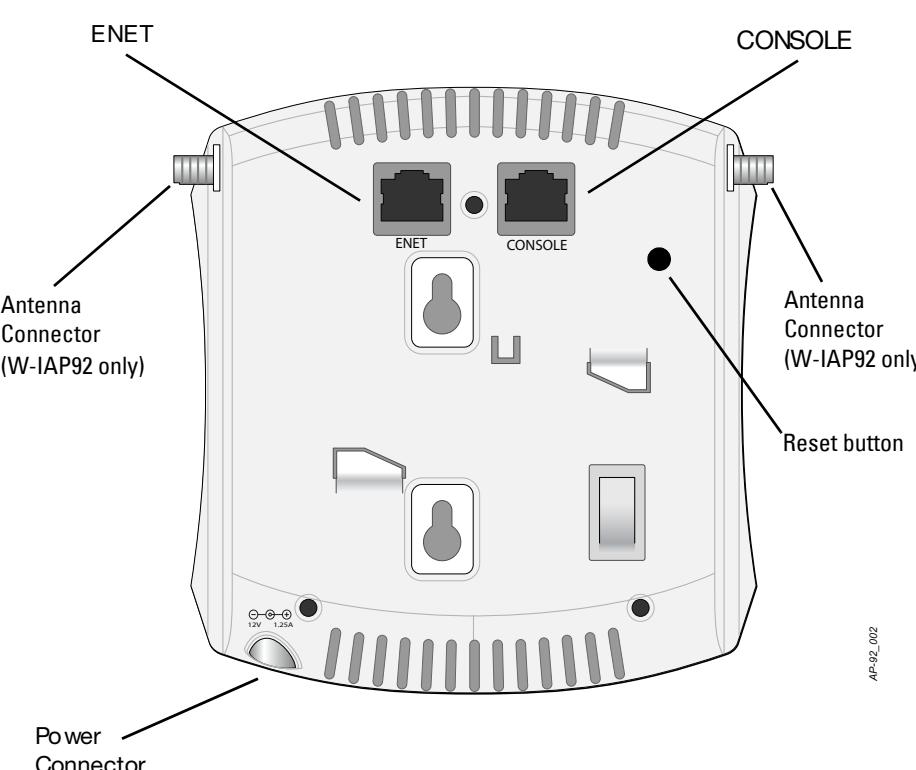


LEDs

- PWR: Indicates whether or not the W-IAP90 Series is powered-on
- ENET: Indicates the status of the W-IAP90 Series's Ethernet port
- 11A/N: Indicates the status of the 802.11a/n radio
- 11B/G/N: Indicates the status of the 802.11b/g/n radio

For information about the W-IAP90 Series's LED behavior, see [Table 1 on page 2](#).

Figure 2 Rear (W-IAP92 Shown)



Console Port

Use the console port to connect to a terminal for direct local management.

Ethernet Port

The W-IAP90 Series is equipped with a single 10/100/1000Base-T (RJ-45) auto-sensing, MDI/MDX wired-network connectivity port. This port supports IEEE 802.3af Power over Ethernet (PoE) compliance, accepting 48VDC as a standard defined Powered Device (PD) from a Power Sourcing Equipment (PSE) such as a PoE midspan injector, or network infrastructure that supports PoE.

DC Power Socket

If PoE is not available, an optional power adapter kit (sold separately) can be used to power the W-IAP90 Series.

Reset Button

The reset button can be used to return the W-IAP90 Series to factory default settings. To reset the W-IAP90 Series:

- Power off the W-IAP90 Series by removing the Ethernet cable (PoE) or power adapter cable.
- Press and hold the reset button using a small, narrow object, such as a paperclip.
- Power-on the W-IAP90 Series without releasing the reset button. The power LED will flash within 5 seconds.
- Release the reset button.

The power LED will flash again within 15 seconds indicating that the reset is completed. The W-IAP90 Series will now continue to boot with the factory default settings.

Note: If you have converted your IAP to a campus AP, pressing the reset button converts it back to an IAP.

External Antenna Connectors

The W-IAP92 is designed for use with external antennas. The W-IAP93 is equipped with internal antennas.

Before You Begin

Caution: FCC Statement: Improper termination of access points installed in the United States (non-US Regulatory Domain model/s) will be in violation of the FCC grant of equipment authorization. Any such willful or intentional violation may result in a requirement by the FCC for immediate termination of operation and may be subject to forfeiture (47 CFR 1.80).

