

Chapter 1 – Server Hardware Installation

SERVER HARDWARE SUPPORT

Server hardware is supported by Dell directly. If any issue associated with the hardware is discovered, please contact Dell. Use the following procedure to obtain Dell support.

This section covers the procedures required to setup the Dell server, as a virtual server on the customer's network, to function as an IPedge Virtual Server

CREATE A DELL ACCOUNT

In order to transfer the Dell server and register that server for warranty support you must have a Dell account. Use the procedure below to create an account.

1. Go to the following website.
<http://www.dell.com/support/retail/us/en/04/ownershiptransfer/IdentifySystem>
2. Click on the **My Account** link in the top left corner of the screen.
3. Click on the **Create a Dell.com account** link.
4. Enter the required information.

Note: If you know your standardized address used by the U.S. Post Office, please enter it.
Enter your 9 digit Zip Code (five digit will work).
Enter your street name and number in the first address line, and any non-address information (Suite, Department, etc.) in the second address line

5. Click on the Confirm Registration button.

DELL OWNERSHIP TRANSFER

The Dell servers are registered to Toshiba when shipped. The first steps transfer the server to you and your customer.

1. Locate the Service Tag Number on the Dell server. The number is on the Information Tag on the server front panel. Refer to [Figure 1-1](#), [Figure 1-3](#), or [Figure 1-5](#).
2. Open the following website.
<http://www.dell.com/support/retail/us/en/04/ownershiptransfer/IdentifySystem>

Note: Dell may change the URL at any time. If necessary, look for warranty service on www.Dell.com.

3. Enter the **service tag** number and click **Continue**.

Are you on the system now?

We can look up your computer's Service Tag and Express Service Code for you.

Automatically detect my service tag

For (10) or more tags, please use the below Bulk transfer files. Please note there is an International and Domestic file and ALL fields must be completed in order to process your request. (Domestic = US to US; Int'l = all other transfer types)

[Domestic Bulk Transfer](#)
[International Bulk Transfer](#)

If not, look up one or more systems

Service Tag * Express Service Code

[+ Add More](#)

4. Enter the Company Name and Zip code as shown here. Company Name is **Toshiba** and the zip code is **92618**.

Identify System Previous Owner Information New Owner Information

Products you are transferring
PowerEdge R720 (5RGDH02)

Previous Owner Information

First Name

Last Name

Company Name *

Email

Street Address

Country **United States**

City

State/Prov/Cnty **California**

Zip Code *

Phone Number

[Previous](#)

5. Enter the following information and click on **Continue**.
Company Name: Use the following format.

Toshiba “DEALER NAME” CUSTOMER NAME

For example: Toshiba “ABC Communications” XYZ Company

Email: Your email address

Address: The address where the server is installed (customer location). Dell will use this information when they need to visit the site for warranty support.

The screenshot shows a multi-step process for transferring ownership. The current step is 'New Owner Information', which is highlighted with a blue triangle. The previous steps, 'Identify System' and 'Previous Owner Information', are marked with checkmarks. The 'Review' step is a circle. Below the progress bar, the product being transferred is identified as 'PowerEdge R720'. The 'New Owner Information' section contains the following fields and values:

- First Name: John
- Last Name: Smith
- Company Name: Toshiba ABC Comm XYZ Company
- Email: john@abc.com
- Confirm Email: john@abc.com
- Street Address: 123 Main Street, Suite 312
- Country: United States
- State/Prov/Cnty: Your State
- City: Home Town
- Zip Code: 99999-9999
- Phone Number: 8885551212
- How will the product be used?: Commercial/Office

Additional text on the form includes: 'PO Boxes are invalid. Please provide a physical address.' and 'If the country you're looking for doesn't appear, please read additional information'. At the bottom of the form, there is a 'Continue' button and a 'Previous' link.

6. Confirm the information and click on the **Submit** button.

- The following screen will display. It may take several days for the changes to take effect.

My Account Order Status Feedback

Support > Ownership Transfer

Ownership Transfer

> Support Home Page
> Drivers & Downloads
> Product Support
> Order Support
> Support By Topic
> Warranty Information
> Contact Us

Thank You
We have forwarded your request to transfer Service Tags: DJ2GY12 to the proper Dell organization. Please allow 10-15 days for processing. Thank you for choosing Dell.

[Submit more tags >](#)

Keep your new acquired Dell product up-to-date.
We've combined all the support information you might need in one easy place. Look for drivers and downloads or check on warranties, upgrades and spare parts. Review product views, FAQs, troubleshooting articles and recent product conversations. We want you to get the most from your Dell product.

[Product Support](#)

If you have any questions regarding the ownership transfer of this system, please contact Customer Service at [Customer Service](#). All requests to transfer ownership, service, limited warranty* and Dell support are determined in Dell's sole discretion. Dell reserves the right to refuse to honor any transfer requests and requests for warranty coverage and/or service. If Dell has not received payment for the subject system, even if you have made payment to another party, you may not return any transferred system under the Dell Return Policy. All such transfer requests are also subject to Dell's terms and conditions of sale located at www.dell.com

