Setting Up the i15000 Series Platform

MAN-0661-02

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Platform Overview

About i15000 Series models

The i15000 Series platform is a powerful system that is designed specifically for application delivery performance and scalability.

The i15000F platforms (i15820-DF) are available with a FIPS-validated hardware security module (HSM) as a factory-installed option. These platforms have dual solid-state drives (SSDs).

The i15000 Series platform is available in a Network Equipment-Building System (NEBS) compliant version (i15000-N). The i15000-N with stock DC power supply units (PSUs) is NEBS compliant. The i15000-N with AC PSU upgrades (UPGs) is not NEBS compliant. The i15000 with stock AC PSUs is not NEBS compliant.

For more information, please see the data sheet at *www.f5.com/pdf/products/big-ip-platforms-datasheet.pdf*.

About the platform

Before you install this platform, review information about the controls and ports located on both the front and back of the platform.

On the front of the platform, you can use the LCD touchscreen to view information about, manage, and reset the system. You can also use the front-panel LEDs to assess the condition of the system.

Figure 1: Front view of the i15000 Series platform

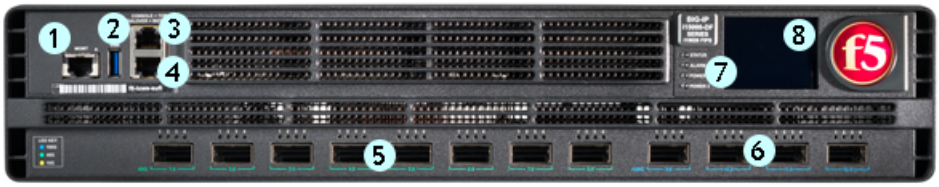

Figure 2: Front view of the i15820-DF platform

1. 100/1000/10000 (100Base-T, 1GBase-T, 10GBase-T) capable management port
2. USB 3.0 port
3. Console serial port

4. Serial (hard-wired) failover port
5. 40GbE QSFP+ ports (8)
6. 100GbE QSFP28 ports (4)
7. Indicator LEDs
8. 2.2 inch LCD touchscreen

The back of the i15000 Series platform includes the fan tray, two power supply units (PSUs), the chassis ground terminals, and the storage drives (located behind the fan tray).

Figure 3: Back view of the i15000 Series AC-powered platform

1. Fan tray (removable)
2. Power input panel 1 (AC power receptacle)
3. Power input panel 2 (AC power receptacle)
4. Chassis ground terminals

Figure 4: Back view of the i15000 Series DC-powered platform

1. Fan tray (removable)
2. Power input panel 1 (DC terminal)
3. Power input panel 2 (DC terminal)
4. Chassis ground terminals

Hardware included with the platform

This platform includes all of the hardware components listed here.

Quantity	Hardware
2	Power cables (black), AC power only, per platform configuration. Might include multiple power cable types if product is delivered outside of the US/Canada.

Quantity	Hardware
2	DC PSU connectors, standard DC power only. By default, this platform includes two DC PSUs and two PSU connectors.
1	RJ45 to RJ45 failover cable, CAT 5 crossover (blue)
1	RJ45 to DB9 console port cable (beige)
1	RJ45F to RJ45M rolled adapter (beige)
1	Quick-install rail kit
2	Rail lock brackets
4	M3 x 8mm flathead screws, black with patch
4	#8-32 pan head screws, steel zinc

Peripheral hardware required

For each platform, you might need to provide additional peripheral hardware. If you plan to remotely administer the system, it would be helpful to have a workstation already connected to the same subnet as the management interface.

