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Release Notes for Cisco 6100 Release 2.2.0

September 2, 1998

These release notes discuss features, resolved problem reports, and unresolved problem reports for the Cisco 6100 advanced digital subscriber line access multiplexer (DSLAM) supported in Cisco 6100 Release 2.2.0.

For more detailed information about the features in these release notes, refer to the “Related Documentation” section on page 9. Information about electronic documentation can be found in the “Cisco Connection Online” section on page 9, and in the “Documentation CD-ROM” section on page 10.

1. Contents

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2. Cisco 6100 DSLAM

The Cisco 6100 Advanced DSL Access Multiplexer (Advanced DSLAM) is a Central Office (CO) grade multiplexer that offers cost effective high-speed services to the residential, telecommuter and business markets. The Cisco 6100 is part of Cisco's leadership architecture that breaks through the DSL service profitability barrier. The 6100 supports a broad range of users by allowing differing modem pooling rates and varying degrees of subtending in a fully NEBS Level 3 compliant package. Through Digital Off-Hook technology, each Cisco 6100 Advanced DSLAM can support up to 400 Asynchronous Digital Line Subscriber (ADSL) users through 64 ADSL modems. Operators can provision the Cisco 6100 Advanced DSLAM to support 1:1 modem configurations or oversubscribed pools of modems from 2:1 to 6.25:1. Basic telephone service splitters are not required at the premises with the Cisco EZ-DSL no-truck-roll technology.

3. Module Software Versions

The individual module software versions (and ROM versions as applicable) that comprise System Part Number 9000-001-12 (Release 2.2.0) are as follows:

System Controller S/W	9651-001-20
Network Interface S/W	9601-001-17
Subtending Host Module S/W	9601-005-08
ATU-C S/W	9101-001-11
LIM Controller S/W	9651-002-10
RDF File	9100-003-03

The module software versions are discoverable using ViewRunner.

4. New Features for Cisco 6100 Release 2.2.0

The following new features are supported by the Cisco 6100 DSLAM in Cisco 6100 Release 2.2. Each feature is discussed in the subsections indicated in parentheses.

- 6100 inband management channel (4.1)
- Multiple trap recipients (4.2)
- RFC1213 IP routing tables (supporting the inband management channel and multiple trap recipients) (4.3)
- ADSL Layer 1 disconnect (subscriber session and idle timeouts) (4.4)
- 136K baud train rates (4.5)
- Reliable dial for faster trains after the first (4.6)
- Adjustable training margins of 0-12dB upstream/downstream (per subscriber) (4.7)
- Increased number of 6100s which can be configured for selection (no limitation on the number of nodes) (4.8)
- Feature capability matrix (4.9)
- Software upgrade changes (4.10)

4.1 Inband Management Channel

The inband management channel feature provides an additional channel (other than out-of-band Ethernet) on the network side of the 6100 to manage 6100. The inband management channel feature will be transparent to the network management system (NMS). Instead of conventional Ethernet physical media, it will use ATM as the physical layer for the management channel. To run IP over ATM, it uses RFC 1483 "Multi-protocol over AAL5" recommendation in NON-ISO-ROUTED-LLC encapsulation mode.

4.2 Multiple Trap Recipients

Previous versions of 6100 software send traps to only one recipient (default), which has the same IP address as the TFTP server. The multiple trap recipients feature will allow the user to configure the 6100 to send traps to a maximum of 10 recipients. The outbound traps can also be filtered based on the various programmable levels for each trap recipient.

4.3 Routing Table

A routing table has been added to support the inband management channel and multiple trap recipient features so the 6100 can select which interface to use (Ethernet or ATM) for out-bound IP packets. The inband management channel will not work without this feature.

4.4 ADSL Layer 1 Disconnect

The ADSL Layer 1 disconnect feature allows configuration of a timer on a per subscriber basis which can be used to disconnect a subscriber after a configured time. Two timers are supported, session and idle.

- Session time-out: Connection is dropped after configured session time regardless of traffic activity.
- Idle time-out: Connection is dropped after inactivity for the configured idle time.

