Manual Chapter: The 3600 Platform

Applies To:

Show Versions

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About the 3600 Platform

The BIG-IP 3600 platform is a powerful system that is capable of managing traffic for any size of enterprise and is designed for high performance at an affordable cost.

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Before you install the 3600 platform, review helpful information about the controls and ports located on both the front and the back of the platform.

On the front of the platform, you can reset the unit using the LCD control buttons. You can also use the front-panel LEDs to assess the condition of the unit. On the back, you can power off the unit.

1. Management port
2. USB ports
3. Console port
4. Serial (hard-wired) failover port
5. 10/100/1000 interfaces
6. SFP ports
7. Indicator LEDs
8. LCD display
9. LCD control buttons

Front view of the platform

The back of the platform includes one or two power supplies.

1. Power input panel (power switch and power receptacle)
2. Unused power supply bay
3. Chassis ground lug (with cover)

Back view of the platform

Components provided with the platform

When you unpack the platform, verify that the following components are included.

Quantity	Hardware
1	Power cable (black)
2	DC terminal blocks, DC power option only
1	Serial failover cable (blue)
1	Console cable (beige)
1	Front-mounting kit
1	Rail-mounting kit

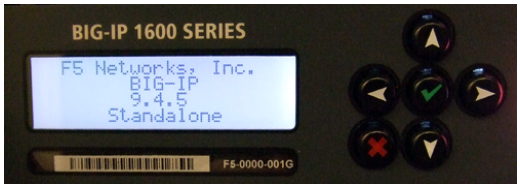
Peripheral hardware requirements

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 cards installed in the platform. You can use either 10/100/1000 Ethernet or 10 Gigabit Ethernet switches.
External USB CD/DVD drive or USB flash drive	You can use any USB-certified CD or DVD mass storage device for installing upgrades and for system recovery. Note: External CD/DVD drives must be externally powered.
Serial terminal console	You can remotely manage the platform by connecting to a serial terminal console through the console port.
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.

LCD panel

The LCD panel provides the ability to manage the unit without attaching a console or network cable.



The LCD panel and control buttons

About LCD menus

There are three menus on the LCD panel. You can configure the display options to meet your needs.

LCD config menu

You can use the LCD config menu to adjust the display properties of the LCD panel.

Option	Description
Backlight	Specifies an LCD screen backlighting option. Select from the following options: • ON enables the backlight. • GRAY enables the software to specify when the backlight is illuminated. • OFF disables the backlight.
Contrast	Sets the contrast of the LCD.
On Brightness	Adjusts LCD backlight brightness.
Off Brightness	Controls the brightness of the LCD when the backlight is off.

Screens menu

You can use the Screens menu to specify the information that is displayed on the default screens.

Option	Description
DateScreen	Displays the date and time.
InfoScreen	Displays the information screen menu.
MACscreen	Displays the MAC addresses on the unit.
SysinfoScreen	Displays system information.
TMMAuthScreen	Displays the number of authentication requests being processed.
TMMCPUScreen	Displays the CPU usage percentage.
TMMMemoryScreen	Displays the memory usage.
TMMStatScreen	Displays simple statistics, such as bytes and packets in and out of the system.
VersionScreen	Displays product version information.

System menu

You can use the System menu to view options for rebooting, halting, and netbooting the hardware. This menu also provides options for configuring the management interface.

Option	Description
Management	Changes the management interface information. Select from the following options: • Mgmt IP sets the management interface IP address. You can use only an IPv4 address. • Mgmt Mask sets the netmask for the management interface IP address. • Mgmt Gateway sets the default route for the management interface. This route is necessary if you plan to manage the unit from a different subnetwork. • Commit saves your changes.

Option	Description
Serial Speed	Changes the baud rate of the serial port. Select from the following options: • 9600 • 19200 (default) • 57600 • 115200

	• 115200
Reboot	Reboots the unit.
Halt	Halts the unit.
Netboot	Boots the unit over an IP network. Select this option if you are installing software from a PXE server.

Using LCD menus

Press the X button to put the LCD in Menu mode. The Left Arrow, Right Arrow, Up Arrow, and Down Arrow buttons are functional only when the LCD is in Menu mode.

Pausing on a screen

Normally, the screens cycle on the LCD panel at a constant rate, but you can pause on a specific screen.
Push the Check button to toggle the LCD screen between Hold and Rotate modes. In Hold mode, a single screen is displayed. The Rotate mode changes the screen displayed on the LCD every four seconds.

Powering on the unit

Press the Check button to power on a unit that is shut down. When you initially power on the unit, use the power switch located on the power supply at the back of the unit.

