

Microsoft Lync Server 2010 on Dell Systems



**Solutions for 500
to 25,000 Users**

Dell

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1 Introduction

1.1 Overview

This Microsoft® Lync Server 2010 solution architecture manual contains possible configurations that can be used to architect your Lync 2010 infrastructure. Samples in the manual are intended to serve as a blueprint or example for organizations whose requirements are similar. Each organization's requirements can differ significantly, though, and include items not accounted for in these configurations. For a configuration sized to your specific requirements, please contact your Dell representative or visit Dell.com/Unified.

1.2 Hardware

Sample solutions described in this manual use the following Dell equipment:

- [PowerEdge™ M1000e](#)
- [PowerEdge R610](#)
- [PowerEdge R710](#)
- [PowerEdge M610](#)
- [EqualLogic™ PS6000X](#)
- [EqualLogic PS6000XV](#)

Click on the links to the product landing pages for additional information on each product.

1.3 Virtualization

Those configurations that employ hardware virtualization software assume a platform approved through Microsoft's [Server Virtualization Validation Program](#) and deployed consistent with Microsoft's support guidelines for running Microsoft Lync Server 2010 on a virtualization platform.

1.4 Disclaimer

These sizing recommendations are based on Microsoft's Planning Tool for Lync 2010 combined with extensive sizing work done on Dell servers and storage and Microsoft® Office Communications Server 2007 R2. Each deployment's workload may differ in specific requirements that govern sizing and architecture.

