UNIVERGE OW5000

Remote Call Control (RCC) Configuration Guide (Release 3.3)

NEC NEC Infrontia Corporation

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Introduction

UNIVERGE OW5000 Remote Call Control (RCC) Service can be configured to collaborate with Microsoft Office Communications Server 2007 (OCS2007). This collaboration enables your PBX system to reflect the call status on the presence information in Microsoft Office Communicator 2007 (MOC2007), and make phones served by the IP telephony server originate phone calls. In addition, when a new call is received, the caller information can be displayed in a pop-up window similar to an instant message.

This document explains the settings needed for the Remote Call Control Service to collaborate with the OCS2007 and MOC2007.



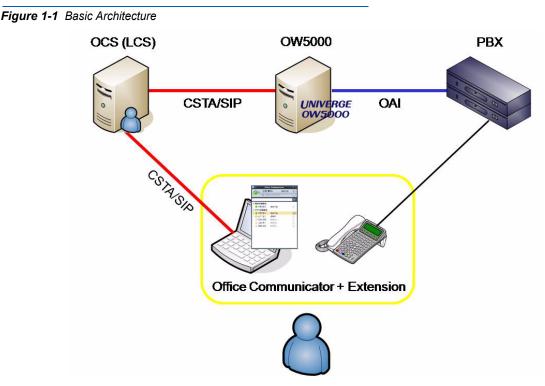
The Remote Call Control Service can also collaborate with Microsoft Live Communications Server 2005 (LCS2005), and Microsoft Office Communicator 2005 (MOC2005).

How This Guide is Organized

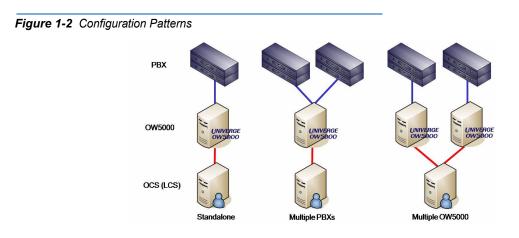
Chapter 1 Introduction	This chapter gives an overview of the Remote Call Control Service and outlines how to use the manual, including the <i>System Architecture, tel URI, Phone Number Normalization, DialNumber Conversion, and Caller Number Normalization.</i>
Chapter 2 Microsoft OCS Configuration	This chapter outlines the procedures and configuration for Microsoft OCS.
Chapter 3 Configuration Examples	This chapter gives examples of OW5000 configurations required to collaborate with OCS and MOCs.
Chapter 4 Troubleshooting Guide	This chapter is a guide to troubleshooting any problems that might occur.

System Architecture

The basic architecture of Remote Call Control is shown in Figure 1-1. Using the SIP-based CSTA (Computer Supported Telecommunications Applications) interface, the MOC carries out status monitoring and call control on the extensions served by the PBX. The OCS transfers CSTA/ SIP messages received from the MOC to the OW5000 Remote Call Control Service according to the preconfigured static route. The Remote Call Control Service converts CSTA/SIP messages into NEC OAI (Open Application Interface) messages, which are used to control the PBX. Conversely, the Remote Call Control Service converts OAI messages sent from the PBX into CSTA/SIP messages, transferring them to the OCS. The OCS transfers CSTA/SIP messages to the target MOC.



Simplified configuration patterns are shown in Figure 1-2. It is possible to configure an RCC environment flexibly in accordance with the PBX configuration and the number of extensions to be accommodated. In the multiple-PBX and multiple-OW5000 configuration examples below, each PBX is connected by a leased line. In a capacity-expanded/NetFusing configuration, each PBX is treated as one logical PBX by the OW5000 Remote Call Control Service.



tel URI

In the CSTA/SIP interface, phone numbers are represented in tel URI formats. Standardized in RFC3966, tel URIs refer to formats for describing phone number resources, and can be described in global or local notation.

