Release Notes for Cisco Wireline Video/IPTV Solution, Release 1.1

June 6, 2006

These release notes include the following topics:

Tip Use this document online. This document provides hyperlinks to related documents and websites, including release notes for solution components and Cisco IOS images.

Document History

Document Version	Date	Notes
1	06/06/2006	This document was first published.

CISCO SYSTEMS

Solution Description

The Cisco Wireline Video/IPTV Solution, Release 1.1, supports both broadcast video and video on demand (VoD) for the wireline market. This enables operators that use digital subscriber lines (DSL) and fiber to the neighborhood (FTTN) to offer not only video but also voice over IP (VoIP) and data (Internet access)—collectively referred to as "triple play"— over their existing infrastructure, now intelligently optimized for video service.

✎ **Note**   The first release of this solution was referred to as the "Cisco Gigabit-Ethernet Optimized IPTV/Video over Broadband Solution." The solutions are the same.

Figure 1 on page 2 presents a generic view of the Cisco Wireline Video/IPTV Solution transport architecture. The shaded area shows the scope of solution testing and documentation. The solution uses a Gigabit-Ethernet (GE) transport network consisting of the following:

- A super headend (SHE), where live feeds for the broadcast video service are located

- A video headend office (VHO), where the video server complex resides

- A video switching office (VSO), where aggregation routers (ARs) that aggregate local or remotely attached GE DSLAMs are located

The regional access network, or RAN, consists of distribution, aggregation, and access layers. There is one SHE per region or network, and one VHE per metropolitan area. A distribution edge router (DER) provides transport for video traffic between the IP/MPLS core network and the VHO. The BRAS can either be colocated in the VHO or not. The real-time encoder encodes and compresses analog signals. The VHO, in turn, is connected to the VSOs through one or more ARs. The customer premises equipment consists of residential gateways, or RGs. (RGs are also referred to as home access gateways, or HAGs.)

Figure 1   Cisco Wireline Video/IPTV Solution Transport Architecture: Generic View
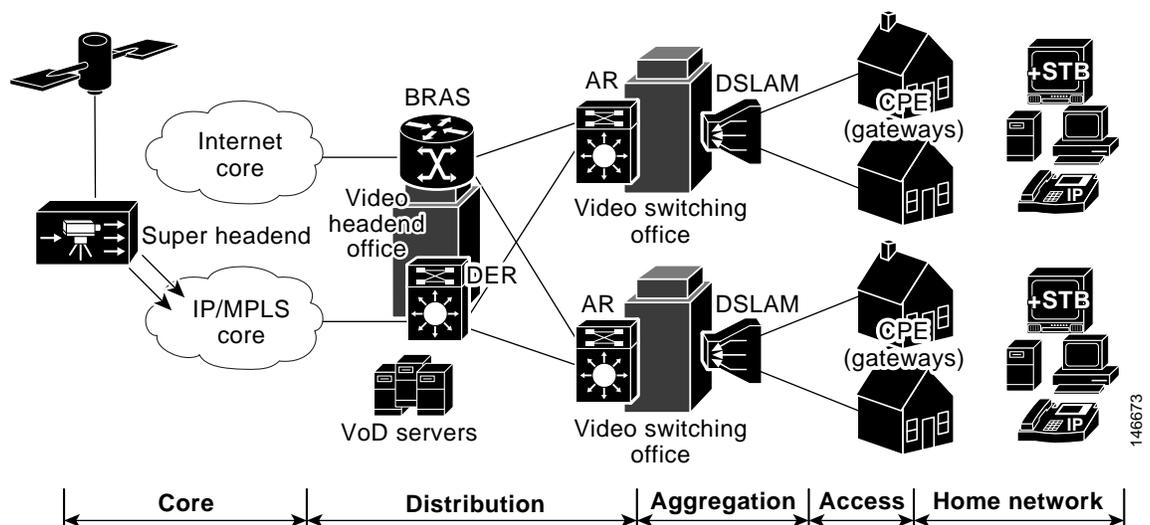
Solution Components

Release1.1 of the Cisco Wireline Video/IPTV Solution features both Cisco and third-party components. Cisco components are listed in the following sections:

- Cisco Hardware Components
- Cisco Software Matrix

Third-party components are listed in Important Notes, page 5.