2 500 Users

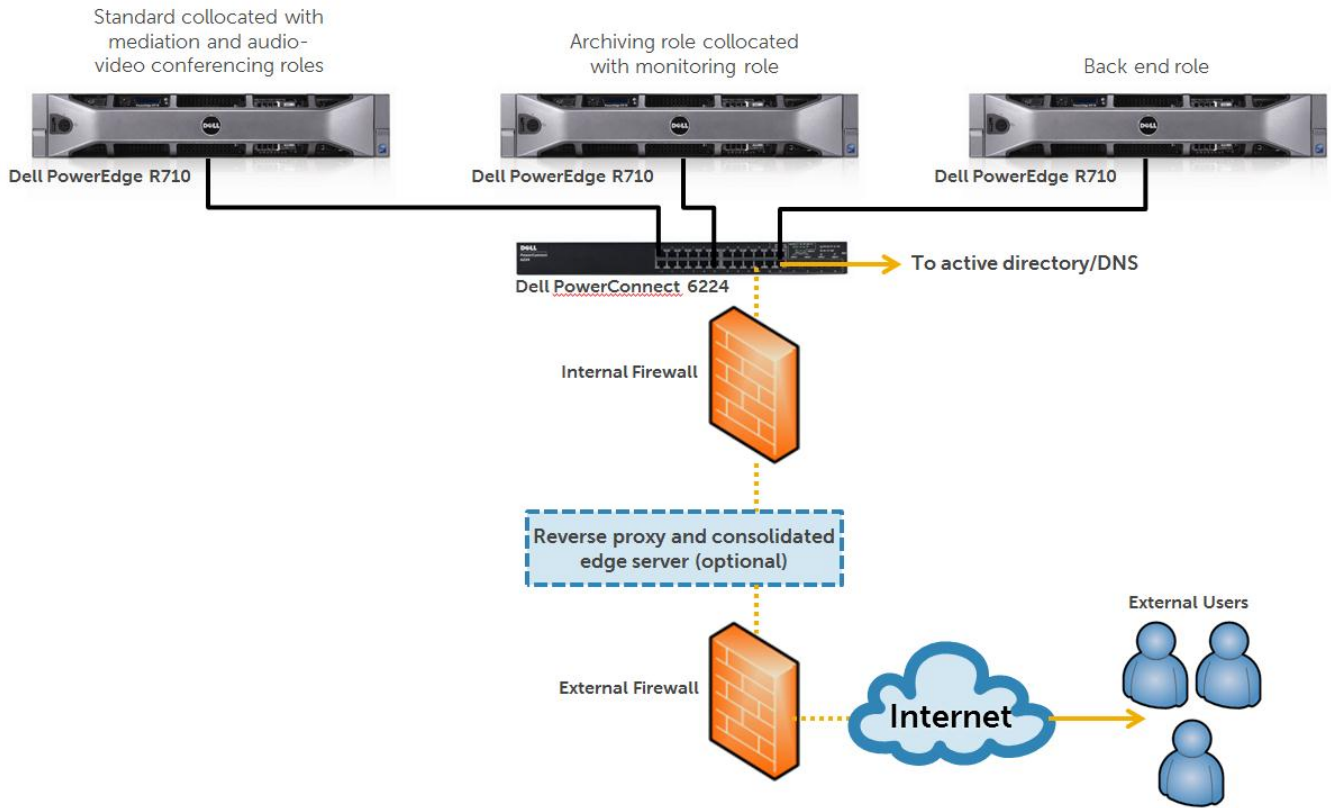
2.1 Solution Requirements

Number of users	500
High Availability	No
Virtualization	No
Number of Sites	1
Not included in this solution	Edge services Exchange servers (including UM)

2.2 Recommended Solution

Server Configurations	Detail
Microsoft Lync Server Version	Standard Edition
Front End, Mediation and A/V Conferencing Servers	1x PowerEdge R710 2x quad-core processors and 16GB of RAM
Back End Server	1x PowerEdge R710 2x dual-core processors and 12GB of RAM
Archiving/Monitoring Server	1x PowerEdge R710 2x dual-core processors and 8GB of RAM
Storage Configuration	Detail
Storage for Front-End	Internal to server/R710 8x 300GB 2.5" 10K SAS drives/RAID 10
Storage for Archiving/Monitoring and Back End Servers	Internal to server/R710 8x 300GB 1.5" 10K SAS drives/RAID 10
Network/VoIP Configuration	Detail
Audio Bandwidth (low- and high-quality range)	1.48 to 2.39 Mbps
Data Bandwidth	2.73 Mbps
Media Gateway (can be SIP trunk)	9 ports/VoIP channels, 1x T1 Lines
Bandwidth between Mediation Server and Gateway	0.24Mbps to 0.58Mbps