- Global notation
 - (1) tel:+<E.164 number>

Example) Phone number (Japan) 090-1234-5678 Tel:+819012345678

Example) Phone number (North America) 212-123-4567 tel:+12121234567

(2) tel:+<E.164 number>;ext=<extension>

Example) Private dial-in number 03-1234-2000 and extension 2000 tel:+81312342000;ext=2000

Example) Private dial-in number 03-1234-5678 and extension 2000 tel:+81312345678;ext=2000

Local notation

(3) tel:<local number>;phone-context=<scope>

Example) Extension 2000 at company's domain "nec.com" tel:2000;phone-context=nec.com

(4) tel:<dial number>:phone-context=dialstring

Globally unique numbers (public numbers) are described in global notation according to E.164. The leading "+" character indicates that the number is unambiguous everywhere in the world. An E.164 number is a phone number within 15 digits, composed of a country number and a domestic phone number (excluding a national prefix). E.164 numbers cannot include "*" and "#". When an extension is associated with a global number, that extension can be included in the tel URI with the ext parameter added. When the ext parameter is added, the E.164 part can be shared by different users (e.g. as the sectional pilot number). However, when the MOC receives a tel URI with the ext parameter, it displays only the E.164 part with the ext part removed on the termination pop-up. In addition, if an incoming call is from a tel URI that is not registered in the Active Directory (the corporate address book), the calling party cannot be identified. For these reasons, when the ext parameter is used, it is recommended to configure the E.164 part not to share the same number among different users.

Numbers unique within a specific organization (such as extensions) are described in local notation. Local numbers do not begin with the "+" character, and should contain the phone-context parameter. Normally, a company's domain name is specified in the phone-context parameter to identify the scope of local numbers. A tel URI as the combination of the contents of the phone-context parameter and a local number should be again globally unique. Local numbers can include "*" and "#".

A number that is directly entered by a user to place a call can be described in local notation by being followed by phonecontext=dialstring. When a user originates a call by entering a dial number in the **Search** box of the MOC, the MOC generates a tel URI in this format (*only when the dial number does not match the normalization rules described later.)

With the OW5000 Remote Call Control Service, local notation (3) is recommended to represent extensions. When extensions and external lines have one-to-one correspondence, global notation (1) can also be used.

Phone Number Normalization

In this document, converting phone numbers into tel URI formats is referred to as "phone number normalization". When the MOC collaborates with PBX extensions, normalized numbers are required in the following situations.

 Originating a call by clicking a phone number displayed on the Contact List of the MOC

The Contact List of the MOC displays **Phone No.**, **Phone No.** (others), Mobile Phone No., and Home Phone No. of the target user, which are registered in the Active Directory. When one of these numbers is clicked to originate a call, the MOC generates a CSTA/SIP message with a normalized phone number. When a normalized phone number is already registered in the Active Directory, it can be used as is. However, phone numbers registered in the Active Directory are usually in such forms as "2000" and "090-1234-5678". To normalize these numbers, use the normalization rules described in the configuration for the OCS address book server. This enables conversion of phone numbers registered in the Active Directory into tel URI formats, and creation of the address book in which the user information is paired with a tel URI. This address book is generated on the OCS server. The MOC downloads this address book at the sign-in time, locally referencing it as the corporate address book. When a call is dialed from the **Contact List**, the MOC obtains the tel URI of the called

party from the corporate address book, and issues an origination request through a CSTA/SIP message.

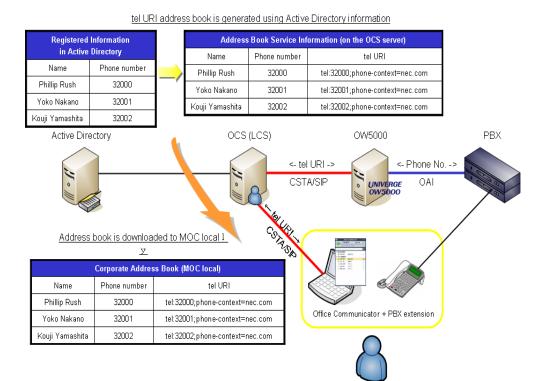


Figure 1-3 Call Origination from Contact List

 Originating a call by user's entering a phone number in the Search box of the MOC

The corporate address book downloaded by the MOC contains the same normalization rules that are described in the configuration for the address book service. It is referenced when a phone number is entered in the **Search** box of the MOC. A character string that is obtained by extracting only 0 to 9 and * from the character string entered in the **Search** box is used as the input value for comparison with the normalization rules. When the input value matches a rule, an origination request is issued with the normalized tel URI. When no match is found, an origination request is issued in the tel:<input value>;phone-context=dialstring format.

