

InfoVista Unified Communications Assurance Solution

Ensuring Delivery of High-Quality Unified Communications Services

The Challenges of Unified Communications Service Delivery

We live in an age where the speed and ease with which enterprises can communicate, share information, and collaborate is growing more and more important to their business success. Unified communications (UC) solutions offer them the promise of simplified business communication, enhanced productivity, and reduced costs by eliminating boundaries between fixed-line phones, mobile devices, and messaging systems.

But deploying UC technologies and services—whether executed, administered and maintained by the enterprise itself, as a service by a managed service provider (MSP) or on a hosted service provider (HSP) platform—is no simple task. The enterprise desires the benefits of unified communications with minimum management headaches or disruptions to daily business operations. The service provider is driven by the objective to generate revenue from UC services while effectively delivering them. Each must address a common set of challenges and requirements associated with ensuring high-quality UC services. These include:

The complexity of the UC infrastructure environment:

Unified voice, email, messaging and conferencing applications combined on the same infrastructure bring an unprecedented level of complexity. It is more difficult to effectively manage unified communications because it is an integration of multiple applications made up of disparate hardware, software, operating systems, and network elements—all with differing performance and capacity indicators that need to be cohesively monitored for their contribution and impact on UC service quality.

UC service quality assurance for end-user satisfaction:

UC service performance issues do not merely slow real-time applications—they can make them unusable. Users will have little tolerance for poor IP telephony call quality or a Web/video conferencing experience that negatively impacts their business interactions, so providers must have the means to monitor the quality of the user experience. Without this capability, they will find it harder to meet their customers' service-level expectations. For the MSP or HSP, this can result in lost revenue from customer churn or penalties. For enterprise IT staff, there's

the risk of the UC services management being outsourced if quality is not maintained.

Difficulty in managing and reporting in a multi-tenant UC services environment:

Managed service providers, hosted service providers and enterprises all operate in organizationally hierarchical environments, where multiple customers—each with additional layers of end users, business units, and locations—will be the service recipients. Accordingly, the provider and its customers need the ability to view UC service performance data from these grouping perspectives. In addition, if specific divisions or locations require a higher quality of service, the provider must be able to differentiate by customers, business units and locations, and monitor against each group's specified service level.

Especially in the shared infrastructure environment of managed or hosted UC services, the collection, segregation, analysis, and presentation of performance data in support of these multiple tiers of "tenants" is a complex but necessary task for accurate service performance management and reporting. Without tools inherently designed for this environment, providers end up with an inadequate degree of visibility to do service-level monitoring and troubleshooting, or they resort to time-consuming, individualized performance management deployments, either of which increases the cost of management for the UC services.

An understanding of service usage patterns for effective service growth and resource planning:

Because a UC service can be adversely affected if the underlying resources are over-utilized, service providers need to proactively monitor traffic growth and utilization of all UC components to ensure that the UC services provided to their customers stay at optimum performance levels.

InfoVista's Unified Communications Assurance Solution

InfoVista offers a focused unified communications assurance solution that enables UC service providers to address the aforementioned challenges and requirements. The solution provides a complete set of capabilities for managing and monitoring the unified communications environment, including unified IP telephony, messaging, and conferencing services. Encompassing proactive monitoring, real-time troubleshooting, performance reporting, capacity planning functions, and a multi-tenant architecture, it equips HSPs, MSPs, and enterprise IT with the pertinent and timely information needed to effectively manage the performance of UC services and provide a high-quality user experience. This carrier-class, service-centric performance management solution includes two integrated InfoVista products—the Unified Communications Knowledge Pack and Voice Data Manager.

InfoVista's **Unified Communications Knowledge Pack** simplifies the process of managing the complex UC infrastructure environment by providing a cross-silo, holistic, and multi-tenant view of the wide array of interdependent UC resources. This includes visibility into network, server and database components, as well as the UC applications, such as call management applications, messaging applications, and voice gateways. As an add-on module that interoperates with InfoVista's award-winning Vistalnsight® for Networks, the Unified Communications Knowledge Pack provides the benefit of a common performance management platform for both UC services and IP/MPLS-based services. This maximizes the provider's return on investment in an OSS tool, keeps the total cost

of ownership and management of new services down, and increases operational efficiencies by leveraging personnel's existing skill-sets.