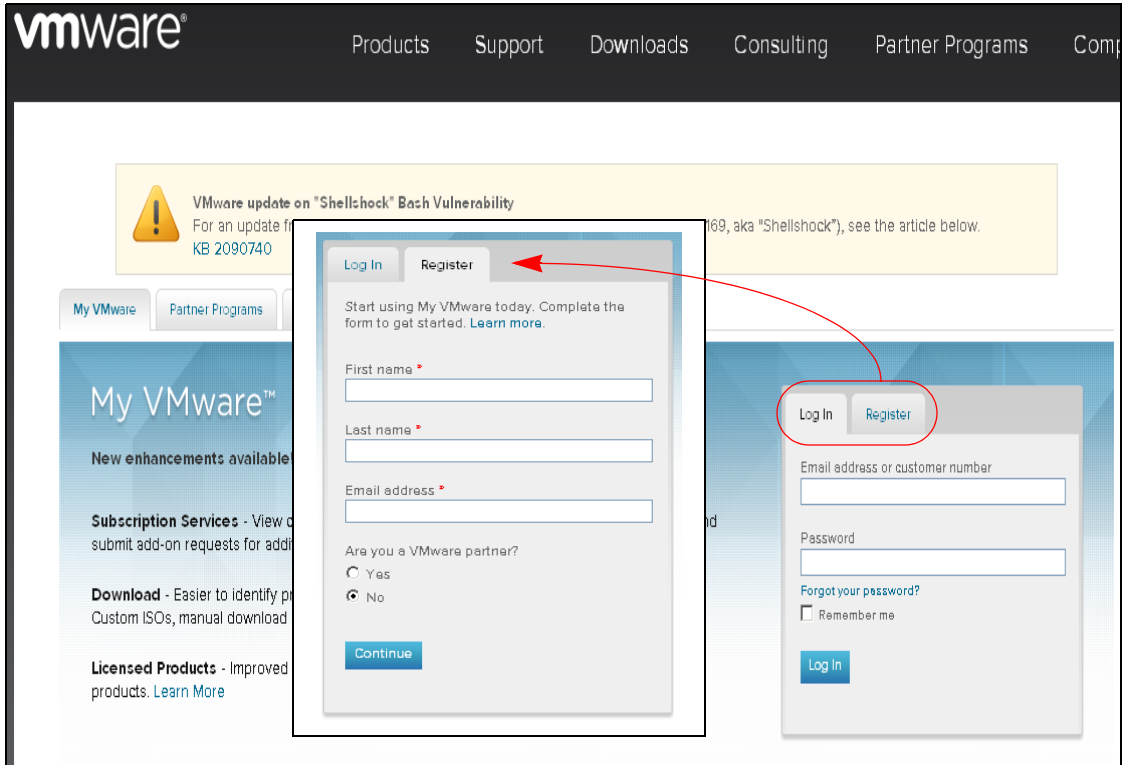
Any service contract applicable to your system is identified by the Service Tag number and may be transferred only in conjunction with the transfer of the entire system. If the system is being transferred into a geographic location in which the same service as provided under the subject service contract is not available at the same price as was initially paid for this service contract by the customer, or if the new owner desires a different category of service, then there may be an additional charge for this transfer. All such transfers will otherwise be subject to the terms and conditions of the original service agreement. Service, the limited warranty or Dell support may not be available in your geographic location. No service and/or warranty will be extended solely because of this transfer.

Dell cannot guarantee the authenticity of the products, limited warranties, service, or technical support or the accuracy of the listings of products you purchase from a party other than Dell. Limitations apply to warranties offered by Dell. Dell's terms and conditions of sale include arbitration, forum selection and damage limitation provisions. See important information about your purchase at www.dell.com

- When warranty service is required, please contact Dell Technical Support through phone, email or chat through the following page.
<http://www.dell.com/support/contents/us/en/04/category/Contact-Information?ref=opinionlab2>
- In order to get support, you may need to Login to your Dell account on the My Account page on Dell.com.
If you do not have an account refer to [CREATE A DELL ACCOUNT on page 1-1](#).

does not already have a VMware license they can use this procedure to acquire a free VMware license.

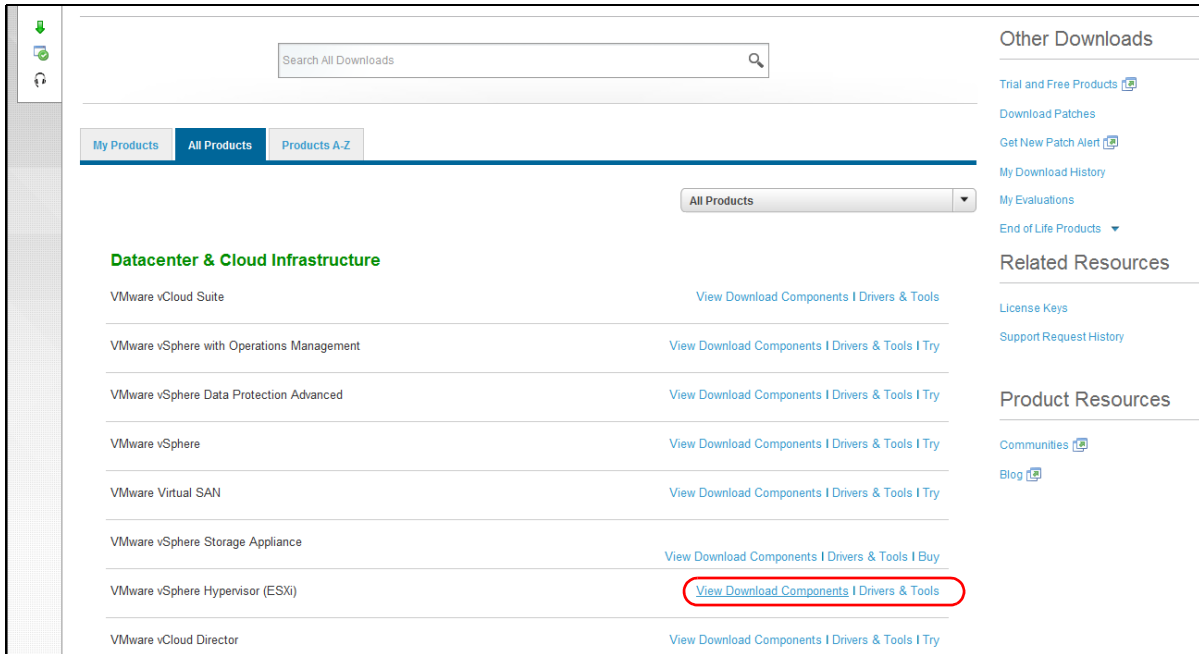
1. Navigate to the VMware website; <http://www.vmware.com>.
2. Click on the Register tab to create an account.



3. Follow the on screen instructions to create your account.
4. When your account has been confirmed by email go to the next step.
5. Browse to <http://vmware.com/products/vsphere-hypervisor>. Click on **Download**.

Important! The VMware must be licensed to the end user, not the dealer. The end user's email address is used by VMware to identify to license holder.

6. Select VMware vSphere Hypervisor (ESXi).



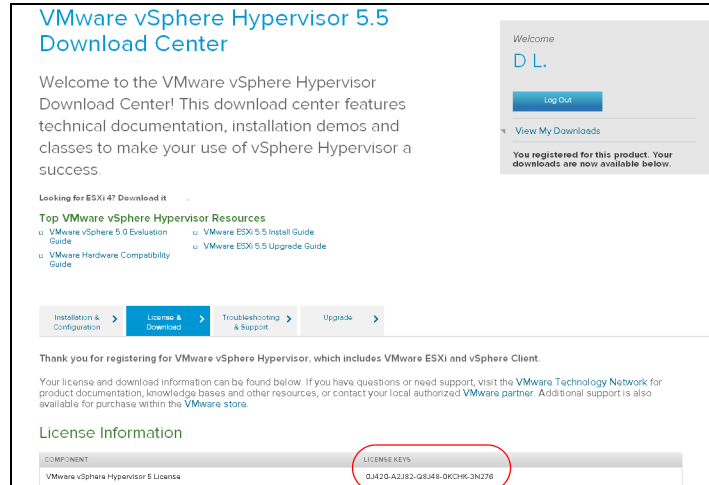
7. Click on Register.



