



Doc. No. 78-4543-04

## 2.2(4) Version Software Release Note Catalyst 3000 Series

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The 2.2 software releases support the existing Catalyst 3000 switch family (including the Catalyst 3000, Catalyst 3100 and Catalyst 3200) and CPW1601. The 2.2 software release introduces the following features:

- Improved PortFast behavior (2.2(4) release)
- Cisco Group Management Protocol (CGMP)
  - to provide enhanced multicast management
- Dynamic Inter-Switch Link Protocol (DISL)
  - to enhance plug and play connectivity of ISL capable ports
- Enhanced broadcast packet handling
- Monitoring of ATM Services (LECS, LES, BUS) via SNMP
  - these MIBs can be read from but not written to
- Deterministic box identification in back to back (dual) Stack configurations
- Improved system performance when creating VLANs or when moving ports between VLANs
- Support for SNMP v2C including get-bulk transfers with transfer sizes up to 8KB
  - refer to RFC1901 for more details.

For detailed information about configuring CGMP and DISL Protocols, refer to the 2.2(1) Configuration Note. For detailed information about configuring other features on a Catalyst 3000 series switch, refer to the Installation and Configuration Guide.

### Critical 2.2 Software Upgrading Instructions



**Caution** As with other 2.0 and above releases, if you are upgrading a pre 2.0 system, you *MUST* upgrade the bootcode first. If you do not, the system will *not* boot when restarted. For complete details, see the section “Downloading the 2.0 (or above) Image to a Pre 2.0 system” in the 2.0 series of Release Notes.

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### Firmware and Memory Requirements for the 2.2 Releases

- ATM Firmware revision v16 is released with the 2.2(3) release. This ATM firmware version contains a fix for 1 anomaly (CSCdj38470). The new firmware is fully compatible with existing main images.
- The 2.2 releases require 8MB of DRAM. For existing 4MB boxes, an upgrade kit (WS-X3428) is available.

### System Limitations

- All systems still have the same hardware limitation of no more than 4 trunk ports per box (ISL and/or ATM). ATM ports are always considered to be trunk ports. This limit is per box, not per Stack (up to 32 trunk ports can be supported in an 8 box Stack).
- No more than 2 ATM ports can be installed per box.
- As with all post 2.0 releases, Boot Code version 2.0 must be used for the system to boot correctly.

### Configuration Notes

- The behavior of PortFast has changed. Until 2.2(3), it moved quickly from blocked to forwarding, but generated a TCN when it moved into the forwarding state or the blocking state. Beginning with 2.2(4), the TCN is no longer generated by a port configured for PostFast unless the port receives a BPDU, which indicates that the port is connected to another switch and should perform the normal spanning tree TCN generation.
- When upgrading existing systems, ISL-capable ports previously configured as Static are set to DISL state Auto, and ISL-capable ports previously configured as Trunk are set to DISL state Desirable.
- ATM firmware version 14 and above is required to run CGMP over ATM trunks. Both v14 and v16 of the ATM firmware is backward compatible with all existing ATM releases on the Catalyst 3000 family (i.e. 1.3, 2.0(x), 2.1(x)).
- When using the Port Statistics Screen (from the Reset Statistics menu) please observe the following caution:



Caution Clearing a port's statistics resets *all* of the counters for this port, both those displayed on the console and those reported via SNMP. If you are using port statistics data for important applications you should exercise extreme caution in choosing to reset a port's statistics, since all applications dependent on such statistics will be affected.

### NMS Notes

- A CiscoView package (version 1.4) for the Catalyst 3000 series, which provides full support for the 2.2 releases, will be available on CCO. This package will be incorporated into the CWSI 2.0 release.

## Feature Notes

- Enhanced broadcast handling is provided by not forwarding broadcast packets to the CPU on any VLAN which has IP disabled. This allows the user to enable IP on only management VLANs and not have the CPU see broadcasts on other VLANs.

This is provided for ethernet ports in the 2.2(1) release; it is extended to ATM ports in the 2.2(3) release. ATM v16 firmware is required for this feature.