NOTE

The string number **#** entered in the **Search** box is ignored.

When # is needed in dialing such as when # is used as the access code to dial an external number from the PBX, the configuration should ensure that the number entered in the **Search** box is normalized into a tel URI in E.164 format and # is automatically inserted by the OW5000 dial number conversion function.

Concerning the LCS, the normalization rules for the address book service are classified into general rules and corporate rules (only the corporate rules can be described for the OCS). For the LCS, the phone number entered in the **Search** box of the MOC is compared with the general rules only.

 Displaying the caller name on the termination pop-up of the MOC when an incoming call is received by a phone

When a call is received by a phone collaborating with the MOC, a termination event is notified with the caller number in the following route: **PBX > OW5000 > OCS > MOC**. In this route, an ordinary phone number is transferred from the PBX to OW5000, so OW5000 converts this number into a tel URI. This normalization of the caller number is enabled by describing the normalization rules in the configuration for the OW5000 Remote Call Control Service, as well as for the OCS address book service. When a call is from an extension whose tel URI is registered with OW5000, the registered tel URI is directly used without comparison with the normalization rules. In order for the MOC to successfully search the corporate address book for the caller name using the notified tel URI as a key, the configuration should ensure that the tel URI contained in the corporate address book matches the normalization result in the OW5000 Remote Call Control Service.

Regular Expressions

The normalization rules are created using regular expressions. Table 1-1 lists representative regular expressions.

Regular Expression	Meaning
٨	The line head is matched.
\$	The line end is matched.
()	Means to group, record, and call the content in the parentheses later.
۵	One character in the brackets is matched. A range can be specified using a hyphen.
	Any one character is matched.
	One character string or another is matched.
*	The immediately preceding expression appears zero or more times.
+	The immediately preceding expression appears one or more times.
?	The immediately preceding expression appears zero or one time.
{m}	The immediately preceding expression appears m times.
{m,}	The immediately preceding expression appears m times or more.
{m,n}	The immediately preceding expression appears m times or more, n times or less.
/d	Digits 0 to 9 are matched. Same as [0-9].
\s	A space character is matched.

Table 1-1 Regular Expressions

A character string grouped by () can be referenced by \$n. \$n means that the nth group from the line head is to be referenced. \$0 means that the whole line is to be referenced.

Table 1-2 and Table 1-3 show examples of normalization rules, which are only for reference and need not be followed to create the normalization rules for your system.

Regular Expression	Conversion	Examples
^0([0-9]{10})\$	+81\$1	09012345678 -> +819012345678
^0([0-9]{9})\$	+81\$1	0312345678 -> +81312345678
^0(\d\d)-(\d\d\d\d)-(\d\d\d)\$	+81\$1\$2\$3	090-1234-5678 -> +819012345678
^\(*0(\d)[()\-](\d\d\d\d)[()\-](\d\d\d\d)\$	+81\$1\$2\$3	03-1234-5678 -> +81312345678 (03)1234-5678 -> +81312345678 03(1234)5678 -> +81312345678
^\+(\d)-(\d\d\d)-(\d\d\d)-(\d\d\d))*	+\$1\$2\$3\$4	+1-212-345-6789 -> +12123456789
^0(\d)-(\d\d\d\)- (\d\d\d\)\sX(\d\d\d\)\$	+81\$1\$2\$3;ext=\$4	03-1234-5678 X2000 -> +81312345678;ext=2000

 Table 1-2
 Normalization Rules (Global Numbers)

 Table 1-3
 Normalization Rules (Local Numbers)

Regular Expression	Conversion	Examples
^([0-9*#]{4})\$	\$1;phone-context=nec.com	2000 -> 2000;phone-context=nec.com
^2([0-9*#]{4})\$	2\$1;phone-context=nec.com	20000 -> 20000;phone-context=nec.com
^8([0-9*#]{7})\$	\$0;phone-context=nec.com	81070000 -> 81070000;phone- context=nec.com