8. Specify the number of licenses you want. You will need one license for each physical server you install. You can have many virtual servers on one license.

CHANGE VMWARE (ESXi) IP ADDRESS

- Copy the License key to a document on your administration PC. The license key will be used in the next procedure.



These next procedures require access to the physical server and connection to a network with internet access.

CHANGE VMWARE (ESXi) IP ADDRESS

The default address of the ESXi server is 192.168.254.245. To change the network configuration use the system console.

Plug in a monitor and a keyboard to the rear panel connects on the IPedge Virtual server chassis. Refer to [Figure 1-2](#), [Figure 1-4](#), or [Figure 1-6](#).

- Press **F2** Customer System/ View Logs.
- Press **F2** Customise System/ View Logs again.
- Login to user name; **root**. The default password is **password**.

Note: If the server is accessible physically and/or on the public network you should change this password. This new password must be retained, there is no way to recover this password.

- Press **Enter**.
- Arrow down to select **Configure Management Network** then, press **Enter**.
- Arrow down to select **IP Configuration** then, press **Enter**.
- In the IP configuration dialog box:

Ensure that **Set Static IP address and network configuration** is selected.

Arrow down to set the **IP Address**.

Arrow down to set the **Subnet Mask**.

Arrow down to set the **Default Gateway**.

Press **Enter**.

8. Arrow down to select **DNS Configuration** then, press **Enter**.
Arrow down to set the **Primary DNS** IP address.
Arrow down to set **Alternate DNS** IP address.
9. Leave the hostname at the default value of localhost.
10. Press **Enter**.
11. Press **ESC**
12. Press **ESC**
13. Press **F12** Shut down / Restart.
14. Login. The same as [Step 3](#) above.
15. Press **F11** Restart.
16. Press **Enter** to confirm the restart.

The system will restart. This will take a few minutes.

INSTALL VSHPERE CLIENT

To copy the license key onto the server you must have vSphere Client on you administration PC.

Note: The administration PC must have internet access for this vSphere Client download procedure.

1. Ensure that the administration PC is on the same subnet as the IPedge Virtual Server.
2. Launch a browser. Enter the IP address of the ESXi server. The default address is: 192.168.254.245.

VMware ESXi
Welcome

Getting Started

If you need to access this host remotely, use the following program to install vSphere Client software. After running the installer, start the client and log in to this host.

Please note that the traditional vSphere Client does not support features added to vSphere in the 5.1 and 5.5 releases. The traditional vSphere Client is intended for use if you need to connect directly to an ESXi host, are performing certain vSphere Update Manager operations, or are running vCenter Plug-ins that support only the vSphere Client such as vCenter Site Recovery Manager or vCenter Multi-Hypervisor Manager.

You can take advantage of the fullest range of functionality introduced or updated in this release by using the vSphere Web Client.

- [Download vSphere Client](#)

To streamline your IT operations with vSphere, use the following program to install vCenter. vCenter will help you consolidate and optimize workload distribution across ESX hosts, reduce new system deployment time from weeks to seconds, monitor your virtual computing environment around the clock, avoid service disruptions due to planned hardware maintenance or unexpected failure, centralize access control, and automate system

For Administrators

vSphere Remote Command Line

The Remote Command Line allows you to use command line tools to manage vSphere from a client machine. These tools can be used in shell scripts to automate day-to-day operations.

- [Download the Virtual Appliance](#)
- [Download the Windows Installer \(exe\)](#)
- [Download the Linux Installer \(tar.gz\)](#)

Web-Based Datastore Browser

Use your web browser to find and download files (for example, virtual machine and virtual disk files).

- [Browse datastores in this host's inventory](#)

For Developers

vSphere Web Services SDK

Learn about our latest SDKs, Toolkits, and APIs for managing VMware ESX, ESXi, and VMware vCenter. Get sample code, reference documentation, participate in

Internet | Pro

Note: Ignore any certificate warnings that appear.

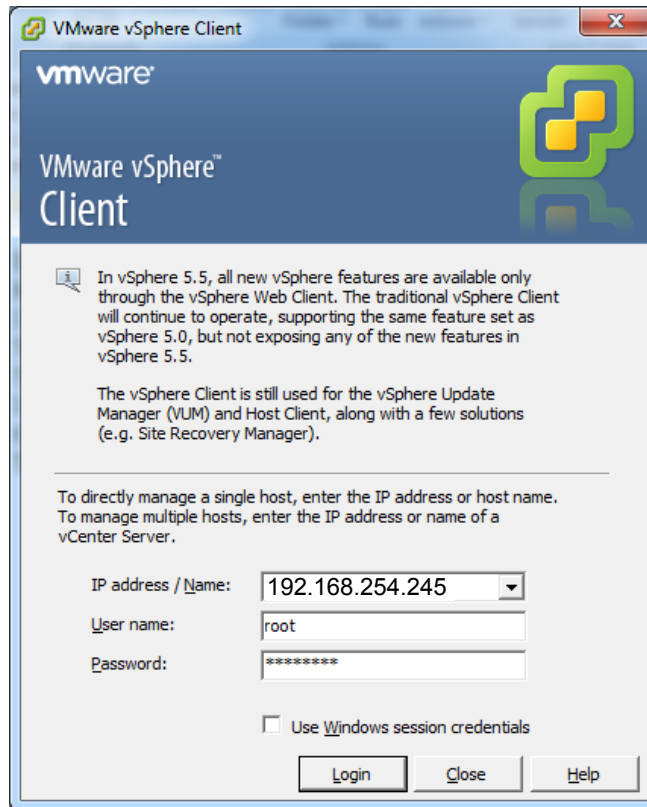
3. The vSphere client will download then launch the installer. Follow the prompts to complete the installation. This will take several minutes.