4.5 136K baud

The 136K baud feature adds an additional set of selectable upstream/downstream training rates for ATU-Cs. It provides some immunity to AM radio interference and provides extended reach under low noise conditions.

4.6 Reliable Dial

With reliable dial, each time an ATU-C trains, it memorizes the upstream and downstream training rates so that the next training cycle can be held to around seven seconds. This is very useful in saving training time for the lines with longer loop lengths.

4.7 Adjustable Training Margins

The adjustable training margin feature enables the user to adjust the margin (upstream and downstream) that the CAP physical layer will train to. This allows for optimizing performance dependent on the expected noise environment. The system defaults to 0dB downstream, 0dB upstream.

In 6100 software release 2.1.2, set the training margin to 0dB downstream and 3dB upstream to match the margin for subscribers provisioned under 6100 software release 1.0.1. In 6100 software release 2.2.0, set the training margin to 0dB downstream and 5dB upstream to match the margin for subscribers provisioned under 6100 software release 1.0.1.

For new subscribers being provisioned under 6100 software release 2.2.0, set the training margin to be 3dB downstream and 6dB upstream.

4.8 Increased Number of Selectable 6100s

This enhancement allows an unlimited number of 6100 IP addresses/names to be selectable for management. In previous releases of ViewRunner for Windows, a maximum of 14 6100 IP addresses/names were supported.

4.9 Feature Capability Matrix

With the addition of a feature compatibility matrix file (FCM), ViewRunner for Windows can now manage several 6100 software release levels. ViewRunner reads a release definition file (RDF) to determine what features are supported on a given 6100 system controller (regardless of its release level) and customizes the features presented to the user when connected to that 6100.

The FCM file included with ViewRunner for Windows Release 2.2.0 includes a feature description of all 6100 software releases up to and including Release 2.2.0. Newer 6100 releases may be managed by ViewRunner without updating this file. However, the user is warned each time a new 6100 IP address is discovered if that node’s system controller (SC) software is not recognized. In these cases, ViewRunner will present the default SC 2.2.0 feature set to the user.

The most current versions of the FCM can be obtained through the Cisco Connection Online (CCO).

4.10 Software Upgrade Changes

When a user chooses to upgrade the current 6100 software, a new software download wizard facilitates updating the images for that 6100 to match those specified in a given release definition file (RDF).

The most current versions of the RDF and 6100 software images can be obtained through the Cisco Connection Online (CCO).

5. Resolved Problem Reports

The bugs listed in Table 1 are fixed in Cisco 6100 Release 2.2.0.

Table 1 Resolved Problems

Bug Number	Description
1689	SC Ethernet port becomes non-functional.
2044	GFC multiplexing bit not getting cleared on SHM port 2 connections.
2278	DS3 NI dropped all cells for port 2 of SHM.
2279	Partial Packet discard not functioning on SHM.
2335	IPC congestion, packet loss between LCM and LIM.
2328	SMB address reset can cause a LCM to retry SMB message to LIM.
2368	NI reports HEC errors for valid cells from SHM port 2.

Table 1 Resolved Problems (continued)

Bug Number	Description
1997	Download server ASSERTs and CLEARs INFO event for DL underway.
2001	Loss Of Service alarm is not reported by NI DS3.
2009,2030	The downstream modem connections are limited to a 3.2 Mbs bandwidth.
2035	Five events for the Subtend ports have incorrect severity. The events are FC_DS3_FIFO_FULL (currently info), FC_DS3_TX_PARITY (currently info), FC_DS3_RX_HEC_ERROR (currently info), FC_DS3_PLCP_OOF (currently critical), FC_DS3_PLCP_LOF (currently info).
1704	Sometimes short DS3 loopback cables cause data transmission errors (Hardware fix - Ferrite added).
1842	During heavy management IP network congestion, software download if images from the management station to the SC can fail.

6. Open Problem Reports

The bugs listed in Table 2 are open problem reports as of Cisco 6100 Release 2.2.0.

