CISCO SYSTEMS

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Cisco LocalDirector Version 1.6.6 Release Notes

February, 1998

This document describes changes to features and commands that are different or not described in the *Cisco LocalDirector Installation and Configuration Guide, Version 1.6.3* (Document Number 78-3456-05).

The following sections are included:

Changes for Version 1.6.6

Cisco LocalDirector version 1.6.6 includes the following changes:

Bug Fixes in Version 1.6.6

- It is possible for LocalDirector versions 1.6.3, 1.6.4, and 1.6.5 to get a watchdog timeout, which will cause the unit to reboot. The LocalDirector will hang for 5 minutes before the reboot happens. This was caused by a reassigned connection due to a "no answer" from the real server for a new connection coming in to a virtual machine. [CSCdj71314]

- The **route** command was not executed on reboot of the LocalDirector unit. The **route** command was saved in the flash configuration, but not executed on reboot.[CSCdj75484]

- The **delay** command was expecting an extra argument on the command line. [CSCdj76975]

- SNMP configuration information was not saved with the **write memory** command, and that part of the configuration was lost on reboot of the LocalDirector unit. [CSCdj76977]

- Static ARPS were not saved with the **write memory** command, and that part of the configuration was lost on reboot of the LocalDirector unit. [CSCdj76978]

- Use of the **delay** command caused connections in LocalDirector memory to be timed out instead of immediately being removed from memory as soon as the connection ended. If the delay feature was enabled and a client reused the same port for another connection while LocalDirector still had the connection in memory, the unit would reboot. [CSCdj76979]

- With a LocalDirector connected to 10BaseT hubs on both sides, one interface would stop receiving traffic and require a reboot to make it receive traffic again. This was caused by a documented bug in the Intel NIC that is used in the LocalDirector. The documented bug states that it is possible for an interface to stop receiving traffic and suggests a workaround to include if the problem occurs. The Intel device driver now includes this workaround. [CSCdj76980]

Note This problem seems much more prevalent on older Intel NICs, and has only been seen twice with a LocalDirector connected to 10BaseT hubs.

- When connections were reassigned by LocalDirector (for example, a real machine did not answer a SYN packet or responded with TCP RST), **sticky** command information was not being updated for the client. Thus, the client's connections would not work if a stateful protocol (such as SSL) was being used. [CSCdj79643]

LocalDirector Platforms

There are three LocalDirector platforms - the new LocalDirector 420, the new LocalDirector 410, and the original LocalDirector. The original LocalDirector (CA-LDIR) is now referred to as the LocalDirector 415. See the Cisco Product Bulletin at http://www.cisco.com/ld for more information about the LocalDirector 420 and 410.
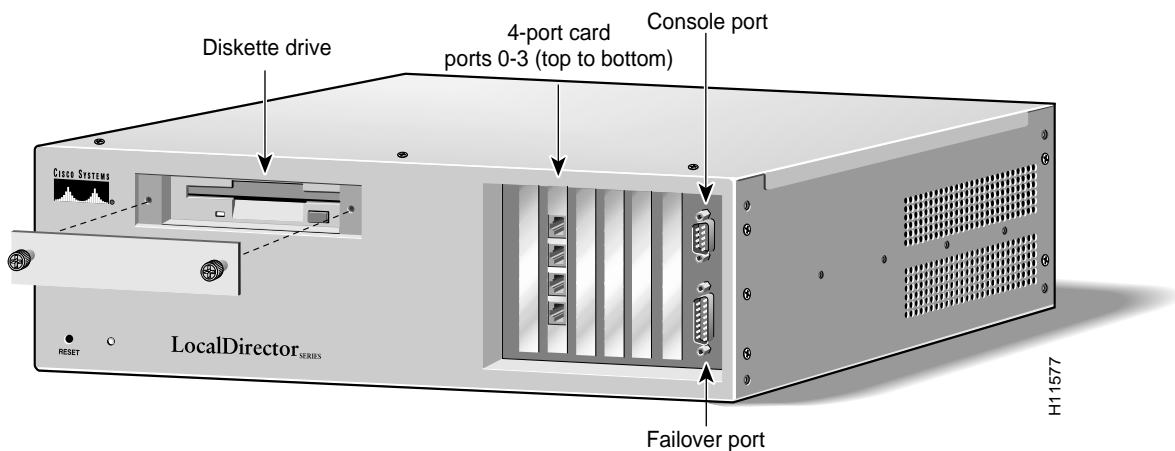
LocalDirector 420

