CISCO SYSTEMS

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Cisco LocalDirector Version 1.6.3 Release Notes

October, 1997

This document describes changes to features and commands that are different or not described in the *Cisco LocalDirector Installation and Configuration Guide* (Document Number 78-3456-04).

The following sections are included:

- Changes for Version 1.6

- Feature Changes

- New or Changed Commands

- Cisco Connection Online

- CD-ROM Documentation

Changes for Version 1.6

Cisco LocalDirector version 1.6 includes the following changes:

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.

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

- SNMP auto discovery no longer causes LocalDirector to crash.

- The FDDI interface option was broken in version 1.6.2, but is fixed in version 1.6.3.

- The *no* option for the **sticky** command was removed in version 1.6.2, but it is included in version 1.6.3.

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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.

- The SNMP messages "LocalDirector booted" and "SNMP warmstart" are now sent.

- 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.

- 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.

- LocalDirector correctly stores static ARPs in the configuration.

- 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.

- Static routes are no longer shown twice with the **show route** command.

- 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.

- 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.

Known Bugs

- Passive FTP connections are not handled correctly by LocalDirector. 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.

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.

- 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

- If SYSLOG messages are sent to the console while in configuration mode, the LocalDirector could crash if a lot of SYSLOG messages are being generated. To avoid this, direct output to a SYSLOG host instead. See **syslog console** and **syslog host** in the *Cisco LocalDirector Installation and Configuration Guide* for more information.

Notes and Caveats

- The failover IP address and system IP address for LocalDirector 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.

- 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 **map** command will be removed in the next release of LocalDirector.

- 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.

Feature Changes

The following sections describe changes to LocalDirector features.

Failover

Failover now works in a switched environment, and configuration replication between the LocalDirector primary and standby unit is automatic. The LocalDirector will now auto-recover if a failover failure is due to link up/down on an interface.

In the third example of **show failover** output in the *Cisco LocalDirector Installation and Configuration Guide*, the IP addresses in the display were incorrect. The following example is correct:

The following example shows that a failure has been detected. Note that interface 1 on the primary unit is the source of the failure. The units are back in waiting mode because of the failure. The failed unit has removed itself from the network (interfaces are down) and it is no longer sending hello packets on the network. The active unit will remain in the waiting state until the failed unit is replaced and failover communications start again.

```
ld-prim(config)# show failover
Failover On
Cable status: Normal
    This host: Primary - Standby (Failed)
            Active time: 7140 (sec)
            Interface 0 (192.168.89.2): Normal (Waiting)
            Interface 1 (192.168.89.2): Failed (Waiting)
    Other host: Secondary - Active
            Active time: 30 (sec)
            Interface 0 (192.168.89.1): Normal (Waiting)
            Interface 1 (192.168.89.1): Normal (Waiting)
```

FDDI

A FDDI interface option is available with version 1.6.3 of LocalDirector. Each FDDI card is a dual-attach with two SC connectors.

Note Port-B is on the top of the FDDI card, and Port-A is on the bottom.

Gratuitous ARPs

Gratuitous ARPs are supported in version 1.6.

Slowstart

The slowstart feature is optional on a per virtual server basis, and the **predictor** command has changed in 1.6 to support slowstart.

Source MAC address

In version 1.5, when the LocalDirector would transmit a packet, it would copy its MAC address as the source MAC address of the packet when it forwarded the packet to a real machine. In version 1.6, the LocalDirector functions more as a transparent bridge in that all transmitted packets keep the source MAC address of the sending host.

Thus, in version 1.6 the only packets that will have the LocalDirector as the source MAC address are the following:

- Telnet connections
- Any pings that are done from the LocalDirector console
- HELLO messages for failover

Note All LocalDirector units will emit failover HELLO messages regardless of whether or not failover is being used. This is required for LocalDirector to work in a switched environment.

New or Changed Commands

The following sections describe new or changed commands in this release:

- **data**
- **failover**
- **mtu**
- **name**
- **ping**
- **predictor**
- **show real**
- **show virtual**
- **snmp-server**
- **timeout**
- **weight**

data

The **data** command limits the number of connections to real servers running the HTTP daemon, but are not sending data because the daemon is down. Some webservers (especially those running Microsoft Windows NT 4.0) will continue to establish connections to a real server even though the daemon or application running on that port is dead. The LocalDirector does not recognize this as a real machine failure, but the **data** command can be used to limit the number of connections sent to a server that is not sending data for established connections.

Syntax Description

real_id	The IP address or name of a real server.
number of connections	The number of connections to allow to a real server where data has been requested, but no data has been sent by the server. The feature is disabled by default with an initial value of 0.

Note   The *number* variable for the **mtu** command has changed to *number of connections* in LocalDirector version 1.6.3.