Regular Expression	Conversion	Examples
^8-(\d\d)-([0-9*#]{5})\$	8\$1\$2;phone-context=nec.com	8-10-70000 -> 81070000;phone- context=nec.com
^\$	notknown;phone-context=nec.com	No caller number (anonymous) -> notknown;phone- context=nec.com

^\$indicates a blank line. When the caller number cannot be acquired at termination, the regular expression for a blank line is matched. When the conversion result is tel:notknown;phone-context=~, "unknown" is displayed on the MOC.

DialNumber Conversion

To send an origination direction to a PBX, OW5000 must convert a tel URI number into a dialable number before passing it to the PBX. Table 1-4 shows examples of tel URI conversion. In the following examples, the external line origination access code and the international origination number of the PBX are assumed to be "0" and "010", respectively.

Table 1-4 tel URIs and Dialable Numbers

Туре	tel URI	Dialable numbers
Global number (domestic)	tel:+819012345678	009012345678
Global number (international)	tel:+862112345678	0010862112345678
Global number (domestic) ext	tel:+819012345678;ext=2000	2000
Global number (international) ext	tel:+862112345678;ext=3000	3000
Local number	tel:2000;phone-context=nec.co.jp	2000
Local number	tel:3000;phone-context=dialstring	3000

Every extension using MOC must be registered in the Extension Database of OW5000 with its tel URI. Extensions that do not use MOC normally need not be registered in the Extension Database of OW5000.

The table below lists whether or not MOC is used and if registration in OW5000 is required (Table 1-5).

tel URI Fo	OW5000 Registration Required?		
	tel:+>E.164>		
Extensions using MOC	tel:+>E.164>;ext= <extension></extension>	Required	
	tel: <extension>;phone- context=>scope></extension>		
	tel:+>E.164>	Required	
Extensions not using MOC	tel:+>E.164>;ext= <extension></extension>	Normally not required	
	tel: <extension>;phone- context=>scope></extension>	(Required depending on the configuration *)	

Table 1-5 MOC Usage and OW5000 Registration Requirement

* The cases in which extensions not using MOC need to be registered in OW5000 are described below.

• (1) When multiple access codes for an identical PBX exist within one voice network

Example) To call extension 2000 of PBX 810, 8102000 must be dialed from PBX 820, but 6152000 must be dialed from another PBX 830.

In such a configuration, an appropriate access code must be appended at origination by preassigning the access code to each PBX in **PBX > PBX Dialing** (Destination PBX) of OW5000. Therefore, extensions which do not use MOC are also required to be registered in OW5000.

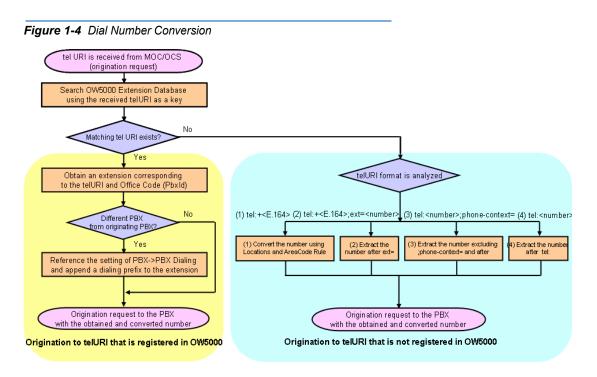
• (2) When the conversion from the caller number into the tel URI format is difficult

Example 1) When a call is received from extension 2000 of PBX 810, PBX 820 is notified of 8102000, but PBX 830 is notified of 6152000.

Example 2) When the "tel:+<E.164>;ext=<extension>" or "tel:<extension>;phone-context= <scope>" format is used, the <E.164> number or <scope> needs to be decided for every caller number.

The caller number must be converted into a unique tel URI to be notified to OCS/MOC. If the conversion is not possible using the caller number normalization rules (AniTranslate.txt), the extensions not using MOC must be registered in OW5000.

