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Cisco LocalDirector Version 3.1.4 Release Notes

November, 1999

These release notes support Cisco Local Director Version 3.1, up to and including Version 3.1.4.

Use these release notes with the *Cisco LocalDirector Installation and Configuration Guide* on CCO and the Documentation CD-ROM.

Contents

These release notes describe the following topics:

New and Changed Information

The following sections list the new features supported by the Cisco Local Director version 3.1.

New Features in Cisco LocalDirector 3.1.3

There are no new features supported by the Cisco LocalDirector version 3.1.3.

New Features in Cisco LocalDirector 3.1.2

There are no new features supported by the Cisco LocalDirector version 3.1.2.

New Features in Cisco LocalDirector 3.1.1

These following sections list the new and modified features supported by the Cisco LocalDirector 3.1.1:

- New Features, page 2
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New Features

- The **alias ip address** command allows a virtual server to be placed on an IP network that is different from the real server's IP network without the use of a router.

- Use the **failover alias ip address** command to set up an alias on the standby failover unit and take advantage of one of the following attributes:

  — multiple IP addresses

  — dispatched mode

  — allowing a failover unit to be on a network that is different from a real server's network.

  A maximum of 256 aliases are allowed.

- Virtual servers can be grouped together with the **buddy** command. Certain commands and parameters (such as the **sticky** command) that affect one virtual server affect all other virtual servers in the buddy group.

- The **dynamic-feedback** command configures a TCP connection between LocalDirector and a server running the Dynamic Feedback Agent. The Dynamic Feedback Agent provides statistical information to LocalDirector about the availability of servers in a server farm. LocalDirector maintains the connection to the Dynamic Feedback Agent server, updates the Dynamic Feedback Agent internal status about the availability of servers, and makes load balancing decisions based on the information it receives. This process ensures that the most available server is chosen to provide future connections.

- New default values can be set for some LocalDirector commands. Once a new value is set, the new value is active until the value is changed with the **default** command.

- LocalDirector can set an IP precedence value in the IP header to and from virtual servers with the **color** command. This allows packet prioritization for different types of services on virtual servers. The Cisco Policy Manager software, version 1.0, can be used with LocalDirector to support a graphical user interface (GUI) version of this feature.

- The Cisco Appliance Server Architecture (CASA) architecture is now supported by LocalDirector. The CASA allows a stand-alone LocalDirector to implement Cisco Network Director Service Manager functionality.

Modified Features

The following changes have been made to existing LocalDirector features for the 3.1.1 release:

- The LocalDirector version 2.1 implementation of the **sticky** command has been expanded to use the SSL session ID as a key for stateful sticky connections (instead of the client IP address). This allows the **sticky** command to effectively load balance traffic when proxy servers are in use. LocalDirector supports SSL3 servers and SSL2/3 (hybrid) clients.

- LocalDirector load balances the User Datagram Protocol (UDP) protocol. A new field, *protocol,* can be specified for virtual servers and real servers. The **virtual** and **real** commands can use the default TCP protocol (using the **tcp** keyword), or if the protocol keyword set to **udp**, LocalDirector will load balance the UDP flows.

- LocalDirector supports the following industry-standard modes of load balancing. These modes of load balancing are set with the **redirection** command:

   — Directed mode—Uses Network Address Translation (NAT) to translate the IP headers in packets. NAT, supported in LocalDirector since version 1.0, reduces system administration time by providing a quick setup with no network address changes.

   — Dispatched mode—Substitutes the MAC address of the server in the packet for the destination address, thus preserving the IP header information. Dispatched mode increases traffic throughput. However, dispatched mode also requires that the aliased IP address on a real server match the virtual IP address on LocalDirector. Dispatched mode should be used for UDP and for TCP when the IP address information needs to remain unchanged.

- The **service** *virtual_id* **ftp-proxy** command specifies that the *virtual_id* provides FTP service. LocalDirector monitors the control connection by proxying it, making this service pretty effective. The trade-off is that each FTP session now consumes more resources in LocalDirector.

- The **out-of-service** command has added the following options: **oos**, **maintenance**, **sticky**, and **failed**.

Important Notes

The following sections contain important notes about the Cisco LocalDirector.

- LocalDirector User Interface, Versions 2.2.x and 2.1.x, cannot be used with any LocalDirector version 3.1 release.

- A Netscape 4.04 browser with the Apache webserver does not work with the sticky SSL feature. The SSL handshake occurs and data is sent from the client, but the connection pauses at that point. The server is apparently unable to work with the data received from the client.

   This problem is inherent in the Netscape/Apache combination, and occurs whether or not LocalDirector is present. [CSCdk91721]

- LocalDirector supports the SSL version 2/3 hybrid client hello message, which allows the client to send a Version 2 hello message as long as the client is capable of communicating with the server using Local Director version 3 after the handshake.