Caution: EU Statement

Lower power radio LAN product operating in 2.4 GHz and 5 GHz bands. Please refer to the Dell PowerConnect W-Instant User Guide for details on restrictions.

Produit réseau local radio basse puissance operant dans la bande fréquence 2.4 GHz et 5 GHz. Merci de vous référer au Dell PowerConnect W-Instant User Guide pour les détails des restrictions.

Low Power FunkLAN Produkt, das im 2.4 GHz und im 5 GHz Band arbeitet. Weitere Informationen bezüglich Einschränkungen finden Sie im Dell PowerConnect W-Instant User Guide.

Apparati Radio LAN a bassa Potenza, operanti a 2.4 GHz e 5 GHz. Fare riferimento alla Dell PowerConnect W-Instant User Guide per avere informazioni dettagliate sulle restrizioni.

IAP Pre-Installation Checklist

Before installing your W-IAP90 Series access point, be sure that you have the following:

- CAT5 UTP cable of required length
- One of the following power sources:
 - IEEE 802.3af-compliant Power over Ethernet (PoE) source
 - The POE source can be any Power Source Equipment (PSE)
 - Dell power adapter kit (sold separately)

Summary of the Setup Process

Note: It is important that you verify the items listed under [IAP Pre-Installation Checklist](#) before you attempt to set up and install an W-IAP90 Series.

Successful setup of a W-IAP105 access point must be performed in this order:

- Identify the specific installation location for each IAP.
- Install each IAP.
- Verify post-installation connectivity.
- Configure each IAP.

Note: The W-IAP90 Series is designed in compliance with governmental requirements. Only authorized network administrators can change the system settings. For more information about IAP configuration, refer to the [Dell PowerConnect W-Instant Quick Start Guide](#) and [Dell PowerConnect W-Instant User Guide](#).

Caution: Access points are radio transmission devices and as such are subject to governmental regulation. Network administrators responsible for the configuration and operation of access points must comply with local broadcast regulations. Specifically, access points must use channel assignments appropriate to the location in which the access point will be used.

Identifying Specific Installation Locations

You can mount the W-IAP90 Series Instant access point on a wall or on the ceiling. Each location should be as close as possible to the center of the intended coverage area and should be free from obstructions or obvious sources of interference. These RF absorbers/reflectors/interference sources will impact RF propagation.

Unidentified Known RF Absorbers/Reflectors/Interference Sources

Identifying known RF absorbers, reflectors, and interference sources while in the field during the installation phase is critical. Make sure that these sources are taken into consideration when you attach an AP to its fixed location. Examples of sources that degrade RF performance include:

- Cement and brick
- Objects that contain water
- Metal
- Microwave ovens
- Wireless phones and headsets

Installing the IAP

Caution: Installation and service of Dell PowerConnect W-Series products should be performed by Professional Installers.

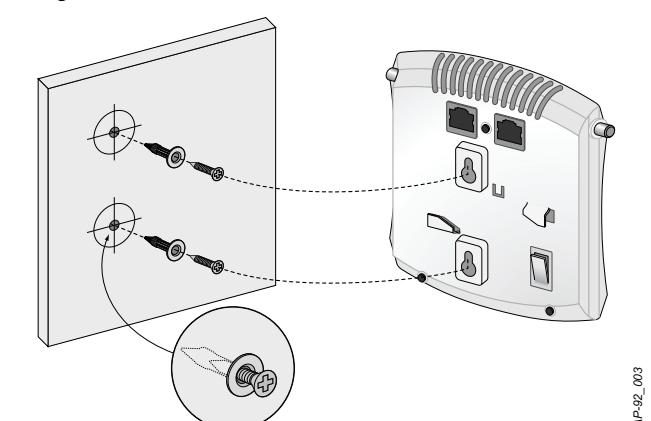
Note: If you are installing an W-IAP92, be sure to attach the antennas before mounting the IAP.

Using the Integrated Wall-Mounting Slots

The keyhole-shaped slots on the back of the IAP can be used to attach the device upright to an indoor wall or shelf. When you choose the mounting location, allow additional space at the right of the unit for cables.

- Since the ports are on the back of the device, make sure that you mount the IAP in such a way that there is a clear path to the Ethernet port, such as a pre-drilled hole in the mounting surface.
- At the mounting location, install two screws on the wall or shelf, 1 7/8 inches (4.7cm) apart. If you are attaching the device to drywall, Dell recommends using appropriate wall anchors (not included).
- Align the mounting slots on the rear of the IAP over the screws and slide the unit into place (see [Figure 3](#)).