- Reliable box identification in back to back (dual) Stacks is provided to ensure that stacks reliably reform with the boxes assuming the same box number each time. This is provided by saving the box number of each box in non-volatile memory and using that value when the stack is reforming. The earlier method of determining box numbers is still used if there are no valid box numbers saved or the boxes have conflicting information due to a box being replaced.
- The ability to access the debug menu from a telnet session has been added in the 2.2(3) release. This removes the need for a directly connected console when debug access is required. When telneting to a Stack, the debug menu is available only for the IP controller box (usually the lowest numbered box in a Stack). Direct console connection is still required if debug access is needed for a box other than the IP controller box.

## Known Anomalies

The following are known conditions as of this version of the software release.

### CGMP Limitations Over ATM (CSCdj04492)

Multicast sources arriving at the Catalyst 3000 series via an ATM port cannot have the list of destination ports controlled by CGMP. This is a limitation of the ATM subsystem and is not planned to be fixed in any future release.

This limitation is described in detail in the CGMP section of the 2.2(1) Configuration Note.

### CGMP and Filter Table Entry Conflict (CSCdj15673)

It is not possible to run CGMP and have Address Filtering in use at the same time. CGMP will override filter table entries.

### Invalid Warning Message Generated when Configuring Default ATM LANE LECS (CSCdj06271)

When configuring a new system to be LECS and LES+BUS, if an ATM address for the default ELAN is added before the system is rebooted, a warning message appears. The system behavior is not affected; the default ELAN comes up correctly. To avoid the warning message, reboot the system after configuring the system as LECS, LES+BUS and before assigning ATM addresses.

### SNMP Sets Are Not Supported for ATM LANE MIBs (CSCdj21675)

SNMP Sets for the LANE server MIBs, CISCO-LECS-MIB, CISCO-LES-MIB and CISCO-BUS-MIB are not supported for the 2.2(2) release.

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Note The CISCO-LEC-MIB remains unchanged with this release (it continues to support only SNMP Gets and does not support SNMP Sets).

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## Corrected Anomalies for the 2.2(4) Software Release

The following conditions have been corrected with the 2.2(4) version of the software release. In addition, all corrections applied to the 2.2 and above releases are included in this release.

- CSCdj37145: Incorrect IP default gateway gets used
- CSCdj37972: Spanning tree BPDUs not flooded when STP is disabled
- CSCdj38698: upgrade from 1.3 to 2.1(1) scrambles up LANE parameters
- CSCdj40333: Display problem in Router Configuration Menu
- CSCdj49864: SNMP does not work on non-default VLANs.
- CSCdj50269: c3000 stops sending periodic vtp messages, causing pruning
- CSCdj50773: RMON history time stamp is off by magnitude of 10.
- CSCdj51790: ifOutErrors incorrect for WSX-3009 (100BaseFX) cards
- CSCdj51846: ATM/LAN/switch congestion messages should appear only under debug
- CSCdj52155: ATM: Ready-Query packets have wrong length
- CSCdj52598: Fatal error when box configured as LECS
- CSCdj54523: bpdus not forwarded if STP is disabled.
- CSCdj54782: Using SNMP, ifOperStatus on an active AUI port reports down
- CSCdj56674: Portfast goes through all states before forwarding
- CSCdj58800: When more than 2 trunks in a box, STP BPDUs corrupted causing loop
- CSCdj58896: DISL - DISL packets are not sent when set to DES and AUTO.
- CSCdj60319: Console goes to sleep although switch operates normally
- CSCdj60514: possible memory leak in vtp\_dep\_vlan\_state\_change\_notification()
- CSCdj62471: ATM - Lecs are downed when IP is enabled
- CSCdj62473: Stack--Performance on unknown destination packets poor over ATM
- CSCdj62867: stack with ATM uplink gets LEVEL 3 congested
- CSCdj64179: Fatal Error Ageing Task: Learning tables corrupted (p).
- CSCdj65147: switch crash when change VTP mode from client to server
- CSCdj66632: Telnet - system crashed with invalid memory access.
- CSCdj66797: ATM Firmware-- Fails to reinitialize, queue is full
- CSCdj67181: Invalid MAC address displayed via telnet
- CSCdj67291: possible deadlock in address aging/stack
- CSCdj67448: SNMP: small amounts of memory leaks when SwitchProbe object is SET.
- CSCdj67943: ATM, STACK - a joining box does not have correct LEC state up,down
- CSCdj67999: Box w/debugger image crashed when telneting to show tech support
- CSCdj68039: stack, stp - STP of a joining box does not see other ports in stack
- CSCdj68046: FATAL ERROR VTP\_Task: Deactivate recvd while in Secondary state
- CSCdj68144: switch lock up - no telnet console or switched frames