With the **Voice Data Manager** option of InfoVista's 5View™ Service Data Manager, providers can leverage high-performance, real-time service usage data processing capabilities to get full visibility into the voice and call quality indicators that reflect the experience of various customers and business units. This information enables the provider and customer to effectively monitor the UC service and assure that voice and call quality meets customer expectations. Furthermore, Voice Data Manager offers the service provider and customer the ability to view aggregated business and service metrics and drill down to the details of each individual call when necessary, for efficient troubleshooting of call quality issues.

Inherent in InfoVista's unified communications assurance solution is advanced service modeling capabilities that understand the relationships between the UC-related resources and the services and multiple tiers of customers, business units, and locations they support. This ability for analysis and presentation of UC services data from a multi-layer, multi-dimension model allows for comprehensive and focused views of UC service performance. Thorough security capabilities allow the provider to filter visibility of the performance data to the appropriate end customers, users, or groups. These features, along with powerful, effective methods to collect, store, and manage massive amounts of data makes InfoVista the solution to meet the carrier-grade, multi-tenancy requirements of managed and hosted UC service environments.

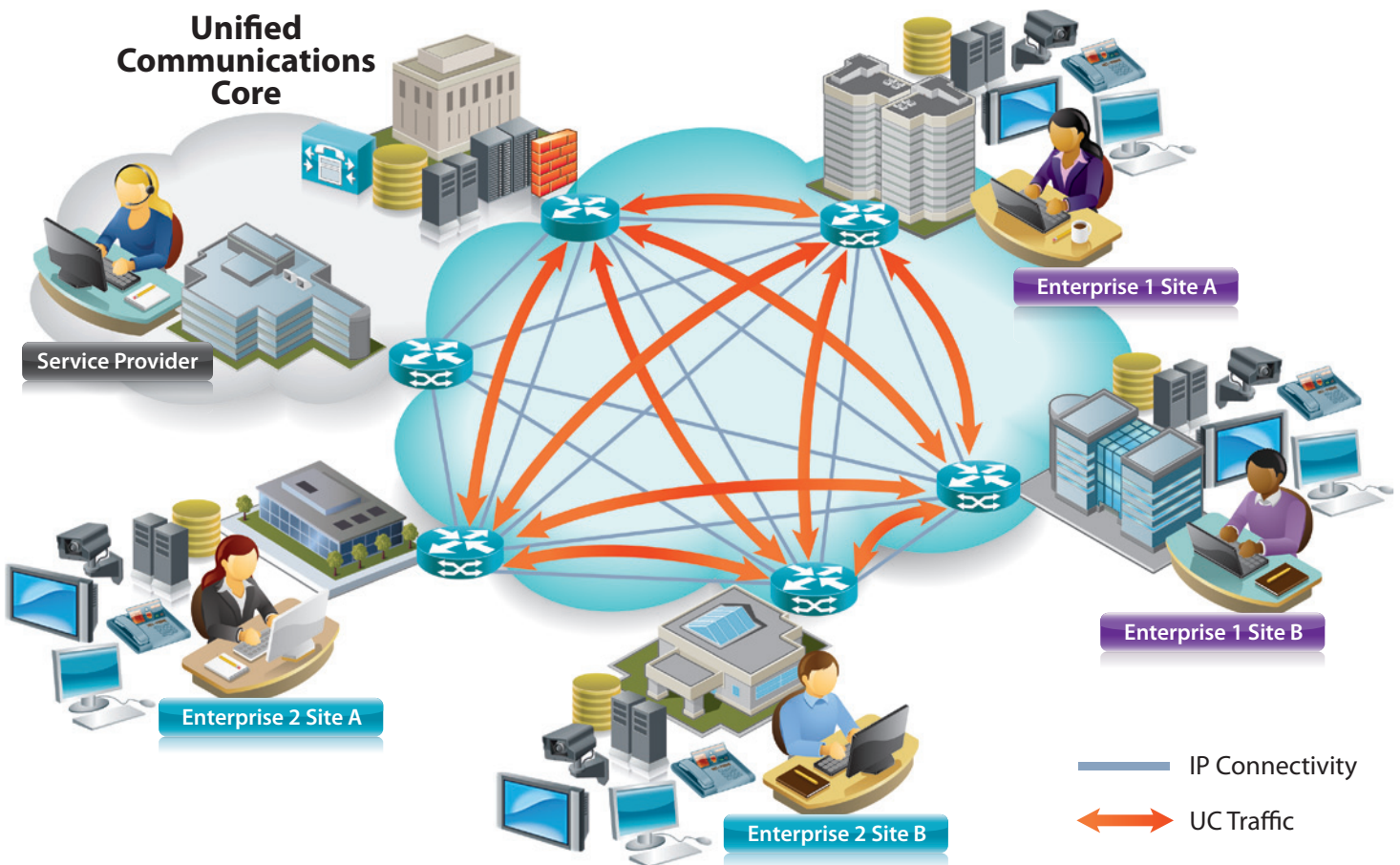


Figure 1. Hosted Unified Communications Services Environment

A cross-silo, holistic view of the UC environment is provided through reports and metrics on voice and call quality for IP telephony, unified messaging and conferencing applications, and UC resource health and network performance. These reports offer the actionable information for efficient day-to-day management of UC services, and their out-of-the-box nature make InfoVista's unified communications assurance solution quick to deploy. The solution's ability to aggregate call traffic data and present it in the context of a business's organizational groupings, such as by executive users, customer service, sales or finance, provides the means to truly assess service performance from the user perspective, allowing staff to react quickly when critical departments are affected, and perform usage-based troubleshooting to resolve call quality issues.

Capacity management reporting provides the ability to monitor traffic growth and utilization of all UC components over time, enabling timely upgrade and rightsizing activities. Such reporting, as well as exception alerting, enable a proactive approach to UC service performance management. The solution makes it possible for service operations staff to avoid many service-impacting issues rather than just react to problems after they occur. When issues do occur, built-in workflows and intuitive navigation that enables users to drill down from a bird's eye view to granular, technical details streamline problem resolution, thereby lowering support costs and increasing service reliability.

Table 1. Features and Benefits of the InfoVista Unified Communications Assurance Solution

