



Aastra MX-ONE™ V.4.0 Integration with Microsoft® OCS 2007 R2

Quick Setup Guide

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Doc. Nr. ASE/MXO/PLM/ 0123/EN Rev.A

Contents

1	Introduction	3
1.1	General	3
1.2	Scope of this document	3
2	Solution Description	4
2.1	Direct SIP	5
2.2	Features	6
2.3	Prerequisites	6
	2.3.1 MX-ONE	6
	2.3.2 Microsoft® Office Communications Server 2007 R2	7
3	Installation and configuration	8
3.1	Installation	8
	3.1.1 MX-ONE Installation	8
	3.1.2 Microsoft® infrastructure and OCS 2007 R2 Installation	8
3.2	Configuration	8
	3.2.1 MX-ONE Configuration	9
	3.2.2 Microsoft® Office Communications Server R2 configuration	9
3.3	Basic verification	14
	3.3.1 Microsoft® OC client to OC client verification	15
	3.3.2 Microsoft® OC Client to MX-ONE terminal	15
	3.3.3 MX-ONE terminal to Microsoft® OC Client	16
	3.3.4 PSTN to OC Client	16
4	References	17

1 Introduction

Aastra MX-ONE (MX-ONE V.4.0) is a complete IP-based communications system with unbeaten capabilities for mobile users. Not only does MX-ONE provide excellent voice communications, it also provides the applications necessary to offer true mobility and Unified Communications.

MX-ONE Telephony System is based on an open software and hardware environment, using standard servers with a LINUX™ SUSE operating system. Furthermore, MX-ONE integrates with 3rd party solutions using standards based interfaces, such as SIP and CSTA V3/XML.

This open standards approach enables Aastra to offer our customers a choice and with this in mind we have worked together with Microsoft® to ensure that MX-ONE can be integrated with the latest Microsoft® Unified Communications products. Aastra MX-ONE V.4 is fully certified by the Microsoft® Partner Program to ensure that customers have seamless experiences with setup, support, and use of MX-ONE Telephony System with Microsoft® unified communications software. Aastra's MX-ONE Telephony System integrates with Microsoft® UC solutions directly via a SIP connection to reduce the overall cost and complexity of the combined solution.

1.1 General

MX-ONE V.4.0 is Aastra's Unified Communications solution and can interwork with third party UC products using standards based protocols, such as SIP and CSTA V3/XML.

Integration of MX-ONE V.4.0 with the Microsoft® Office Communications Server (OCS) 2007 R2 is supported as a complementary solution providing end user services like instant messaging, conferencing.

Microsoft® Partner Program has certified the integration between MX-ONE V.4.0 and Microsoft® Office Communications Server 2007 R2 via a Direct SIP connection.

1.2 Scope of this document

The intent of this guide is to describe the basic integration between the Aastra MX-ONE and Microsoft® OCS 2007 R2. The following sections describe the solution integration that has been certified through the Microsoft® partner program and covers only the Direct SIP integration. However, MX-ONE integration with Microsoft® OCS 2007 R2 is also supported via Dual Forking and Remote Call Control. For a more technical description on how these integrations are set-up and function, refer to the relevant CPI documentation for MX-ONE or go to the Microsoft® UC product websites. Please, always check the latest products documentation.

2 Solution Description

The integration of MX-ONE V.4 and Microsoft® OCS 2007 R2 described in this guide is achieved via Direct SIP.

Direct SIP that is specified by Microsoft® means that a SIP trunk is used to connect MX-ONE Telephony System 4.0 and OCS 2007 R2 (Mediation Server).

The SIP trunk connection between the systems can be deployed with or without encryption. MX-ONE Telephony System supports TLS and SRTP as the SIP transport mechanism when connected with Mediation Server.

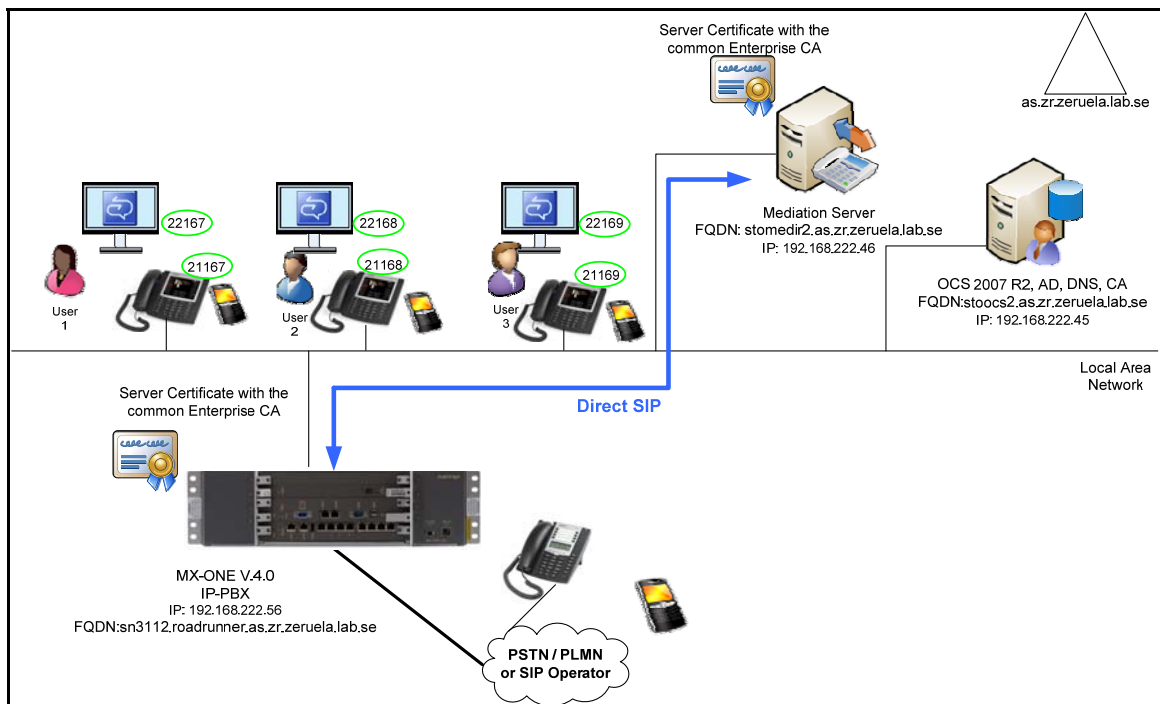


Figure 1 - MX-ONE Telephony System 4.0 integration with Microsoft® OCS 2007 R2 via Direct SIP

Microsoft® Office Communications Server 2007 R2 (OCS 2007 R2) offers several capabilities and may be configured based on the specific customer project requirements. This guide covers only the components that are required in the integration between MX-ONE Telephony System 4.0 and OCS 2007 R2 via Direct SIP to offer the functionality required by the Microsoft® certification program.