Figure 3 Installing the W-IAP90 Series Access Point on a Wall



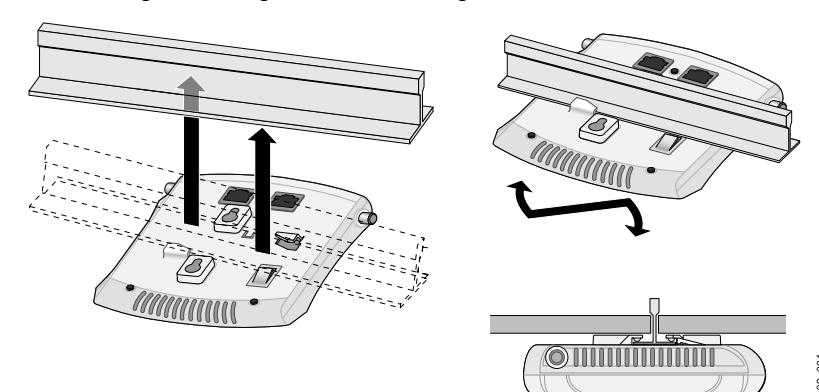
AP92_003

Using the Integrated Ceiling Tile Rail Slots

The snap-in tile rail slots on the rear of the IAP can be used to securely attach the device directly to a 15/16" wide, standard ceiling tile rail.

- Caution:** Make sure the IAP fits securely on the ceiling tile rail; poor installation could cause it to fall.
- Pull the necessary cables through a prepared hole in the ceiling tile near where the IAP will be placed.
 - If necessary, connect the console cable to the console port on the back of the IAP.
 - Hold the IAP next to the ceiling tile rail with the ceiling tile rail mounting slots at approximately a 30-degree angle to the ceiling tile rail (see [Figure 4](#)). Make sure that any cable slack is above the ceiling tile.

Figure 4 Orienting the Ceiling Tile Rail Mounting Slots



AP92_004

- Pushing toward the ceiling tile, rotate the IAP clockwise until the device clicks into place on the ceiling tile rail.

Connecting Required Cables

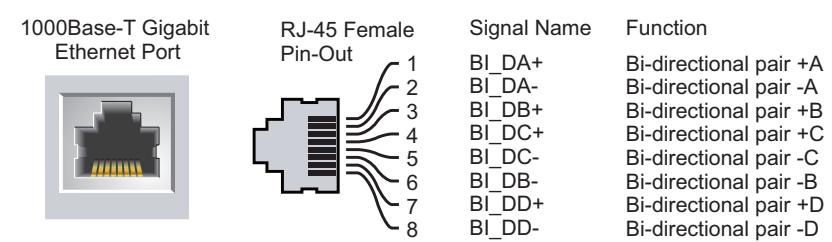
Install cables in accordance with all applicable local and national regulations and practices.

Ethernet Ports

The RJ45 Ethernet port (ENET) supports 10/100/1000Base-T auto-sensing MDI/MDX connections.

The 10/100/1000 Mbps Ethernet port is on the back of the IAP. The port has an RJ-45 female connector with the pin-outs shown in [Figure 5](#).

Figure 5 Gigabit Ethernet Port Pin-Out



Serial Console Port

The serial console port (Console) allows you to connect the IAP to a serial terminal or a laptop for direct local management. This port is an RJ-45 female connector with the pinouts described in [Figure 6](#). Connect this port in one of the following ways:

- Connect it directly to a terminal or terminal server using an Ethernet cable.
- Use a modular adapter to convert the RJ-45 (female) connector on the IAP to a DB-9 (male) connector, and connect the adapter to a laptop using an RS-232 cable. See [Figure 7](#) for connector details of the adapter.