LocalDirector version 1.6.5 and later supports the 4-port Ethernet interface in the LocalDirector 420. The ports are numbered 0 to 3, with port 0 on the top of the interface and port 3 on the bottom. Only port 0 and port 1 are enabled at this time. The other two ports are disabled until version 2.x. It does not matter which port connects to the client network and which connects to the real server network. Multiple 4-port cards will be supported in version 2.x.

Note Ports 2 and 3 on the LocalDirector 420 are disabled until version 2.x.
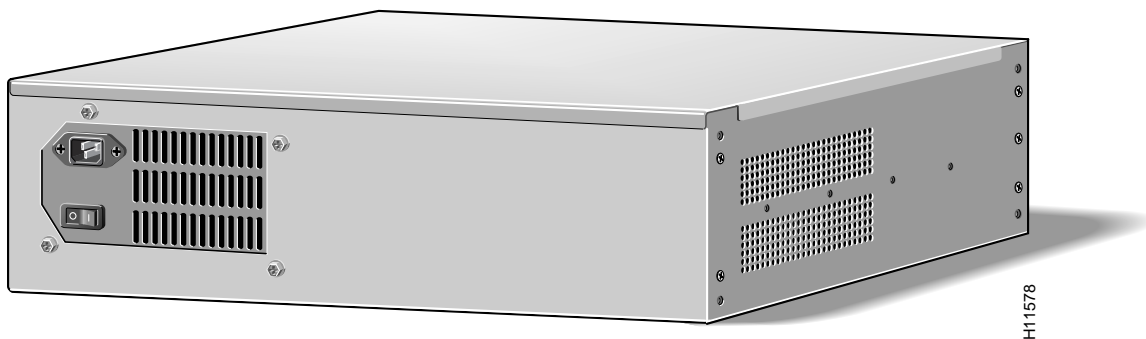
The front panel of the LocalDirector 420 is shown in Figure 1. Note that the diskette drive, interfaces, console port, and failover port are accessed from the front panel.
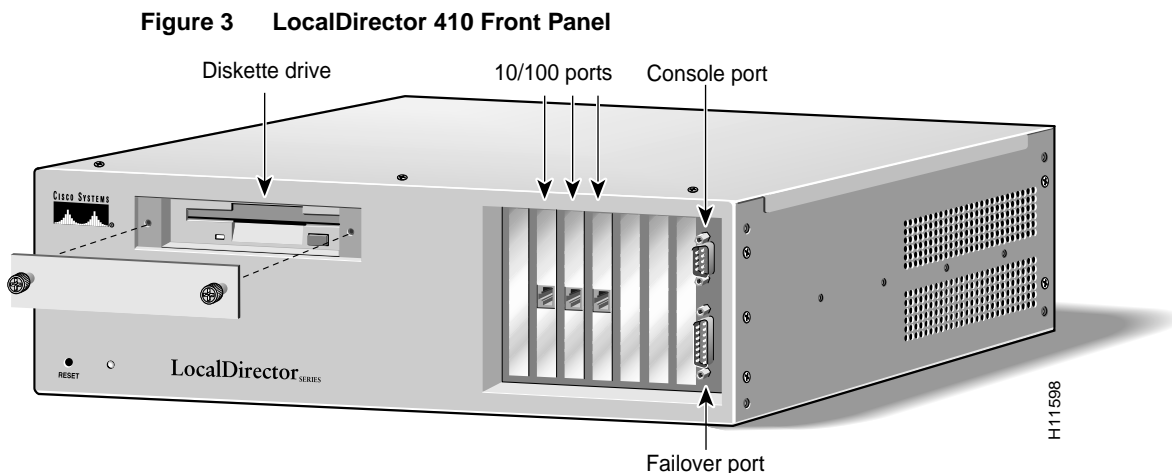
Figure 1 **LocalDirector 420 Front Panel**

The back panel of the LocalDirector 420 is shown in Figure 2. The power cord receptacle and power switch are located at the back of the unit.

