Cisco TelePresence Exchange System

The Cisco TelePresence® Exchange System is a flexible telepresence and business video services-creation platform that enables service providers to develop and deliver a broad portfolio of cloud-based managed and hosted telepresence services for next-generation cloud-based business telepresence solutions. Using the Cisco TelePresence Exchange architecture, service providers can expand their revenue streams by extending their network and conferencing services portfolio with a range of advanced media services such as multimedia conferencing, interoperability services, recording and streaming, and new high-touch services such as personalized concierge and white-label wholesale services.

Challenge

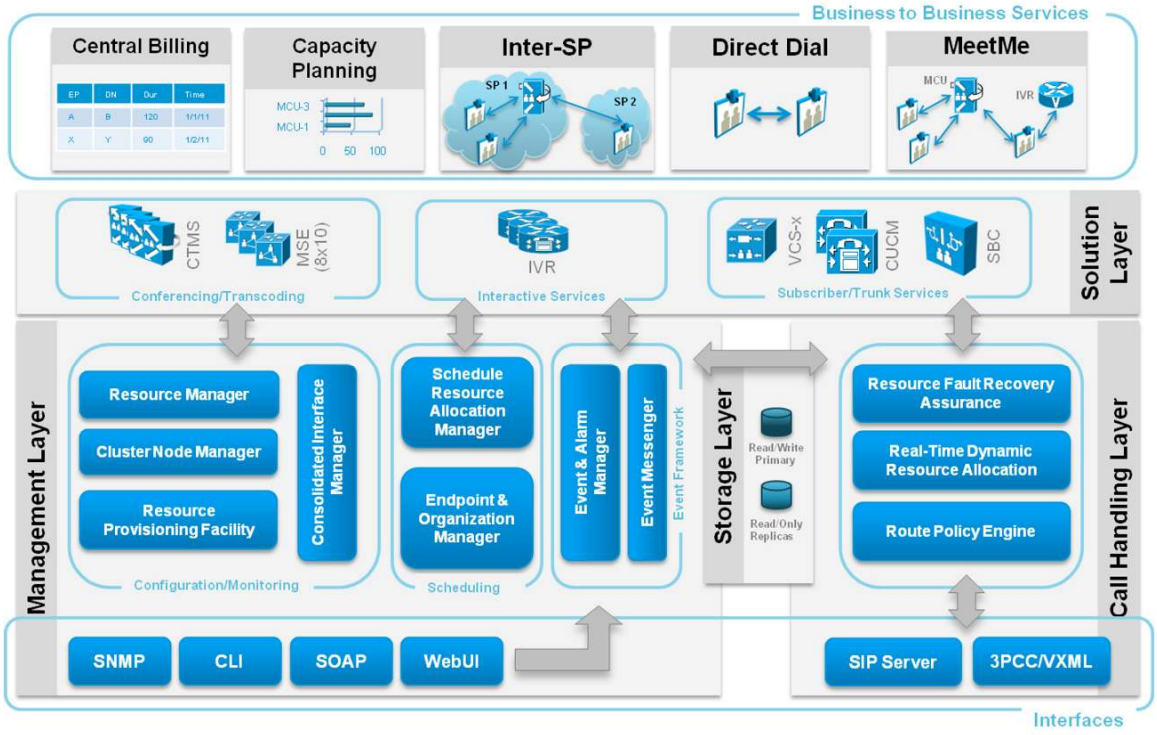
Service providers operate under tremendous pressure to continually offer new collaborative applications that help companies cut costs, improve collaboration, and realize operational efficiencies while accelerating demand for premium network services.

It is well understood that offering effective ways for enterprise subscribers to collaborate with their customers, partners, and suppliers leads to sustaining high usage and perceived value of premium bandwidth services. The Cisco TelePresence cloud-services approach is a critical part of creating a solid service-differentiation strategy and gaining time to market advantage to launch successful managed and hosted Cisco TelePresence Exchange services and solutions.

Solution

Cisco has developed a superior way to enable organizations to connect with their customers, partners, and suppliers using Cisco TelePresence technology. The Cisco TelePresence Exchange System integrates full-high-definition video, advanced audio, and interactive collaboration tools with the underlying network as the platform to deliver immersive meeting, interoperability, and advanced media services to enhance telepresence collaboration experiences. Through this powerful combination of technology and design, local and remote participants feel as if they are in the same room. Cisco's approach to enabling service providers to deliver cloud-based managed and hosted Cisco TelePresence experiences is to offer a telepresence service-creation platform that enables delivery of a full suite of services to their customers. The solution is built on an end-to-end network architecture that is designed for delivering the superior level of performance, security, and reliability needed to preserve the Cisco TelePresence quality of experience (QoE) across enterprise boundaries (Figure 1).

