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Managing IP Telephony

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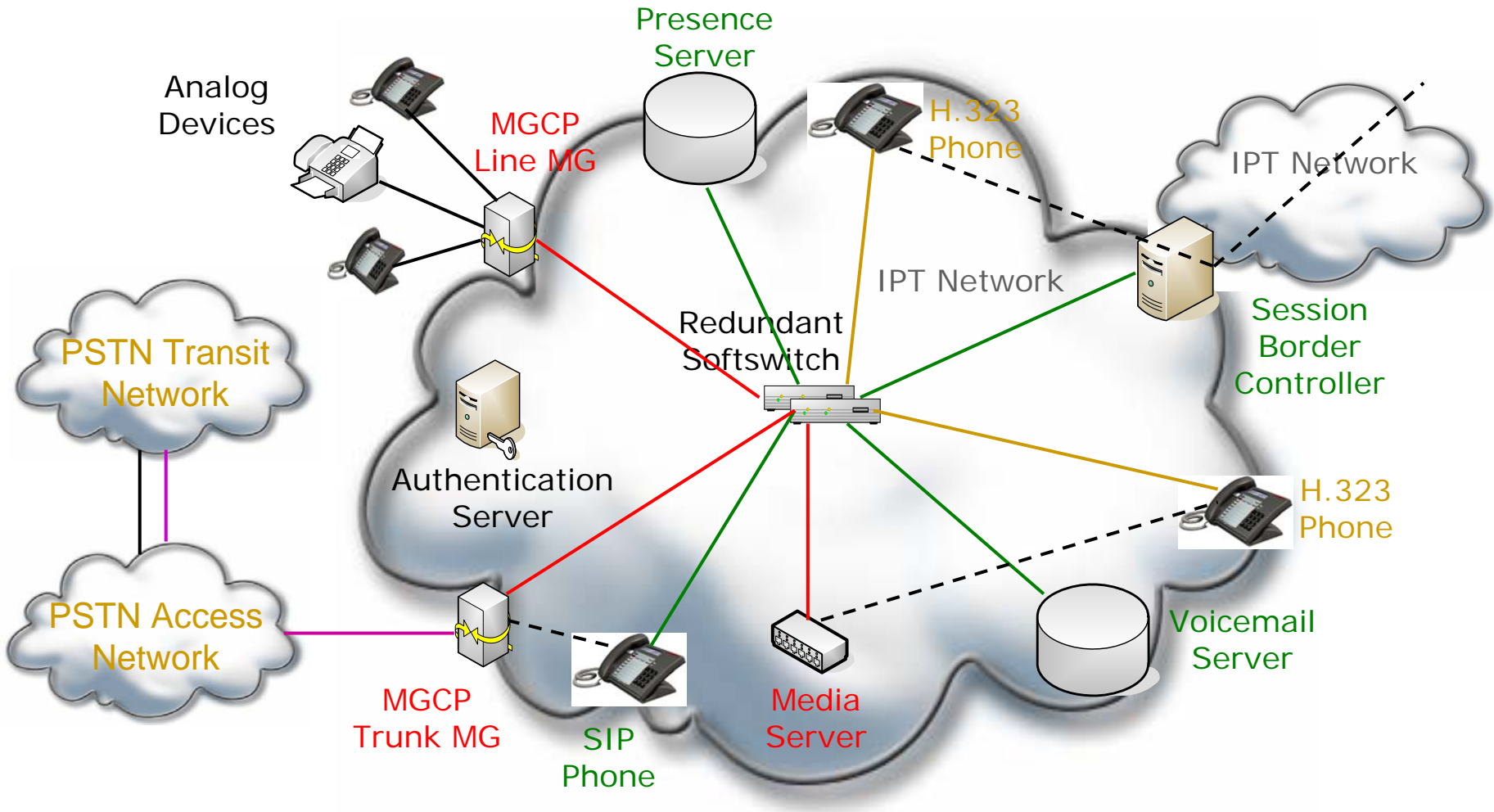
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Agenda

- **IP telephony – a complex environment**
- **Tools for managing your IP telephony network**
- **Management tool kit for convergence**
- **Key performance requirements for IP telephony**
- **Key performance metrics for IP telephony**
- **It's not just about performance management**
- **Conclusions**

IP telephony – a complex environment



Tools for managing your IP telephony network

- **Do not simply re-apply application management or element management principles to the applications and elements that comprise the IP telephony solution**
- **SNMP-based Manager of Manager (MOM) tools specialize in element health management. Do not expect your MOM tool to be able to manage your IP telephony environment as a telephony service**
- **To manage your IP telephony environment, you need tools that can manage IP telephony as a telephony service**

IP telephony is still telephony – all that's changed is the implementation and infrastructure. User expectations are exactly the same as they have been for years...