Figure 6 Serial Port Pin-Out

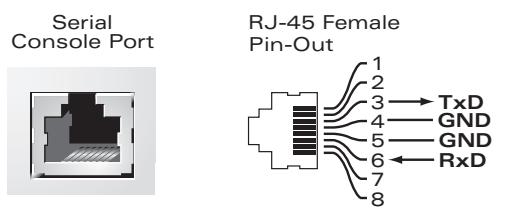
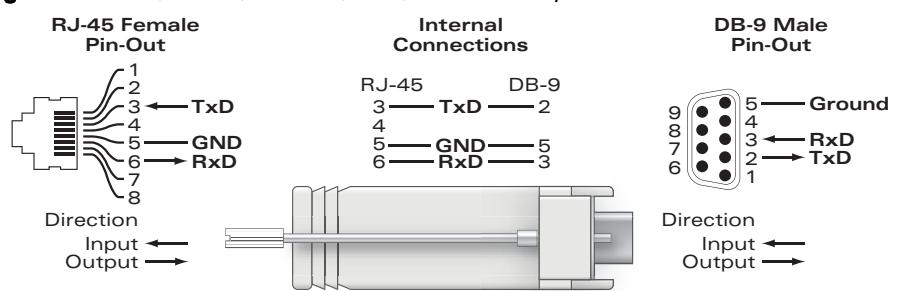


Figure 7 RJ-45 (Female) to DB-9 (Male) Modular Adapter Conversion



Power Connection

The W-IAP90 Series has a single 12V DC power jack socket to support powering through an AC-to-DC power adapter.



Caution: If both POE and DC power are available, the IAP uses POE even when there is not enough POE voltage available to power the IAP..

Verifying Post-Installation Connectivity

The integrated LEDs on the IAP can be used to verify that the IAP is receiving power and initializing successfully (see [Table 1](#)). Refer to the *Dell PowerConnect W-Instant Quick Start Guide* for further details on verifying post-installation network connectivity.

Table 1 W-IAP90 Series LED Behavior

LED	Color/State	Meaning
PWR	Off	No power to IAP
	Green flashing	System initializing
	Red steady	System failed to initialize, contact TAC
	Green steady	Power on, device ready
ENET (10/100/1000 Mbps)	Off	No link
	Green on	1000 Mbps link
	Amber on	10/100 Mbps link
	Flashing	Ethernet link activity
11A/N	Off	5 GHz radio is disabled
	Amber	5 GHz radio enabled in 11a mode
	Green	5 GHz radio enabled in 11n mode
	Green flashing	5 GHz Air Monitor

Table 1 W-IAP90 Series LED Behavior (Continued)

LED	Color/State	Meaning
11B/G/N	Off	2.4 GHz radio disabled
	Amber	2.4 GHz radio enabled in 11b/g mode
	Green	2.4 GHz radio enabled in 11n mode
	Green flashing	2.4 GHz Air Monitor

Product Specifications

Electrical

- Ethernet:
 - 1 x 10/100/1000Base-T auto-sensing Ethernet RJ-45 Interfaces
 - MDI/MDX
 - IEEE 802.3 (10Base-T), IEEE 802.3u (100Base-T), IEEE 802.3ab (1000Base-T)
 - Power over Ethernet (IEEE 802.3af compliant), 48V DC/350mA (see [Figure 5](#) for pin configuration)
- Power: 12 VDC power interface, supports powering through an AC-to-DC power adapter

Note: If a power adapter other than the one provided by Dell is used in the US or Canada, it should be cULus (NRTL) Listed, with an output rated 12 VDC, minimum 1.25A, marked "LPS" or "Class 2," and suitable for plugging into a standard power receptacle in the US and Canada.

Proper Disposal of Dell Equipment

For the most current information about Global Environmental Compliance and Dell products, see our website at www.dell.com.

Waste of Electrical and Electronic Equipment

Dell products at end of life are subject to separate collection and treatment in the EU Member States, Norway, and Switzerland and therefore are marked with the symbol shown at the left (crossed-out wheeble bin). The treatment applied at end of life of these products in these countries shall comply with the applicable national laws of countries implementing Directive 2002/96/EC on Waste of Electrical and Electronic Equipment (WEEE).