Note This solution is primarily for Cisco products. To establish and maintain the third-party products and applications that may be a part of the Cisco Wireline Video/IPTV Solution, refer to the documentation provided by the vendors of those products.

Cisco Hardware Components

Table 1 describes the Cisco hardware components tested for Release 1.1 of the Cisco Wireline Video/IPTV Solution. Software releases that were tested for the solution are listed in Table 2 on page 4.

Tip When viewing this document online, the components in the Hardware columns of Table 1 serve as links to the platform-specific user documentation. Refer to the release notes for each platform and software image that you use in this solution.

Note Different applications of this solution may use different subsets of the following components.

Table 1 Cisco Hardware Components

Network Role	System	Product Number	Removable Optics
DER, AR	Layer 3 switch	7606, 7609, 6509	
	Supervisor	WS-SUP720-3BXL	N/A
	10 GE x 4 optic	WS-X6704-10GE	XENPAK-10GE-LR
	1 GE x 24 optic	WS-X6724-SFP	1GE-SR/LR/DWDM
	48-port copper Ethernet	WS-X6748-SFP	1GE-COPP-SR or -LR

See also Related Documentation, page 7.

Cisco Software Matrix

Table 2 is a matrix that describes the tested Cisco IOS and other software releases for Release 1.1 of the Cisco Wireline Video/IPTV Solution. If you are implementing this solution for the first time, we recommend that you use the most recent software releases in Table 2. If you have already implemented the solution in your network, use the entries in Table 2 as options for upgrading your solution components.

Table 2 also provides hyperlinks to release notes and the Cisco IOS Upgrade Planner from which you can download Cisco IOS images for Cisco components of the solution. See How to Use the Cisco Upgrade Planner, page 4.

Before you select a Cisco IOS image, do the following:

- Select a feature set. Consult with your Cisco account representative to determine the Cisco IOS features that are required for your installation.

- Check the release notes for the platform and software release for flash and DRAM memory requirements.

Tip If you view this document online, some of the components in the first column of Table 2 serve as links to the platform-specific release notes. The software release names in the rest of the table serve as links to the Cisco IOS Upgrade Planner from which you can download the Cisco IOS images.

Table 2 Cisco Wireline Video/IPTV Solution, Release 1.1, Software Matrix

Component	Cisco Release Tested for This Solution
Cisco Catalyst 6500 series	Cisco IOS Release 12.2(18)SXF2
Cisco 7600 series	

How to Use the Cisco Upgrade Planner

Note You need a Cisco.com password and user ID to access the Cisco IOS Upgrade Planner.

Step 1 To access the Cisco IOS Upgrade Planner, complete one of the following steps:

a. Within the online version of these release notes, click the release version in Table 2, and launch the Cisco IOS Upgrade Planner.

b. Go to http://www.cisco.com/cgi-bin/Software/Iosplanner/Planner-tool/iosplanner.cgi?, and launch the Cisco IOS Upgrade Planner.

Step 2 Select the platform name from the Select Platform column in the Choose Options window.

Step 3 Go to the Select Release column and find the heading Early Development Updates.

Step 4 Search for the release name that corresponds with the name in the Cisco Releases Tested for This Solution column in Table 2.

Step 5 Click the link for that release. The Cisco IOS Upgrade Planner is refreshed.

Step 6 Read all instructions on the page, then click the appropriate software feature in the Select Software Feature column. The Cisco IOS Upgrade Planner is refreshed.

Step 7 Read the information on that page. If you agree with the requirements, click I Agree. The Cisco IOS Upgrade Planner is refreshed.