   We have found that Internet Explorer (4.0) does not work with IIS because the server responds to the client's Version 2 hello message with a version 2 server hello message. [CSCdm46555]

   The table below shows which combination of browsers and servers are performing correctly:

Browser	Apache	IIS
Netscape Navigator	works	works
Opera	works	works
Microsoft Internet Explorer	works	works if SSL version 2 is turned off (see CSCdm46555 ReleaseNote or Microsoft customer service document Q187498 for instructions)

- If you are using the Dynamic Feedback Protocol (DFP) or SNMP to automatically change the weight of a real server, you can manually change that server's weight by using the **weight** command. The next time a "dynamic weight" is sent through SNMP or DFP, LocalDirector will use that dynamic weight.

  This provides the ability to manually override the dynamic weight being fed into LocalDirector.

- The Opera browser does not always use the same SSL session ID from the server. Consecutive connections to a secure virtual server using SSL sticky does not always result in a return to the same real server. This is due to the way Opera handles session IDs: Opera uses a new session ID, thus creating a new sticky association. [CSCdm49617]

- The resolution for setting the default interval for UDP connections on real servers is the adjustment of the TIMEOUT knob for the real machines. [CSCdm15526]

- Using the older specification for the port parameter (that is, *ip_address port* instead of the new invocation *ip_address*:*port*) causes certain commands, including the **no sticky** command, to ignore the command altogether without generating error messages. Older configuration files should be checked to ensure the new style for specifying the port is used.

  This is not a LocalDirector problem. This problem is due to the way the CLI reads virtual machine types. The LocalDirector does not know if a port or sticky timer is being specified in the CLI. To remove a sticky timer, specify the following syntax:
  no sticky [*virt:port:bindid*]. [CSCdk90873]

Caveats

Caveats describe unexpected behavior in Cisco LocalDirector 3.1. This section contains open and resolved caveats for the Cisco Local Director version 3.1.

Open Caveats-Version 3.1.4

This section describes possibly unexpected behavior by Cisco LocalDirector version 3.1.4.

- CSCdm48348

  The number of sticky connection objects on a standby unit increases faster than the number of sticky connection objects on a primary unit.

- CSCdp34739

  Robust FTP is not implemented for static reals.

- CSCdm04760

  When using the **static** command, the LocalDirector does not translate the IP address in the data portion of the packet. This inability to translate the IP addresses causes FTP problems when a server inside the LocalDirector initiates an FTP session.

- CSCdp24275

  Pings from standby units usually fail. Arp and bridge tables are not updated when the IP address being pinged is on the same subnet as an alias of the LocalDirector.

- CSCdm41158

  Fragmented proxy packets (SSL sticky or robust FTP packets) are not processed correctly if the first packet received is out of sequence and does not contain the entire TCP header.

- CSCdp37156

  Proxy connections (SSL sticky or robust FTP) are not reassigned.

- CSCdp35235

  Failovers after a **configure net** with configuration files with lines that are larger than 5k do not always synchronize properly.

Resolved Caveats—Version 3.1.4

The following caveats were resolved for Cisco LocalDirector version 3.1.4.

- CSCdm23831

  RNS 4–port Ethernet cards with Intel chips can have 2% alignment errors.

- CSCdm66919

  Write mem failures do not generate syslog entries.

- CSCdm66903

  False OKs are returned through telnet connections.

- CSCdm68225

  If you are replicating FTP connections for a failover scenario, you also have to configure a 'default' virtual port for the virtual IP address in order to receive the data connections which are being replicated to the standby unit.

- CSCdm69080

  Backup machines are not properly cleared before replicating the failure configuration.

- CSCdm66540

  No error message is printed when a real that was specified by the **weight** command does not exist.

- CSCdm70556

  The weight value for all predictors must be greater than zero. If the weight value for a predictor is less than zero, the real machine will not be used. This behavior is similiar to the real machine behavior in oos maintenance mode.

- CSCdm70558

  The real machine does not default to a static weight when a dynamic weight change via DFP times out.

- CSCdm71139

  The data-in counter for the **show real** command does not get decremented correctly if the feature is not turned on for the real machine.

- CSCdm72446

  The LocalDirector mishandles ICMP error type 3 code 4 for dispatched mode.

- CSCdm66643

  If configuration file fails to download to the flash memory card, a cryptic error message is generated.

- CSCdm81195

  The second packet of LDAP traffic is delayed when bridged through the LocalDirector.

- CSCdm78239

  If the machines primary is removed a first, a backup machine can not be removed.

- CSCdm77636

  The default mode for redirect mode is assisted redirect mode. The default redirect mode should be local redirect mode.

- CSCdm45514

  The **delay** command parameters are hardcoded to 5 minutes.

- CSCdm84715

  The **weight** command is not saved if the weight parameter is the default parameter while the weight timeout parameter is not the default weight timeout parameter.