Management tool kit for convergence

A MOM specializes in:

- Event management
- Helpdesk / level 1 support

It does not specialize in:

- Root cause analysis
- End-to-end application management

An IP telephony management tool specializes in:

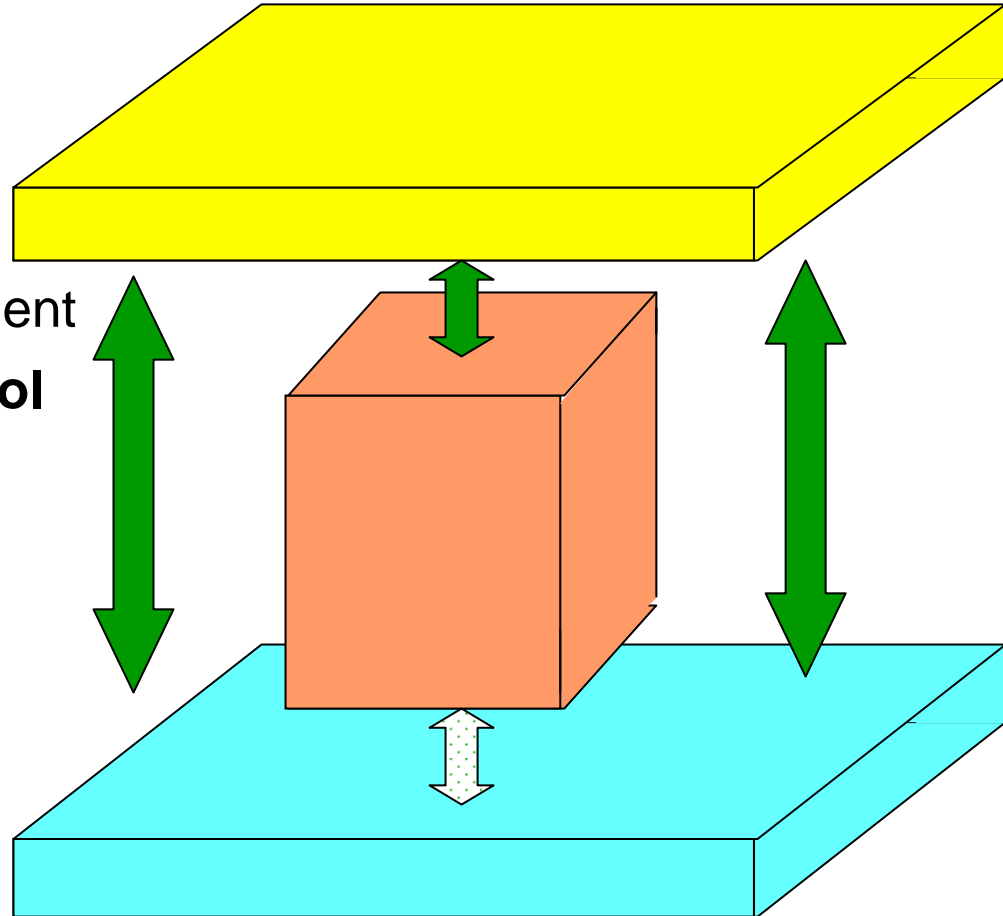
- Telephony service management
- Call and call traffic management

A network management tool specializes in:

- Element management
- Path/route management

It does not specialize in:

- End-to-end application management



Key performance requirements for telephony

The core telephony performance requirement is: **Nx9's availability**

For example, in a 3x9's IP telephony environment:

- This is **NOT** 99.9% server, element or application uptime
- This **IS** that 99.9% of every user's calls must be successful
- i.e. only one call in one thousand may fail due to problems in the IPT environment

A call is successful if it meets user expectations and doesn't cause negative user behavior

Key performance requirements for telephony

The primary factors that can lead to the failure of a call are:

- **Delay to dial tone**
- **Delay to ringback tone**
- **Voice quality**
- **Call setup failures that result from problems in the IP telephony application**
 - Unable to route to destination number
 - No channel or resource available
 - PBX congestion

Key performance metrics for IP telephony

Key metrics for IPT performance monitoring tools are those which:

- Let you know *immediately* if a problem or trend is occurring that impacts on your Nx9 availability requirements:
 - Increase in call failure rates
 - Bad voice quality on live calls

Key performance metrics for IP telephony

Key metrics for IPT performance monitoring tools are those which:

- Let you know *immediately* if a problem or trend is occurring that impacts on your Nx9 availability requirements
- **Give advance warning of problems that can lead to call failures:**
 - Phone-to-PBX connectivity status impaired
 - Inability to route calls to particular destination number patterns
 - PBX, trunk, gateway or media server failures
 - Congestion on PBX, trunks, gateways or media servers
 - Increasing delays to dialtone or ringback tone
 - IP network congestion that may lead to bad voice quality
 - Gradual increase in call rates or call traffic utilization of devices



Key performance metrics for IP telephony

Key metrics for IPT performance monitoring tools are those which:

- Let you know *immediately* if a problem or trend is occurring that impacts on your Nx9 availability requirements
- Give advance warning of problems that can lead to call failures
- **Facilitate the rapid diagnostics of the root cause of call failures:**
 - Within the tool and through integrations with other tools

It's not just about performance management

Most IP telephony management tools do more than just performance management of the IP telephony environment:

- **Fault management**
- **SLA (service level agreement) management**
- **Telephony capacity planning**
 - Identify over- and under-utilized IPT devices
 - Identify over- and under-utilized PSTN interconnect points
 - Monitor and report on IPT device utilization trends over time
- **Server/desktop management**
- **Telephony asset/inventory management**
- **Telephony security management**
 - Authentication failures
 - Denial of service attacks
 - Toll fraud
- **Configuration management**

Conclusions

- **IP telephony management is NOT simply about element management or voice quality management**
- **To manage an IP telephony environment, you need specialized tools that can manage the distributed IP telephony application as a real-time critical telephony service**
- **Your IP telephony management tools should integrate into your management tool kit, for rapid problem alerting and diagnostics**