Figure 2 **LocalDirector 420 and 410 Back Panel**

LocalDirector 410

The front panel of the LocalDirector 410 is shown in Figure 3:

Figure 3   LocalDirector 410 Front Panel

The LocalDirector 410 back panel is the same as the LocalDirector 420, shown in Figure 2.

LocalDirector version 1.6.5 and later supports two of the 10/100 interfaces on the LocalDirector 410. The ports are numbered 0 to 2 from the left to the right, and port 2 on the third interface is disabled until version 2.x.

Note   Port 2 on the third interface of the LocalDirector 410 is disabled until version 2.x.
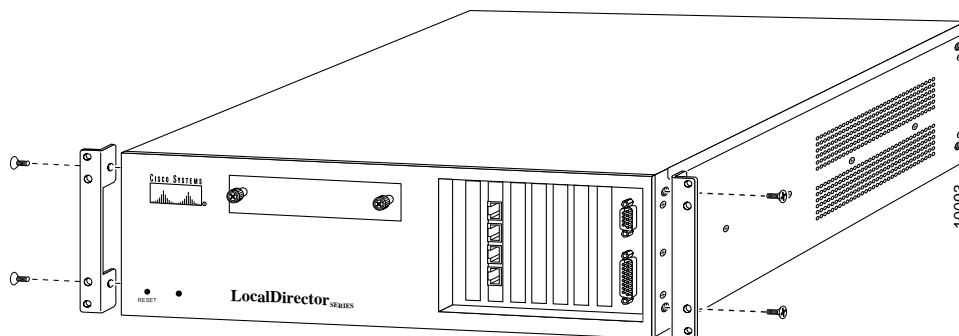
LocalDirector 415

Version 1.6.x software is supported on the LocalDirector 415.

Note   In version 1.6.5 and earlier, interfaces on the LocalDirector 415 are read right to left, which is the opposite of the LocalDirector 410 and 420. In LocalDirector version 2.x, all interfaces will be numbered left to right, top to bottom. Interface numbers of existing units will change to conform to this numbering scheme.

Rackmount Brackets

Rackmount brackets are optional on the LocalDirector 420 and 410. To attach the rackmount brackets, refer to Figure 4.

Figure 4   Attaching Rackmount Brackets

Supported Interfaces

Table 1 shows the interfaces that are supported on the LocalDirector platforms:

Table 1   Supported Interfaces by Platform

Platform	4-Port 10/100 Ethernet Card	1-Port 10/100 Ethernet Card	FDDI
LocalDirector 420	1 supported in version 1.6.5 and later, up to 4 in version 2.x	not supported	2 supported (multimode, dual-attached, SC connectors)
LocalDirector 415 (original platform, CA-LDIR)	1 supported in version 2.x	2 supported in version 1.6.5 and later, 3 supported in version 2.x	2 supported (multimode, dual-attached, SC connectors)
LocalDirector 410	not supported	2 supported in version 1.6.5 and later, 3 supported in version 2.x	not supported

4-port Ethernet cards are supported on the LocalDirector 420, and the LocalDirector 415 will support one 4-port Ethernet card in version 2.x. The LocalDirector 410 does not support 4-port Ethernet.

Interface Numbering

The LocalDirector interface numbering scheme will change with the introduction of 4-port Ethernet cards. The 4-port interfaces on the LocalDirector 420 are numbered left to right, top to bottom.

Interfaces on the LocalDirector 415 are numbered right to left, bottom to top. Interface numbering on existing LocalDirector 415 units will remain the same in version 1.6.x, but will change to left to right, top to bottom in version 2.x.

Note   Interface numbering on the LocalDirector 415 will remain the same in version 1.6.x, but will reverse when upgraded to version 2.x.

LEDs

Each interface port has two LEDs, one amber and one green. Table 2 explains the states of the LEDs on the 4-Port interface cards.

- Green - Indicates data transmission activities relative to the amount of traffic.

- Flashing amber - Autosensing in progress (even with no configuration and no cable connections).

- Steady amber - Active connection (this is normal operation).

- The **interface ethernet 0 auto** command causes the amber LED to blink continually when the link is not up, and **interface ethernet 0 [10baset|100basetx|100full]** shuts off the amber LED when the link is not up.