- CSCdm66800

  The LocalDirector weighted / loaded behavior can be unpredictable.

- CSCdp02402

  Buddy associations in the standby unit are not cleared during bootup or write standby.

- CSCdp06329

  The console does not distinguish between the non-existant **sh e 4** command and the existant **shu e 4** command. The console should return an error message.

- CSCdp03095

  Reals bound to sticky virtuals with SSL enabled will not fail.

- CSCdp09265

  The LocalDirector connection counter does not decrement properly.

- CSCdp11596

  If **names** are on, the **delay** command writes the name instead of the IP address into the configuration terminal. The end result is the loss of the command on reboot.

- CSCdk87047

  If the LocalDirector has a 4–port RNS card with the DEC chip set, internal looping occurs when you manually change the line speeds from 10baset to 100basetx and then back to 10baset.

- CSCdm45606

  If the **no data** command is invoked without keywords, no error message is displayed and nothing is changed. Additionally, the **no data** *real_ip_address* command does not return the value to 0; the **data** *real_ip_address* 0 command must be used to return the value to 0.

- CSCdm52240

  Clearing the default gateway with the **clear configuration secondary** command causes problems when the user invokes this command from a telnet session within a firewall.

- CSCdp27237

  Concurrent **boot image** commands from either a console or a telnet session will cause the LocalDirector to reload.

- CSCdp27474

  Concurrent **conf net** and **write net** commands from either a console or a telnet session will cause the LocalDirector to pause indefinitely.

- CSCdp24266

  The LocalDirector does not fail an FTP virtual when robust FTP for the virtual is enabled.

- CSCdp34831

  New connections are not reassigned to new reals when an RST is sent from the real.

- CSCdp27345

  The Ethernet driver can be corrupted by proxy or local telnet if either service retransmits packets.

- CSCdp27416

  Repeated use of the **show error** command causes the LocalDirector to reboot.

- CSCdp29124

  Reassign commands fail due to invalid TCP checksums in SYN.

- CSCdp30505

  The **write standby** command does not work.

- CSCdp30689

  LocalDirector is displayed in telnet password prompts.

- CSCdp32523

  Packets that arrive at a virtual server for a non–existent connection generate an RST to the client with a source IP address of 0.0.0.0.

- CSCdp34843

  Client connections are not RST'd when a real server is not available for a virtual server.

- CSCdp36876

  Real servers and virtual servers must have the same port to enable bind in dispatched mode.

Resolved Caveats—Version 3.1.3

The following caveat was resolved for Cisco LocalDirector version 3.1.3.

- CSCdm58481

  A telnet session to the LocalDirector caused a reboot after exiting the session.

Resolved Caveats—Version 3.1.2

The following caveat was resolved for Cisco LocalDirector version 3.1.2

- CSCdm54556

   The proxy code, which is used in the SSL sticky feature, dropped the first packet that completed the SSL handshake and contained data. The client had to resend the data, based on TCP timers, for the SSL session to continue. Although the SSL connections worked, the connections were slow because of the DATA resend that was required for the data dropped in the packet. This problem was compounded when the web page was composed of several sessions.

Resolved Caveats—Version 3.1.1

The following caveats were resolved for Cisco LocalDirector version 3.1.1:

- CSCdj69947

   Packets destined for servers on a different subnet than the LocalDirector traversed the outside Ethernet three times before being forwarded to the appropriate server if directly-connected multiple logical subnets were running on the inside interface.

- CSCdj81299

   Using the **sticky** command created a load inbalance when clients were coming from a site that used a proxy server to access the Internet. Since sticky in Version 2.x used the client's IP address for storing the association to a real server, all clients coming from a proxy server were sent to the same real server.

- CSCdj82485

   LocalDirector had to disable the Cisco Syslog MIB, so traps were not sent for every SYSLOG message when an SNMP host was configured.

- CSCdk05464

   The **show interface** command would display only interface 0 statistics when the **show interface ethernet** *n* command was issued, regardless of what interface number *n* represented.

- CSCdk06921

   Connection replication only occured at the beginning of a connection. If failover occured, a connection remained intact on the newly active box. However, if the previously active box was rebooted and failover switched back , the connection was lost. All replication was lost on connections that were established before replication was enabled (even though the connection still existed) or if the standby box was rebooted.

- CSCdk20283

   If the standby unit was not present when the active LocalDirector was receiving connections in a failover configuration, the established connections were not replicated to the standby unit when they became available.

- CSCdk22258

   Support for the UDP protocol was needed for virtual servers and real servers.

- CSCdk24894

  The **show memory** command output was static. LocalDirector pre-allocated its memory on bootup in accordance to the configuration.

  This was misleading to users who looked at the command as a way of determining how loaded their system was. Typically, this output did not change, regardless of the load on the system.