At least the following Microsoft® OCS 2007 R2 components are required in order to support this integration:

- Server Infrastructure
 - Microsoft® infrastructure (Active Directory, DNS, etc.)

- Microsoft® Office Communications Server 2007 R2 Standard or Enterprise Edition
- Microsoft® Mediation Server
- Client
 - Microsoft® Office Communicator Client (OC Client)

The Microsoft® Office Communicator Client (OC Client) is the end user device in the Microsoft® OCS 2007 R2. It may also be used as a soft-client with MX-ONE when the systems are integrated via the optional Dual Forking scenario.

2.1 Direct SIP

In Direct SIP integration, referred to as Enterprise Voice by Microsoft®, Office Communicator users will have dedicated phone numbers that differs from those used in the MX-ONE.

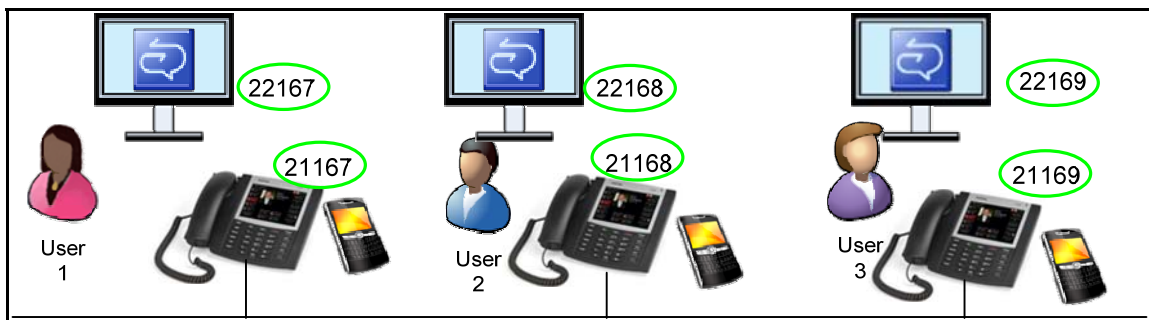


Figure 2 - Direct SIP user view

This enables the Office Communicator (OC) client to make and receive external calls through a PC. The calls are routed from the OCS by the SIP trunk to the MX-ONE and further to the PSTN and vice-versa.

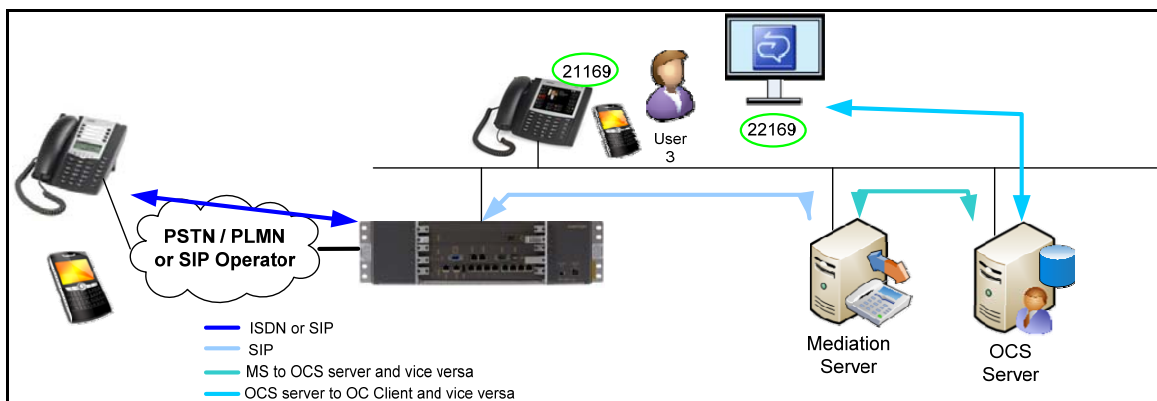


Figure 3 - MX-ONE Signaling

MX-ONE Telephony System 4.0 and OCS 2007 R2 will behave as networked PBX's, as typically is the case with all external trunks in the MX-ONE.

MX-ONE has features, such as Dual Forking and Parallel Ringing that can hide these different numbers and those features may be combined with the direct SIP integration in order to keep only one single number visible for the end user. For a more technical description on how these integrations are set-up and function, please refer to the relevant CPI documentation for MX-ONE.

2.2 Features

MX-ONE V.4.0 integrated with Microsoft® Office Communications Server 2007 R2 via Direct SIP delivers the following end user features:

- Softphone features:
 - Make and Receive calls
 - Call Hold/Retrieval
 - Forwarding
 - Call by contacts
 - Transfer
 - Inband DTMF support according to RFC 2833, for services, for example bank account verification, where DTMF relay is required.
- Instant Messaging
- Conference
- Presence between OC clients

2.3 Prerequisites

In order to have the proper integration between MX-ONE and Microsoft® Office Communications Server using Direct SIP, there are some prerequisites on both sides that must be fulfilled.

2.3.1 MX-ONE

On MX-ONE side, at least one Telephony Server and one Media Gateway are required to interwork with Microsoft® OCS 2007 R2.

2.3.1.1 Main components:

At least the following MX-ONE components are required:

- Telephony System
 - Telephony Server
 - MX-ONE Telephony Server 4.0 SP1 or later
 - Supported Media gateways
 - MX-ONE Classic - 7U 19-inch chassis, using IPLU or MGU boards
or
 - MX-ONE Lite - 3U 19-inch chassis, using MGU gateway
- Terminals
 - All current MX-ONE Analog, Digital, DECT, IP and Mobile extension terminal types are supported with this integration.