Halting the unit

We recommend that you halt the unit before you power it down or reboot it using the LCD menu options.

1. Press the X button, then use the arrow keys to navigate to the System menu.
2. Press the Check button.
3. Navigate to the Halt menu.
4. Press the Check button.
5. Press the Check button again at the confirmation screen. Wait 30 seconds before powering the machine off or rebooting it.

Putting the unit into standby mode

Hold the X button for four seconds to put the unit in standby mode and power off the host subsystem. F5 Networks recommends that you halt the system before you power off the system in this manner.

Rebooting the unit

Hold the Check button for four seconds to reset the unit. You should only use this option after you halt the unit.

Clearing alerts

Press the Check button to clear any alerts on the LCD screen. You must clear any alerts on the screen before you can use the LCD panel.

Indicator LEDs

The behavior of each LED indicates the status of the system.

Indicator LED behavior

The indicator LEDs behave in a specific manner to indicate system or component status.

Behavior	Description
Off (none)	LED is not lit and does not display any color.
Solid	LED is lit and does not blink.
Blinking	LED turns on and off at a regular frequency.
Intermittent	LED turns on and off with an irregular frequency and might sometimes appear solid.

Status LED

When the unit is in a standard operating state, the Status LED behaves in a defined manner.

State	Description
off/none	System is halted and powered down.
green solid	System is running in normal mode. Also indicates that the system is in an Active state of a device group.
yellow solid	System is running in an impaired mode. The condition is not considered to be significant enough to be considered an alarm condition. Also indicates that the system is the Standby member of a device group.

State	Description
yellow blinking	The system is not under host computer control. This might be due to the host being halted or due to a software or hardware problem that interferes with the host's control of the LED.

Power supply LEDs

The power supply LEDs indicate the operating state of the power supplies.

Power 1 state	Power 2 state	Description
green solid	green solid	Power supply is present and operating properly. Also indicates when the system is in power standby mode.

green solid	green solid	Power supply is present and operating properly. Also indicates when the system in is power standby mode.
yellow solid	yellow solid	Power supply is present, but not operating properly.
off/none	off/none	No power supply present.

LED alert conditions

When there is an alert condition on the unit, the Alarm LED behaves in a specific manner.

Note: The Alarm LED might continue to display until alerts are cleared using the LCD panel.

Action	Description
System situation	Alarm LED behavior
Emergency	Red blinking
Alert or Critical	Red solid
Error	Yellow blinking

Defining custom alerts

The /etc/alertd/alert.conf and the /config/user_alert.conf files on the BIG-IP system define alerts that cause the indicators to change. The /etc/alertd/alert.conf file defines standard system alerts, and the /config/user_alert.conf file defines custom settings.
Note: You should edit only the /config/user_alert.conf file.

1. Open a command prompt on the system.
2. Change to the /config directory. `cd /config`
3. Using a text editor, such as vi or Pico, open the /config/user_alert.conf file.
4. Add the following lines to the end of the file: alert BIGIP_MCPD_MCPDERR_POOL_MEMBER_MON_DOWN "Pool member (.*?):(.*?) monitor status down." { snmptrap OID=".1.3.6.1.4.1.3375.2.4.0.10"; lcdwarn description="Node down" priority="1" } alert BIGIP_MCPD_MCPDERR_NODE_ADDRESS_MON_DOWN "Node (.*?) monitor status down." { snmptrap OID=".1.3.6.1.4.1.3375.2.4.0.12"; lcdwarn description="Node address down" priority="1" } alert BIGIP_MCPD_MCPDERR_POOL_MEMBER_MON_UP "Pool member (.*?):(.*?) monitor status up." { snmptrap OID=".1.3.6.1.4.1.3375.2.4.0.11" } alert BIGIP_MCPD_MCPDERR_NODE_ADDRESS_MON_UP "Node (.*?) monitor status up." { snmptrap OID=".1.3.6.1.4.1.3375.2.4.0.13" }
5. Save the file and exit the text editor. The front panel LEDs now indicate when a node is down.

Additional indicator LED status conditions

A few LED status conditions are not covered in the definition tables in the /etc/alertd/alert.conf file.

Yellow intermittent Status LED indicator

A yellow intermittent Status LED indicates that the unit is not under host computer control. This might be due to the host being halted or due to a software or hardware problem that interferes with the host's control of the LED.

Green/Yellow solid Status LED indicator

When the Status LED indicator is solid yellow or green, it indicates that the system is in a Standby state (yellow) or an Active state (green). It displays solid green if the unit is Standalone or if it is the Active unit of a redundant system configuration. It displays yellow if the unit is the Standby member of a redundant system configuration.