Figure 1. Cisco TelePresence Exchange System Solution Architecture



Cisco has designed a flexible and modular platform that allows service providers to start with a foundation for media and session handling necessary to deliver basic Cisco TelePresence network services and expand their service options to include a feature-rich portfolio of advanced media and conferencing services. Using the Cisco TelePresence Exchange System platform, service providers can expand their service offerings to include services such as dynamic meet-me multimedia conferencing and any-to-any interoperability with standard- and high-definition (SD and HD, respectively) video conferencing systems and other collaboration applications. The Cisco solution is a flexible service-creation platform that enables service providers to deliver value-added Cisco TelePresence applications (for example, directory and scheduling) to their customers as hosted services and use policy- and resource-management capabilities to optimize network resources and enable differentiated service levels to meet targeted customer segment requirements and deployment models.

Cisco TelePresence Services include the following:

- Managed Cisco TelePresence services:
  - Managed Cisco TelePresence Service
  - Hosted Cisco TelePresence Service

    Call-control infrastructure in the cloud

    Additional line-side services and voice services
  - Gateway-only services
  - Concierge services

- Conferencing and bridging services:
  - Multimedia conferencing or meet-me conferencing

    Dynamically allocated bridge and personal identification number (PIN)

    Personal bridge and PIN
  - Interoperability services (HD and SD video)
  - Concierge services
- Advanced media services:
  - Network-based recording
  - Network-based streaming services
  - Messaging services
- Specialized and industry services (enabled through an open application programming interface [API]):
  - Video concierge services
  - Live desk support services
  - Industry: Virtual healthcare, virtual learning, etc.
- Service targeted by segment
  - Basic small and medium-sized business (SMB) services
  - Premium enterprise services
  - Wholesale services

    Service provider interconnect and advanced media
- Public Cisco TelePresence Suites:
  - Hosted and enterprise service model
  - Enterprise interconnect

The Cisco TelePresence Exchange System solution delivers the following critical capabilities that are required to deliver business-class hosted and intercompany telepresence service experience:

- Reliable: Builds on the proven Cisco® IP Next-Generation Network (IP-NGN) architecture, and offers service providers carrier-class performance, availability, and resilience from enterprise-class elements.
- Secure: Extends a company's secure environment beyond its enterprise boundaries, providing authentication and media encryption capabilities, masking the enterprise's internal IP addresses and network topology and enforcing access control lists (ACLs) and policy controls.
- Scalable: Multitenant solution designed to support multiple customer segments and meeting types, scales to support large multipoint meetings and deliver network-based interoperability subscriber services; is optimized for global geographic reach, including to public Cisco TelePresence Suites.
- Easy to use: Maintains the simplicity of Cisco TelePresence features, such as "one button to push" to initiate meetings, allowing you to meet with others quickly and easily; also provides scheduling services to reserve resources for intercompany and hosted intracompany calls.
- Integrated network: Uses a network- and topology-aware architecture for quality of service (QoS) and bandwidth needed to preserve the Cisco TelePresence QoE across different enterprise and service provider networks while taking advantage of a distributed architecture to optimize network economics and the customer in-meeting experience.

- Flexible and modular network architecture: Allows service providers to start with a foundational intercompany Cisco TelePresence architecture and expand their service offerings by licensing additional modules and including additional components as needed.
- Open and extensible: Designed to be an open architecture that offers the following benefits:
  - It enables service providers to deliver interprovider Cisco TelePresence connections, including standardized architecture for interprovider QoS and support management.
  - Standards-based APIs customize and differentiate service provider services through a set of video applications such as scheduling, directory, and concierge services, and address the need for service lifecycle and workflow integration across business and operational support systems.

The Cisco TelePresence Exchange System takes advantage of open standards, such as H.323 and Session Initiation Protocol (SIP), to deliver network-based interoperability services for SD and HD video conferencing systems and other collaboration applications.