Type of hardware	Description
Network hubs, switches, or connectors to connect to the platform network interfaces	You must provide networking devices that are compatible with the network interface ports on the platform. You can use either 10000-Megabit switches with a breakout cable or 40/100-Gigabit Ethernet switches.
External USB CD/DVD drive or USB flash drive	You can use any USB-certified CD/DVD mass storage device or a USB flash drive for installing upgrades and for system recovery. ***Note:*** *External CD/DVD drives must be externally powered.*
Serial console	You can remotely manage the platform by connecting to a serial console terminal server through the console port. ***Important:*** *In the event that network access is impaired or not yet configured, the serial console might be the only way to access the unit. You should perform all installations and upgrades using the serial console, as these procedures require reboots, in which network connectivity is lost temporarily.*
Management workstation on the same IP network as the platform	You can use the default platform configuration if you have a management workstation set up.

Platform Installation

About installing the i15000 Series platform

After you have reviewed the hardware requirements and become familiar with the i15000 Series platform, you can install the unit into a 19-inch rack.

Warning: *Due to the weight of the platform, at least two people are required to install this chassis into a rack. Failing to use two people can result in severe personal injury or equipment damage.*

Important: *Before you install this platform, review the environmental guidelines to make sure that you are installing the platform into a compatible rack and in the appropriate environment.*

Note: *F5 recommends that you keep all original packaging, in case you need to repackage and ship the platform later.*

About the quick-install rails

The quick-install rails are optimized for installation into square hole cabinets, but can be installed in other cabinet styles, such as round hole cabinets, using the screws provided. The rails are easily converted to mount to either cabinet style.

Figure 5: Quick-install rails

For information about installing the platform using the quick-install rails, see the instruction guide provided by the manufacturer, which is included with the rail hardware.

Caution: *Be sure that the rotating mount brackets located on the ends of the rails are locked into place on both sides of the platform when installing the quick-install rails.*

After installing the platform, secure the chassis to the rack with the rail lock brackets that are provided.

Quick-install rail kit hardware

When you are installing with the quick-install rail kit, use these components.

Quantity	Hardware
2	Quick-install rails

Quantity	Hardware
2	#8-32 pan head screws, steel zinc
8	#8-32 thumb screws (from rail kit)
2	Rail lock brackets
4	M3 x 8mm flathead screws, black with patch (threadlock) (for rail lock brackets)

Install the rail lock brackets

Be sure that the rails are installed onto the chassis before you install the rail lock brackets.

The rail lock brackets secure the platform to the rack when you are using the quick-install rail kit.

1. Use a #1 Phillips screwdriver to attach the rail lock brackets to each side of the unit using two of the black M3 x 8mm flathead screws that are provided with the kit.

   Use 5 inch-pounds (0.6 Newton-meters) of torque on these screws.

2. Slide the unit into the rack.

Warning: *Due to the weight of the platform, at least two people are required to install this chassis into a rack. Failing to use two people can result in severe personal injury or equipment damage.*

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3. Use a #2 Phillips screwdriver to secure the rail lock brackets to the rack on each side of the unit using one of the #8-32 pan head screws that are provided with the kit.

   Use 14 to 16 inch-pounds (1.6 to 1.8 Newton-meters) of torque on these screws.

About installing the i15000-N (NEBS) platform

After you have reviewed the hardware requirements and become familiar with the i15000-N (NEBS) platform, you can install the unit into a 19-inch rack.

Warning: *Due to the weight of the platform, at least two people are required to install this chassis into a rack. Failing to use two people can result in severe personal injury or equipment damage.*

Important: *Before you install this platform, review the environmental guidelines to make sure that you are installing the platform into a compatible rack and in the appropriate environment.*

Note: *F5 recommends that you keep all original packaging, in case you need to repackage and ship the platform later.*

Secure the i15000-N (NEBS) platform to the rack

Be sure that the quick-install rails and rail lock brackets are installed onto the chassis before you secure the unit in the rack.

After you have installed i15000-N platform, you must secure the back of the platform to the rack.

Use the included #8-32 thumb screw from the rack rail kit to secure the back of the rack rail in the center screw location.

Use 14 to 16 inch-pounds (1.6 to 1.8 Newton-meters) of torque on these screws.