Table 2   4-Port Interface LEDs

LED	LED State	Indication
Green	off	No data transmission.
	on	Steady data transmission.
	flashing	Intermittent data transmission.
Amber	off	Disabled or unused. If the interface was configured with the **10baset**, **100basetx**, or **100full** options, the link is not up yet.
	on	The connection is active.
	flashing	Autosensing. If the interface was configured with the **auto** option, the link is not up yet.

Note   The LED behavior on the 4-port Ethernet interface is different from other Cisco products. Use this information to determine if the LED activity indicates normal interface operation.

Autonegotiation

The 4-port card in the LocalDirector does not autonegotiate. When a 4-port interface is configured using the **int eth 1 auto** command, it will perform autosense. The main difference between autosense and autonegotiation is that autosense can not be used to establish full-duplex links. Use the **int eth 1 100full** command to set full-duplex mode.

The single-port card will autonegotiate, but your network interface must support auto-detection.

Note   The 4-port interface will not "autosense" to full duplex. This will cause a problem if the LocalDirector interface is at half duplex and is connected to a switch on the other end trying to do full duplex.

Notes and Caveats

- The **map** command will be removed in a future release of LocalDirector. The ability to define port-bound servers with the **real** and **virtual** commands has eliminated the need for the **map** command. In version 2.x, configurations that include the **map** command will not be allowed.

- Failover is supported with a combination of LocalDirector 420, 410, and original 415 units; however, in version 2.x failover between different units will be restricted to similar configurations.

- The primary and secondary LocalDirector units in a failover configuration must be on the same IP network.

Note   A failover IP address must be set for failover to work properly. Failover changed significantly in version 1.6, and failover must be re-configured when LocalDirector units are upgraded from a previous version.

- If you configure failover, the configuration replication feature will overwrite the host name of the active unit in the configuration of the standby unit. Therefore, you cannot use the **hostname** command to configure each unit to have a different name. Do not use the host name in the command line prompt as a means of determining which LocalDirector unit you have accessed.

- For SNMP, the interface numbers on the SNMP host are different from the interface numbers on the LocalDirector. For example:

  snmp ifc 1 = LD ifc 0

  snmp ifc 2 = LD ifc 1

- The LocalDirector will not leave SynGuard mode once it is entered unless you turn SynGuard off, or raise the number of unanswered SYNs allowed above the current level (which will force it out of SynGuard mode).

- The values assigned with the **name** command can be up to 32 alphanumeric characters. Names that are longer than 32 characters will be truncated. The **name** command is optional, and it is not related to DNS. It provides a means of making LocalDirector servers easier to configure, and the names associated to the configuration do not have to be synchronized with DNS.

- In order to use any weights defined for a real server, the **weighted** predictor must be set. If weights are assigned and the **leastconns** predictor is set, the weights will not have an affect on load balancing.

- If you are upgrading from version 1.2.5, double-check the interface and subnet mask of the LocalDirector. If these values are different from the original configuration, use the **interface** and **ip address** commands to change back to the previous settings.

- If a maximum connection value is set on all of the real servers bound to a virtual server, the virtual servers may be reported as failed. When all of the real servers have reached the value set with the **maxconns** command, the virtual server will not be able to service new connections. When the **show virtual** command is issued, it will show the state of the virtual server as FAILED, and a SYSLOG message is generated. As soon as the real servers fall below the value set by **maxconns**, the virtual server will automatically be brought back in-service.

Documentation Errata

The configuration example for Secure Socket Layer Protocol in Chapter Three, "Configuring LocalDirector," of the *Cisco LocalDirector Installation and Configuration Guide, Version 1.6.3*, incorrectly uses a real server IP address with the **sticky** command. The example should read as follows:

The **virtual** command is used to identify 192.168.1.100 443 as a virtual server accepting traffic on port 443 (SSL):

```
LocalDirector(config)# virtual 192.168.1.100 443
```

The **sticky** command is used to ensure that requests from the same client will be sent to the same real server until 10 minutes of inactivity have elapsed:

```
LocalDirector(config)# sticky 192.168.1.100 443 10
```

Known Bugs

- Polling sysUpTime on LocalDirector 1.6.x returns "0". [CSCdj67096]

- If a client initiates a Passive FTP connection, then the real server will be accessed directly for an FTP data connection. As long as routes are set up correctly on the real servers, this will not affect the FTP client; however, FTP data connections will not be counted for that real server on the LocalDirector. [CSCdj61333]

Note The only time this could be a problem is if you use unregistered IP addresses on real machines. The client cannot communicate directly with a real machine that has an unregistered IP address across the Internet.

