

# EASY TO USE, FEATURE RICH, SECURE AND RESILIENT COMMUNICATIONS



## NORTEL

### Nortel Best Practice

#### Audio conferencing that is always available

##### Executive summary

The word “ubiquitous” perfectly describes our always available audio conferencing environment at Nortel. The defacto standard for communications, audio conferencing is a business essential with its reservation-less functionality that allows thousands of Nortel employees to pick up a phone and conduct virtual meetings across geographies and time zones.

Each month Nortel employees conduct 20 million minutes of audio conferencing, which represents approximately 62 percent of the total voice traffic at Nortel. It is the largest voice service Nortel IT offers in regards to employee usage.

Like other IT services, audio conferencing can be provided via a hosted service, managed service or operated in-house. In the early 2000s, Nortel was spending approximately \$8 million annually on reservation-less audio conferencing services through an external service provider. It was provided using a combination of hosted and managed service with the service provider managing the audio conference bridges on our premises in addition

to hosting operational, administration and management of equipment at their premises. While the service was effective at providing the required audio conferencing coverage, it did not support our goal to reduce costs and increase operational efficiencies.

In 2004, we transitioned from hosted/managed audio conferencing to an internally operated solution using components from Nortel’s Communication and Application Server portfolio; specifically, the [Multimedia Communications Server \(MCS\)](#) with

##### Reader ROI:

- Provide an audio conferencing solution that is always available, easy to use, low cost, feature-rich, secure and scalable
- Global delivery of audio conferencing based on a single system with built-in resiliency and redundancy



**Media Application Servers (MAS)** to support the Multimedia Conferencing requirements.

As a result, we achieved ROI within eight months and provided our employee with always-available (or reservation-less) audio conferencing that is easy to use, low cost, feature-rich and secure. The Nortel solution is SIP-based and allowed us to also deploy desktop video conferencing and web/document conferencing.

Today we have eight regionally located Media Application Servers (MAS) that provide reservation-less audio conferencing to employees in over 200 locations in 60 countries. In addition, we have a single contingency MAS audio conferencing bridge that provides redundancy in the event of a MAS bridge failure at one of the other eight locations.

This best practice describes why Nortel Multimedia Communications Server with MAS and Multimedia Conferencing was chosen as the technical solution for our audio conferencing environment.

## Business challenge

With thousands of employees located in 220 locations across 60 countries around the world, audio conferencing has become the de facto standard for team meetings, project reviews and customer presentations. The way Nortel IT provides audio conferencing has changed over the past few years.

In the early 2000s, Nortel outsourced their audio conferencing to an external service provider. The service was provided using a combination of hosted and managed service with the service provider managing the audio conferencing bridges on our premises, while hosting at their premises the operations,

administration and management of equipment and service. While the service was effective at providing the required audio conferencing coverage, it did not support our goal to reduce costs, increase operational efficiencies and take advantage of Nortel's SIP-based technology. Specifically, we needed to:

- **Find a way to lower IT spend on audio conferencing environment:** Nortel IT was spending approximately \$8 million annually to an external service provider for audio conferencing services. To reduce IT spend, we built an excellent business case justification to transition from the outsourced service to an internally operated audio conferencing environment.
- **Ensure audio conferencing is easy to use and always available for employees:** Up to 10 percent of Nortel employees use audio conferencing simultaneously every day. Given its popularity, audio conferencing needed to remain easy to use, reservation-less, and require little or no intervention from IT.
- **Leverage Nortel's IP network for least cost delivery:** The audio conferencing solution should take advantage of Nortel's existing voice over IP (VoIP) infrastructure running unified communications and the ability for desktop video conferencing and web/document conferencing.
- **Build hardware, network and geographic resiliency into the environment:** With continuous service in mind, resiliency needed to be engineered into the audio conferencing environment in the event of planned or unplanned outages.
- **Ensure coverage for large broadcast requirements:** Less than 10 percent of all audio conferencing events at Nortel involve more than 50

participants. These large broadcast events are infrequent but are needed for Nortel product launches, corporate announcements, global training sessions and other special events.