Caution Make sure that you have enough memory on your system for the file. Note the values in the Minimum Memory and Minimum Flash columns in the File Download Information table.

Step 8 Read all instructions on that page, then click the filename of the binary image in the Download: line.

Step 9 Continue as prompted.

Important Notes

Third-Party Components

Note While third-party components are tested for interoperability in this solution, they are not supported as part of this solution. Configurations relevant to the transport network are documented in the *Cisco Wireline Video/IPTV Solution Design and Implementation Guide*. Refer to third-party documentation for configuration of third-party equipment.

Table 3 lists third-party components of the solution.

Note For the most current information, contact your Cisco account representative, visit the manufacturer's website, or contact the manufacturer's representative.

Table 3   Third-Party Components

Network Role	Vendor	System	Product Number
DSL switch	Ericsson	Ethernet DSL Access ECN320	FAB 801 3908
DSLAM		EDN312xp, version R3, revision R1A, ADSL2, ADSL2+	FAB 801 4246
	UTStarcom	IP DSLAM	AN2001B
Residential gateway (RG)	Ericsson	HM340d, version 2, ADSL2 CPE modem	ZAT 759 94/A101
VoD server	Kasenna	GB (GigaBase) Media Server	GB-MS-BASEA-LB
			GB-MS-GIGE-COP
Application server		Living Room Application Server	LR-VSIF-HWSW
IP STB	Amino	STB	110

Third-Party Hardware and Software Requirements

Special Issues in Using DSL Equipment

If you are using Ericsson DSL equipment, see Appendix D, "Configuring Ericsson DSL Equipment," in the *Cisco Wireline Video/IPTV Solution Design and Implementation Guide*.

Limitations and Restrictions

Ericsson Version Recommendation

During solution testing the Ericsson EAN, detailed in Appendix D, "Configuring Ericsson DSL Equipment," of the *Cisco Wireline Video/IPTV Solution Design and Implementation Guide, Release 1.1,* exhibited an unacceptable number of packet drops between the DSLAM and HAG. When the EAN was upgraded to the version listed in that appendix, the packets drops were no longer witnessed. Contact Ericsson to obtain the latest software releases for all of the Ericsson equipment.

Caveats

This section lists the key caveats for the components in this solution. Workarounds are provided where applicable.

✎
Note For additional caveats that may affect this solution, refer to the release notes for each platform and software release that you use as a solution component. If you view this document online, the software release numbers in Table 2 on page 4 serve as links to the platform-specific release notes.

If you have an account with Cisco.com, you can use the Bug Toolkit to find to find caveats of any severity for any release. To find the open caveats for Cisco components used in this solution, you must query the system for each of the component and software releases used or being planned for your network. To reach the Bug Toolkit, go to http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl.

Open Caveats—Release 1.1

- CSCef28346—Long IGMP join latencies for multicast with the Cisco Catalyst 6000 series and Sup 720 have been seen with Cisco IOS Release 12.2(18)SXE and later releases.

  Workaround—Use static joins, as described in "Effect of Multicast on Channel-Change Performance," in Chapter 3, "Solution Transport Architecture," of the *Cisco Wireline Video/IPTV Solution Design and Implementation Guide, Release 1.1.*

- CSCsc16554—When the IGMP limit (state limit) feature is used with Source Specific Multicast (SSM) and source mapping, the feature does not work under all conditions.

  When SSM is used and the client supports only IGMP version 2, source mapping is required. IGMPv2 messages cause the active group counter to increment properly. However, when the receiver sends an IGMPv2 leave message to the router, the active group counter (set by the **ip igmp limit** command) does not decrement. Consequently, all subsequent IGMP joins are denied.

  Workaround—There is no workaround.

- CSCse09084—IP unnumbered is a requirement in DSLAM aggregation networks where numbers of VLANs are aggregated into one IP subnet. An option to add Dynamic Host Control Protocol (DHCP) host routes as connected routes is available in Cisco IOS. However, when "connected" mode is used, the **clear ip route** command causes DHCP host routes to be deleted permanently.