Table 2 Open Problems

Bug Number	Description
157	The NI becomes active in the redundant position (Slot 11). Impact - The insertion of a second NI in the redundant slot while service is operating will cause service failure. Work around - Do not insert the NI at this time into Slot 11 during installation or during service.
561	The SC and LIM controller become active in the redundant position (Slot 30 for SC and Slot 12 for LIM controller). Impact - The insertion of a second SC in the redundant slot while service is operating will cause service failure. The insertion of a second LIM controller in the redundant slot while service is operating will cause service failure. Work around - Do not insert the SC at this time into Slot 30 during installation or during service. The LIM controller becomes active in the redundant position (Slot 12). Do not insert the LIM controller at this time into Slot 12 during installation or service.
684	Occasionally, upon system start-up from reset, a disconnected NI fiber is not reported. Impact - Will not show an alarm when fiber is not connected (only the first time). Work around - Connect the fiber and alarm will work fine.
1131	During an NI reset, active OC3 cell flow may cause NI alarm and NI shut-down on power-up. Impact - If the fiber is currently plugged in and active, during install or reset of the system, then the NI may shut-down. An alarm in ViewRunner is provided to alert the user of this problem: "ATM SWITCH POLLING RATE IS INADEQUATE, CELLS DROPPED". Work around - Disconnect fiber and restart NI.

Table 2 Open Problems (continued)

Bug Number	Description										
1497	<p data-bbox="521 323 1474 352">Identical fault message text is provided when NI DS3 C-bit parity detection is asserted and cleared.</p> <p data-bbox="521 386 1442 441">Impact -The message "Unexpected frame format" is provided in both the asserting and clearing cases.</p> <p data-bbox="521 470 808 499">Work around - Not required.</p>										
1710, 1785	<p data-bbox="521 512 1455 567">Infrequently, ViewRunner shows ports Out of Service despite the subscribers, ports, and modules being unlocked.</p> <p data-bbox="521 596 1068 625">Impact - Subscriber loses association with the line ports.</p> <p data-bbox="521 655 1386 684">Work around - The problem can be cleared by locking and then unlocking the subscriber.</p>										
1722	<p data-bbox="521 701 1360 730">Direct connect ATU-C generated alarm when unlocked and reset. One time occurrence.</p> <p data-bbox="521 760 779 789">Impact - Improper alarms.</p> <p data-bbox="521 819 1445 873">Work around - Inserted the same module in a different slot and it behaved as expected. Has not occurred again.</p>										
1779	<p data-bbox="521 890 1458 945">Had a single instance of an ATU-C reset when the internal distribution of S/W images to modules was not allowed and the ATU-Cs did not contain a current image.</p> <p data-bbox="521 974 1243 1003">Impact - ATU-C may not get upgraded if download process is not allowed.</p> <p data-bbox="521 1033 1159 1062">Work around - Allow distribution of software images to modules.</p>										
1854	<p data-bbox="521 1079 1318 1108">Following an NI reset, the following non-fatal events are seen in the event window:</p> <table data-bbox="521 1108 1179 1297"> <tr> <td data-bbox="521 1108 992 1138">FC_SUBTEND_PORT_BUFFER_OVERFLOW</td> <td data-bbox="1117 1108 1179 1138">INFO</td> </tr> <tr> <td data-bbox="521 1146 938 1176">FC_SUBTEND_PORT_UTOPIA_ERROR</td> <td data-bbox="1117 1146 1179 1176">INFO</td> </tr> <tr> <td data-bbox="521 1184 951 1213">FC_SUBTEND_PORT_INGRESS_ERROR</td> <td data-bbox="1117 1184 1179 1213">INFO</td> </tr> <tr> <td data-bbox="521 1222 976 1251">FC_SUBTEND_PORT_INGRESS_2_ERROR</td> <td data-bbox="1117 1222 1179 1251">INFO</td> </tr> <tr> <td data-bbox="521 1260 943 1289">FC_SUBTEND_PORT_EGRESS_PARITY</td> <td data-bbox="1117 1260 1179 1289">INFO</td> </tr> </table> <p data-bbox="521 1327 1474 1381">Impact - No impact, events are generated at start up and is based on the start-up sequence of NI and SHM.</p> <p data-bbox="521 1411 808 1440">Work around - Not required.</p>	FC_SUBTEND_PORT_BUFFER_OVERFLOW	INFO	FC_SUBTEND_PORT_UTOPIA_ERROR	INFO	FC_SUBTEND_PORT_INGRESS_ERROR	INFO	FC_SUBTEND_PORT_INGRESS_2_ERROR	INFO	FC_SUBTEND_PORT_EGRESS_PARITY	INFO
FC_SUBTEND_PORT_BUFFER_OVERFLOW	INFO										
FC_SUBTEND_PORT_UTOPIA_ERROR	INFO										
FC_SUBTEND_PORT_INGRESS_ERROR	INFO										
FC_SUBTEND_PORT_INGRESS_2_ERROR	INFO										
FC_SUBTEND_PORT_EGRESS_PARITY	INFO										
1901	<p data-bbox="521 1457 1432 1512">Infrequently, in a single LIM chassis system, replacing a LIM controller causes ViewRunner to display two LIM chassis.</p> <p data-bbox="521 1541 1052 1570">Impact - Displays a LIM chassis, which does not exist.</p> <p data-bbox="521 1600 945 1629">Work around - Delete second LIM chassis.</p>										
1912, 1913	<p data-bbox="521 1646 1474 1701">DS3 Subtending port does not block data flow upon port or module lock. Unimplemented feature at this time.</p> <p data-bbox="521 1730 1055 1759">Impact - Cannot block data by unlocking Subtend port.</p> <p data-bbox="521 1789 1078 1818">Work around - To block the data, pull the DS3 cable out.</p>										