CSCdj68709: MEMORY HEAP CORRUPTION - BOX with ATM trunk failed with FREEpoolFail  
CSCdj69581: OUT OF SPACE. A box on a stack crashed when another box booted.  
CSCdj70252: UNI3.1 STATUS\_ENQ messages incorrectly formed under heavy load  
CSCdj70376: Telnet session cannot be terminated if session in Cat Manager menu  
CSCdj70730: ISL:STP port path cost not saved for static ports  
CSCdj70953: Box with atm in stack crashed with RB\_send:exceeded quota msg  
CSCdj71416: ATM - UNI version 4.0 should be handled appropriately  
CSCdj72781: ISL: Loop is formed when a Single Unit got 2nd ISL Trunk.  
CSCdj73270: RMON code causes SNMP to quit working.  
CSCdj73486: ATM: addresses over ATM are deleted upon a topology change  
CSCdj74428: ATM-- After topology change ARP reverification floods CPU  
CSCdj74639: ATM connectivity - Data direct is not created but LE-ARP table is DD  
CSCdj75591: After having topology change, dest pkt is not xmt from stack.  
CSCdj76327: ATM-- Fatal Error when running test over weekend  
CSCdj76885: ATM--Signalling error seen on Cat3k  
CSCdj80591: Port Freeze detection code should be enabled by default  
CSCdj81120: STACK- llif\_SendMessage: exceeded retry quota and crashed  
CSCdj81121: Box crashed with invalid KA message on ATM stack

## Corrected Anomalies in the 2.2(3) Software Release

The following conditions have been corrected with the 2.2(3) version of the software release.

CSCdj08612: ATM board keep using BUS and not DD when HSRP is active on LEC(s)  
CSCdj36104: Spanning tree should be forwarded on SPT-disabled/VTP-pruned port  
CSCdj38470: ATM - Broadcast traffic is sent to the CPU when IP is disabled  
*Note:* Requires ATM v16 firmware for this fix.  
CSCdj38623: ATM - Congestion activates when only 200 packets of broadcast/sec  
CSCdj38698: Upgrade from 1.3 to 2.1(1) scrambles up LANE parameters  
CSCdj38833: sysUpTime returned by SNMP is very different from the Console value  
CSCdj38883: ATM - Addresses will not be relearned if aged out by demand aging  
CSCdj39117: ATM - LE\_ARP cache occasionally ages and traffic floods  
CSCdj39500: 3000 loses vtp info upon reset if >64 vlans on ext. vtp server  
CSCdj39896: Telnet should be able to access the eps commands  
CSCdj40477: Cat3K sent a BPDU packet to unicast address  
CSCdj40711: Congestion - Must report when the switch is congested  
CSCdj42028: IPX Clients are losing their connectivity  
CSCdj43415: C3100 has incorrect string in the Stack Connection

CSCdj44750: Stack - Box still maintains the old IP controllers MAC after deStack  
CSCdj44951: LEC goes down with SSCOP sequence errors  
CSCdj45035: CPA Transmit Queue fix is not enabled  
CSCdj47455: Switch software should check for v16 ATM firmware  
CSCdj47829: Switch goes into mon960 debugger and does not reboot  
CSCdj48626: Learn and Lock does not display the learned address properly  
CSCdj48630: Provide DEBUG option not to release DDVCC if ready-ind not received

## Corrected Anomalies from the 2.2(2) Software Release

The following conditions have been corrected with the 2.2(2) version of the software release.