2.3 Architecture Diagram



3 1,000 Users

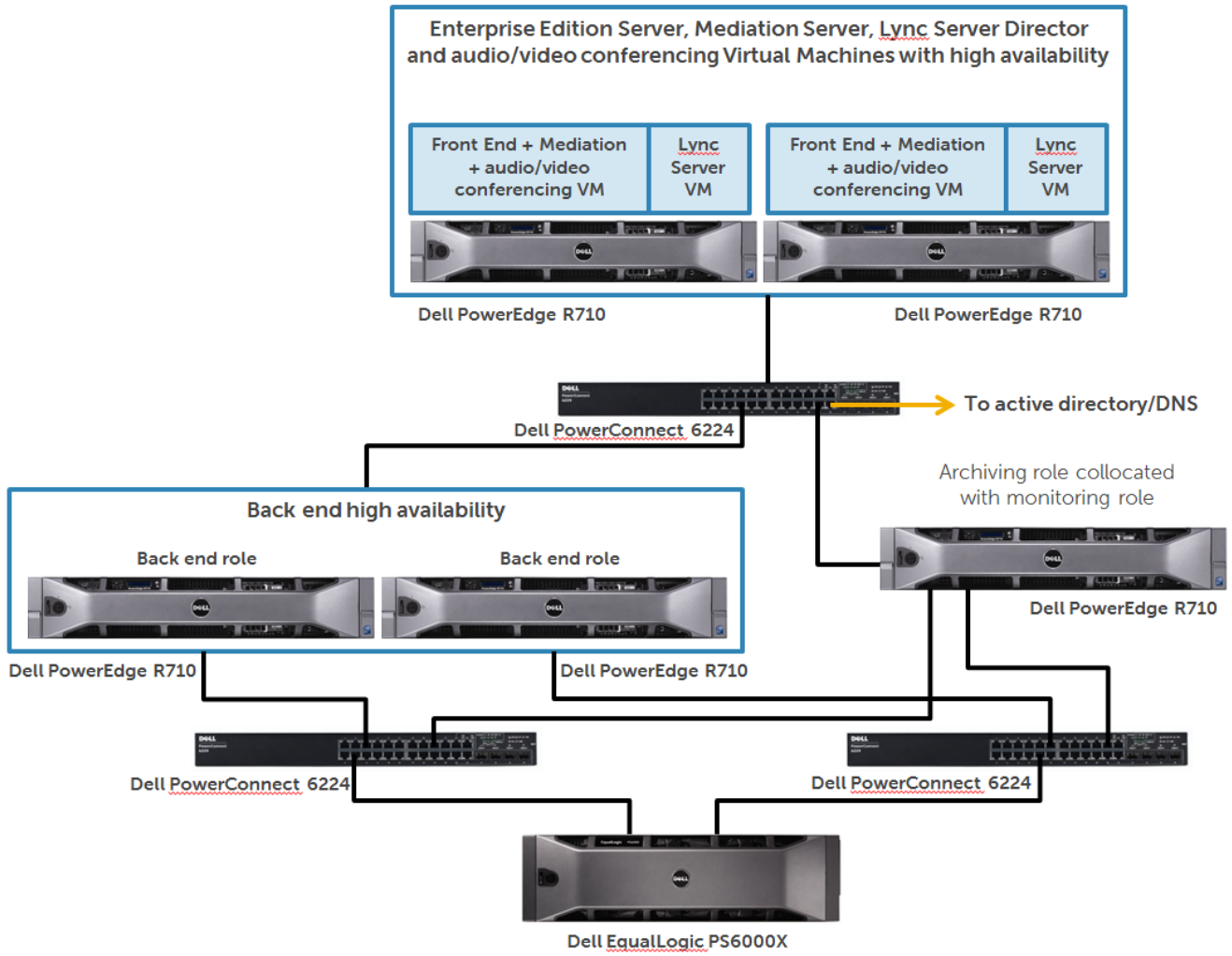
3.1 Solution Requirements

Number of users	1,000
High Availability	Yes (except for Archiving/Monitoring Server)
Virtualization	Partially virtualized
Number of Sites	1
Not included in this solution	Edge services Exchange servers (including UM)

3.2 Recommended Solution

Server Configurations	Detail
Microsoft Lync Server Version	Enterprise Edition
Virtualization Servers	2x PowerEdge R710 2x six-core processors and 32GB of RAM
Front End, Mediation and A/V Conferencing VM's	2x VMs each with 4 vCPUs and 16GB RAM (1x VM per host)
Lync Server Directors	2x VMs each with 2 vCPUs and 8GB of RAM (1x VM per host)
Archiving/Monitoring Server	1x PowerEdge R710 2x dual-core processors and 12GB of RAM
Back End Server	2x PowerEdge R710 2x quad-core processors and 24GB of RAM
Storage Configuration	Detail
Storage Hardware	1x Dell EqualLogic PS6000X
Drives	16x 400GB 3.5" 10K SAS
RAID	RAID 10
Network/VoIP Configuration	Detail
Audio Bandwidth (low- and high-quality range)	2.97 to 4.77 Mbps
Data Bandwidth	5.47 Mbps
Media Gateway (can be SIP trunk)	12 ports/VoIP channels; 1x T1 Lines
Bandwidth between Mediation Server and Gateway	0.32Mbps to 0.77Mbps