2.3.1.2 Licenses:

The list of appropriate MX-ONE licenses needed for this integration is not part of the scope of this guide. However, the license requirements for this integration can be found in the Commercial Product Description - Aastra MX-ONE V.4.0 Integration with Microsoft[®] OCS 2007 R2 and Microsoft[®] Exchange Server 2010 UM.

2.3.2 Microsoft[®] Office Communications Server 2007 R2

A Microsoft[®] environment needs to be available in the customer site.

Note that the Microsoft[®] OCS 2007 R2 is not part of the MX-ONE offering. It is important that Microsoft[®] competent engineers be used for installation and integration according to the MX-ONE configuration guidelines for the interface between the systems.

2.3.2.1 Main Components:

The main Microsoft[®] components that are required to interconnect with MX-ONE are Microsoft[®] OCS Server 2007 R2, the Mediation Server and the OC client.

The OCS 2007 R2 requirements are found in the Microsoft[®] Office Communications Server 2007 R2 documentation, see the item References in the end of this guide.

2.3.2.2 License

Microsoft[®] licenses needed for this integration are not included as part of the scope of this guide. Please contact Microsoft[®] or a qualified Microsoft[®] partner to obtain the

proper license requirements for each component of the Microsoft® Office Communications Server 2007 R2 solution.

3 Installation and configuration

3.1 Installation

3.1.1 MX-ONE Installation

It is assumed that MX-ONE V.4.0 SP1 or later is installed in the customer environment. The system installation is not covered in this guide and should be performed by a qualified Astra certified partner prior to the start of the integration work.

For MX-ONE V.4.0 installation, please check the appropriate CPI documentation for MX-ONE.

3.1.2 Microsoft® infrastructure and OCS 2007 R2 Installation

It is assumed that Microsoft® infrastructure and Microsoft® Office Communications Server 2007 R2 are installed in the customer environment by a qualified engineer.

For Microsoft® infrastructure requirements and Microsoft® Office Communications Server 2007 R2 installation, please check the appropriate Microsoft® documentation.

For more details of Microsoft® deployment, go to:

Deploying Microsoft® Office Communications Server 2007 R2

([http://technet.microsoft.com/en-us/library/dd425168\(office.13\).aspx](http://technet.microsoft.com/en-us/library/dd425168(office.13).aspx))

3.2 Configuration

The following information is used in this guide, based in Astra's laboratory setup:

- MX-ONE Telephony Server
 - IP address: 192.168.222.56
 - FQDN:sn3112.roadrunner.as.zr.zeruela.lab.se
- Microsoft® OCS Server 2007 R2, Active Directory, Certification Authority and DNS Server:
 - IP address: 192.168.222.45
 - FQDN: stoocsr2.as.zr.zeruela.lab.se
- Mediation Server:
 - IP address: 192.168.222.48
 - FQDN: stoexc2.as.zr.zeruela.lab.se

3.2.1 MX-ONE Configuration

A SIP trunk has to be configured in MX-ONE Telephony System as well the access code for this route.

The setup presented below uses TCP as transport protocol, in this case the destination access is expected to listening on port 5060 as default. This might be changed using SIP route parameter “-remoteport”

In order to secure a good interoperability between MX-ONE and Microsoft® OCS 2007 R2, we recommend the use of “Forced Gateway” because it will guarantee the same behavior for all type of calls passing through MX-ONE and going to OCS 2007 R2.

```
number_initiate -numbertype ED -number 2110
number_data_initiate -externalnumber 2110 -minlength 4 -maxlength 5
sip_route -set -route 51 -uristring sip:?@192.168.222.46 -fromuri0
sip:?@192.168.222.56 -protocol tcp -codecs PCMA,PCMU
sip_route -set -route 51 -accept REMOTE_IP -match 192.168.222.46
ROCAI:ROU=51,SEL=711000000000010,SIG=0111110000A0,TRAF=03151515
,TRM=4,SERV=3100000001,BCAP=000100;
#varc d5=1 forced gateway
RODAI:ROU=51,TYPE=TL66,VARI=00000000,VARC=00001000,VARO=0000090
0;
RODDI:rou=51,dest=2110,adc=0005000000000250000001000000,srt=1;
Server 1 has the IP address 192.168.222.56, so the route needs to be defined in
the Server 1.
ROEQI:ROU=51,TRU=1-1;
```

3.2.2 Microsoft® Office Communications Server R2 configuration

This guide describes the Microsoft® OCS R2 Standard Edition configuration with one pool.

Microsoft® Deploying Enterprise Voice documentation is used for this setup.

(<http://technet.microsoft.com/en-us/library/dd441382%28office.13%29.aspx>)

Open the Office Communications Server 2007 snap-in.

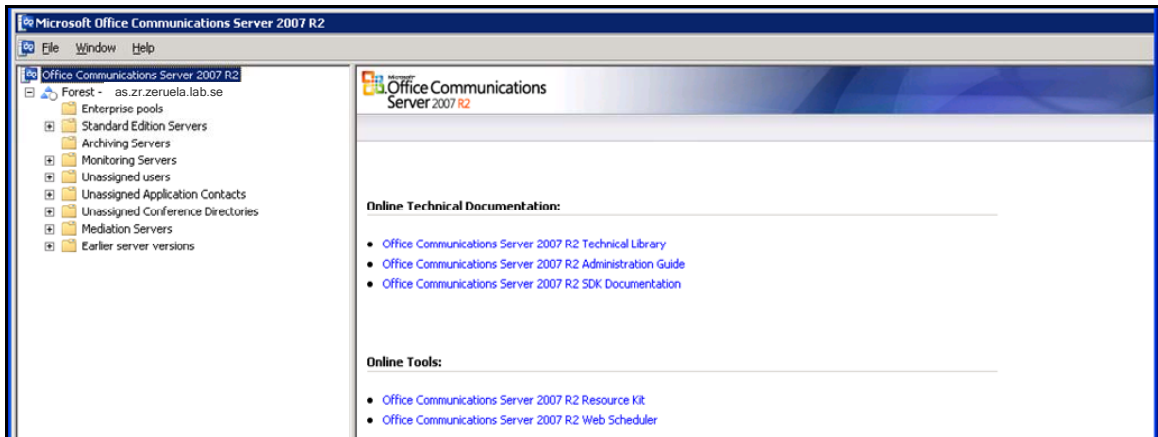


Figure 4 - Microsoft® Office Communications Server 2007 snap-in

3.2.2.1 Creating Location Profiles

A Location Profile is required, please follow the document below to create it:

For Create Location Profiles document, go to:

([http://technet.microsoft.com/en-us/library/dd425128\(office.13\).aspx](http://technet.microsoft.com/en-us/library/dd425128(office.13).aspx))

The screen below shows an example of Phone number normalization for 5 digits.