UPLOAD THE LICENSE KEY

UPLOAD THE LICENSE KEY

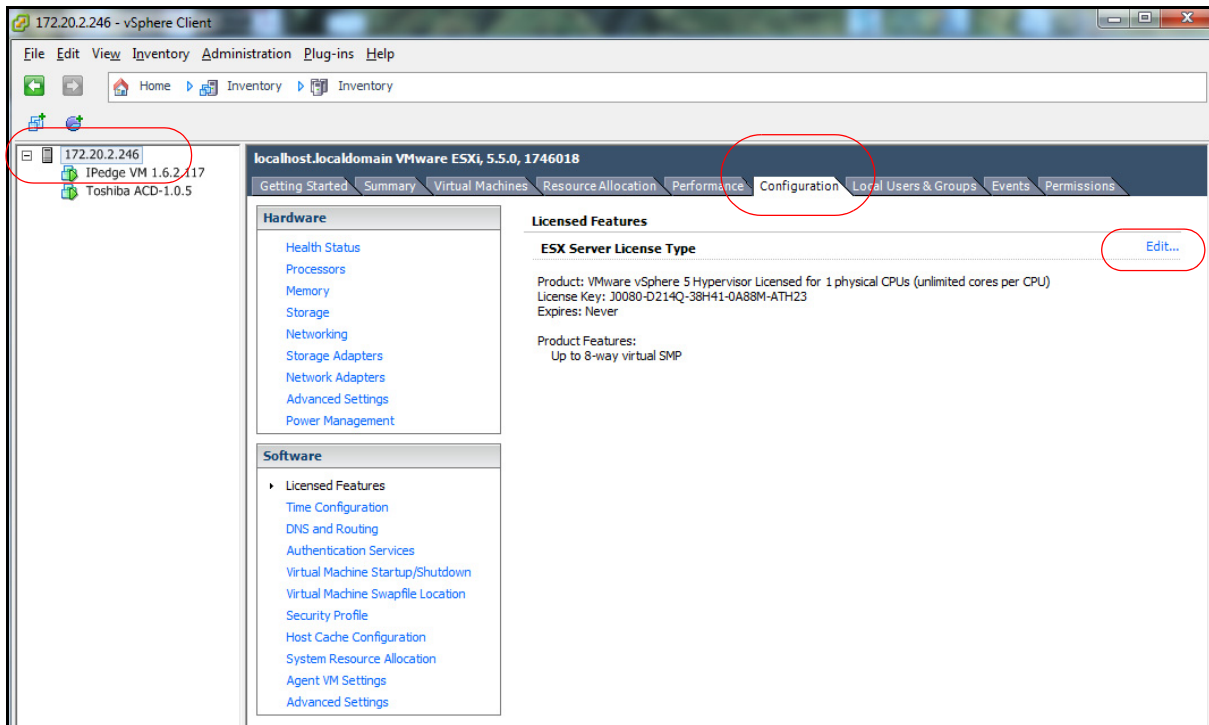
This procedure is used to apply the VMware license key to the server.

1. Launch vSphere Client.



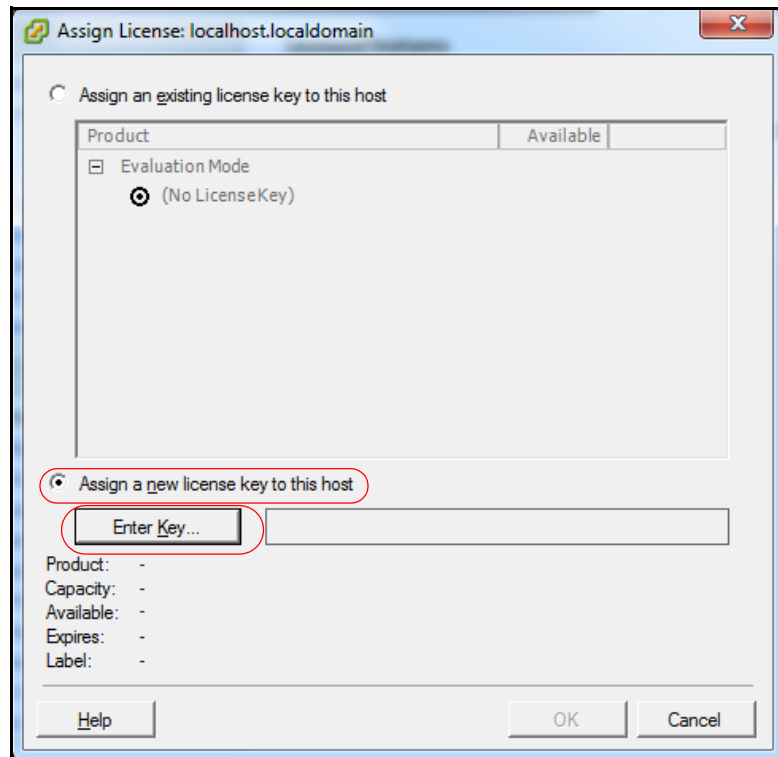
2. Enter the IP address of the IPedge Virtual server.
3. The default user name is; root.
The default password is: password.
4. Click on the **Login** button.

5. Click on the IP address of the server in the left hand column.



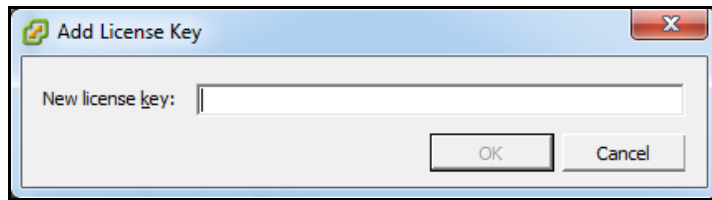
6. Click on the Assign a new license key to the host radio button.

7. Click on **Enter key** button.



DONGLE PORT

- Copy or type the license key into the **New license key** field.



- Click on **OK**.

Important! This procedure must be completed within 60 days or the server will stop processing all calls.

DONGLE PORT

The license dongle **MUST** remain plugged into the server at all times. The systems monitors the dongle.

Important! If the dongle is not connected at system start-up critical functions will not start.

The system will monitor the USB License Dongle. If the dongle is removed or replaced with an invalid dongle while the server is running it will continue to function for 24 hours then, the following occurs:

- All new calls (except E911) will be prohibited.
- If ACD is running it will change to 'demonstration' mode.
- New license container files will be rejected.

While the dongle is out:

- Configuration changes are allowed.
- Station registration such as Call Forward, or Do Not Disturbed are allowed.

When the dongle is reconnected normal operation is restored within one minute.

IP NETWORK CONNECTION

Each IPedge Virtual Server chassis has from two to four NIC connectors. The connectors are teamed. The network cable can be plugged into any NIC port.