3.3 Architecture Diagram



4 5,000 Users

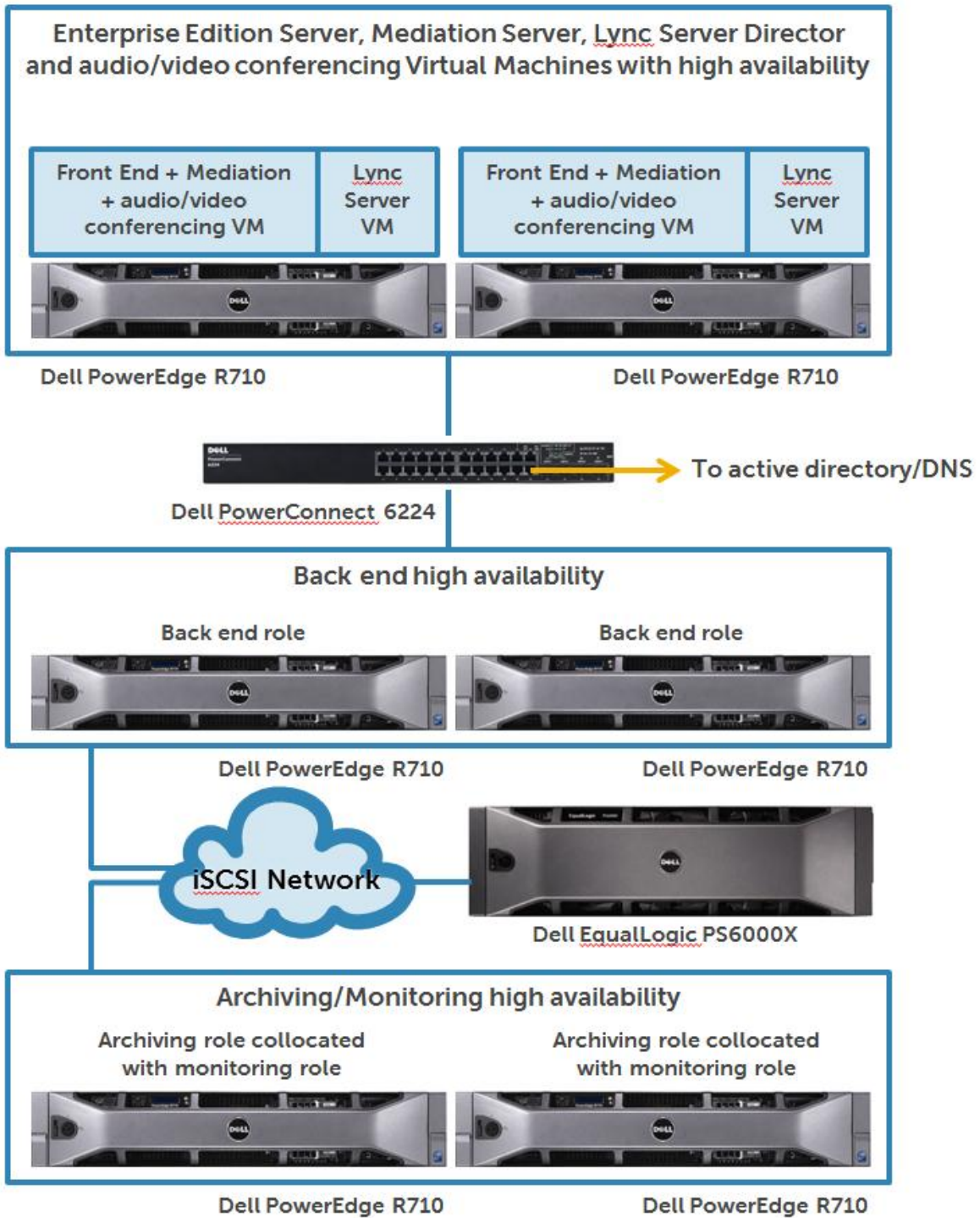
4.1 Solution Requirements

Number of users	5,000
High Availability	Yes
Virtualization	Partially virtualized
Number of Sites	2
Not included in this solution	Edge services Exchange servers (including UM)