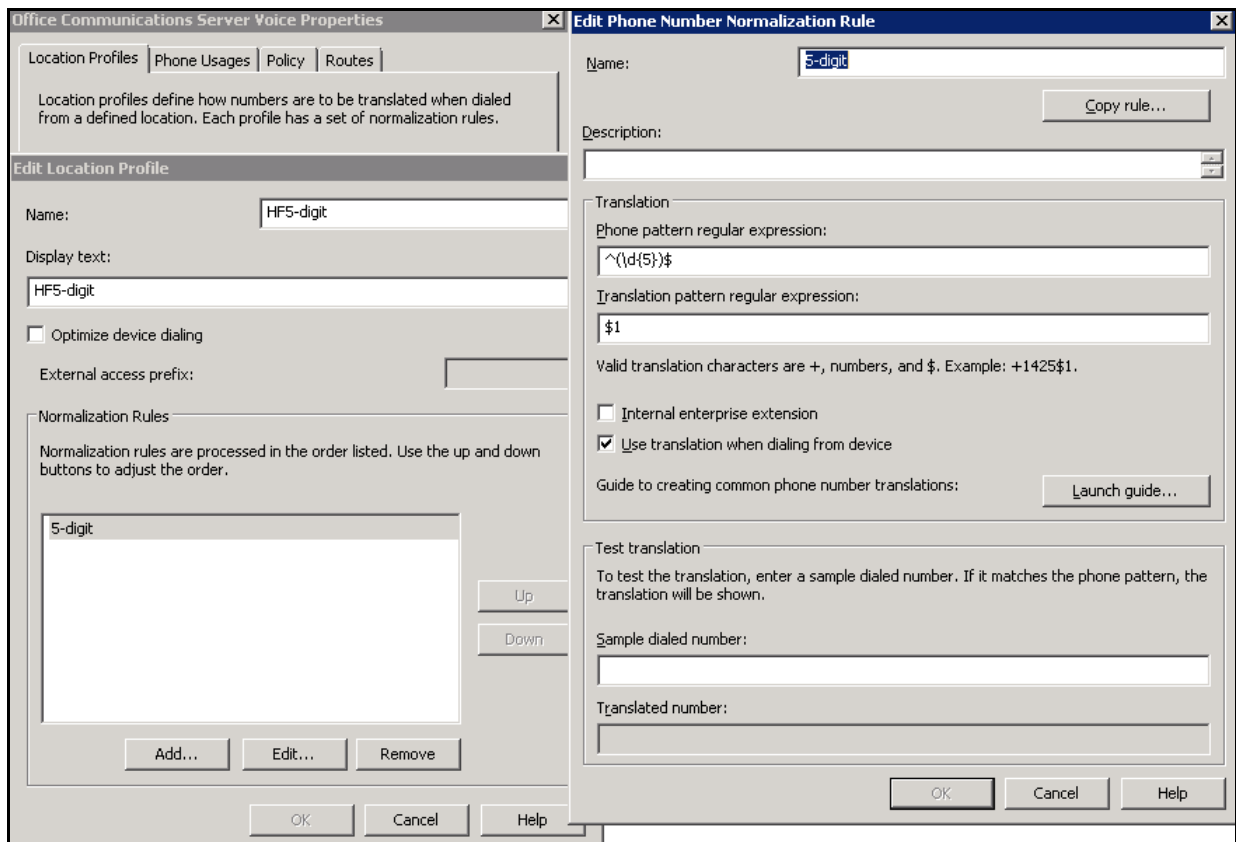


Figure 5 - Location Profiles

3.2.2.2 Assigning Location Profile to Pool

Assign the location profile to the pool is required, please follow the document below:

For Assign Location Profile to Pool document, go to:

([http://technet.microsoft.com/en-us/library/dd425328\(office.13\).aspx](http://technet.microsoft.com/en-us/library/dd425328(office.13).aspx))

The screen below shows an example of Assign Location Profile to Pool.

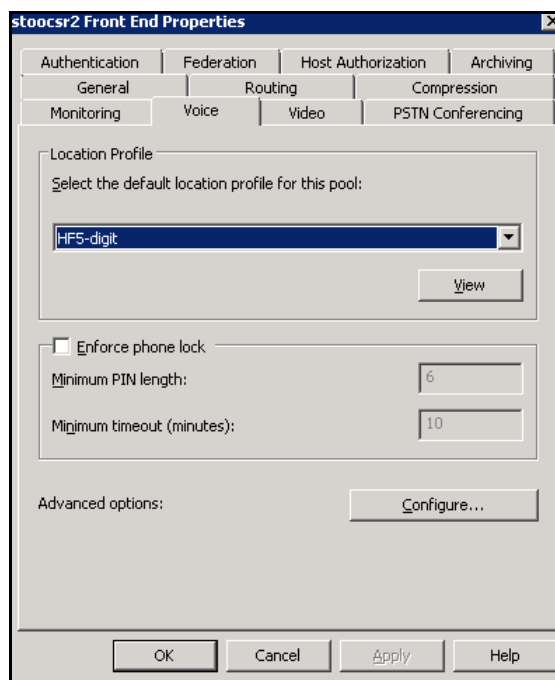


Figure 6 - Profile associated with a Pool

3.2.2.3 Deploying Mediation Server

Mediation Server needs to be deployed, please follow the document below:

For Deploy Mediation Server document, go to:

([http://technet.microsoft.com/en-us/library/dd441327\(office.13\).aspx](http://technet.microsoft.com/en-us/library/dd441327(office.13).aspx))

The screens below show an example of Mediation Server deployment using TCP.