About grounding the platform

You must ground the platform after you install it in a rack. The chassis ground lug is located on the back of the platform.

Do not secure multiple bonding or grounding connectors with the same bolt. The grounding connectors do not need to be removed to perform service or installation procedures. You can connect other bonding or grounding conductors to a grounding connector provided a reliable bond between the connector and the equipment is not disturbed during installation, service, or maintenance of the platform.

For this platform, F5 recommends using dual ring grounding lugs by Panduit (part number LCDX6-10AF-L).

Important: *All grounding cable terminal lugs must meet appropriate safety standards.*

Note: *The platform must be grounded to a common bonding network (CBN).*

Figure 6: Chassis ground lugs (with and without protective cap)

Connect the ground lug to the ground terminal

You must provide these components to properly ground the chassis:

- Crimping tool
- Dual ring ground terminal lug (for example, Panduit dual ring grounding lug, part number LCDX6-10AF-L)
- One 6 AWG copper wire long enough to reach from the chassis to the common bonding network (CBN)

After the unit is installed in the rack and before you provide power to the system, you need to connect the grounding hardware.

1. Remove the M4 Keps nuts from the ground lug on the back of the chassis.
2. Attach a ground ring terminal to the 6 AWG copper ground wire.
3. Install the ground ring terminal onto the chassis ground terminal.
4. Secure the ground ring terminal with the M4 Keps nuts.

   Use 18 to 24 inch-pounds (2.0 to 2.7 Newton-meters) of torque on these Keps nuts.
5. Connect the ground wire to a common bonding network (CBN).

Connect the cables and other hardware

After you have installed the unit into the rack, connect the cables and other hardware.

Important: *In the event that network access is impaired or not yet configured, the serial console might be the only way to access the unit. You should perform all installations and upgrades using the serial console, as these procedures require reboots, in which network connectivity is lost temporarily.*

1. If you are using the default network configured on the management interface, connect an Ethernet cable to the management port.

   Note: *For EMI compliance, shielded cables are required for the management port, and the shield must be grounded at both ends.*

2. Connect the console port to a serial console server. Depending on which F5 system you have and the console network to which you are attaching, you can use either the supplied RJ45 to DB9 console port cable or the RJ45F to RJ45M rolled serial adapter to connect the system to a serial console.

   - Connect the RJ45 to DB9 console port cable to the console port on the system.

     Note: *The default baud rate and serial port configuration is 19200/8-N-1.*

   - Connect the RJ45F to RJ45M rolled serial adapter to the console port if you are connecting the system to a serial console server with a standard CAT5 cable, and then connect the CAT5 cable to the adapter. The adapter provides the appropriate pinout connection to your equipment. For information about cable and connector pinout specifications, see *F5 Platforms: Accessories* at `techdocs.f5.com/kb/en-us/products/big-ip_ltm/manuals/product/f5-plat-accessories.html`.

     Figure 7: The RJ45F to RJ45M rolled serial (pass-through) adapter (CBL-0143-00)

3. Connect power to installed power supplies:

   Note: *Be sure to route the power cords away from the fan tray so that the cords do not impede access to it.*

   - For AC-powered systems, connect an auto locking power cable to the power input panel on all installed power supply units (PSUs), and then connect the cable to the power source.

     Note: *Not all country-specific power cables include a locking feature.*

     Note: *To remove the locking power cord, pull one or both of the power cord locking tabs away from the supply.*

   - For DC-powered systems, connect a DC cable to each supply and then connect the cable to your DC mains power source.

4. If you plan to set up device service clustering (DSC) with hard-wired failover capacity, connect the serial failover cable to the FAILOVER port on each unit.

   Important: *Although the serial failover port is of RJ45 type, the port does not support network connectivity.*

   For more information about configuring failover, see *BIG-IP Device Service Clustering: Administration* at *support.f5.com*.

You can now assign a management IP address to the system, and then license and provision the software.