4.2 Recommended Solution (per Site)

Server Configurations	Detail
Microsoft Lync Server Version	Enterprise Edition
Virtualization Servers	2x PowerEdge R710 2x six-core processors and 32GB of RAM
Front End, Mediation and A/V Conferencing VM's	2x VMs each with 4 vCPUs and 16GB RAM (1x VM per host)
Lync Server Directors	2x VMs each with 2 vCPUs and 8GB of RAM (1x VM per host)
Archiving/Monitoring Server	2x PowerEdge R710 2x dual-core processors and 12GB of RAM
Back End Server	2x PowerEdge R710 2x quad-core processors and 24GB of RAM
Storage Configuration	Detail
Storage Hardware	1x Dell EqualLogic PS6000X
Drives	16x 400GB 3.5" 10K SAS
RAID	RAID 10
Network/VoIP Configuration	Detail
Audio Bandwidth (low- and high-quality range)	7.42Mbps to 11.93Mbps
Data Bandwidth	13.67Mbps
Media Gateway (can be SIP trunk)	20 ports/VoIP channels; 1x T1 Lines
Bandwidth between Mediation Server and Gateway	0.53Mbps to 1.28Mbps

4.3 Architecture Diagram



5 10,000 Users

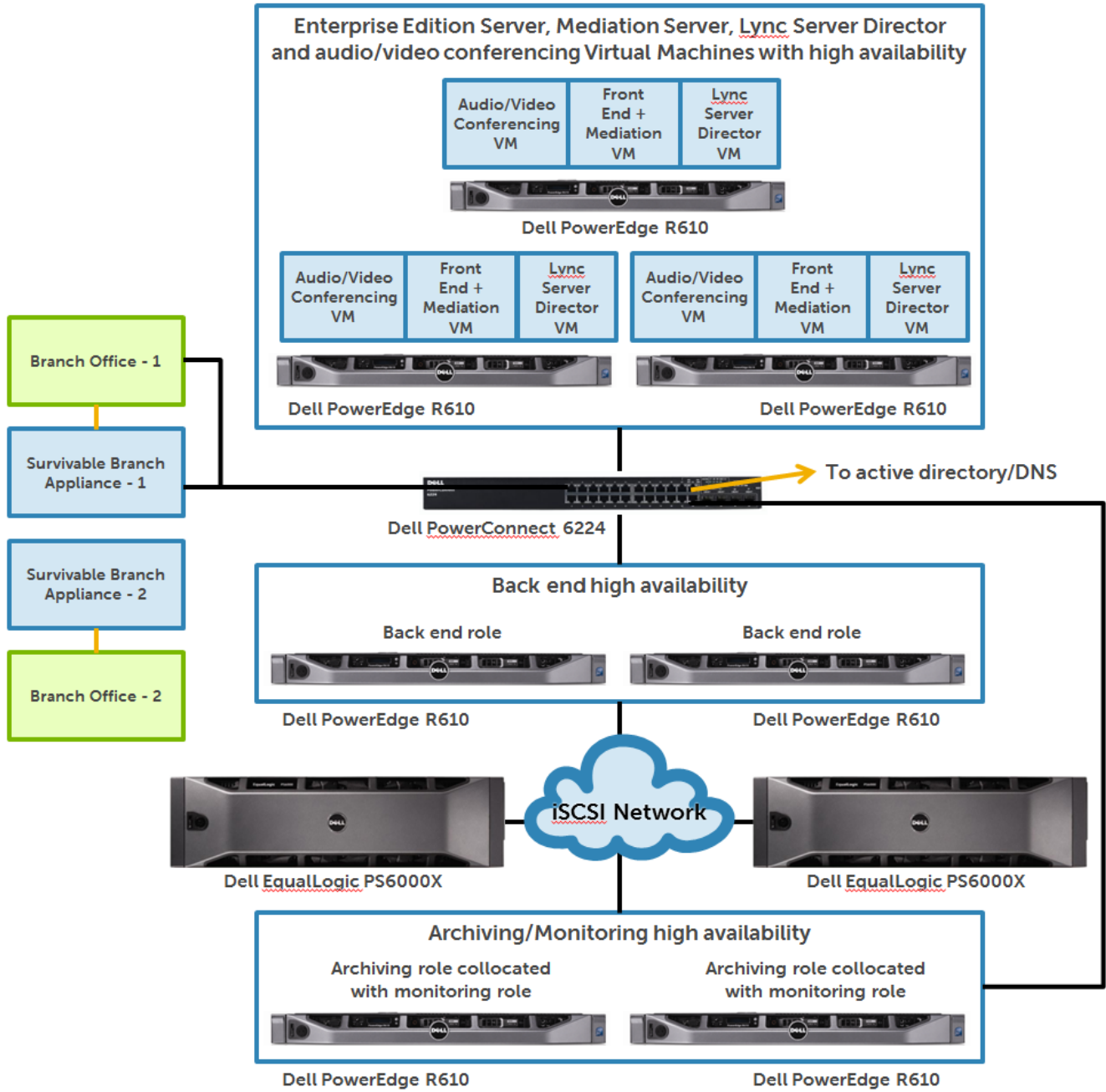
5.1 Solution Requirements

Number of users	10,000
High Availability	Yes (except for Archiving/Monitoring Server)
Virtualization	Partially virtualized
Number of Sites	1
Number of Branch Offices	2 (500 users each)
Not included in this solution	Edge services Exchange servers (including UM)

5.2 Recommended Solution

Server Configurations	Detail
Microsoft Lync Server Version	Enterprise Edition
Virtualization Servers	3x PowerEdge R610 2x six-core processors and 48GB of RAM
Front End, Mediation Server VM's	3x VMs each with 4 vCPUs and 16GB RAM (1x VM per host)
Audio/Video Conferencing Server VM's	3x VMs each with 4 vCPUs and 16GB RAM (1x VM per host)
Lync Server Directors	3x VMs each with 2 vCPUs and 8GB of RAM (1x VM per host)
Archiving/Monitoring Server	2x PowerEdge R610 2x quad-core processors and 16GB of RAM