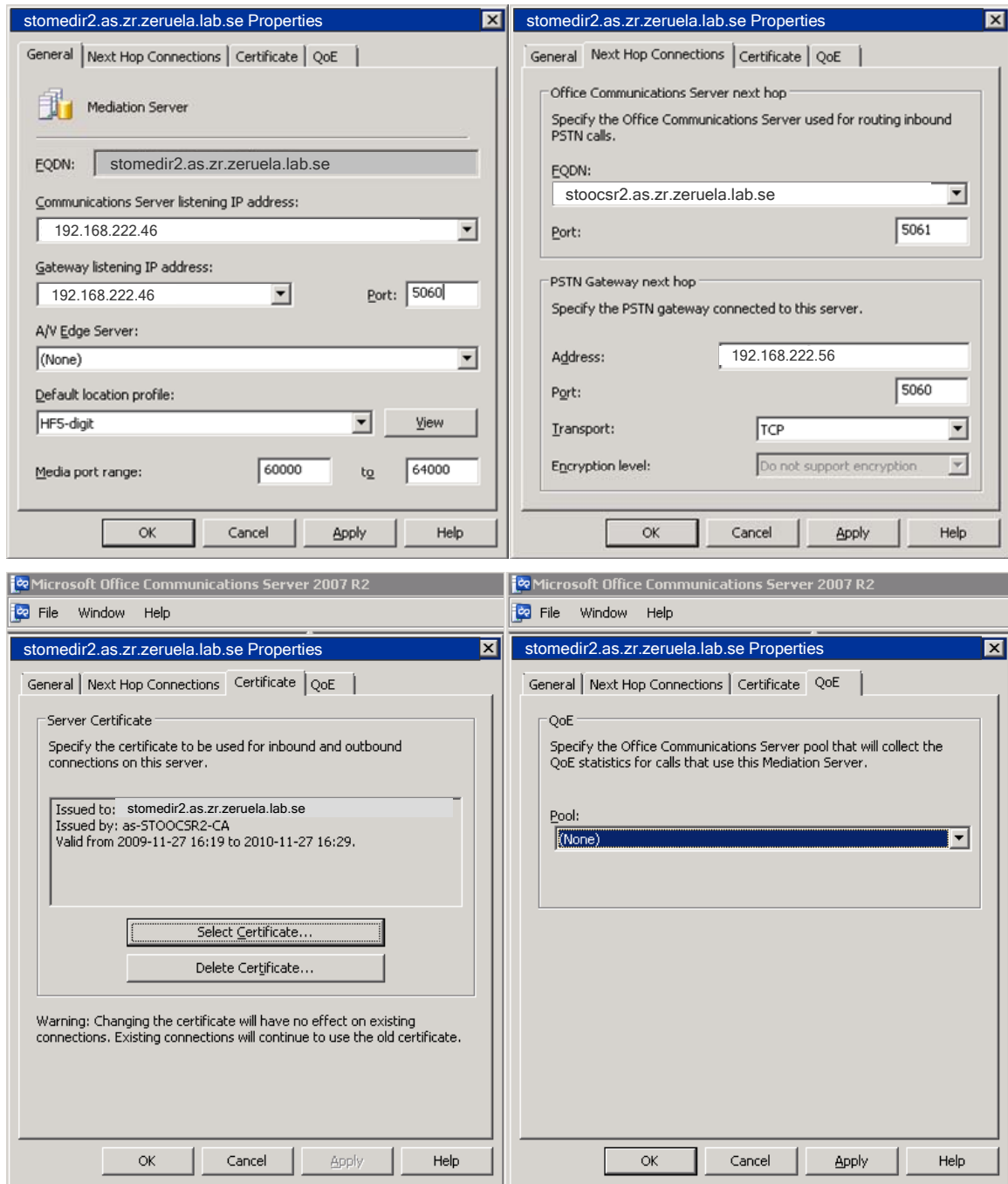


Figure 7 - Mediation Server Properties

3.2.2.4 Outbound Call Routing

Outbound Call Routing needs to be configured, please follow the document below:

For Outbound Call Routing document, go to:

(<http://technet.microsoft.com/en-us/library/dd441301%28office.13%29.aspx>)

The screens below show an example of Outbound Call Routing:

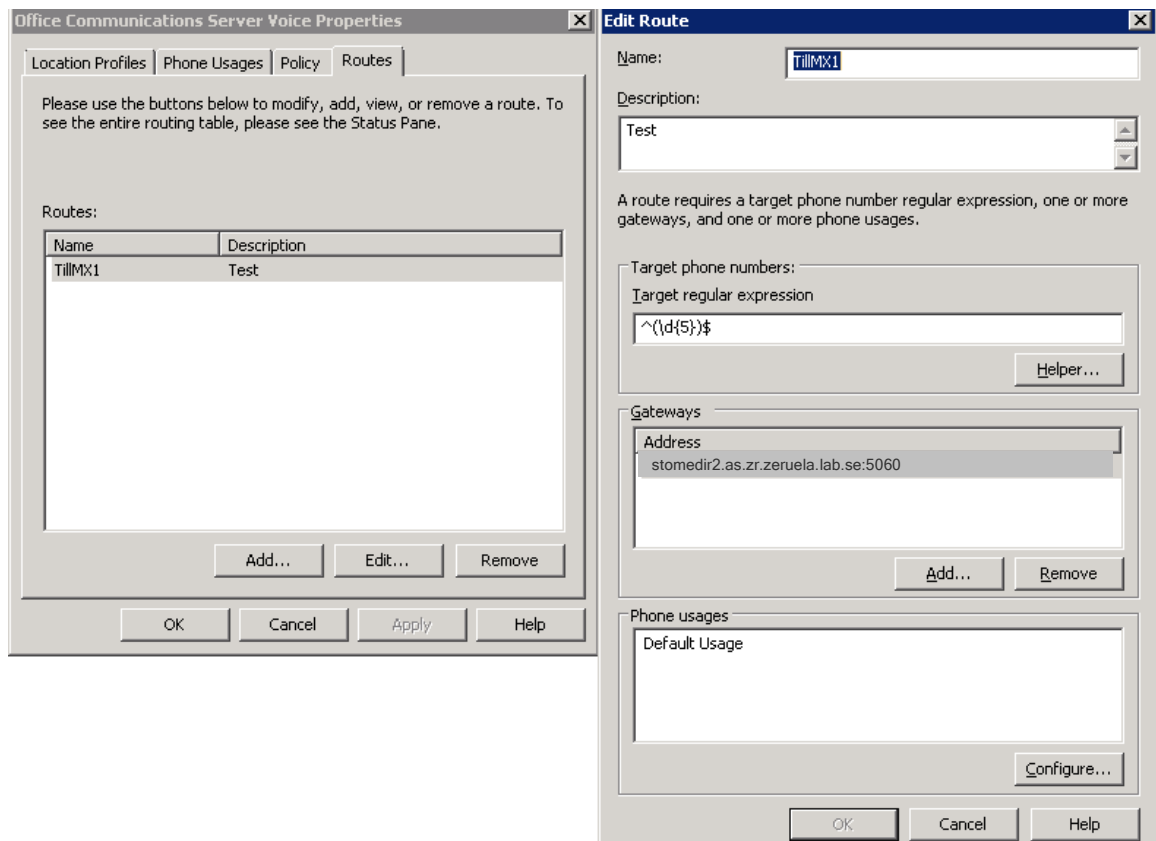


Figure 8 - Outbound Call Routing

3.2.2.5 Enable Users for Enterprise Voice and PBX Integration

In order to enable Users for Enterprise Voice, please follow the document below:

For Enable Users for Enterprise Voice document, go to:

([http://technet.microsoft.com/en-us/library/dd441148\(office.13\).aspx](http://technet.microsoft.com/en-us/library/dd441148(office.13).aspx))

The screen below show an example of a User with Enterprise Voice:

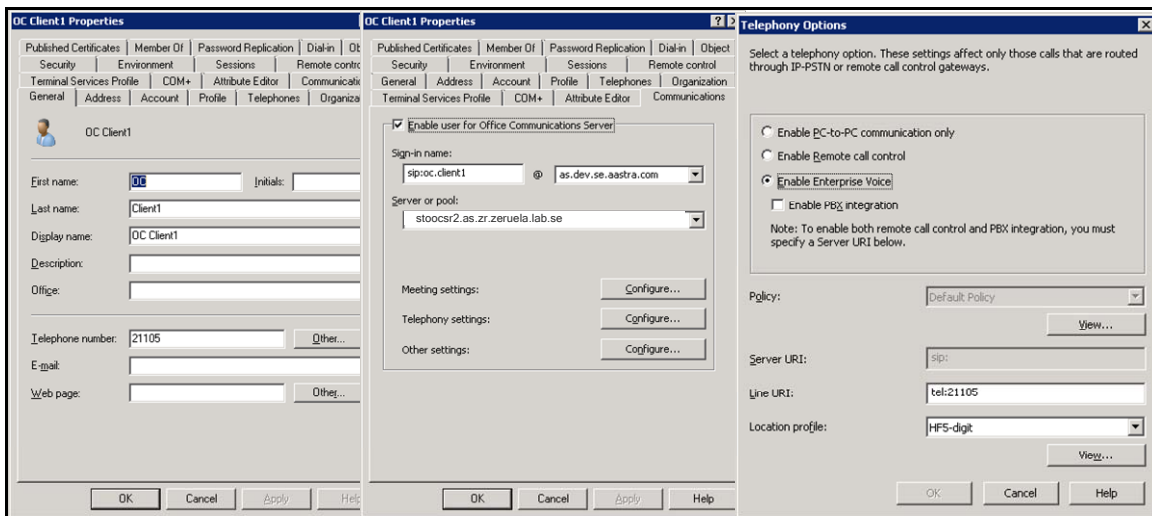


Figure 9 - User Setup

3.3 Basic verification

After the configuration, we shall check that the setup is ok.

The following setup is used by the basic verification:

- MX-ONE terminals: 21157 (H.323) and 21167 (SIP).
- Microsoft® OC Clients:
 - 21105 OC Client 1
 - 21106 OC Client 2

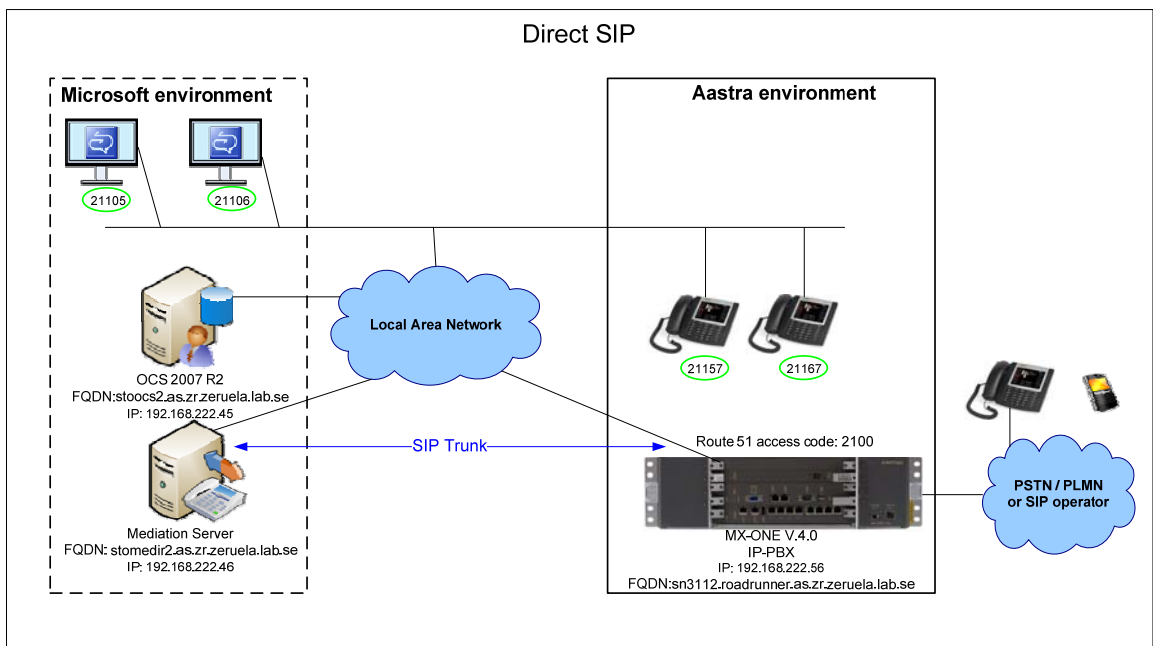
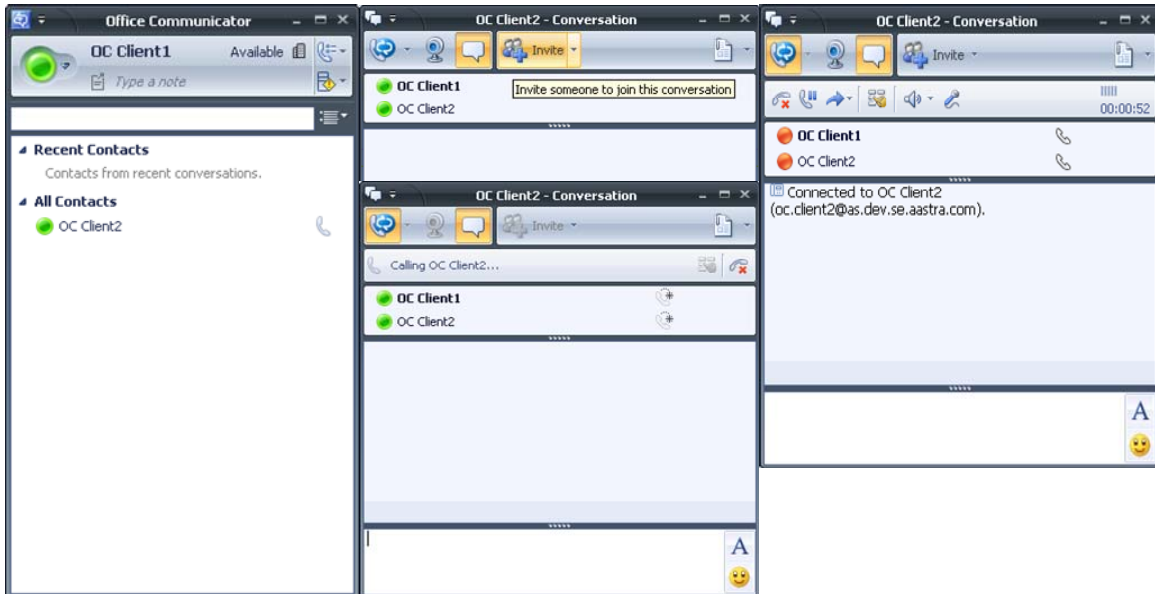