VIRTUAL SERVER COMPONENTS

VIRTUAL SERVER COMPONENTS

Hardware configuration is shown in the table below.

Table 1-1 IPedge Virtual Servers

Feature	Virtual IPedge EP (R220)	Virtual IPedge EC (R420 no RAID)	Virtual IPedge EC (R420 RAID1)	Virtual IPedge EM (R720 RAID1)	Virtual IPedge EM (R720 RAID5)
CPU	Xeon E3- 1240 (3.4GHz, 8M cache)	Xeon E5-2420 (1.8GHz, 10M cache, 1066MHz)	Xeon E5-2420 (1.8GHz, 10M cache, 1066MHz)	Xeon E5-2603 (1.8GHz, 10M cache, 1066MHz) x 2	Xeon E5-2603 (1.8GHz, 10M cache, 1066MHz) x 2
Memory	8GB x 1	4GB x 2	4GB x 2	8GB x 2	8GB x 2
HDD (no RAID)	SATA 500GB	SATA 500GB	-	-	-
HDD (RAID)	-	-	SATA 500GB x 2 HW RAID (H310)	SAS 600GB x 2 HW RAID (H710)	SAS 600GB x 4 HW RAID (710)
BMC	Y	Y	Y	Y	Y
Remote Access	Y (need iDRAC7)	Y (need iDRAC7)	Y (need iDRAC7)	Y (iDRAC7 express)	Y (iDRAC7 express)
HDD	500GB	500GB	500GB x 2	600GB x 2	600GB x 4
Redundant Power	N	N	N	Y (Hot Swap)	Y (Hot Swap)

POWER SUPPLY

The power supply AC input and heat generated, at maximum load, are shown in [Table 1-2](#)

Table 1-2 Power Supply Specifications

Item	R220	R420	R720
AC Volts (50 ~ 60 Hz)	100 ~ 240	100 ~ 240	100 ~ 240
Current AMPs (120 V)	4.0	7.4	6.5 (3.25 x 2)
Maximum Power (Watts)	100.00	174.5	605
BTU/Hr (MAX)	1040	2315	1908
Idle Power (Watts)	53.30	85.6	287.9

PHYSICAL

PHYSICAL

The physical size, weight, and power requirements are shown in [Table 1-3](#).

Table 1-3 IPedge Virtual Server Physical Specifications

Item	R220	R420	R720
Height	42.8 mm (1.68 in.) (1U)	42.8 mm (1.68 in.) (1U)	87.3mm (3.44 in.) (2U)
Width with rack latches	482.4 mm (18.99 in.)	482.4 mm (18.99 in.)	482.4 mm (18.99 in.)
Depth (excludes bezel)	393.7 mm (15.5 in)	607.0 mm (23.9 in)	755.8 mm (29.75 in)
Weight (maximum)	8.058 kg max (17.73 lb)	19.9 kg (43.87 lb)	29.5 kg (65.03 lb)
Width without rack latches	434.0 mm (17.08 in.)	434.0 mm (17.08 in.)	444.0 mm (17.48 in.)
Maximum Power (Watts)	100.00	174.5	605
Idle Power (Watts)	53.30	85.6	287.9

SERVER CHASSIS INSTALL

Refer to the DELL instructions to install the chassis rackmount rails and to install the chassis in the rack.

When the chassis is installed in the rack use the following procedure.

1. Plug the license dongle into a USB connector on the chassis.
2. Plug the network cable into any server NIC.
3. Plug the AC power cord(s) into the server power supplies.
4. Plug the AC power cords into the AC power source.
5. Set the power supply switches, if equipped, to ON.
6. Use the front panel switch to power up the server.

DELL R220 SERVER

The PowerEdge R220 is a 1.68 inch (1U) rack-mount server. The R220 server has one Hard Disk Drive (HDD) and a single power supply (P/S) with one 115 V AC, 15 AMP power cord.

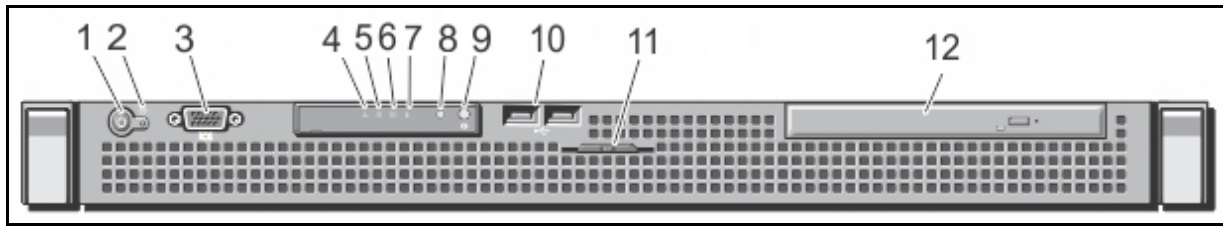


Figure 1-1 R220 Front Panel

Table 1-4 R220 Server Front Panel

Label	Item	Description
1	Power-on indicator, power button	The power-on indicator lights when the system power is on. The power button controls the power supply output to the system. NOTE: On ACPI-compliant operating systems, turning off the system using the power button causes the system to perform a graceful shutdown before power to the system is turned off.
2	NMI button	Used to troubleshoot software and device driver errors when running certain operating systems. This button can be pressed using the end of a paper clip. Use this button only if directed to do so by qualified support personnel or by the operating system's documentation.
3	Video connector	Allows you to connect a VGA display to the system.
4	Health Indicator	Steady Blue - System is on and in good health Flashing Amber - While the system is on or in standby and any error condition exists (i.e.: failed fan or HDD)
5	HDD	Flashes green to indicate HDD activity.
6	Electrical	Flashes amber to indicate electrical error such as input voltage out of range or power supply failure.
7	Temperature	Flashes amber to indicate thermal error condition such as temperature out of range or fan failure.
8	System Status	Steady Blue - Normal system operation Flashing Amber - System problem, refer to the System Event log.
9	System identification button	The identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on the front and the back of the system flashes until one of the buttons is pressed again.

(Sheet 1 of 2)

Table 1-4 R220 Server Front Panel

Label	Item	Description (continued)
10	USB connectors (Two)	Allows you to connect USB devices to the system. The ports are USB 2.0-compliant.
11	Information tag	A slide-out label panel which allows you to record system information such as Service Tag, NIC, MAC address and so on as per your need.
12	Optical drive panel	DVD-ROM drive is not included.