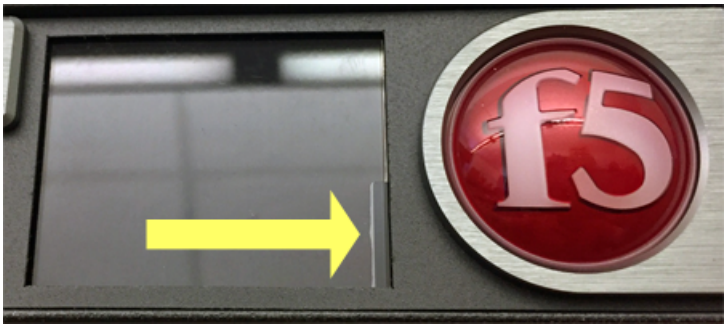
Optionally, you should run the `QKView` utility. This utility collects configuration and diagnostic information about your system into a single file that you can provide to F5 Technical Support to aid in troubleshooting. For more information, see *K12878: Generating diagnostic data using the qkview utility* .

Configure a management IP address using the LCD

You can use the touchscreen LCD to configure the management IP address. With the management IP address, you can access the BIG-IP Configuration utility to configure other aspects of the product, such as the product license, VLANs, and trunks.

Note: *When using the LCD to configure the unit, be sure to use the* ***Commit*** *option to save all settings.*

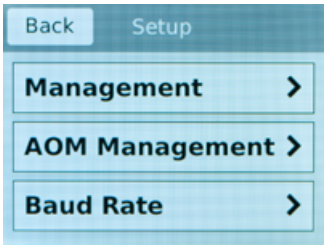
1. (Optional) Remove the protective film from the LCD panel using the small cutout on the lower right corner of the film.



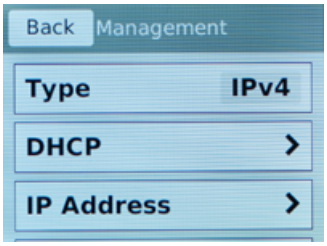
2. Touch the screen to activate the LCD menus.

3. Tap **Setup**.

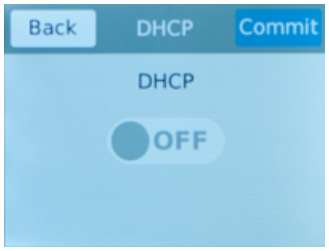
   The Setup screen displays.



4. Tap **Management**.
   The Management screen displays.



5. For the **Type** setting, tap to select either **IPv4** or **IPv6**.
6. If you are using IPv4, you can configure the management IP address using DHCP:
   a) Tap **DHCP**.
      The DHCP option displays.



   b) Tap to set the DHCP option to **ON**.
   c) Tap **Commit** to save your changes.

7. If you are using IPv6 and/or IPv4, you can configure the management IP address manually:

Note: *As of BIG-IP software version 14.0, you can configure your system to be managed concurrently from an IPv4 and an IPv6 address.*

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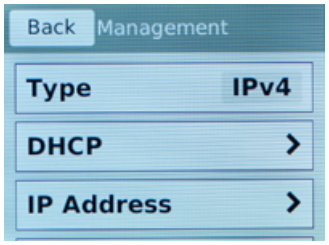
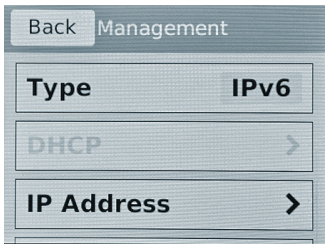
   a) Tap **DHCP**.
      The DHCP screen displays.
   b) Make sure that the DHCP option is set to **OFF**.
      If the DHCP option was set to **ON**, tap **OFF**, and then tap **Commit** to save the change.
   c) Tap **Back** to return to the Management screen.
      If you selected IPv4, this screen displays:



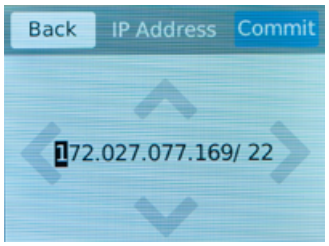
If you selected IPv6, this screen displays:



d) Tap **IP Address**.