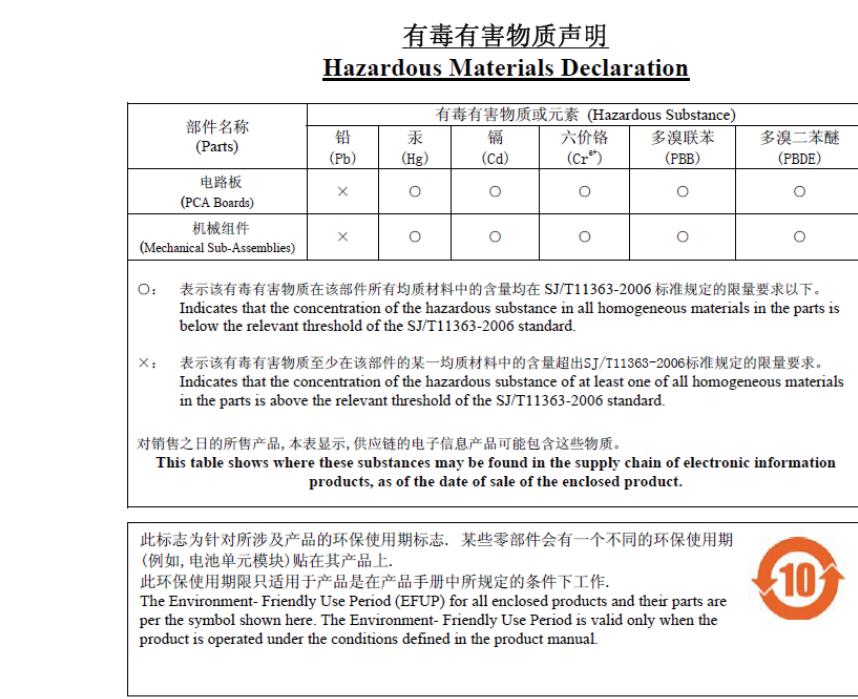
European Union RoHS



Dell products also comply with the EU Restriction of Hazardous Substances Directive 2002/95/EC (RoHS). EU RoHS restricts the use of specific hazardous materials in the manufacture of electrical and electronic equipment. Specifically, restricted materials under the RoHS Directive are Lead (including Solder used in printed circuit assemblies), Cadmium, Mercury, Hexavalent Chromium, and Bromine. Some Dell products are subject to the exemptions listed in RoHS Directive Annex 7 (Lead in solder used in printed circuit assemblies). Products and packaging will be marked with the "RoHS" label shown at the left indicating conformance to this Directive.

China RoHS

Dell products also comply with China environmental declaration requirements and are labeled with the "EFUP 10" label shown at the left.



Safety and Regulatory Compliance

Dell provides a multi-language document containing country specific restrictions and additional safety and regulatory information for all Dell hardware products. The Dell PowerConnect W-Series Safety, Environmental, and Regulatory Information document is included with this product.

The device will be electronically labeled and the FCC ID will be displayed via the controller WebUI under the About menu.



Caution: Dell access points must be installed by a professional installer. The professional installer is responsible for ensuring that grounding is available and it meets applicable local and national electrical codes.

Caution: RF Radiation Exposure Statement: This equipment complies with FCC RF radiation exposure limits. This equipment should be installed and operated with a minimum distance of 7.87 inches (20cm) between the radiator and your body for 2.4 GHz and 5 GHz operations. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. When operated in the 5.15 to 5.25 GHz frequency range, this device is restricted to indoor use.

EMC Compliance and Warning Statement

- IEC 60601-1-2: 2007
- EN 60601-1-2: 2007

This equipment has been tested and found to comply with the limits of the standard for medical devices, IEC 60601-1-2:2007. The unit also complies with the requirements of EN 60601-1-2:2007, providing the presumption of compliance to the European Union's Medical Device Directive 2007/47/EC. The limits are designed to provide reasonable protection against harmful interference in a typical medical installation. This equipment generates, uses and can radiate radio frequency energy, and, if not installed and used in accordance with the manufacturer's instructions may cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment causes interference with other devices, which may be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the device receiving the interference.
- Increase the separation between the equipment.
- Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.
- Consult the manufacturer or field service technician for help.

The Models W-IAP92 and W-IAP93 do not have an Applied Part as defined in IEC 60601-1. The protection against electric shock is Class II.

Device is not protected against ingress of liquids and has a protection class of IPX0 as defined by IEC 60529. Equipment not suitable for use in the presence of flammable mixtures.

The unit is considered "Continuous Operation" equipment as defined by IEC 60601-1.

Power Consumption – 48 VDC 802.3af power over Ethernet or 12VDC, 1.25A for external AC supplied power (adapter sold separately); Maximum power consumption - 10W.

Mechanical Dimensions: 120mm x 130mm x 55mm; 255g.

Environmental: Operating Temp: 0° C to +50° C (+32° F to +122° F); Humidity: 5 to 95% non-condensing. Storage Temp: -40° CS to +70° C (-40°F to +158°F).

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Contacting Supports

Web Site Support

Main Site	http://www.dell.com
Support Site	https://support.dell.com
Dell Documentation	https://support.dell.com/manuals

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http://www.aruanetworks.com/open_source

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