Features	Benefitting Role	Benefits
Carrier-class multi-tenant architecture <ul style="list-style-type: none"> Multi-tiered customer/service modeling—on a single instance of InfoVista's UC assurance solution Analysis, presentation, and hierarchical navigation by organizational tenant groupings and sub-groupings Easy-to-configure user security and automated filtering for personalized access 	<ul style="list-style-type: none"> ✓ OSS Architect ✓ Product Management 	<ul style="list-style-type: none"> ✓ Increases the ease of deployment and commercial management of performance assurance for hosted and managed UC services ✓ Enables customer-specific, portal-based views
Cross-silo, holistic view of the entire UC services environment, including the network, servers, applications, and services Business contextual analytics Visibility into performance indicators through a "single pane of glass" view	<ul style="list-style-type: none"> ✓ Network Operations ✓ OSS Architect 	<ul style="list-style-type: none"> ✓ Increases operational efficiencies with a single unified toolset and business organizational views that allow staff to focus on what's important ✓ Expedites prioritization, troubleshooting and resolution of performance issues by enabling staff to quickly pinpoint the source of an issue ✓ Reduces complexity and costs of monitoring the disparate UC environment
UC service monitoring and reporting <ul style="list-style-type: none"> Voice and call quality Messaging and conferencing quality Call and voice quality down to individual calls 	<ul style="list-style-type: none"> ✓ Engineering ✓ Product Management ✓ Service Operations 	<ul style="list-style-type: none"> ✓ Enables service provider to effectively monitor UC service performance and assure a quality user experience, facilitating high customer satisfaction ✓ Offers the means to uphold SLA commitments from the perspective of the service
UC core monitoring and reporting <ul style="list-style-type: none"> UC network device, server and application performance 	<ul style="list-style-type: none"> ✓ Engineering ✓ Network Operations ✓ OSS Architect 	<ul style="list-style-type: none"> ✓ Provides cohesive visibility into UC resources, increasing the efficiency of day-to-day performance management
Out-of-the-box metrics and reports across InfoVista's unified communications assurance solution platform	<ul style="list-style-type: none"> ✓ Engineering ✓ Operations ✓ OSS Architect 	<ul style="list-style-type: none"> ✓ Enables faster time to market and deployment of UC services ✓ Operational and customization costs are reduced via an out-of-the-box solution
Capacity management <ul style="list-style-type: none"> Tenant-based service and network planning Trending and forecasting indicators across the UC infrastructure 	<ul style="list-style-type: none"> ✓ Engineering ✓ Product Management 	<ul style="list-style-type: none"> ✓ Facilitates more effective service growth and resource planning ✓ Optimizes CAPEX by accurately forecasting when a UC infrastructure upgrade or expansion is required ✓ Enables proactive monitoring to catch and address degradation before service quality is impacted
Scalability—powerful data collection and analysis architecture that scales to support hundreds of thousands of UC user devices while minimizing management traffic on the network	<ul style="list-style-type: none"> ✓ OSS Architect ✓ Engineering 	<ul style="list-style-type: none"> ✓ Suitability for carrier-grade environments ensures that service providers can successfully and economically roll out UC services to large numbers of clients in hosted and managed service environments ✓ Provides detailed visibility into UC service performance without losing the details or sacrificing performance
Embedded workflows, intuitive navigation and drill-down capabilities Early warning alerting of impending capacity or performance degradation Ability to integrate with fault management systems and other IT service management components	<ul style="list-style-type: none"> ✓ Network Operations ✓ Service Operations ✓ OSS Architect 	<ul style="list-style-type: none"> ✓ Points staff to the highest priority issues, allowing them to focus on the customers, business divisions/locations that require immediate or near-future attention ✓ Speeds problem identification and preemptive resolution ✓ Reduces total cost of ownership
Integration with InfoVista's award-winning Vistalnsight for Networks	<ul style="list-style-type: none"> ✓ Network Operations 	<ul style="list-style-type: none"> ✓ Increases operational efficiency and optimizes capital expenditures by utilizing a unified toolset to manage multiple service offerings in a common environment

Prerequisites and Compatibility

Unified Communications Knowledge Pack

VistaInsight for Networks 3.1 with VistaFoundation® Kit 4.1 SP1

Voice Data Manager

5View Service Data Manager 3.0

Supported Unified Communications Applications

The InfoVista unified communications assurance solution monitors the following vendor applications and device release levels:

Application/Device Type	Vendor Application/Device	Version
Call manager	Cisco CallManager (CCM), Cisco Unified Communications Manager (CUCM)	CUCM 5.0, 5.1, 6.0, 6.1,7.0, 7.1.2 ¹
Messaging	Cisco Unity	Unity 4.0.4
Firewall	Cisco ASA 5550	ASA5550-k8 v8.0(4)
Gatekeeper	Cisco 3825	IOS 12.4 (23)
Conference bridge	Cisco ISR 3845	IOS 12.4 (16) Crypto
PSTN media gateway	Cisco AS5400 XM	IOS 12.4(15)T
PSTN gateway	Cisco PGW Softswitch	PGW 9.7(3), 9.8(1)
PSTN gateway H.323 interface	Cisco HSI	PGW2200-HSI 4.3(2)
Billing	Cisco BAMS	BAMS 3.30
SBC	Cisco ASR1000	IOS XE
Provisioning manager	VisionOSS USM	BVSM v7.1
Messaging	Movius Application Server	Software v 4.2
Messaging	Movius Media Server	Software v 4.1
Messaging	Movius NetApp	Software 7.1
Database	Microsoft SQL Server	2000 SP3a
Email	Microsoft Exchange	5.5 and 2003
LDAP	Microsoft Active Directory	5.0 SP4 (2195)
Web server	Microsoft IIS	6.0

Note¹ - Voice Data Manager has been tested against CUCM version 7.1 only.



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