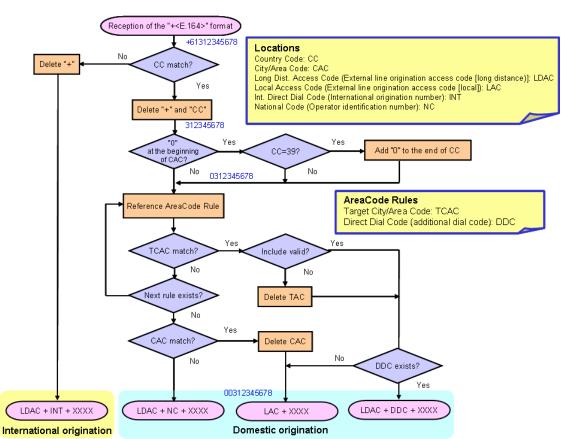
Figure 1-4 shows the procedure for converting a dial number.



If the tel URI specified by the origination request of MOC matches a tel URI registered in OW5000, the destination PBX and the called extension are identified and the dial number is decided. When the destination PBX is different from the local PBX, the call is originated after appending the access code for the destination PBX to the extension by referencing the setting of **PBX > PBX Dialing** of OW5000. When the destination PBX is not registered in **PBX > PBX Dialing**, the call is originated with no access code appended.

If the tel URI specified by the origination request of MOC is not registered in OW5000, analysis of the tel URI format is executed. When the format "tel:+<E.164>" is used, the call is judged as an external line origination and the tel URI is converted into the dial number. When the format "tel:+<E.164>;ext=<number>", "tel:<number>;phone-context=<scope>", or "tel:<number>" is used, the part of "number" is extracted and it is directly used as the dial number for origination.

The rules according to which a global number specified in the "tel:+<E.164>" format (not registered in the Extension Database) is converted into a dial number should be configured in **Locations** and **AreaCode Rules** under **Administrator > PBX Management** of OW5000. In **Locations**, six types of information are configured: the country code of the destination PBX, the city/area code, the external line origination access code (long distance), the external line origination access code (local), the international origination number, and the operator identification number. In **AreaCode Rules**, the list of the city/ area codes which are referenced during conversion is registered as additional information to **Locations**. The procedure for converting an external line dial number is shown in Figure 1-5.





Whether the country code following "+" matches the country code of the local PBX is checked determines whether or not the call is of international origination. The conversion into a dial number is then executed following the rules shown below.

International origination

External line origination access code (long distance) + international origination number + E.164 number

- Example) +12141234567 -> 0 010 121412345678
- Domestic origination (when the city/area code is registered in Locations and AreaCode Rule)

External line origination access code (local) + 0 + E.164 number excluding the country code

Example) +61312345678 -> 0 0 312345678

• Domestic origination (when the city/area code is registered in Locations and AreaCode Rule (with DDC))

External line origination access code (long distance) + additional dial code (DDC) + 0 + E.164 number excluding the country code Example) +61312345678 -> 0 00XY 0 312345678 (where DDC is 00XY) Domestic origination (when the city/area code is not registered in Locations or AreaCode Rule)

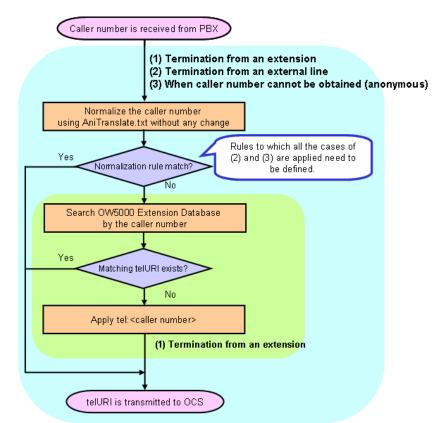
External line origination access code (long distance) + operator identification number + 0 + E.164 number excluding the country code Example) +61412345678 -> 0 00XY 0 412345678 (where the operator identification number (NC) is 00XY)

Caller Number Normalization

A caller number received from the PBX needs to be converted into a tel URI format by the OW5000 Remote Call Control Service, and sent to OCS.