(Sheet 2 of 2)

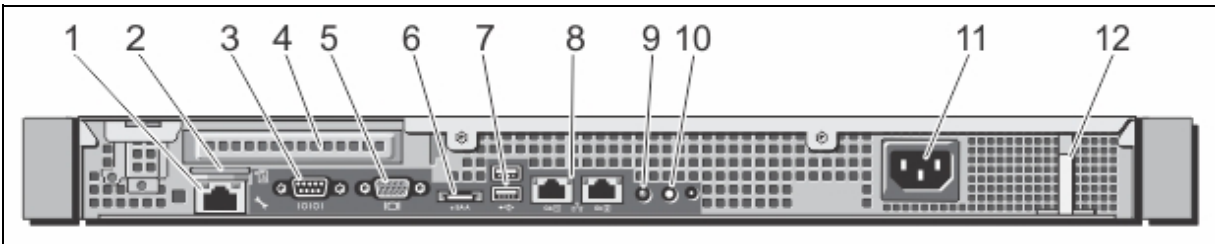


Figure 1-2 R220 Server Rear Panel

Table 1-5 R220 Server Rear Panel

Label	Item	Description
1	iDRAC7 Enterprise Port	Dedicated management port.
2	vFlash card slot	Accepts a vFlash media card. Not used.
3	Serial connector	Serial device connection.
4	PCIe expansion card slots, low-profile	Not used.
5	Video connector	VGA display connection.
6	eSATA	Not used.
7	USB connectors (2)	Allows you to connect USB devices to the system. The ports are USB 2.0-compliant. The ports are 'teamed.'
8	Ethernet connectors	Two integrated 10/100/1000 Mbps NIC connectors
9	System Status	Blue - Normal operation Amber - System problem

(Sheet 1 of 2)

Table 1-5 R220 Server Rear Panel

Label	Item	Description (continued)
10	System identification button	The identification buttons on the front and back panel can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on the front and the system status on the back flashes until one of the buttons is pressed again.
11	Power supply	AC – 250 W
12	Power clip	Clip to secure the AC power cord.
(Sheet 2 of 2)		

DELL R420 SERVER

The PowerEdge R420 is a 1.68 inch (1U) rack-mount server. The R420 server has a single power supply (P/S) with one 115 V AC, 15 AMP power cord.

The R420 without the RAID option has one HDD. The R420 with RAID1 has two HDDs.

Note: The server cannot have the RAID option added after shipping.

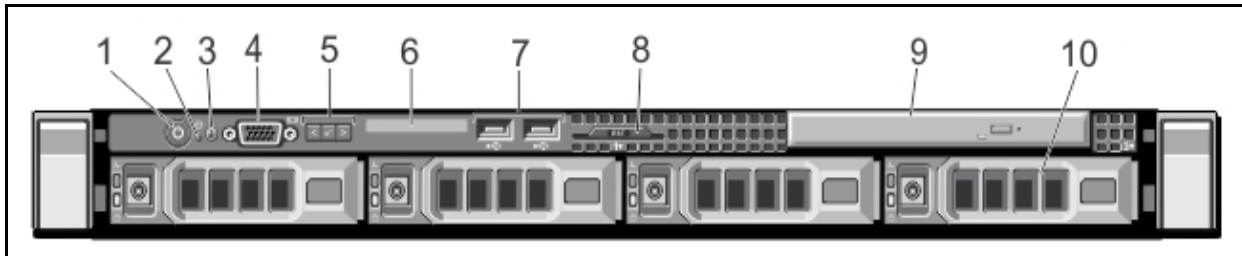


Figure 1-3 R420 Server Front Panel

Table 1-6 R420 Server Front Panel

Label	Item	Description
1	Power-on indicator, power button	The power-on indicator lights when the system power is on. The power button controls the power supply output to the system. NOTE: On ACPI-compliant operating systems, turning off the system using the power button causes the system to perform a graceful shutdown before power to the system is turned off.
(Sheet 1 of 2)		

Table 1-6 R420 Server Front Panel

Label	Item	Description (continued)
2	NMI button	Used to troubleshoot software and device driver errors when running certain operating systems. This button can be pressed using the end of a paper clip. Use this button only if directed to do so by qualified support personnel or by the operating system's documentation.
3	System identification button	The identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on
4	Video connector	Allows you to connect a VGA display to the system.
5	LCD menu buttons	Allows you to navigate the control panel LCD menu.
6	LCD panel	Displays system ID, status information, and system error messages. The LCD lights blue during normal system operation. The LCD lights amber when the system needs attention, and the LCD panel displays an error code followed by descriptive text. NOTE: If the system is connected to a power source and an error is detected, the LCD lights amber regardless of whether the system is turned on or off.
7	USB connectors (2)	Allows you to connect USB devices to the system. The ports are USB 2.0-compliant.
8	Information tag	A slide-out label panel which allows you to record system information such as Service Tag, NIC, MAC address and so on as per your need.
9	Optical drive slot	Not equipped
10	Hard drives	Up to four 2.5 inch hot-swappable hard drives

(Sheet 2 of 2)

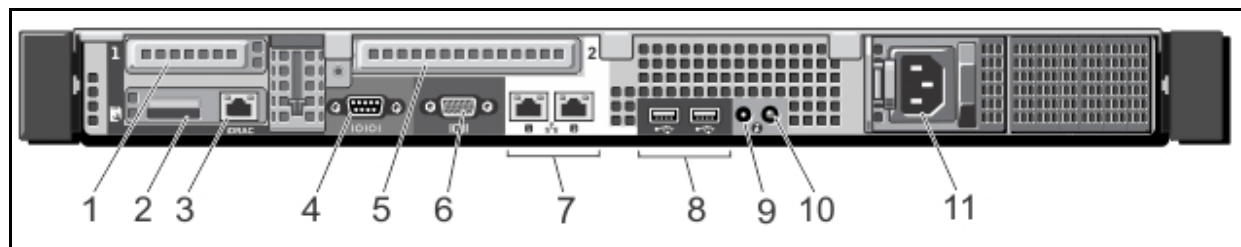


Figure 1-4 R420 Server Rear Panel

Table 1-7 R420 Server Rear Panel

Label	Item	Description
1	PCIe expansion card slots, low-profile	Not used.
2	vFlash card slot	Accepts a vFlash media card. Not used.
3	iDRAC7 Enterprise Port	Dedicated management port.
4	Serial connector	Serial device connection.
5	PCIe expansion card slots, low-profile	Not used.
6	Video connector	VGA display connection.
7	Ethernet connectors	Two integrated 10/100/1000 Mbps NIC connectors
8	USB connectors (2)	Allows you to connect USB devices to the system. The ports are USB 2.0-compliant.
9	System Identification Connector	Connects the optional system status indicator assembly through the optional cable management arm.
10	System identification button	The identification buttons on the front and back panel can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on the front and the system status on the back flashes until one of the buttons is pressed again.
11	Power supply	AC power input plug

DELL R720 SERVER

The PowerEdge R720 is a 2.5 inch (2U) rack-mount server. The server includes two power supplies. Refer to [Figure 1-5](#) and [Figure 1-6](#).