The IP Address screen displays.

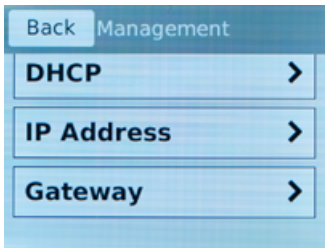
e) Use the left, right, up, and down arrows to configure the management IP address and the length of the routing prefix for the IPv4 or IPv6 management IP address.
For an IPv4 address, this screen displays:



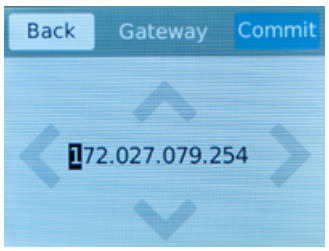
For an IPv6 address, this screen displays:

f) Tap **Commit** to save your changes.

g) On the Management screen, swipe to scroll down and tap **Gateway**.



h) Use the left, right, up, and down arrows to configure the default route for the management interface.



i) Tap **Commit** to save your changes.

You can now access the browser-based Configuration utility using the IP address that you configured.

License the platform

Once the management IP address is configured for the platform, you can use the Configuration utility to license the appropriate F5® software.

1. Using a Web browser, navigate to the management IP address that you assigned to the platform.

   Use this format where <*mgmt-ip-address*> is the management IP address that you assigned:

   `https://<mgmt-ip-address>`

   For example, type an IPv4 management IP address like this: `https://192.168.0.22`. For an IPv6 management address of 2001:0DB8::f5f5/64, type the address like this: `https://[2001:0DB8::f5f5]`.
2. Type `admin` as the user name and `admin` as the password.

   If this is the first time you have accessed the Configuration utility, the first screen you see is the Introduction screen.
3. Click **Next** to view the License screen.
4. Follow the instructions in the Configuration utility to license the platform.

   For more information about licensing your platform, see *BIG-IP System: Essentials* at *support.f5.com*.

Environmental Guidelines

General environmental and installation guidelines

The i15000 Series platform is an industrial network appliance that is designed to be mounted in a standard 19-inch EIA rack.

Follow these guidelines to adhere to safety precautions:

- Install the rack according to the manufacturer's instructions and check the rack for stability before placing equipment in it.
- Build and position the rack so that after you install the platform, the power supply and the vents on both the front and back of the unit remain unobstructed. The platform must have adequate ventilation around the unit at all times.
- Although not required, a 1U space between units makes it easier for you to remove the unit from the rack in the event that the unit requires service. A 1U space between units also provides additional cable routing options.
- Leaving at least 100 mm of space from the front panel of the unit to the rack front or rack door provides enough room for you to route the cables without excessive bending or insulation damage.
- Do not allow the air temperature in the room to exceed 104°F (40°C).

Note: *GR-63-CORE NEBS-compliant shelf units can operate at maximum air temperature of up to 131°F (55°C). Operation at the maximum temperature is supported on a short term basis, per GR-63-CORE.*

- Do not plug the unit into a branch circuit shared by more electronic equipment than the circuit is designed to manage safely at one time.
- Route and secure power cords so that they do not obstruct removal of the fan tray.

Warning: *Due to the weight of the platform, at least two people are required to install this chassis into a rack. Failing to use two people can result in severe personal injury or equipment damage.*

Important: *This product is sensitive to electrostatic discharge (ESD). F5 recommends that you use proper ESD grounding procedures and equipment when you install or maintain the unit.*

Caution: *Customers should not attempt to replace batteries. There is a risk of explosion if a battery is replaced with an incorrect type. Field technicians should dispose of used batteries according to the instructions.*

Attention : *Il y à risque d'explosion si la batterie est remplacée par une batterie de type incorrect. Mettre au rebut les batteries usagées conformément aux instructions.*

Chassis rack-mount spatial requirements

The i15000 Series platforms ship with a rack mount kit to help install the system more easily. This kit requires that the rack or cabinet has certain clearances and spacing, as shown here.