  Workaround—Execute **shut**, then **no shut**, on the Layer 3 switched virtual interface (SVI).

Related Documentation

Solution Documentation

This document, and the *Cisco Wireline Video/IPTV Solution Design and Implementation Guide, Release 1.1*, are available under the following URLs:

http://www.cisco.com/en/US/products/ps6902/tsd_products_support_series_home.html

http://www.cisco.com/univercd/cc/td/doc/solution/vobbsols

Cisco 7600 Series

Documentation resources for the Cisco 7600 series are available at the following URL:

http://www.cisco.com/en/US/products/hw/routers/ps368/tsd_products_support_series_home.html

Cisco Catalyst 6500 Series

Documentation resources for the Cisco 6500 series are available at the following URL:

http://www.cisco.com/en/US/products/hw/switches/ps708/tsd_products_support_series_home.html

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/techsupport

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Product Documentation DVD

The Product Documentation DVD is a comprehensive library of technical product documentation on a portable medium. The DVD enables you to access multiple versions of installation, configuration, and command guides for Cisco hardware and software products. With the DVD, you have access to the same HTML documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .PDF versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD= or DOC-DOCDVD=SUB) from Cisco Marketplace at this URL:

http://www.cisco.com/go/marketplace/

Ordering Documentation

Registered Cisco.com users may order Cisco documentation at the Product Documentation Store in the Cisco Marketplace at this URL:

http://www.cisco.com/go/marketplace/

Nonregistered Cisco.com users can order technical documentation from 8:00 a.m. to 5:00 p.m. (0800 to 1700) PDT by calling 1 866 463-3487 in the United States and Canada, or elsewhere by calling 011 408 519-5055. You can also order documentation by e-mail at tech-doc-store-mkpl@external.cisco.com or by fax at 1 408 519-5001 in the United States and Canada, or elsewhere at 011 408 519-5001.

Documentation Feedback

You can rate and provide feedback about Cisco technical documents by completing the online feedback form that appears with the technical documents on Cisco.com.

You can submit comments about Cisco documentation by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you will find information about how to:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories, security notices, and security responses for Cisco products is available at this URL:

http://www.cisco.com/go/psirt

To see security advisories, security notices, and security responses as they are updated in real time, you can subscribe to the Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed. Information about how to subscribe to the PSIRT RSS feed is found at this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you have identified a vulnerability in a Cisco product, contact PSIRT:

- For Emergencies only — security-alert@cisco.com

    An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- For Nonemergencies — psirt@cisco.com

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302

- 1 408 525-6532

Tip We encourage you to use Pretty Good Privacy (PGP) or a compatible product (for example, GnuPG) to encrypt any sensitive information that you send to Cisco. PSIRT can work with information that has been encrypted with PGP versions 2.x through 9.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

The link on this page has the current PGP key ID in use.

If you do not have or use PGP, contact PSIRT at the aforementioned e-mail addresses or phone numbers before sending any sensitive material to find other means of encrypting the data.

Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

Note Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests, or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—An existing network is down, or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operations are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of the network is impaired, while most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The *Cisco Product Quick Reference Guide* is a handy, compact reference tool that includes brief product overviews, key features, sample part numbers, and abbreviated technical specifications for many Cisco products that are sold through channel partners. It is updated twice a year and includes the latest Cisco offerings. To order and find out more about the Cisco Product Quick Reference Guide, go to this URL:

  http://www.cisco.com/go/guide

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

  or view the digital edition at this URL:

  http://ciscoiq.texterity.com/ciscoiq/sample/

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:

  http://www.cisco.com/en/US/products/index.html

- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:

  http://www.cisco.com/discuss/networking

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html

This document is to be used in conjunction with the documents listed in Related Documentation, page 7.