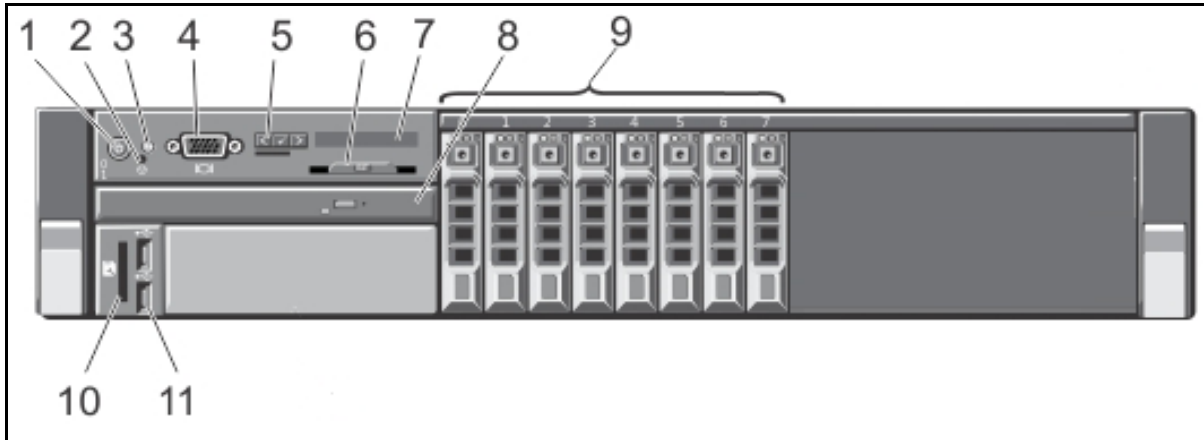


Figure 1-5 R720 Front Panel

Table 1-8 R720 Server Front Panel

Label	Item	Description
1	Power-on indicator, power button	The power-on indicator lights when the system power is on. The power button controls the power supply output to the system. NOTE: On ACPI-compliant operating systems, turning off the system using the power button causes the system to perform a graceful shutdown before power to the system is turned off.
2	NMI button	Used to troubleshoot software and device driver errors when running certain operating systems. This button can be pressed using the end of a paper clip. Use this button only if directed to do so by qualified support personnel or by the operating system's documentation.
3	System identification button	The identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on
4	Video connector	Allows you to connect a VGA display to the system.
5	LCD menu buttons	Allows you to navigate the control panel LCD menu.
6	Information tag	A slide-out label panel which allows you to record system information such as Service Tag, NIC, MAC address and so on as per your need.
(Sheet 1 of 2)		

Table 1-8 R720 Server Front Panel

Label	Item	Description (continued)
7	LCD panel	Displays system ID, status information, and system error messages. The LCD lights blue during normal system operation. The LCD lights amber when the system needs attention, and the LCD panel displays an error code followed by descriptive text. NOTE: If the system is connected to a power source and an error is detected, the LCD lights amber regardless of whether the system is turned on or off.
8	Optical drive slot	Not equipped
9	Hard drives	Up to up to four 2.5 inch hot-swappable hard drives.
10	vFlash media card slot	Accepts a vFlash media card. Not used.
11	USB connectors (2)	Allows you to connect USB devices to the system. The ports are USB 2.0-compliant.

(Sheet 2 of 2)

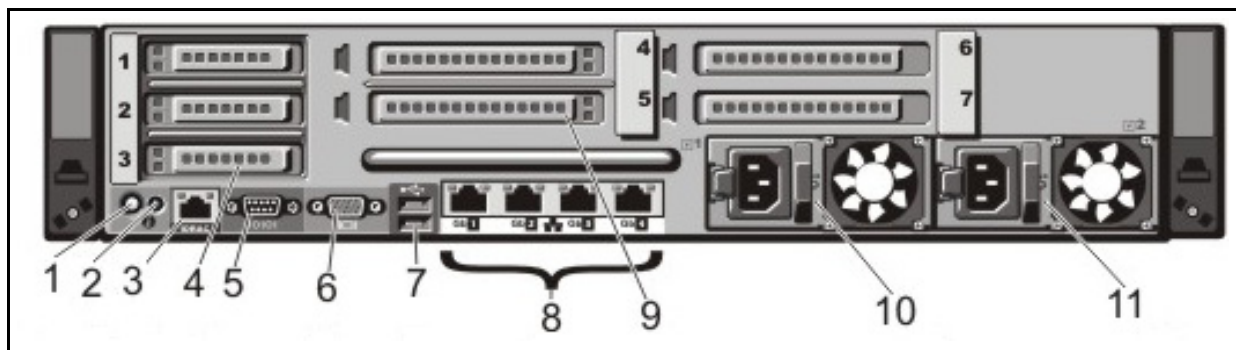


Figure 1-6 R720 Rear Panel

Table 1-9 R720 Server Rear Panel

Label	Item	Description
1	System identification button	The identification buttons on the front and back panel can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on the front and the system status on the back flashes until one of the buttons is pressed again.
2	System Identification Connector	Connects the optional system status indicator assembly through the optional cable management arm.
3	iDRAC7 Enterprise Port	Dedicated management port.
4	PCIe expansion card slots, low-profile (3)	Not Used
5	Serial connector	Serial device connection.
6	Video connector	VGA display connection.
7	USB connectors (2)	Allows you to connect USB devices to the system. The ports are USB 2.0-compliant.
8	Ethernet connectors	Four integrated 10/100/1000 Mbps NIC connectors or Four integrated connectors that include: Two 10/100/1000 Mbps NIC connectors Two 100 Mbps/1 Gbps/10 Gbps SFP+/10 GbE T connectors
9	PCIe expansion card slots full height	Not used
10	Power supply (PSU1)	AC power input plug shown
11	Power supply (PSU2)	

Dell R720 Power Supply

The Dell R720 server has redundant, hot swap power supplies. Each power supply has a 115 V AC, 15 AMP power cord.