Figure 10 - MX-ONE integration with Microsoft® OCS 2007 R2 example

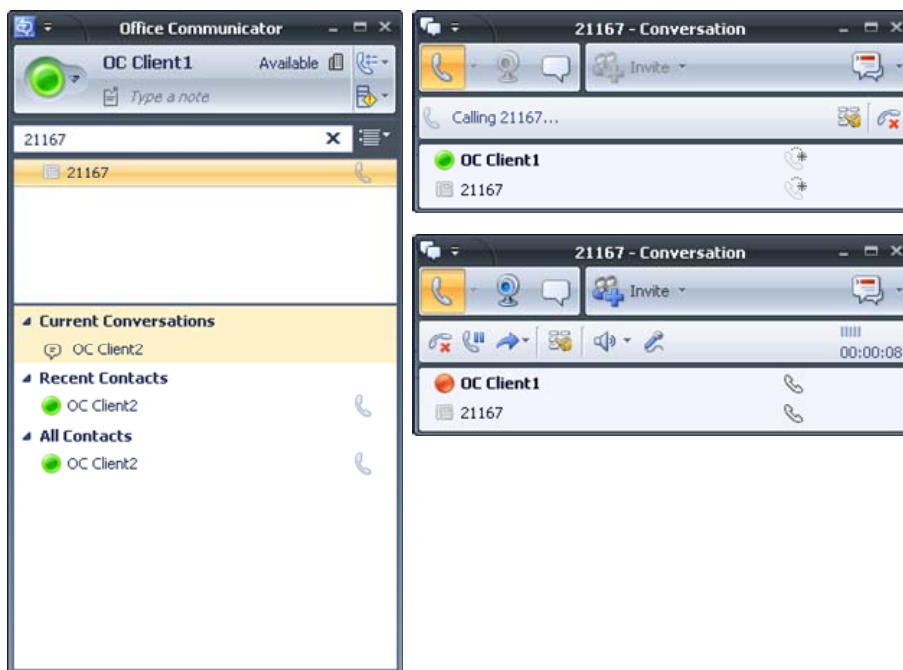
3.3.1 Microsoft® OC client to OC client verification

To verify the Microsoft® OCS 2007 R2 configuration open two OC clients and establish a call between them.



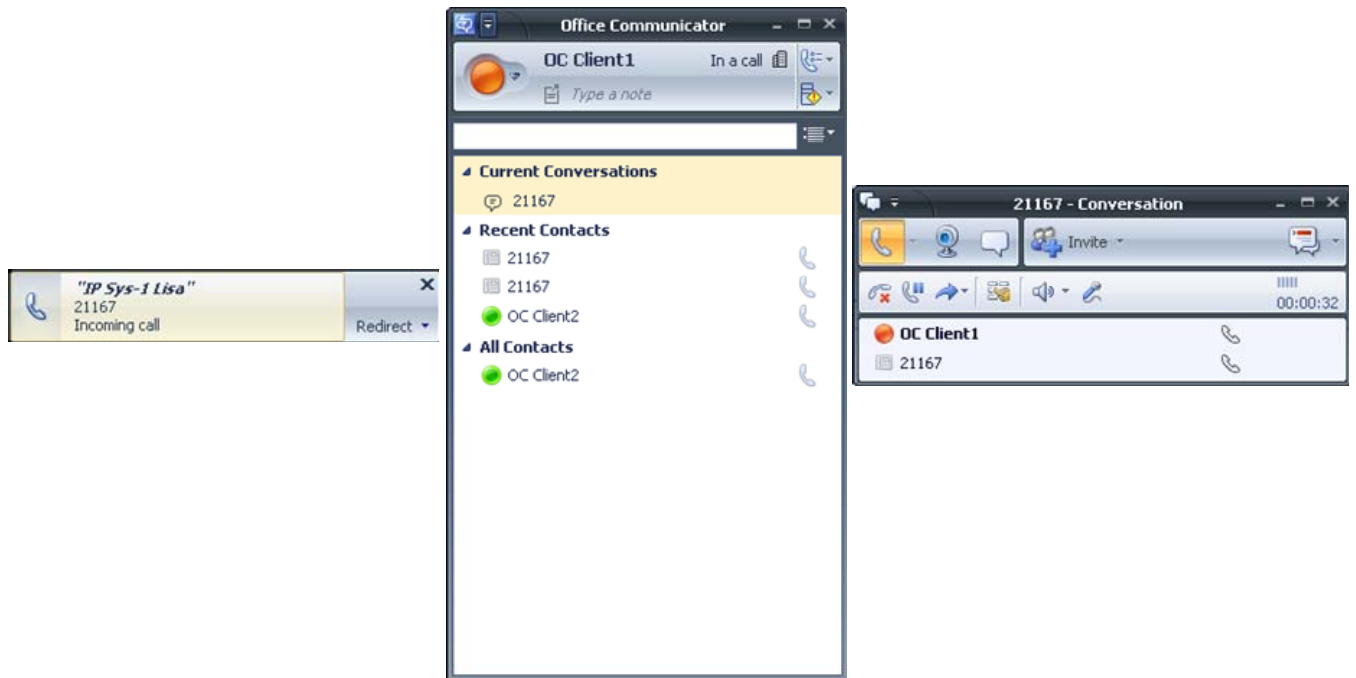
3.3.2 Microsoft® OC Client to MX-ONE terminal