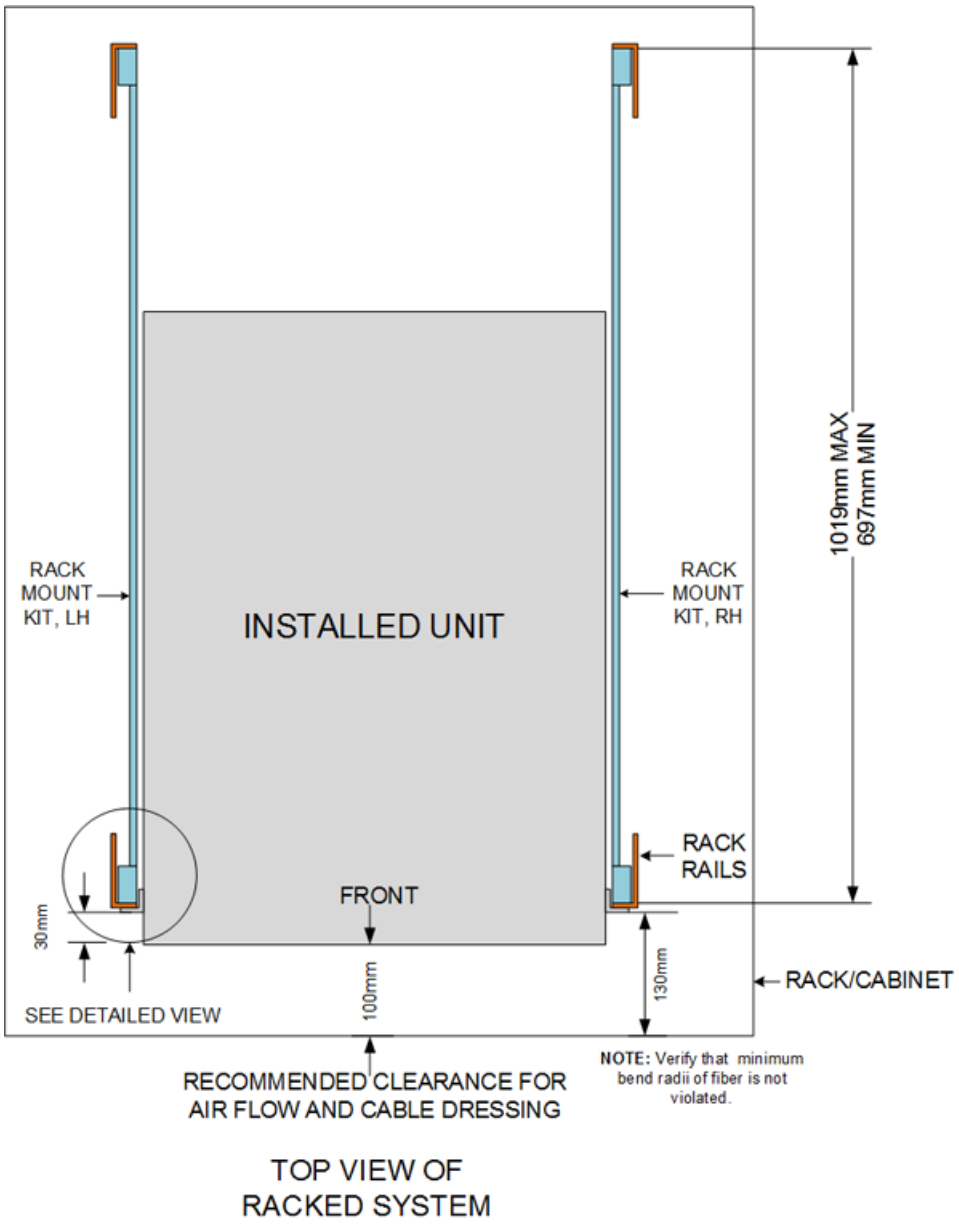


Figure 8: Rack mounting spatial requirements for the i15000 Series platform

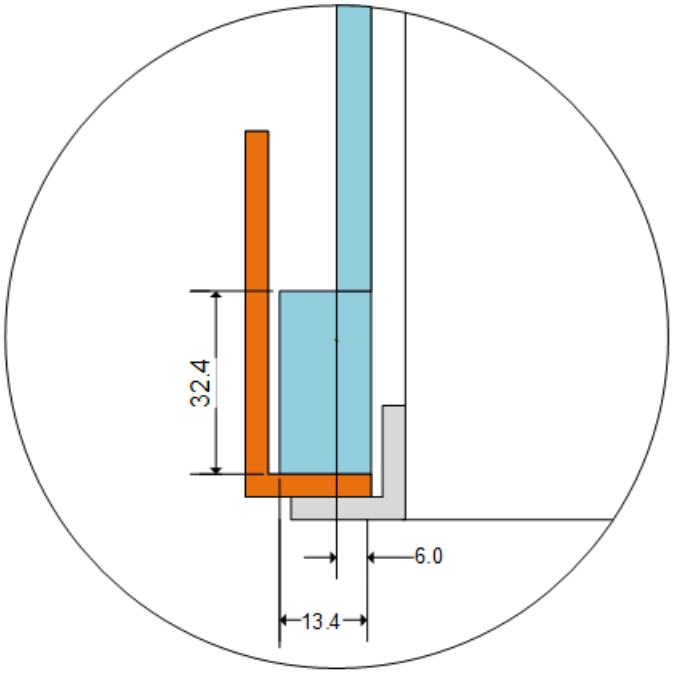


Figure 9: Detailed view of rack mounting spatial requirements

Guidelines for power supply units (PSUs)

All iSeries platforms support either single or dual power supply units (PSUs). When your system includes dual PSUs, both supplies must be of the same type. To verify this, make sure that the supplies have matching base part numbers (PWR-XXXX). You can find the base part number printed on the label on top of the individual power supply.

Note: *The full part number is a nine digit number (PWR-XXXX-YY). The base part number is seven digits and must match, but the suffix (-YY) does not need to match.*

Figure 10: Example of label to check PWR-XXXX part number

If you cannot read the base part number, ensure that the pull handles are both in a vertical orientation and that the sheet metal on the power cord face for each supply has the same perforation shapes.

When you add or replace a PSU in your system, be sure to verify the supply's features and that the PWR-XXXX part numbers match to ensure that you have the correct supply.

Guidelines for AC-powered equipment

An AC-powered installation must meet these requirements:

- Use a 50 amp external branch circuit protection device to install the unit.
- Use one power feed for each individual power supply.

Important: *The platform must be installed in a RESTRICTED ACCESS LOCATION, such as a central office or customer premises environment.*

Note: *The power cables included with this unit are for exclusive use with this unit and should not be used with other electrical appliances.*

Note: *These guidelines apply to STATIONARY PLUGGABLE EQUIPMENT TYPE A with simultaneous multiple connections to the AC MAINS SUPPLY:*

- The building installation shall provide a means for connection to protective earth; and
- The equipment is to be connected to that means; and
- A SERVICE PERSON shall check whether or not the socket-outlet from which the equipment is to be powered provides a connection to the building protective earth. If not, the SERVICE PERSON shall arrange for the installation of a PROTECTIVE EARTHING CONDUCTOR from the separate protective earthing terminal to the protective earth wire in the building.