Platform interfaces

Every platform includes multiple interfaces. The exact number of interfaces that are on the system depends on the platform type.

Each interface on the platform has a set of properties that you can configure, such as enabling or disabling the interface, setting the requested media type and duplex mode, and configuring flow control.

About managing interfaces

You can use tmsh or the Configuration utility to configure platform interfaces.

Viewing the status of a specific interface using tmsh

You can use tmsh to view the status of a specific interface on a platform.

1. Open the Traffic Management Shell (tmsh). `tmsh`
2. Change to the network module. `net` The system prompt updates with the module name: `user@bigip01(Active)(/Common)(tmos.net)#`.
3. Display the current status of a specific interface. `show interface <interface_key>` The following is an example of the output you might see when you issue this command on interface 1.2: ---------- Net::Interface Name Status Bits Bits Errs Errs Drops Drops Colli In Out In Out In Out sions ---------- 1.2 up 191.4K 0 0 0 374 0 0

Viewing the status of all interfaces using tmsh

You can use tmsh to view the status of all interfaces on the platform.

1. Open the Traffic Management Shell (tmsh). `tmsh`
2. Change to the network module. `net` The system prompt updates with the module name: `user@bigip01(Active)(/Common)(tmos.net)#`.
3. Display the current status of all interfaces. `show interface` The following is an example of the output you might see when you issue this command: ---------- ---------- Net::Interface Name Status Bits Bits Errs Errs Drops Drops Colli In Out In Out In Out sions ---------- ---------- 1.1 down 0 0 0 0 0 0 0 0 1.2 up 191.4K 0 0 0 374 0 0 1.3 down 0 0 0 0 0 0 0 0 1.4 up 22.5K 0 0 0 44 0 0 2.1 miss 0 0 0 0 0 0 0 0 2.2 miss 0 0 0 0

1.1 down 0 0 0 0 0 0 0 1.2 up 151.4K 0 0 0 874 0 0 1.3 down 0 0 0 0 0 0 0 1.4 up 22.8K 0 0 0 44 0 0 2.1 miss 0 0 0 0 0 0 0 2.2 miss 0 0 0 0 0 0 0 mgmt up 43.2G 160.0G 0 0 0 0 0

Viewing the status of all interfaces using the Configuration utility

You can use the Configuration utility to view the status of all interfaces on the platform.

1. On the Main tab, expand Network, and click Interfaces. This displays the list of available interfaces.
2. Click Statistics. The Statistics screen for all interfaces opens.

About interface media type and duplex mode

All interfaces on the system default to auto-negotiate speed and duplex settings. We recommend that you also configure any network equipment that you plan to use with the system to auto-negotiate speed and duplex settings. If you connect the system to network devices with forced speed and duplex settings, you must force the speed and duplex settings of the system to match the settings of the other network device.

Important: If the system is attempting to auto-negotiate interface settings with an interface that has the speed and duplex settings forced (that is, auto-negotiation is disabled), you will experience severe performance degradation. This applies to 10GbE and 40GbE interfaces.
By default, the media type on interfaces is set to automatically detect speed and duplexsettings, but you can specify a media type as well. Use the following syntax to set the media type:

tmsh modify net interface <*interface_key*> media <*media_type*> | auto
If the media type does not accept the duplex mode setting, a message appears. If media type is set to auto, or if the interface does not accept the duplex mode setting, the duplex setting is not saved to the /config/bigip_base.conf file.

Important: If you manually configure the platform to use specific speed and duplex settings on interfaces, Auto-MDI/MDIX functionality is disabled by default. When an interface is set manually, it functions as a data terminal equipment (DTE) port. This means that crossover cables are required to connect to other DTE devices (such as servers), and straight-through cables are required for connecting to data communications equipment (DCE) devices (for example, switches or routers). Be sure to use the correct cable type (straight-through or crossover) if you manually set interface speed and duplex settings.
Important: Starting with BIG-IP software versions 9.4.8 and 10.1.0, Auto-MDI/MDIX functionality is retained when you manually configure an interface to use specific speed and duplex settings. With these versions of the BIG-IP system, you can use either a straight-through cable or a crossover cable when media settings are forced, and you will be able to successfully link to either DTE or DCE devices.

Viewing valid media types for an interface using tmsh

You can use tmsh to view the valid media types for an interface.
Note: This platform might not support all of the media type options that are available in tmsh.