If this is a closed numbering configuration (including standalone PBX configuration), the procedure for normalizing a caller number is shown in Figure 1-6.





Caller numbers are converted into tel URI formats according to the normalization rules described in AniTranslate.txt, and then sent to OCS.

A caller number may be involved in one of the following three types of termination:

(1) Termination from an extension

(2) Termination from an external line

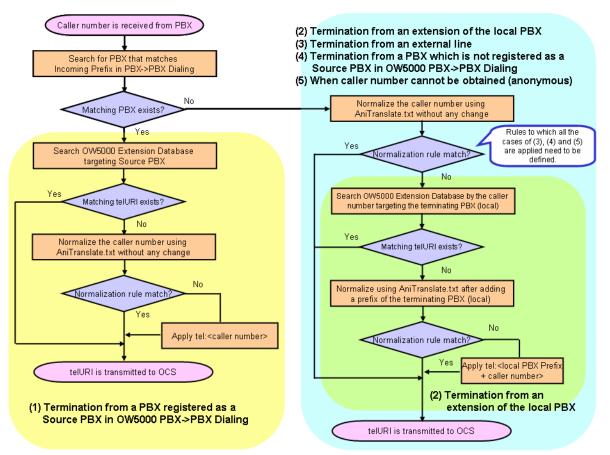
(3) Caller number cannot be obtained (anonymous)

<u>Unless otherwise defined (*), define the normalization rules so that all</u> <u>caller numbers of (1) to (3) can be normalized according to</u> <u>AniTranslate.txt.</u>

* If the rule definition in AniTranslate.txt is difficult such as when the tel:+<E.164> format is used, define rules not to match AniTranslate.txt normalization rules so that a tel URI registered in the OW5000 Extension Database is sent to OCS.

Figure 1-7 shows the procedure for normalizing a caller number when in an open numbering configuration.

Figure 1-7 Caller Number Normalization (for Open Numbering)



If the first digit of the caller number matches Incoming Prefix set in **PBX** > **PBX Dialing**, search for the target extension of the target PBX. If a matching tel URI is found, send the registered tel URI to OCS. If a tel URI match is not found, convert the caller number into a tel URI according to the normalization rule described in AniTranslate.txt and send it to OCS.

If the first digit of the caller number does not match the Incoming Prefix set in **PBX >PBX Dialing** the caller number may be involved in one of the following four types of termination:

(2) Termination from an extension of the local PBX

(3) Termination from an external line

(4) Termination from a PBX which is not registered as a **Source PBX** in OW5000 **PBX > PBX Dialing**

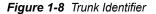
(5) Caller number cannot be obtained (anonymous)

Define the normalization rules so that all caller numbers of (3) to (5) are converted into tel URIs according to AniTranslate.txt.

Caller numbers that do not match normalization rules are treated as (2) call termination from extensions of the local office. Search for the target extension of the local PBX. If a matching tel URI is found, send the registered tel URI to OCS. If no tel URI match is found, append the local PBX prefix to the caller number, convert it to a tel URI as per the normalization rule described in AniTranslate.txt, and send it to OCS.

In addition, with the OW5000 Remote Call Control Service, if a call is originated to an external/leased line using MOC or if the other party is switched from an extension to an outside line, the information of the other party cannot be obtained correctly, and an 8- to 10-digit outside trunk identifier may be displayed on the MOC screen.

Example 1) When a phone number for an external/leased line is entered in the **Search** box of MOC to originate a call, an outside trunk identifier (22510251 in the example below) is displayed as the called party after the called party answers the call. In addition, when the other party is switched to an external/leased line through an unattended call transfer (direct transfer), an outside trunk identifier is displayed as well.



🗣 🗧 22510251 - Conversation		- = ×
- 📿 🆓 Invite -		-
🕫 🖑 🛹 🗍 🏢		IIIII 0:00:18
\varTheta Theodore Martin	C	
0 22510251	C	

Example 2) When an outside phone number such as a mobile phone is selected from the **Contact List** to originate a call, the "i" symbol is displayed on the right side of the called party's name after the called party answers the call. When the mouse pointer is placed on the "i" symbol, the following message displays, *The participant has attended the phone meeting from outside trunk identifier XXXXXX*. A similar display also appears when the termination side forwards a call from an extension to an outside line such as a mobile phone by redirection operation (forwarding during termination).