Solution Benefits

Service provider benefits of Cisco TelePresence Exchange solutions include:

- The system generates new service revenue streams for premium bandwidth services from existing Multiprotocol Label Switching (MPLS) VPN footprints for expanding collaboration.
- The system integrates with the underlying IP NGN for easy, rapid deployment and operations management.
- The system supports network-based Cisco TelePresence interoperability with traditional video systems or other telepresence solutions using the Cisco TelePresence MSE 8000 Series in multitenant provider architectures for optimum service scalability and reach.
- The system supports cascading links and intelligent routing decisions based on endpoint type, resource availability, and performance service-level agreements (SLAs).
- The system conforms to a policy- and resource-management framework for interprovider connectivity, facilitating the process by which service providers can peer their networks with other service provider partners' networks with the intent of increasing the service reach for their business customers.
- The system provides a centralized control point for management, billing, and administration, with real-time call-detail-record (CDR) reporting for all calls traversing the exchange solution. With a single point of collection for call information, service providers can easily aggregate and correlate call information from multiple sources to facilitate the billing process for end customers and revenue settlement with other service provider partners.
- The solution optimizes initial infrastructure capital by using a "pay-as-you-grow" flexible licensing model to reduce barriers to entry and better align costs to revenue.
- The system enables the creation of differentiated telepresence and business video services through a flexible service-creation platform.
- The system provides the scalability and reach to deliver services to customers and users across the globe.

User benefits of the Cisco TelePresence Exchange System and provider services include:

- Extends as-a-service model for Cisco TelePresence deployments to accelerate the benefits and competitive advantage of immersive collaboration with Cisco TelePresence technology to enterprise

customers trying to avoid major initial capital expenditures (CapEx) and operating expenses (OpEx) investments.

- Avoids the cost of building and managing a separate overlay network by using the company's existing network and service provider connection to extend Cisco TelePresence meetings beyond the enterprise boundary.
- Maintains the simplicity of Cisco TelePresence features such as "one button to push" to initiate meetings, making Cisco TelePresence meetings as simple as making a phone call.
- Provides multiple levels of security in intercompany communication traffic across different enterprise and service provider networks.
- Extends collaboration benefits to customer and partner engagements through hosted video communities.
- Extends collaboration reach to a wide range of video endpoints without sacrificing users' QoE.

Solution Delivery

The Cisco TelePresence Exchange System is an integrated telepresence service-creation platform designed for service provider partners interested in offering flexible and converged cloud-based telepresence services to target new revenue opportunities. It delivers a consistent user experience across enterprise and service provider boundaries and enables the quick deployment of secure cloud-based services such as hosted and managed telepresence and HD and SD multipoint conferencing.

With the Cisco Developer Network and the Web 2.0-enabled open API, service providers receive an unparalleled opportunity to align their cloud-based managed and hosted Cisco TelePresence service practice with their business model to support new and expanded options for telepresence service, including:

- Rapidly bring your Cisco TelePresence Exchange service to market by engaging with third-party application providers to deliver customized elements of your envisioned service
- Accelerate the growth of new subscribers with access to an easy-to-use customer portal for your Cisco TelePresence Exchange service
- Expand usage of Cisco TelePresence meetings with robust call-accounting tools measuring return on investment (ROI) and simple interfaces for scheduling meetings

The Cisco Developer Network brings together an ecosystem of partners that can help service providers with customized scheduling interfaces and call-accounting solutions designed to measure ROI of a customer deployment and speed the delivery of premium service-offerings options for managed and hosted telepresence services.

The following APIs are currently supported, each with an independent web services definition (Web Service Description Language [WSDL]):

- Scheduling API: This API allows developers to schedule and manage telepresence meetings within and across enterprises
- CDR APIs: This |API allows developers to easily retrieve and manage call records for usage analysis, ROI, and measurement

The Cisco TelePresence Exchange System exposes a set of standards-based APIs to address the need for service lifecycle and workflow integration across business and operational support systems. Based on proven technology and powered by a fully redundant and horizontally scalable architecture, it delivers an open, scalable, and robust multitenant solution that can grow in scale and functions based on service needs.

Service provider benefits include:

Reduced internal service readiness test and development overhead with proven platform for video service creation:

- Rapid deployment of new collaboration services and applications with open API support to allow service providers to customize and differentiate their services with company-developed and partner applications
- Enhanced service value and reduced initial investment and time to market with Cisco scheduling and directory applications
- Broad deployment support capabilities for SD and HD video interoperability
- Web-based interfaces for exchange and subscriber management, provisioning, troubleshooting, reporting, and system monitoring

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