1. Open the Traffic Management Shell (tmsh). `tmsh`
2. Change to the network module. `net` The system prompt updates with the module name: `user@bigip01(Active)(/Common)(tmos.net)#`.
3. Display the valid media types for a specific interface. show running-config interface <interface_key> media-capabilities
   Important: In all Gigabit Ethernet modes, the only valid duplex mode is full duplex.
   The following is an example of the output you might see when you issue this command on interface 1.3: net interface 1.3 { media-capabilities { none auto 10T-FD 10T-HD 100TX-FD 100TX-HD 1000T-FD 1000T-HD } }

Valid media types

The following table lists the valid media types for the tmsh interface command.

Note: This platform might not support all of the media type options that are available in tmsh.

10BaseT half	100BaseTX full
10BaseT full	1000BaseLX full
10GBaseER full	1000BaseCX full
10GBaseLR full	1000BaseT half
10GBaseSR full	1000BaseT full
10GBaseT full	1000BaseSX full
10SFP+Cu full	auto
40GBaseSR4 full	none
40GBaseLR4 full	no-phy
100BaseTX half	

Network interface LED behavior

The appearance and behavior of the network interface LEDs on the platform indicate network traffic activity, interface speed, and interface duplexity.

RJ45 Copper interface LED behavior

The appearance and behavior of the RJ45 network interface LEDs indicate network traffic activity, interface speed, and interface duplexity.

Link	Speed LED	Activity LED
No Link	Not lit	Not lit
10Mbit/s, half duplex	Yellow blinking	Yellow solid
10Mbit/s, full duplex	Yellow blinking	Green blinking
100Mbit/s, half duplex	Yellow solid	Yellow blinking
100Mbit/s, full duplex	Yellow solid	Green blinking
1Gbit/s, half duplex	Green solid	Yellow blinking
1Gbit/s, full duplex	Green solid	Green blinking

SFP port LED behavior

The appearance and behavior of the SFP optic interface LEDs indicate network traffic activity, interface speed, and interface duplexity.

Link	Speed LED	Activity LED
No link	Not lit	Not lit
10 Mbit/s, half duplex	Yellow blinking	Yellow solid
10 Mbit/s, full duplex	Yellow blinking	Green blinking
100 Mbit/s, half duplex	Yellow solid	Yellow blinking
100 Mbit/s, full duplex	Yellow solid	Green blinking
1 Gbit/s, half duplex	Green solid	Yellow blinking
1 Gbit/s, full duplex	Green solid	Green blinking

Optical transceiver specifications

The following tables list specifications for optical transceivers that are supported by this platform.

Specifications for copper SFP modules

This table lists specifications for the available copper Gigabit Ethernet SFP transceiver modules.

Important: 1000Base-T network segments have a maximum length of 328 feet (100 meters) and must use Category 5 cable minimum. F5 recommends Category 5e or Category 6.
Note: F5 Gigabit Ethernet 1000Base-T Copper SFP modules comply with IEEE standards 802.3ab (1000BASE-T).

Module	Connector type	Maximum operating distance	Cable specifications	Supported Platforms
1000Base-T Copper Ethernet Transceiver	RJ45	328 feet (100 meters)	Minimum Category 5 (Cat5), Cat5e or Cat6 recommended	1600, 3600, 3900, 6900, 8900, 8950, 11000, 11050

Important: Specifications are subject to change without notification.

Specifications for fiber SFP modules

This table lists specifications for the available fiber Gigabit Ethernet SFP (or Mini-GBIC) transceiver modules.

Important: You must ensure suitability of both the optical fiber and the laser transceiver on the other end.
Important: Fiber cables must be a minimum of two meters, according to IEEE Std 802.3ae.
Note: F5 Gigabit Ethernet modules comply with IEEE standards 802.3ab (1000BASE-T) and 802.3z (1000BASE-SX, 1000BASE-LX).

Module	Laser emitter	Connector type	Operating distance/cable specifications	Supported platforms
1000Base-SX (Short Range) Ethernet Transceiver	850 nm (multi-mode)	LC	• 220 meters maximum of 62.5um MMF that meets type A1a defined in IEC 60793-2:1992 • 500 meters maximum of 50.0um MMF that meets type A1b defined in IEC 60793-2:1992	1500, 1600, 3400, 3600, 3900, 6400, 6800, 6900, 8400, 8800, 8900, 8950, 11050, VIPRION 4400 Series, B4100, B4200, VIPRION 2400, B2100
1000Base-LX (Long Range) Ethernet Transceiver	1310 nm (single-mode)	LC	• 5 kilometers maximum using 10um SMF that meets type B1 in IEC 60793-2:1992 • 550 meters maximum using 50um MMF that meets type A1b defined in IEC 60793-2:1992 • 550 meters maximum using 62.5um MMF that meets type A1a defined in IEC 60793-2:1992 Note: When using MMF, single-mode, fiber offset-launch mode-conditioning patch cords are required in both ends of the link, as specified in IEEE 802.3-2005 section 38.11.4.	1500, 1600, 3400, 3600, 3900, 6400, 6800, 6900, 8400, 8800, 8900, 8950, 11050, VIPRION 4400 Series, B4100, B4200, VIPRION 2400, B2100

Important: Specifications are subject to change without notification.