## Solution

In 2004 Nortel IT decided to transition to an internally supported, reservation-less audio conferencing system based on a single system — the **Nortel Multimedia Communications Server (MCS)**. The system is integrated into over 130 individual PBX systems globally with **Media Application Servers** supporting the **Multimedia Conferencing** requirements. As a result, we achieved ROI within eight months and provided our employees with always-available audio conferencing that is easy to use, low cost, feature-rich and secure.

### a. Methodology

Our reservation-less, or always available, audio conferencing — access via our private electronic switched network (ESN), the public switched telephone network and SIP (VoIP) — allows any employee to self-register for a permanent dial-in number so they conduct an audio conference at a moment's notice with only a conference code and PIN. There is a single ESN number to connect to the **Multimedia Conferencing** solution followed by a unique conference code. Each audio conference can host up to 200 participants although the standard setting at Nortel is 50 participants. The chairperson controls are protected by a chairperson PIN that activates the conference and provides the ability to mute/unmute all lines, lock/unlock conference, count the number of participants, enable/disable entry or exit tones, and allow the conference to continue/end after the chairperson leaves the call. Once the conference is active, any participant can mute/unmute their line,

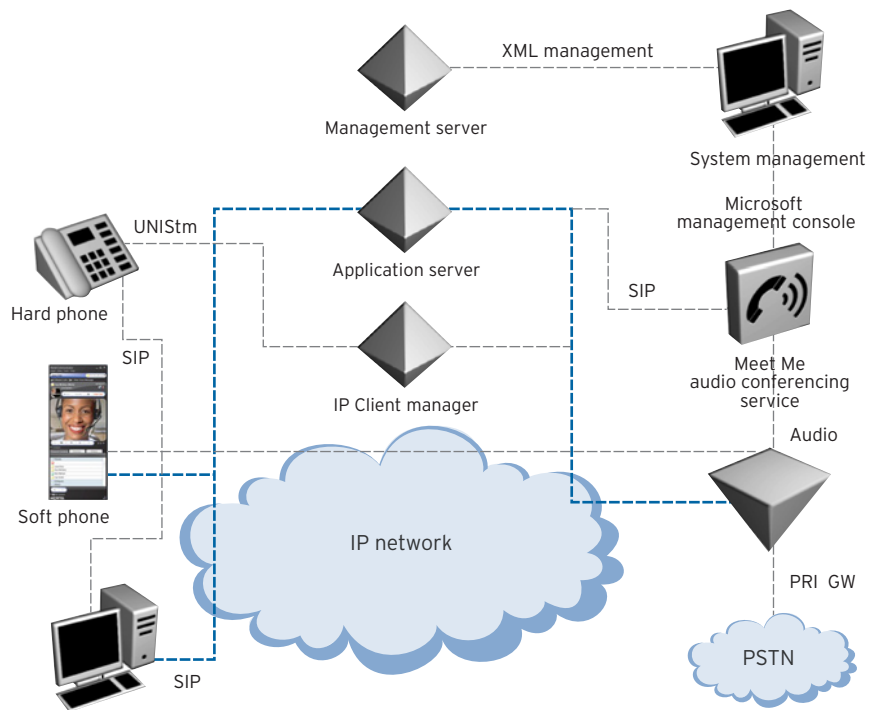
request operator assistance, and play audio emotion like clapping, laughing and more. Our 24/7/365 support team provides operator assistance and trouble shooting for conferencing problems, noisy lines or hung ports. Support is a split responsibility with first level support provided by the Help Desk (outsourced) and technical support (second and third level) provided by Nortel IT (in-house).

Using a combination of voice switches, leased lines and our dial plan at Nortel, we implemented a least cost routing solution that controls how calls — including audio conference calls — get carried from site to site at the lowest possible cost. Essentially we can carry traffic internally across our IP (Internet Protocol) network or dedicated circuits until the point where it makes economic sense to engage the public network and pay toll charges. For example, if we find that it's most cost-effective to use a dedicated leased circuit when crossing the ocean between Europe and North America, then we will route the call using this method. We can make these kinds of decisions for calls that are directed at Nortel sites internationally and toll calls in general, subject to local regulations.

Whenever possible, our audio conferencing environment takes advantage of Nortel's IP network and our deployment of Multimedia Communications Server for unified communications. This means that employees can leverage their MCS PC client to participate in or chair audio conferences. With MCS, the PC client sends the chairperson an instant message when participants are waiting, joining or leaving the conference.