- CSCdk25530

  The command **telnet 0.0.0.0 255.255.255.0** was accepted, but failed to perform any action. However, the command **telnet 0.0.0.0 0.0.0.0** worked.

- CSCdk33149

  You could only retrieve the value for the first MIB instance in the cldVirtualTable.

- CSCdk38075

  If you attempted to create a real server that already existed on LocalDirector, an error message without a carriage return would display, making the output look garbled.

- CSCdk50678

  There was no value for the SNMP object sysobjectOID.

- CSCdk55614

  The **oos** command was not understood when downloading a configuration from a TFTP server with the **config net** *file ip* command.

- CSCdk58223

  When trying to bind a server on a port higher than 32768, LocalDirector responded with the following error message:

  ```
  machine does not exist; can't bind
  ```

- CSCdk61788

  If the snmpwalk or snmpget was used against LocalDirector, the incorrect value of 0 for ifAdminStatus was received.

- CSCdk61794

  Snmpwalk returned no information and produced the "End of MIB" message for walks on anything short of or equal to .1.3.6.1.2.

- CSCkd66733

  When binding an existing virtual server to a non-existent real server by IP address, LocalDirector responded with a correct error message. However, if an invalid name was used, the incorrect error message "arg2: invalid IP address" was returned.

- CSCdk66749

  Using the **conf f** command without a floppy disk in the drive failed to generate an error message.

- CSCdk90027

  An snmpget of cldRealTotalConnections using an index of (cldRealIPAddress,cldRealPort) with port value 0 resulted in LocalDirector returning the incorrect object, cldRealIPAddress, instead of the requested object.

- CSCdm02673

  LocalDirector performed a gratuitous ARP for each enabled interface. These gratuitous ARPs were propagated to each interface. This caused additional log entries in the networks when log events such as MAC address changed for IP addresses.

- CSCdm22062

  When LocalDirector would fail, it would shut down its interfaces. This was done as a precautionary measure to prevent a failed unit from harming the rest of the network (by constantly transmitting trash, and so forth). If you used the **write mem** command on LocalDirector while it was failed, it saved the information when the interfaces were down.

- CSCdm22544

  The **arp** command returned incorrect information if a colon was incorrectly used in the IP address.

- CSCdm24145

  SNMP traps that referenced real servers and virtual servers were not correct. For example, the trap (output from CWW):

  ```
  4/8/99   21:31:44 LD                 Trap: P3  1,
  ent=ciscoLocalDirectorMIBNotificationPrefix, comm=public,
  cldVirtualTable.4.5.4.3.2.1.0.0=2     LD
  ```

  referenced cldVirtualTable.4, but there is no variable "4" in cldVirtualTable. Instead of:

  cldVirtualTable.4.5.*ip_address.port.bind_id***=***value*

  Below is the correct output:

  cldVirtualTable.cldVirtualTableEntry(1).cldVirtualState(4).*ip_address.port.bind_id***=***valu
  e*

- CSCdm26732

  If a failover cable was not connected and the **write standby** command was issued, the configuration was not replicated and the error message was not returned.

- CSCdm47752

  In a failover setup, the active unit replicates the configuration to the standby unit when the standby unit is available. Before the configuration is replicated, the current configuration on the standby unit is erased. However, in version 2.2.2, the **static** commands were not erased before replication, which led to a reboot on the **show static** command.

Related Documentation

The following documents are specific to Cisco Local Director Version 3.1 and are located on CCO and the Documentation CD-ROM:

- *LocalDirector Installation and Configuration Guide, Version 3.1*

On CCO at:

Service & Support: Documentation Home Page: Internet Service Unit: LocalDirector Documentation: LocalDirector Version 3.1 Documentation

On the Documentation CD-ROM at:

Cisco Product Documentation: Internet Service Unit: LocalDirector Documentation: LocalDirector Version 3.1 Documentation

- *Cisco LocalDirector Version 3.1.x Release Notes*

On CCO at:

Service & Support: Documentation Home Page: Internet Service Unit: LocalDirector Documentation: LocalDirector Version 3.1 Documentation

On the Documentation CD-ROM at:

Cisco Product Documentation: Internet Service Unit: LocalDirector Documentation: LocalDirector Version 3.1 Documentation

- *LocalDirector User Interface Version 3.1 Installation and Release Notes*

On CCO at:

Service & Support: Documentation Home Page: Internet Service Unit: LocalDirector Documentation: LocalDirector Version 3.1 Documentation

On the Documentation CD-ROM at:

Cisco Product Documentation: Internet Service Unit: LocalDirector Documentation: LocalDirector Version 3.1 Documentation

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

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

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

- 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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CD-ROM Documentation

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more up to date than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at http://www.cisco.com, http://www-china.cisco.com, or http://www-europe.cisco.com.

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