Cable pinout specifications

The following pinouts describe how specified connectors are wired. Pinouts are helpful when building and testing connectors, cables, and adapters.

RJ-45 connector pinouts for the console port

This table lists the pinouts for the RJ-45 console (upper) port.

Pin number	Name
1	RTS
2	DTR
3	TX
4	GND
5	GND
6	RX
7	DSR (no connect)
8	CTS

RJ-45 connector pinouts for the failover port

This table lists the pinouts for the RJ-45 failover (lower) port

This table lists the pinouts for the RJ-45 failover (lower) port.

Pin number	Name
1	RTS
2	DTR
3	CTS
4	GND
5	GND
6	DSR
7	TX
8	RX

Always-On Management

The Always-On Management (AOM) subsystem enables you to manage the BIG-IP system remotely using SSH or serial console, even if the host is powered down. The AOM Command Menu operates independently of the BIG-IP Traffic Management Operating System (TMOS).

You can use the command menu to reset the unit if TMOS has locked up, or get access to TMOS directly, so that you can configure it from the command line interface.

AOM consists of the host console shell (hostconsh) and the AOM Command Menu, which contains the options for AOM.

Note: The available functionality and options in AOM vary depending on the platform type.

AOM Command Menu options

The AOM Command Menu provides Always-On Management options for the BIG-IP system.

Number/Letter	Option	Description
1	Connect to Host subsystem console	Exits the AOM Command Menu and returns to terminal emulation mode.
2	Reboot Host subsystem (sends reboot command)	Reboots the host subsystem. In this case, the Traffic Management Operating System (TMOS) is rebooted.
3	Reset Host subsystem (issues hardware reset--USE WITH CARE!)	Resets the host subsystem. In this case, TMOS is halted. Important: We do not recommend using this option under normal circumstances. It does not allow for graceful shutdown of the system.
4	Reset AOM subsystem (issues hardware reset--USE WITH CARE!)	Resets the AOM subsystem. In this case, the system is reset with a hardware reset. Important: We do not recommend using this option under normal circumstances. It does not allow for graceful shutdown of the system.
5	Power off/on Host subsystem (issues hardware shutdown--USE WITH CARE!)	Powers off the Host subsystem. In this case, TMOS is powered off. If the Host subsystem is already powered off, this option powers on the Host subsystem.
B	AOM baud rate configurator	Configures the baud speed for connecting to AOM using the serial console.
L	AOM subsystem login	Presents a logon prompt for the AOM subsystem. This subsystem cannot be configured by end users.
N	AOM network configurator	Runs the AOM network configuration utility. This utility enables you to reconfigure the IP address, netmask, and default gateway used by AOM. If you use this option while connected using SSH, your session will be disconnected as a part of the network configuration operation.
P	AOM platform information	Displays information about the platform, including serial number and MAC address.

Accessing the AOM Command Menu from the serial console

You can access the AOM Command Menu through the host console shell (hostconsh) using the front panel serial console.

1. Connect to the system using the serial console.
2. Open the AOM Command Menu. `Esc (`

Setting up Always-On Management SSH access

You can use the AOM Command Menu to set up remote SSH access to the system and then connect remotely using an SSH client.

1. Connect to the system using the serial console.
2. Open the AOM Command Menu. `Esc (`
3. Type `n` to open the AOM network configuration utility.
4. Configure an IP address and gateway for the AOM subsystem.

Accessing the AOM Command Menu using SSH

You can access the AOM Command Menu through the host console shell (hostconsh) remotely through SSH, provided you have configured an IP address for AOM.

1. Open an SSH session, where *<ip addr>* is the IP address that you configured for AOM: `ssh root@<ip addr>`
2. Type the root password.
3. Open the hostconsh shell. `hostconsh`
4. Open the AOM Command Menu. `Esc (`

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Was this resource helpful in solving your issue?

- **Yes - this resource was helpful**
- **No - this resource was not helpful**
- **I don‘t know yet**

NOTE: Please do not provide personal information.

Additional Comments (optional)

Type your comment here (1000 character limit)...

Please enter the words to the right:

Reload **Audio** **Help**

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