An outside trunk identifier is an 8- to 10-digit number created based on the PBX internal trunk information. Just like the normalization of caller

numbers, an identifier is normalized into a tel URI format by the procedure in Figure 1-6, and notified to the caller.

Caller Number Normalization Rules

Caller number normalization rules (AniTranslate.txt) are installed in the following folder in the OW5000 server.

C:\Program Files\NEC\OW5000\RCC\AniTranslate.txt

Open AniTranslate.txt. Note that rules for country number "1" (North America) are described in this file. Add # at the line head to make it a comment line and describe a necessary normalization rule.

In the following description format, describe a country code, regular expression, and conversion pattern on a single line. ? indicates [tab]. A line beginning with # is treated as a comment line. For country code, describe the country number (that matches the Country Code in **Locations** for the PBX installation location. In <conversion pattern>, describe a pattern including the tel: scheme.

Description format (Caller number normalization rules)

Comment line

<Country code> <a>
Regular expression (Line head^ and line end\$ are required)>

▲<Conversion pattern (Including tel:scheme) >

Comment line

<Country code> <Regular expression (Line head^ and line end\$ are required)> <Conversion pattern (Including tel:scheme)>

Description format (Caller number normalization rules)

Convert a 10-/11-digit number beginning with 0 into tel:+<E.164>.

81 ^0([0-9]{9,10})\$ tel:+81\$1

Convert an 8-digit extension beginning with 8 into tel:

<extension number>;phone-context=univerge.com.

81 ^8([0-9*#]{7})\$ tel:\$0;phone-context=univerge.com



The above description format is different from the following description format for phone number normalization rules for the OCS address book server (address book service).

Description format (Phone number normalization rules)

Comment line

- <Regular expression (Line head^ and line end\$ are unnecessary)>
- <Conversion pattern (not including tel:scheme)>
- # Comment line
- <Regular expression (Line head^ and line end\$ are unnecessary)>
- <Conversion pattern (not including tel:scheme)>

2

Microsoft OCS Configuration

This chapter describes additional configurations for OCS and MOC which are required for collaborating with the OW5000 Remote Call Control. This document is created on the assumption that the setup of OCS and MOC has been done and MOC is ready for presence confirmation and instant message transmission/reception. Confirm that all the Microsoft software patches have been applied to all OCS servers and computers which execute MOC.

OCS/MOC2007 Configuration

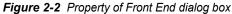
Log into the Windows server on which OCS is running. Select **Start** > **Management Tool** > **Office Communications Server 2007**. Rightclick on the computer name and select **Property** to open an Office Communications Server 2007 dialog box.

Figure 2-1	Office	Communications	Server	2007	dialog box
------------	--------	----------------	--------	------	------------

Office Communications Server 2007 Forest - EBC.PRV Enterprise pools		Öffice Communications Server 2007				
🖹 🚞 Standard	dition Servers	Status Database	Resources			
 Archiving Unassigne 	Logging Tool	l Settings				
Mediation Live Comn	Application Prop	erties + tion or global route:	nec-lcs-test.ebc.prv			
Live com	Properties	Eront End Properties Web Conferencing Properties	<none> 5061</none>			
	⊻iew New <u>W</u> indow fro	M/V Conferencing Properties	Both NTLM and Kerberos			
	Refresh	o server compression:				
	Help	P routes (outbound connections)	Next Hop Address: 172.24.176.37	Port: 5062	Transport: TCP	
		Default certificate settings: Server name: nec-lcs-test.ebc.prv	Enabled/Disabled:			
		Meeting Settings				
		Archiving and CDR Settings				
		Address Book Server Settings				
		B Voice Settings				

Adding Static Route

Step 1 To register the routing conditions and destination for CSTA/SIP messages, select the Routing tab on the property screen.