Back End Server	2x PowerEdge R610 2x quad-core processors and 32GB of RAM
Survivable Branch Appliance	2 (1 per branch office)
Storage Configuration	Detail
Storage Hardware	2x Dell EqualLogic PS6000XV
Drives	32x 400GB 3.5" 15K SAS
RAID	RAID 10
Network/VoIP Configuration	Detail
Audio Bandwidth (low- and high-quality range)	29.69 to 47.71 Mbps
Data Bandwidth	54.67 Mbps
Media Gateway (can be SIP trunk)	56 ports/VoIP channels, 3x T1 Lines
Bandwidth between Mediation Server and Gateway	1.48Mbps to 3.58Mbps

5.3 Architecture Diagram



6 25,000 Users

6.1 Solution Requirements

Number of users	25,000
High Availability	Yes
Virtualization	Partially virtualized
Number of Sites	2
Number of Branch Offices	2 (500 users each)
Not included in this solution	Edge services Exchange servers (including UM) Site Failover

6.2 Recommended Solution (per Site)

Server Configurations	Detail
Microsoft Lync Server Version	Enterprise Edition
Virtualization Servers	3x PowerEdge M610 2x six-core processors and 48GB of RAM
Front End, Mediation Server VMs	3x VMs each with 4 vCPUs and 24GB RAM (1x VM per host)
Audio/Video Conferencing Server VMs	3x VMs each with 4 vCPUs and 16GB RAM (1x VM per host)
Lync Server Director VMs	3x VMs each with 2 vCPUs and 8GB of RAM (1x VM per host)
Archiving/Monitoring Server	2x PowerEdge M610 2x quad-core processors and 12GB of RAM
Back End Server	2x PowerEdge M610 2x quad-core processors and 24GB of RAM
Survivable Branch Appliance	2 (1 per branch office)
Storage Configuration	Detail
Storage Hardware	2x Dell EqualLogic PS6000XV
Drives	32x 600GB 3.5" 15K SAS
RAID	RAID 10
Network/VoIP Configuration	Detail
Audio Bandwidth (low- and high-quality range)	35.63Mbps to 57.26Mbps
Data Bandwidth	65.61Mbps
Media Gateway (can be SIP trunk)	68 ports/VoIP channels; 3x T1 lines
Bandwidth between Mediation Server and Gateway	1.8Mbps to 4.35Mbps

6.3 Architecture Diagram