**b. Deployment**

To provide resiliency throughout the United States, Canada, Europe and Asia, we placed two Media Application Server pools in each region to:



**Figure 1. Audio conferencing**

- Ensure efficient use of long distance provisioning
- Regionalize IP and voice traffic
- Provide greater network resiliency and service redundancy

The entire Nortel Media Application Server platform is built with redundancy in mind for the network, power, traffic and more. On each server pool, the associated subscriber base is duplicated on two separate blades. For added resiliency, all subscriber data is backed up to a designated contingency MAS system in the event of a failure. Also, the MAS chassis is configured with an additional blade — so that in the event of a single blade failure — there is a back-up blade readily available. Capacity management is measured using statistical information created on the MAS blades. Nortel IT created scripts that collate, filter and then graph the statistical data captured in system logs on the MAS blades; the graphs give support staff a quick view of how the solution is performing.

To promote fast user acceptance of the new audio conferencing environment, Nortel IT heavily communicated the changes to employees via bulletins, web alerts, on-site posters, emails and more. An intranet web site provides a self-registration tool for employees to use to get their own permanent dial-in number. The tool:

- Validates the user as a Nortel employee
- Captures user particulars (employee ID, ESN number, etc.) and stores in a central database
- Allocates user to a geographically appropriate server
- Builds a new Multimedia Conferencing account
- Generates email confirmation to the user with dial-in number, passcode, chairperson PIN number and intranet URL outlining how to report a problem, tips and tricks, and FAQs (frequently asked questions).

Although over 90 percent of our audio conferences at Nortel involve 50 or less participants, occasionally there is a need for large special events requiring operator assistance like product launches, corporate announcements, global training sessions and other special events. Audio conferencing for these large special events is handled by a third party managed by the [Nortel Multimedia Services](#) team.

### c. Results

Audio conferencing has one of the highest satisfaction ratings (90 percent) of any IT service at Nortel. Often taken for granted, our in-house solution delivers:

- Reservation-less audio conferencing for thousands of Nortel employees in over 200 locations across the globe
- Approximately \$6 million annual savings over previously outsourced solution
- Payback in eight months
- Each month 20 million minutes of MCS audio conferencing representing approximately 62 percent of our total voice traffic
- Full-feature chairperson and participant controls
- Access to dial-in number via ESN, PSTN and SIP (VoIP)
- Best cost and scalable architecture

For more information, contact your Nortel representative, or call 1-800-4 NORTEL or 1-800-466-7835 from anywhere in North America.

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### d. Lessons learned

In North America, the use of toll-free access to audio conferencing systems was initially provided but not widely promoted to employees. To encourage the use of our VoIP capability, we have since eliminated the use of toll-free access to further reduce our costs. Other lessons the Nortel IT team learned along the way include:

- To improve interoperability and supportability, standardize the support equipment and software wherever possible like the headsets used, firmware, unified communications client, etc. This includes self-registration, FAQs and self-help tools that allow employees the ability to view or update their audio conference account, PIN and preferences.
- Create different service packages with different feature availability to allow for flexibility in providing users with the services they require, while at the same time allowing IT to control the system resources.
- Do not assume all users understand audio conferencing etiquette. As part of ongoing support and training, IT continues to remind all participants they can make audio conferences quicker, quieter and more effective by following three simple steps:

- 1) Introduce yourself when entering the conference and again when speaking for the first time;
- 2) Mute your line when you are not talking;
- and 3) Recognize that background noise degrades the overall audio quality and reduces the productivity of all participants.

### Conclusion

Nortel IT uses Nortel Multimedia Conferencing to provide thousands of employees with reservation-less audio conferencing facilities. This allows employees to conduct an audio conference at a moment's notice with only a conference code and PIN. It is a system that saves millions over the previous outsourced solution and is feature-rich, secure, resilient and scaleable. A win-win for both employees and IT!

The business case and/or financial information presented in this document is based on Nortel research and is intended for illustrative purposes only. It is based on certain assumptions.

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*Written by Mary Jo LeBlanc with technical contribution by Robert Ross, Beth Ashley and Michael Carter of Nortel IT. Go to [www.nortel.com/nortelonnortel](http://www.nortel.com/nortelonnortel) for more Nortel IT case studies, best practices, videos, implementation steps and freeware tools.*

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