CISCO SYSTEMS

®

Doc. No. 78-4543-05

2.2(5) Version Software Release Note Catalyst 3000 Series

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 releases introduce the following features:

- Improved PortFast behavior

- 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.

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 to manage the Catalyst 3000 series, which provides full support for the 2.2 releases, should be available on CCO. Please check the README file in the package for more details.

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.

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

Corrected Anomalies for the 2.2(5) Software Release

The following conditions have been corrected with the 2.2(5) version of the software release. In addition, all corrections applied to the 2.2 and above releases are included in this release.

CSCdj57230: DISL - Data sent in ISL format when 100tx port is static

CSCdj60301: STP - Loop forms when a box separated from a stack with redun ATM

CSCdj81251: ATM - Some addresses continue to flood locally in certain cases.

CSCdj82808: ATM - CPA failed with invalid memory access.

CSCdj83640: Box crashed with buffer_free_pool message over the weekend

CSCdj84208: ATM - system crashed with buffer_pool_free message

CSCdj84684: DISL - Packets have wrong length value

CSCdj84703: Bad pointer message on screen after reboot

CSCdj85011: CORE file should save the backtrace

CSCdj85625: Spanning tree loop with STP turned off on non-default VLAN

CSCdj88369: Permanent entries not created in master table

CSCdj88485: Console - cannot get into diag menu via telnet

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

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

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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
- 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. For additional information, contact cco-team@cisco.com.

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