



Solution Overview

This chapter presents the following major topics:

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- [Miscellaneous Solution Support, page 1-4](#)

Solution Description and Scope

The Cisco Gigabit-Ethernet Optimized IPTV/Video over Broadband (GOVoBB) Solution, Release 1.0, supports both broadcast video and video on demand (VoD) for the video over broadband/telco market, enabling operators that use digital subscriber lines (DSL) and fiber (FTTx) 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. (The solution assumes that Internet access is already available.)

Generic Architecture and Scope

[Figure 1-1 on page 1-2](#) presents a generic view of the Cisco GOVoBB Solution transport architecture. 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

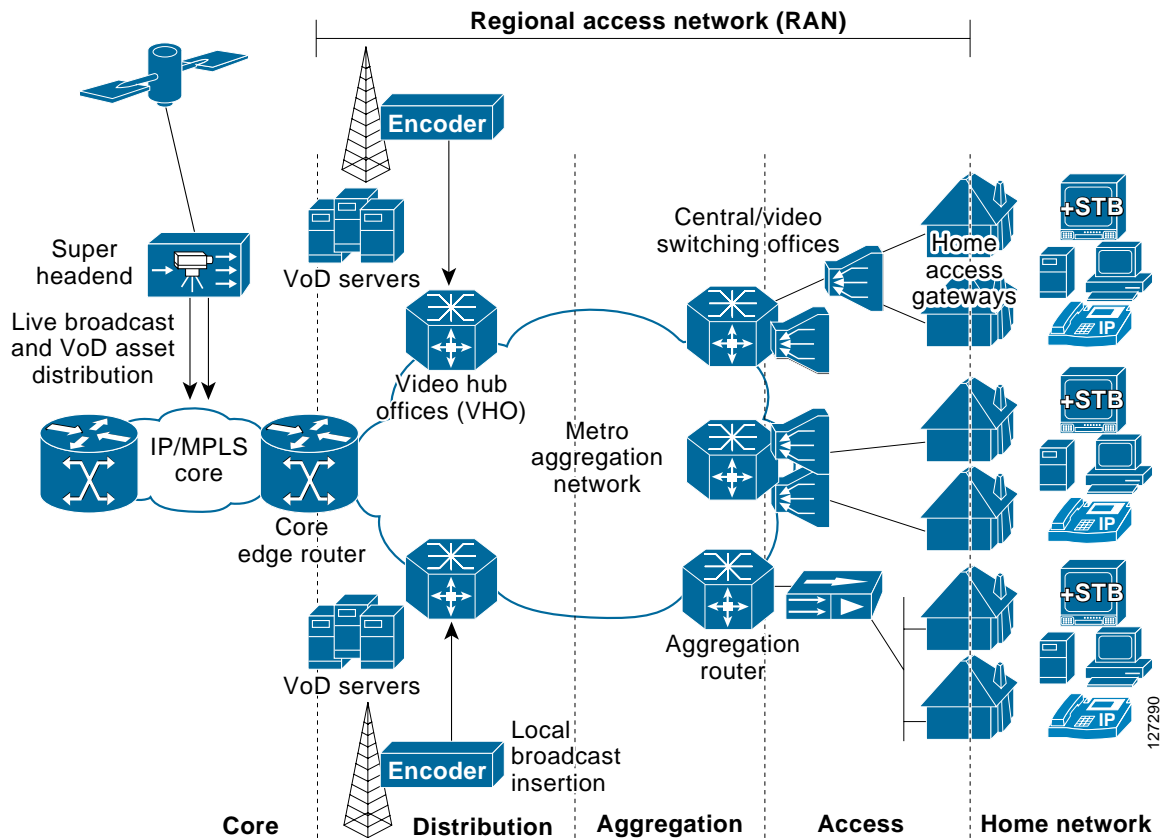
The regional access network, or RAN, consists of distribution, aggregation, and access layers. There is one SHE per region or network, and one VHE per metropolitan area. A distribution edge router (DER) provides transport for video traffic between the IP/MPLS core network and the VHO. The real-time encoder 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 home access gateways, or HAGs.



Note

MultiProtocol Label Switching (MPLS) was not formally tested as part of the first release of the solution.

Figure 1-1 Cisco GOVoBB Solution Transport Architecture: Generic View



Note

For a detailed discussion of the transport architecture, see [Chapter 2, “Video Application Components and Architecture.”](#)

In Scope

The scope of the solution comprises fully tested and supported Cisco components, as well as third-party components tested and supported by Cisco. The following aspects of the solution are fully tested and supported:

- Unidirectional optical transport network for video streams, with 1-GE drop-and-continue, asymmetric switching, and unidirectional link routing (UDLR)
- 10-GE symmetric switching
- Ethernet switching and routing at VHO and VSO interfaces
- Network and element management



Note

Management is provided through the Cisco IOS command line interface (CLI) only. See also [Operational Support Systems, page 1-4.](#)

- Multiservice fully converged backbone based on a ring or hub-and-spoke design

Table 1-1 summarizes the correspondence between site types and their transport network types.

Table 1-1 Site Types and Their Transport Network Types

Site Type	Super Headend	Video Headend Office	Video Switching Office	Residence
Transport Network Type	Core	Distribution	Aggregation	Home network

Out of Scope

Not included in the scope of the solution, but still required to support triple play, are items such as subscriber device authentication for one or more of the other nonvideo services. In addition, the architecture of this release places minimal requirements on the DSLAM. This allows the solution to work with as many third-party DSLAMs as possible.

This first release of the solution, which focuses on the metro/distribution-to-subscriber portion of the network, does not specify a transport architecture or test results for video transport over an MPLS core network. Instead, it uses a simplified topology in which the video components associated with the SHE and VHOs are both attached to the DER.

Solution Components

Cisco Equipment

Release 1.0 consists of core Cisco components that are tested, documented, and fully supported by Cisco. Also, third-party equipment, although not fully supported by Cisco, has been selected and tested in conjunction with the core components, to increase the number of test cases and improve the overall quality of the solution in practical networks. The following Cisco equipment has been tested in the context of the solution:

- Cisco 7609
- Cisco Catalyst 6509
- Cisco Catalyst 4948-10GE
- Cisco Catalyst 4510R
- Cisco Catalyst 4507R



Note

For the details of solution components, see [Solution Components, page 3-3](#).

Third-Party Equipment

For this release of the solution, [Table 1-2 on page 1-4](#) lists the third-party vendors and the basic functionality they provide. (For detailed descriptions of video functions, see [Video Application Components, page 2-1](#).)

Table 1-2 Component Partners and Basic Functionality

Vendor	Basic Functionality
Kasenna www.kasenna.com	VoD server Middleware
Amino www.aminocom.com	Set-top box
Ericsson www.ericsson.com/	DSLAM, residential gateway

For more detail, including product names and part numbers, see [Table 3-1 on page 3-3](#).

Miscellaneous Solution Support

This section clarifies the degree to which other aspects of the solution and its implementation are supported in this first release.

Operational Support Systems

Release 1.0 does not certify element management systems (EMSs) or network management systems (NMSs) operated within the context of the Cisco GOVoBB architecture. Customers continue to provide such capabilities as applicable to their particular environments. All the management information base (MIB) components for the Cisco equipment are available from Cisco, and can be incorporated into the customer's current EMS.

Billing

Billing is outside the scope of this first release of the solution.

EMC

Release 1.0, with all its platforms, accessories, and components, complies with applicable electromagnetic compliance (EMC) standards.

Safety

Release 1.0, with all its platforms, accessories, and components, complies with applicable safety standards.