Caution: *High leakage current. Earth connection essential before connecting supply.*

Guidelines for DC-powered equipment

A DC-powered installation must meet these requirements:

- Use a 15 amp external branch circuit protection device to install the unit.
- For permanently connected equipment, incorporate a readily accessible disconnect in the fixed wiring.
- Use only copper conductors.
- Cabling for the system must be grounded on both sides.
- Use one power feed for each individual power supply.

Caution: *Install DC-powered equipment only in restricted access areas, such as dedicated equipment rooms, equipment closets, or similar locations.*

Avertissement : *Installer le matérial alimenté par courant continu uniquement dans des zones à accès reglementé, telles que des salles de matériel, des armoires de materiel ou tout emplacement similaire.*

Guidelines for NEBS platforms

This information applies to the Network Equipment-Building System (NEBS) version of the this platform:

- This equipment meets NEBS requirements per GR-63-CORE.
- This equipment is suitable for installation in these locations:
  - Network Telecommunication Facilities
  - Locations where the National Electrical Code (NEC) applies

Important: *The intra-building interfaces of this platform, including Ethernet, are suitable for connection to intra-building or unexposed wiring or cabling only with shielded and grounded cables at both ends. The intra-building ports of the equipment must not be connected metallically to interfaces that connect to the outside plant (OSP) or its wiring.*

Note: *You should coat bare conductors with an appropriate antioxidant compound before you make crimp connections. You should bring all unplated connectors, braided strap, and bus bars to a bright finish and then coat them with an antioxidant before you connect them.*

Platform airflow diagram

When you install the platform into a rack, it is important to understand the unit's airflow direction so that you can ensure proper cooling.

The platform employs a negative pressure fan system, which draws cold air in from the front of the chassis.

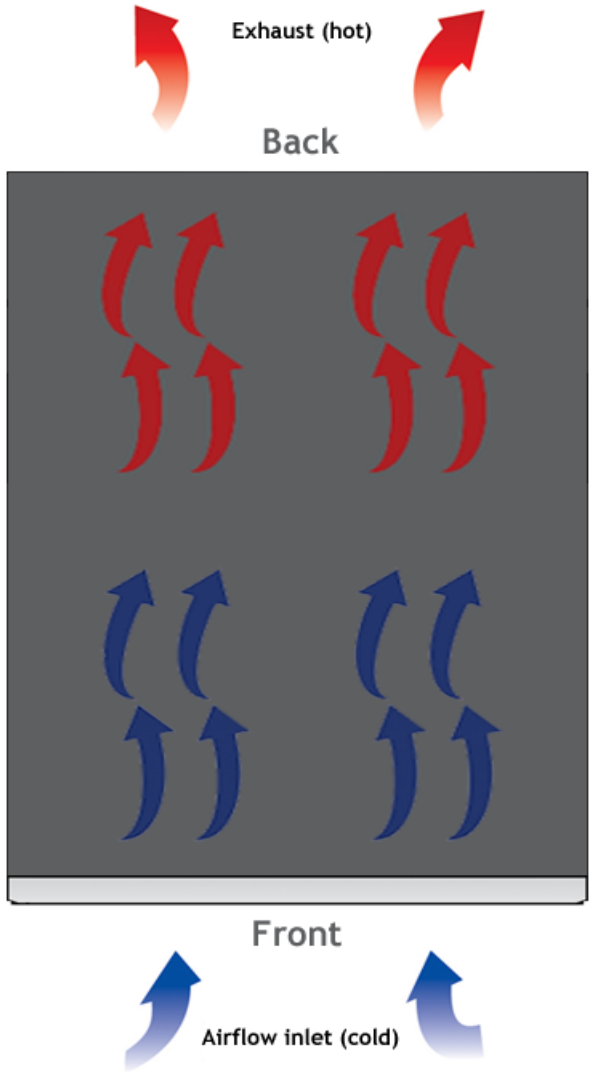


Figure 11: Airflow in iSeries platforms

Legal Notices

Legal notices

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