Table 2 Open Problems (continued)

Bug Number	Description
1920	Had a single instance of an ATU-C with solid Status and Active LEDs, but not discovered via ViewRunner. Impact - ATU-C not communicating with SC properly. Work around - Reseat ATU-C.
1956	Had a single instance of being unable to transmit data after DS3 port on SHM was disconnected and reconnected. Impact - Data flow could be interrupted. Work around - Reset the NI module.
2002	On the SHM module, the RAI and OCD alarms do not clear when the alarm condition is corrected. Impact - Incorrect alarms. Work around - No work around.
2017	NI and SHM LEDs do not behave the same as other modules if there is an error in the download process. Impact - No system impact, other modules blink Status LED and all other LEDs are off. On the NI and SHM, the Status LED blinks and the Active LED is on. Work around - LEDs are correct for all modules once downloaded.
TBA	ADSL training for the 136 kbaud rates of 1024 and 896, margin could drop (as much as 3 dB) shortly after train for certain noise conditions. Work around #1 - If this occurs, the customer should be provisioned for 1280 (which is 340 Kbaud), and for 1024 and 960 (which is 340 Kbaud) for 896. Work around #2 - Make sure that margin is set at a minimum of 3 dB up and 3 dB down.

7. Open Problem Reports (between 2.1.0 and 2.2.0)

The bugs listed in Table 3 are open problem reports between Cisco Release 2.1.0 and 2.2.0.

Table 3 Open Problems

Bug Number	Description
2354, 2060	Restore does not always create a HardWare Revision table. Impact - Hardware revisions may get lost. Modules will not become active or will not download the new images. Work around - Restore the system again.
2073	Repeated power-up cycles on OC3 NIUs (6-8 times) can result in a Switch Failure. Impact - May cause Egress sequencing error or Cisco 675s will lose cells. Work around - Reset NI.