The R720 server supports the Hot Spare feature that significantly reduces the power overhead associated with power supply redundancy.

When the Hot Spare feature is enabled (default), a redundant power supply is switched to a sleep state. The active power supply supports 100% of the load, thus operating at higher efficiency. The redundant power supply in the sleep state monitors output voltage of the active power supply. If the output voltage of the active power supply drops, the redundant power supply returns to an active output state.

The active power supply can also activate a sleeping power supply if having both power supplies active is more efficient than having the redundant power supply in a sleep state. The power supply defaults are to wake both power supplies if the load on the active power supply is greater than 50% and to sleep the redundant power supply if the load falls below 20%.

HARD DISK DRIVE INDICATORS

The HDD indicators are shown in [Figure 1-7](#) and [Table 1-10](#).

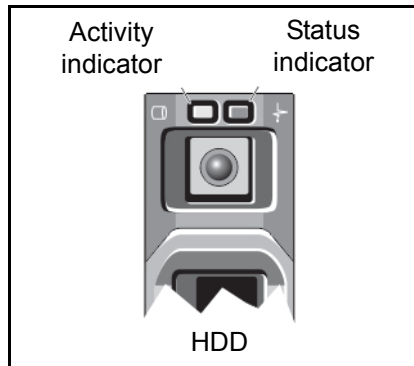


Figure 1-7 HDD Indicator

Table 1-10 RAID Hard Disk Drive Indicators

Status Indicator Pattern	Condition
Flashes green two time per second	Identifying drive or preparing for removal (RAID only)
Off	Drive is ready for removal. The status indicator will remain off until all of the HDDs are initialized after the system is turned on. HDDs are not ready for insertion or removal during this time.
Flashes; green, amber, off.	Predicted HDD failure.
Flashes amber four times per seconds	HDD failed
Flashes green slowly	HDD rebuilding
Steady green	HDD is online
Flashes green three seconds, amber three seconds, and off six seconds	HDD rebuild aborted

**RACKMOUNT
INSTALLATION**

The IPedge servers mount into standard 19 inch EIA Universal Spacing racks and cabinets using the optional mounting rails. Order the optional rack-mount rails when ordering the server.

Table 1-11 Rack Mount Rail Kits

Part Number	Description
DELL-770-BBIF	R220 standard size rail kit – 1U/2U Static Rails for 2-Post and 4-Post Racks, Customer Kit (770-BBIF)
DELL-770-BBIG	R220 short rail kit – 1U/2U Static Rails for 2-Post and 4-Post Racks, Short, Customer Kit (770-BBIG)
DELL-331-5460	R420 static rail – Ready Rails Static Rails for Select 1U systems, Universal 2-Post/4-Post, Customer Install (331-5460)
DELL-331-5463	R420 sliding rail kit – Ready Rails Sliding Rails Without Cable Management Arm for 1U Systems, Customer Kit (331-5463)
DELL-330-8149	R720 static rail kit – Ready Rails Static Rails for select 2U systems, Univ 2-Post/4-Post, Customer Install (330-8149)
DELL-331-4436	R720 sliding rail kit – Ready Rails Sliding Rails for 2U PowerEdge Systems, Customer Kit (331-4436)

The optional rackmount rails are not included with the server chassis. The optional mounting rails can be ordered from Toshiba. Refer to the [Table 1-11](#) for the Rail Kit part numbers. Rail installation instructions are available from www.DELL.com.

CAUTION! The servers must only be installed in an equipment rack using the mounting rails. The front panel screws only secure the chassis on the rails. They are not weight bearing.

POWER REQUIREMENTS

The IPedge server should have a dedicated AC power circuit. The specific input voltage and current requirements for each server is listed in the specifications for each model.

**UPS
RECOMMENDATIONS**

Toshiba recommends an uninterruptible power supply (UPS) with power conditioning for the IPedge Virtual Server.

**IPT POWER
CONSUMPTION**

In [Table 1-12](#) the power consumption for IP5000-series telephones and the Add-on modules is shown. Use this information to calculate the Power over Ethernet (PoE) requirements and UPS capacity.

Table 1-12 IP Telephone and Add-On Module Power Consumption

Telephone Model ¹	Option		Power Rating (Watts)	Current (A) ²	Typical (Watts) ³	Typical Current (A) ⁴	IEEE802.3af PD Class
	Model	Qty					
IP5122-SD	none	--	7.4	0.15	6.2	0.13	0
IP5122-SDC	none	--	7.4	0.15	6.2	0.13	0
IP5132-SD	none	--	7.4	0.15	6.2	0.13	0
IP5131-SDL	none	--	7.4	0.15	6.2	0.13	0
IP51xx +	IDM5060	3	10.3	0.21	8.6	0.18	0
IP51xx +	IDM5060	2	9.4	0.20	7.8	0.16	0
IP51xx +	IDM5060	1	8.4	0.18	7.0	0.15	0
IP51xx +	LM5110	2	10.3	0.21	8.6	0.18	0
IP51xx +	LM5110	1	9.4	0.20	7.8	0.16	0
IP51xx +	KM5020	2	8.9	0.19	7.4	0.15	0
IP51xx +	KM5020	1	8.2	0.17	6.8	0.14	0
IP5622-SD	none	--	3.7	0.08	3.0	0.06	1
IP5631-SDL	none	--	4.1	0.08	3.3	0.07	2
IP5631-SDL	IDM5060	3	6.4	0.13	5.4	0.11	2
IP5631-SDL	IDM5060	2	5.6	0.12	4.7	0.10	2
IP5631-SDL	IDM5060	1	4.8	0.10	4.0	0.08	2
IP5631-SDL	LM5110	2	6.4	0.13	5.3	0.11	2
IP5631-SDL	LM5110	1	5.6	0.12	4.7	0.10	2
IP5631-SDL	KM5020	2	5.2	0.11	4.3	0.09	2
IP5631-SDL	KM5020	1	4.6	0.10	3.9	0.08	2
IP5531-SDL	none	--	3.6	0.08	3.0	0.06	2

1. Power ratings are only telephone and option modules consumption. The values do not include LAN cable power loss, and apply to PoE, not local power supplies.
2. Power ratings are only telephone and option modules consumption. The values do not include LAN cable power loss, and apply to PoE, not local power supplies.
3. Typical means that it is only an example and there is no guarantee implied. The "typical" value might be used for a calculation of actual UPS backup time in an average installation
4. Typical Current (A) = Typical Watts / 48 v