Bug Fixes in Version 1.6.5

- There was a bug in the configuration replication feature of LocalDirector where the enable password was not replicated to the standby unit. The enable password is now handled correctly during configuration replication. [CSCdj67564]

- Under heavy traffic loads, the LocalDirector would hang and one or both interfaces showed a state of "Line Protocol UP, Interface DOWN." [CSCdj62498]

- In version 1.6.4, if a client responded with a TCP RST/ACK when a connection was closing, the LocalDirector would reboot. [CSCdj67572]

- Previously, the **no snmp-server** command would remove all SNMP information from the configuration. Now you must enter the command option associated with the part of SNMP that you want to remove. For example, the **no snmp-server location** command will remove the text string identifying the location of an SNMP server, but not the IP address of the server. [CSCdj67573]

- When the LocalDirector was polled with a MIB browser, it would respond with "Cisco Firewall" for the *sys.descrip* and *sys.name* MIB types. It now responds correctly with "Cisco LocalDirector." [CSCdj67574]

Bug Fixes in Version 1.6.4

- When communicating with LocalDirector, if a user connects to a port that is not available, the LocalDirector generates a TCP RST, which is correct. However, there was a bug in the generation of the TCP RST that caused the LocalDirector to reboot or exhibit erratic behavior. [DDTs defect number not available.]

- There was a bug in SYSLOG when two users used the **show syslog** command at the same time with paging turned on. The second user to continue on paged output would reboot the LocalDirector. [CSCdj53491]

- If a lot of SYSLOG messages were generated and output was directed to the console, it would cause the LocalDirector to crash. [DDTs defect number not available.]

Bug Fixes in Version 1.6.3

- TCP packets generated by LocalDirector had an incorrect TCP checksum, which caused the station receiving a RST to ignore it. The LocalDirector now generates the correct checksum for RST packets. [DDTs defect number not available.]

- LocalDirector now supports fragmented packets from real servers. Fragmented packets to virtual servers have been supported since version 1.5. [CSCdj33094]

- SNMP auto discovery no longer causes LocalDirector to crash. [DDTs defect number not available.]

- The FDDI interface option was broken in version 1.6.2, but is fixed in version 1.6.3. [DDTs defect number not available.]

- The *no* option for the **sticky** command was removed in version 1.6.2, but it is included in version 1.6.3. [DDTs defect number not available.]

Bug Fixes in Version 1.6.2

- The software labels on the LocalDirector interfaces were reversed, and now they are correct. The interface numbers on back of the LocalDirector match the interface numbers in the software. This will not affect use of the **ping** command, because the ping will be sent out of both interfaces now. [DDTs defect number not available.]

- The SNMP messages "LocalDirector booted" and "SNMP warmstart" are now sent. [DDTs defect number not available.]

- In version 1.5, SNMP/SYSLOG messages could only be sent out the interface labeled 0. In version 1.6, the SNMP/SYSLOG messages are sent out of both interfaces. [DDTs defect number not available.]

- In version 1.5, you could use Telnet to access the LocalDirector; however, you could only Telnet to the active LocalDirector and only two Telnet sessions were supported per interface. In version 1.6, you can use Telnet to access the LocalDirector from any interface or any combination of interface 0 and interface 1. [DDTs defect number not available.]

- LocalDirector correctly stores static ARPs in the configuration. [DDTs defect number not available.]

- In version 1.5, FTP control connections were timed out by the LocalDirector while the FTP data connection was still active. In version 1.6, the LocalDirector will not "timeout" an FTP control connection while the FTP data connection is still active. [DDTs defect number not available]

- Static routes are no longer shown twice with the **show route** command. [DDTs defect number not available.]

- In version 1.5, broadcast packets sourced by the LocalDirector (for example, ARP requests) may have an incorrect source MAC address. In version 1.6, all broadcasts from the LocalDirector will have the correct source MAC address, which is the MAC address of the LocalDirector unit. [DDTs defect number not available.]

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