Table 3 Open Problems (continued)

Bug Number	Description
2080	Date setting accepts the date outside the valid range of 1/1/1990 to 12/31/2089. Impact - No impact other than acceptance of invalid dates. Work around - Re-enter the valid dates.
2114	LIMC does not reset on event 'Loss of communication'. Impact - LIM-C may lose connection with SC and will be inactive. Work around - Reset the LIMC by reinserting.
2362, 2112	The SC's IP information gets corrupted after save or after BOOTP completed. Impact - Only an installation impact when using the BOOTP capability. Work around - Re-enter the SC IP address in the boot menu.
2176	When locked, 6100 modules still give alarms when pulled from chassis. Impact - No system impact, unimplemented feature. Work around - Not required.
2336	Incorrect image creation date. Impact - ViewRunner displays incorrect image date. Work around - Not available.
2352	After resetting the SC through SNMP, the SC cannot be reset again when it comes up. Impact - SC can be reset only once using SNMP. Work around - Set SC Admin State to <code>Unlocked</code> , Maint State to <code>Normal</code> , then back to <code>Locked/maint</code> prior to resetting via SNMP.
2364	Fabric Control will not configure transit VPCs. Impact - No system impact, unimplemented feature. Work around - Use VCCs only.
2390	On one occasion the ATUC downloaded the code twice. Impact - No impact, though unnecessary to download twice. Work around - Not required.
2405	If the tftp path (in ViewRunner) for software download is greater than 45 characters, SC may crash. Impact - During installation the tftp path grater than 45 characters may cause SC to crash. Work around - Use path length less than 45 characters.
2375, 2407	The software download may fail during retries. Impact - Software downloads may fail during retries. Work around - If the software download fails; clear the NV RAM before the retry.

Table 3 Open Problems (continued)

Bug Number	Description
2409	Deleting transit subscriber with large number (>50) of transit PVCs, may cause SC to crash. Impact - If the transit subscriber with large number of transit PVCs is deleted, may cause SC to crash. Work around - Delete the transit subscriber's transit PVCs one by one.

8. Related Documentation

Use these release notes in conjunction with the documents listed in this section.

- *Cisco 6100 Set Up and Installation Manual, Version 2.2.0*
78-5481-02
- *Cisco 6100 Series Maintenance and Troubleshooting Manual, Version 2.2.0*
78-5480-02
- *Cisco ViewRunner for Windows Set Up and Installation Manual, Version 2.2.0*
78-5505-02
- *Cisco ViewRunner for Windows Provisioning and Operation Manual, Version 2.2.0*
78-5485-02
- *Cisco ViewRunner for HP OpenView Set Up and Installation Manual, Version 2.2.0*
78-5484-01
- *Cisco ViewRunner for HP OpenView Provisioning and Operation Manual, Version 2.2.0*
78-5483-01

Note These documents can be found at <http://www.netspeed.com/techsup/telco/6100/index.html>. Contact Cisco TAC for the userid and password.

9. 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.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, product documentation, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, description of service offerings, and download access to public and authorized files.

Note The 6100 documentation will be found on CCO in the next release. In the meantime, the documents can be found at <http://www.netspeed.com/techsup/telco/6100/index.html>. Contact Cisco TAC for the userid and password.

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
- 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.

Note If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or tac@cisco.com. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.

For the latest information on caveats and known problems, follow these steps to consult CCO:

- Step 1** Connect to CCO as directed in the section above.
- Step 2** On the CCO home page, click LOGIN, which appears in green in the menu bar at the top of the page, and log into CCO. (If you are not a registered CCO user, follow the instructions to register so that you can log in.)
- Step 3** After you log in, click Software & Support on the CCO home page.
- Step 4** On the Software & Support page, click Technical Tools.
- Step 5** On the Technical Tools page, click Bug Toolkit II. (Bug Toolkit II is not visible on the Technical Tools page unless you log in to CCO as directed in Step 2.)
- Step 6** Use one of the tools to get up-to-date bug information. For example, click Search for Bug by ID Number, then enter a bug ID, such as CSCdk09616, when prompted. For instructions on using the bug tools, go to the bottom of the Bug Toolkit II page and click Help—How to Use the Bug Toolkit.

10. Documentation CD-ROM

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 current 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>.

Note The 6100 documentation will be found on CCO in the next release. In the meantime, the documents can be found at <http://www.netspeed.com/techsup/telco/6100/index.html>. Contact Cisco TAC for the userid and password.

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This document is to be used in conjunction with the *Release Notes for Cisco 6100 for Cisco 6100 Release 2.2.0* publication.

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