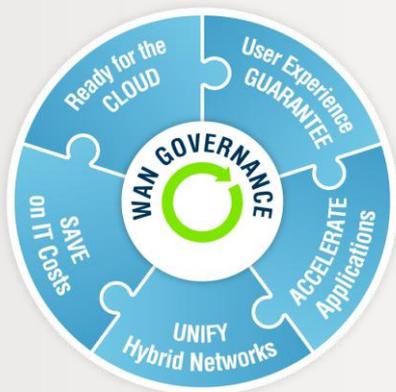




Voice/Videoconferencing

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The Ipanema System specifically addresses the key requirements of a successful Voice/Videoconferencing deployment over the WAN:

- It automatically recognizes the voice and video flows and the underlying CODECs;
- It takes into account the characteristics and requirements of each CODEC;
- It protects the real-time flows against any network impairments caused by the competition for network resources;
- It gracefully integrates new flows into the existing application mix (email, ERP, Desktop Virtualization...).

ENSURING THE SUCCESS OF ENTERPRISE VOIP, VIDEOCONFERENCING AND TELEPRESENCE

Voice over IP (VoIP) is part of modern enterprise IT. Questions surrounding the Return on Investment (ROI) of IP Telephony deployment of inside the enterprise no longer exist. Many large organizations have smoothly and progressively migrated to IP based telephony as their communication needs have evolved.

Enterprise use of video through videoconferencing has always carried a strong ROI potential. Videoconferencing adoption has entered a new era. The perception of participant's presence through high quality video and audio (referred as telepresence) has reached the level where videoconference is a true alternative to travel. The underlying savings potential is huge.

More than other critical applications both videoconferencing and IP Telephony rely fully on the WAN capabilities. Both use the same protocol sets for carrying data: the real-time Transport Protocol (RTP). Because they are real-time by nature, applications using RTP generate network flows that are highly sensitive to network delay, loss and jitter.

Voice and video also introduce a new communication model across the WAN. Calls or conferences involve communications that often take place between branches and not between a branch and a datacenter as with other traditional applications.

These real-time and meshed flows require next generation WAN optimization technologies to guarantee their performance and to make them as easy to handle as any other business critical application.



APPLY TO ALL RTP BASED VOICE OR VIDEO SOLUTIONS

- Polycom, Tanberg, Microsoft, LifeSize...
- CISCO, Alcatel-Lucent, Avaya...





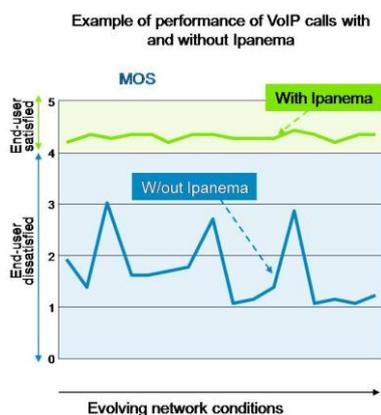
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TECHNICAL CHALLENGES

- Voice and video flows require guaranteed access to bandwidth, to deliver good quality of experience.
- Even more importantly, as they are real-time in nature they require the lowest possible transit delay, lowest possible jitter and minimal packet loss rate over the network.
- Real-time flows are not properly handled by traditional WAN optimization solutions that simply “by-pass” them.
- Branch to branch communications generate so called “meshed flows” that cannot be controlled without global coordination between optimization devices.
- As a result, enterprises today are reluctant to have their voice and video flow converged into a unified infrastructure and they use inflexible and costly static partitions in the form of dedicated Class of Service.

FEATURES

Ipanema’s Autonomic Networking System ensures the success of **Voice over IP (VoIP) and Videoconferencing**. The corresponding features being totally automatic, they scale up to the largest deployment:



Voice and video quality reporting (MOS and AQS)

- **Classification** of RTP based flows. Ipanema dynamically recognizes voice or video RTP flows including their CODEC in order to apply tailored performance objectives to them;
- **Global optimization** of the whole traffic mix by dynamically managing competition between each flow over the entire network. Branch to datacenter and branch to branch communications are all taken into account; the behavior of the network toward all business critical applications is guaranteed without the need to statically reserve bandwidth, including for voice and video flows;
- Ipanema takes the **specific nature of voice and video flows** into account. On top of bandwidth requirements per each active user, the sensitivity to delay, jitter and losses is taken into account by Ipanema’s Optimization mechanisms;
- Precise **reporting** on the WAN contributes to the Quality of Experience using: Ipanema’s Application Quality Score (AQS) that takes into account the impact of all network impairments (one way delay, loss, jitter) and makes it perfect for Video quality monitoring; ITU’s Mean Opinion Score (MOS) using the standard E-Model in combination with ultra-precise measurement of each packet;
- Delivering (through the Rightsizing feature) precise information about the **real bandwidth requirements**, (present and future), associated with business critical applications including voice and video flows;
- Providing a complete framework to enable all services:
 - **Anytime**: Real-time and fully automated adaptation to changes in the application or in the network environment;
 - **Anywhere**: thanks to its Tele-Optimization concept, Ipanema delivers its benefits over the whole network without the need to equip all sites;
 - **Anyway**: Ipanema simultaneously optimizes the performance of all applications whether they be data transfers, interactive (such as virtual desktops), or real-time (such as voice or video).

CUSTOMER BENEFITS

- The performance of voice, video as well as all other business critical applications is **guaranteed** across the whole, converged WAN, whatever happens in the network;
- The network contribution is constantly **aligned with enterprise’s business goals** regardless of the complexity of the application mix and of the traffic matrix;
- The **telecommunications costs** involved with the deployment of voice and video are streamlined and fully under control;
- The WAN’s contribution to voice and video **quality of user experience** is precisely proven and reported;
- Completely **governed**, the WAN becomes a predictable asset on which the enterprise can fully rely.