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failover

The **failover** command enables access to the optional failover feature. The **failover** command without an argument indicates that you have connected the optional failover cable from your primary LocalDirector to a secondary LocalDirector. The default is **no failover**; however, if the failover cable is present at boot-up, it will be detected and failover will be enabled automatically. Use the **show failover** command to verify the status of the connection and to determine which unit is active.

Failover works by passing control to the secondary unit should the primary unit fail. The switch between units occurs within 30 seconds of the failure event. The markings on the failover cable let you choose which unit is primary and which is secondary. Refer to *Installing the Failover Connector Assembly and Cable* (Document Number 78-3749-02) supplied with the failover cable option for more information about upgrading an existing LocalDirector unit to accept the failover cable.

Syntax Description

[active]	Make a LocalDirector the active unit. Use this command to make a primary unit active after it has been out of service, or to make a secondary unit active so the primary unit can be taken offline for maintenance. Either enter **no failover active** on the secondary unit to switch service back to the primary, or enter **failover active** on the primary unit.
ip address	This IP address will be used by the standby unit to communicate with the active unit. Use this IP address with the **ping** command to check the status of the standby unit. This address must be on the same network as the system IP address. For example, if the system IP address is 192.168.123.1, set the failover IP address to 192.168.123.2.
reset	Forces both units back to an unfailed state. Use this command instead of rebooting the LocalDirector. This will not cause a switch to occur, and if the LocalDirector still has problems, it will be failed again.

mtu

The *val* variable for the **mtu** command has changed to *bytes* in version 1.6.3.

Syntax Description

unit	The interface (0 or 1) for which the MTU is being specified.
bytes	The MTU for the interface. Specify a number between 64 and 65,535.

name

The **name** command now has a *no* option that will remove a name associated with a real or virtual server.

ping

The **ping** command no longer requires that you specify an interface number.

Syntax Description

ip	The IP address of a host on the network.

predictor

The **predictor** command now lets you select either **roundrobin** or **none** as slowstart options for use with the **leastconns** or **weighted** arguments. The LocalDirector will rotate through the servers until the number of connections reaches a pre-determined level when slowstart is enabled. This avoids overloading a server with too many requests when it is brought in-service. The slowstart option is enabled by default.

Syntax Description

virtual_id	The IP address or name of the virtual server.
fastest	Assigns new connections to the physical server with the fastest predicted response time.
roundrobin	Rotates through the list of physical servers bound to virtual, assigning connections to the next server.
leastconns	Assigns new connections to the physical server that has the least number of current connections. This is the default.
weighted	Assigns new connections based on values set with the **weight** command. The default weight for each server is one.
none	Disables slowstart for the virtual server. Use the **roundrobin** option to enable slowstart.

show real

The **show real** command output now includes the DataIn counter, which counts the number of clients requesting but not receiving data.

For example:

```
LocalDirector(config)# show real
Real Machines:
                                            No Answer TCP Reset DataIn
        Machine    Port  Connect    State  Thresh Reassigns Reassigns  Conns
        server1  default       0      IS       8         0         0      0
        server2  default       0      IS       8         0         0      0
LocalDirector(config)#
```

show virtual

The **show virtual** command output now displays the predictor and slowstart predictor options. An asterisk (*) is shown next to the active predictor. This indicates whether the virtual server is using the selected predictor value, or is in slowstart mode.

For example:

```
LocalDirector(config)# show virtual
Virtual Machines:
        Machine    Port   State  Connect    Sticky    Predictor    Slowstart
   192.168.0.99  default    OOS        0         0  leastconns*  roundrobin
```

snmp-server

The *ip_address* variable for the **snmp-server host** command has changed to *ipaddr*. Also, the **snmp** commands now accept a *no* option.

Syntax Description

contact	Indicates that you are supplying your name or that of the LocalDirector system administrator.
location	Indicates that you are specifying your LocalDirector location.
host	Indicates that you are specifying an IP address of a host to which SNMP traps should be sent. You can specify a maximum of five host IP addresses, one per command.
text	When used with **contact**, specify your name or that of the LocalDirector system administrator. When used with **location**, specify your LocalDirector location.
ipaddr	When used with **host**, the IP address of a host to which SNMP traps should be sent. You can specify a maximum of five host IP addresses.

timeout

The *minutes* variable for the **timeout** command has changed to *idle_minutes* in version 1.6.3.

Syntax Description

real_id	Real server IP address or name.
idle_minutes	The number of minutes the server maintains a connection before dropping it. The default is 120 minutes, and the minimum is 5 minutes.

weight

The **weight** command now has a *no* option that will remove a weight value associated with a real server.

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- WWW: http://www-europe.cisco.com

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- Telnet: cco.cisco.com

- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

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