CSCdj14210: CDP failing to send packets on ports in other boxes in b2b stack  
CSCdj21110: ifNumber reports incorrect value  
CSCdj21434: BRIDGE.MIB does not fully support Stack ports  
CSCdj24255: vlad: moving a port into a vlan, removes the vlan from the trunk  
CSCdj24715: Cold-start traps do not work with spanning tree off  
CSCdj25727: Download of ATM firmware V14 corrupts FLASH  
CSCdj26552: Collision Counter Fields in 802.3 stats report incorrect info 4 100BT  
CSCdj27570: Port assignment to VLAN unsuccessful  
CSCdj27909: (Catalyst) 3000 fails to respond to SNMP  
CSCdj28689: MIB ifIndex problems  
CSCdj29292: DISL does not properly handle future DISL packet versions  
CSCdj29384: LEC does not come up if VLAN present only on ATM  
CSCdj29388: CPU entries not created for VLAN only on ATM trunks  
CSCdj29681: Add ATM Info in ShowTech Support  
CSCdj29908: dot1dTpFdbStatus object shows incorrect value  
CSCdj30442: DISL sometimes thinks link is down when its not  
CSCdj30498: RMON short-term history utilization is off by 6%  
CSCdj30659: Cat3200 getting bogus values for Largest Number of active stations  
CSCdj32455: Problems with system password length  
CSCdj32957: ifDescr is missing for the default interface  
CSCdj35024: console is very slow in a Stack with ATM traffic  
CSCdj36000: Statistics - the largest number of stations is not reset.  
CSCdj36118: ATM - Download ATM image fails when two ATM cards in a box.  
CSCdj37474: Mcast/Bcast from trunk not delivered to VLAN ports  
CSCdj37687: Memory corruption on telnets

## Corrected Anomalies from the 2.2(1) Software Release

The following conditions have been corrected with the 2.2(1) version of the software release.

CSCdi92430: RB can be confused by primary leaving/rejoining without notification

CSCdj02783: Stack port numbering incorrect if boxes swapped

CSCdj08257: High ping failure rate between Catalyst 3000 series and FORE ATM NIC

CSCdj09537: Interoperability between Catalyst 3000 and 5000 with ISL; CAM gets confused

CSCdj10909: NVRAM TFTP Download/Upload fails if a Catalyst 3200 is not first in the Stack

CSCdj11850: Changing ports between VLANs on a Catalyst 3000 series causes packet loss

CSCdj12151: Broadcast Suppression broken

CSCdj12152: ISL, Non-ISL Ports are numbered incorrectly

CSCdj12155: Trunking, Non-Trunking bounces if new VLAN is created

CSCdj13107: Broadcast packets should not be forwarded to CPU when IP is disabled

CSCdj14897: Catalyst 3000 (series) propagates VTP packets from STP blocked ports in VTP transparent mode

CSCdj15107: Connectivity over LANE stops for awhile then comes back.

*Note:* The fix for this anomaly is contained in v14 of the ATM firmware, not in the 2.2(1) image.

CSCdj15310: SSCOP problems between Catalyst 3000 series and LS1010

CSCdj16625: MAC filters block traffic to CPU

CSCdj17518: ISL trunking not passing Appletalk traffic

CSCdj18924: Address table - ping stopped working when trunk became static

CSCdj19203: STP - Box 2 does not see box 1's ports due to ATM card init timing

CSCdj19374: ARP response was not sent over a trunk. STP was FWD but ASIC was BLK

CSCdj19472: Stack - box 2 does not agree with box 1's spanning tree topology

## Cisco Connection Online

Cisco Connection Online (CCO) is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

If you purchased your product from a reseller, you can access CCO as a guest. Your reseller offers programs that include direct access to CCO's services.

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CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

- WWW: <http://www.cisco.com>
- WWW: <http://www-europe.cisco.com>
- WWW: <http://www-china.cisco.com>
- Telnet: [cco.cisco.com](http://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.

For a copy of CCO's Frequently Asked Questions (FAQ), contact [cco-help@cisco.com](mailto:cco-help@cisco.com). For additional information, contact [cco-team@cisco.com](mailto:cco-team@cisco.com).

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This document is to be used in conjunction with the *Catalyst 5000 Series Command Reference* and *Catalyst 5000 Series Software Configuration Guide* publication.

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