To verify the MX-ONE and Microsoft® OCS 2007 R2 configuration open OC client and establish a call to an MX-ONE terminal.



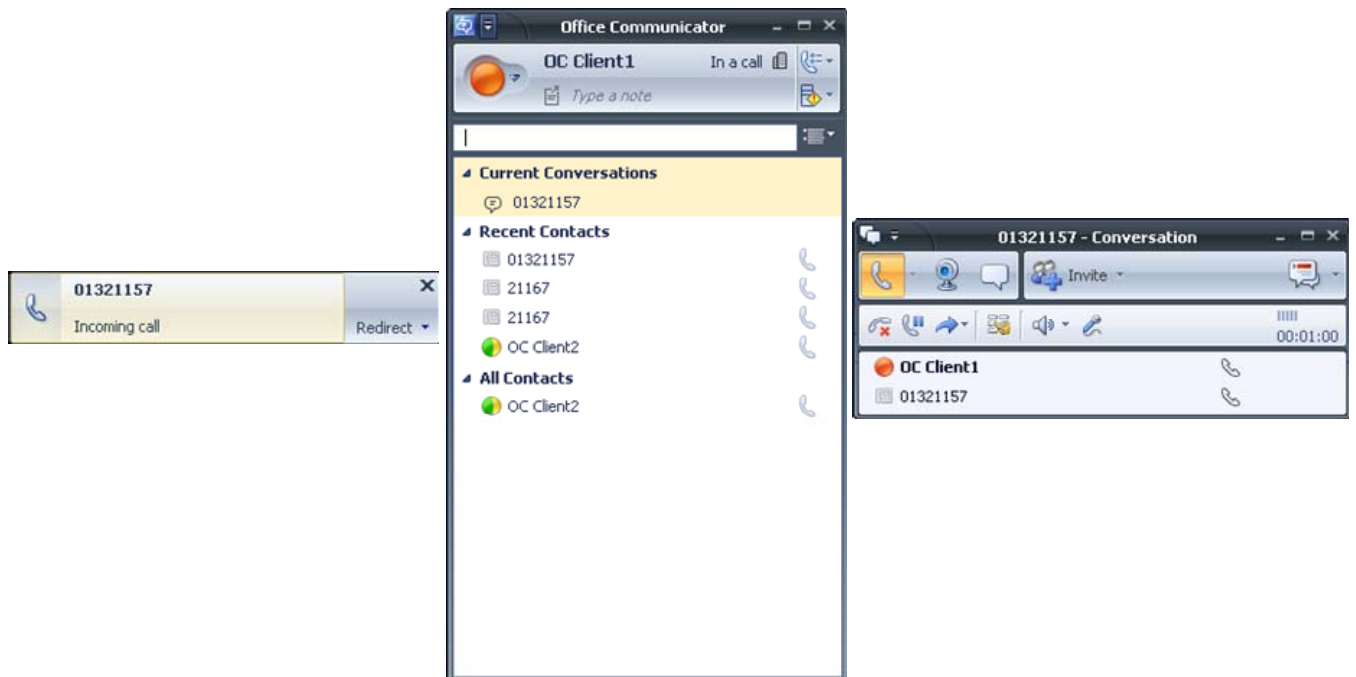
3.3.3 MX-ONE terminal to Microsoft® OC Client

To verify the MX-ONE and Microsoft® OCS 2007 R2 configuration open OC client, from MX-ONE terminal establish a call to OC client.



3.3.4 PSTN to Microsoft® OC Client

From a PSTN or a mobile phone, establish a call to OC Client.



4 References

Please always check the latest documentation. The links below are the ones available at the time of this guide was written.

CPI documentation for MX-ONE V.4.0 SP1 or later

Microsoft® Office Communications Server 2007 R2:

([http://technet.microsoft.com/en-us/library/dd440724\(office.13\).aspx](http://technet.microsoft.com/en-us/library/dd440724(office.13).aspx))

- Office Communications Server Infrastructure Requirements

([http://technet.microsoft.com/en-us/library/dd425353\(office.13\).aspx](http://technet.microsoft.com/en-us/library/dd425353(office.13).aspx))

- Internal Office Communications Server Component Requirements

([http://technet.microsoft.com/en-us/library/dd425098\(office.13\).aspx](http://technet.microsoft.com/en-us/library/dd425098(office.13).aspx))

- Environmental Requirements

([http://technet.microsoft.com/en-us/library/dd441230\(office.13\).aspx](http://technet.microsoft.com/en-us/library/dd441230(office.13).aspx))

- Hardware Requirements for Office Communications Server 2007 R2

([http://technet.microsoft.com/en-us/library/dd572817\(office.13\).aspx](http://technet.microsoft.com/en-us/library/dd572817(office.13).aspx))

- Client System Requirements

([http://technet.microsoft.com/en-us/library/dd572756\(office.13\).aspx](http://technet.microsoft.com/en-us/library/dd572756(office.13).aspx)).

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