Federation		st Autho			Archiv		Voice
General	Routir	ng	Co	mpressi	on	Auth	nenticatio
Routing							
- Specify <u>s</u> tatic ri	outes for	outbour	nd con	nection	s.		
Matching UR	1	NextH	lop	Port	Transp	oort	
		A <u>d</u> d	. [<u>E</u> c	lit	<u><u> </u></u>	move
Wamina: The F	host addr						move
Warning: The H Authorization ta							move
							move
							move



Figure 2-3	Edit Static	Route	dialog	box
------------	-------------	-------	--------	-----

Edit Static Route			X
Matching URI			
Wildcard character:	s can be used in	the domain names.	
<u>D</u> omain:		nec-lcs-test.ebc.prv	
Phone URI			
Next hop			
Nexthop			
C EQDN:			
IP address:		172 . 24 . 176 .	37
<u>T</u> ransport:		TCP	•
P <u>o</u> rt:			5060
E <u>R</u> eplace host in	request URI		
	0K.	Cancel	Help

Step 3 Enter the matching URI of the OW5000 Remote Call Control server into the **Domain** field.

If the configuration has two or more OW5000 units, a different domain name is required for each OW5000 server to enable routing.

Specifying FQDN of the OW5000 server is recommended.



- *Step 4* In the **Next hop** field, enter the address of the server on which the OW5000 Remote Call Control Service runs.
- Step 5 Select TCP for Transport.
- *Step 6* Enter the **Port** number, which has been set at RCC Setting of OW5000 Administrator (default: 5060).
- Step 7 Click OK.

Adding Approved Host

Follow the steps below to add an approved host.

Step 1 Select the Host Authorization tab on the property screen.

Figure 2-4 Host Authorization Tab

ec-lcs-test Fror	nt End Propert	ies			×
General	Routing	Compre	ssion	Auth	nentication
Federation	Host Auth	orization	Archi	ving	Voice
	zed hosts such a d additional ban			n servers	, special
Servers	Outb	ound Only	Throttle	As Se	Treat As A
4					Þ
	A	<u>d</u> d	<u>E</u> dit		<u>R</u> emove
	ОК	Cancel	Ap	oly	Help

Step 2 Click Add. An Edit Authorized Host dialog box displays (Figure 2-5).

Figure 2-5 Edit Authorized Host dialog box

Server			
C EQDN:	172	24 . 176 .	3
P address:	1		
Settings			
<u>O</u> utbound Only			
Ihrottle As Server			
Treat As Authenticated			

- Step 3 In the Server field, enter the address of the server on which the OW5000 Remote Call Control Service runs. The address should be added as the static route beforehand.
- Step 4 Check Treat As Authenticated in the Setting field.
- Step 5 Click OK.

Phone Number Setting

Select **Start** > **Management Tool** > **Active Directory User and Computer** to display the properties of the RCC user.

Figure 2-6 RCC User Properties				
	Storrie, Mike Prope	rties		? ×
	Member Of	Dial-in	Environment	Sessions
	Remote control	Terminal Service	es Profile COM+	Communications
	General Addres	s Account	Profile Telephone	es Organization
	Storrie	, Mike		
	<u>F</u> irst name:	Mike	Įnitials:	
	Last name:	Storrie		
	Di <u>s</u> play name:	Mike Storrie		
	Description:			
	Offi <u>c</u> e:			
	<u>T</u> elephone number	r: 22510		Other
	E- <u>m</u> ail:			
	<u>W</u> eb page:			Othe <u>r</u>
		DK Ca	incel Apply	Help

Step 1 Enter the main phone number into the **Telephone number** field from the **General** tab.

The input value for this field needs to be a value that can be converted into the line URI, which will be set in the next section, by normalization. Therefore, this value should be the extension number itself of the collaborating PBX phone or the value from which the extension number can be derived. For an open numbering network configuration, the local prefix (access code + exchange number) should be educible as well as the extension number.

Step 2 To enter another phone number, click **Other**, or the mobile/home phone number in the **Telephones** tab, as needed.

User Option Settings

Follow the steps below to display the properties of the RCC user from the Microsoft Office Communication Server 2007 dialog box (Figure 2-7).

Figure 2-7 Microsoft Office Communication Server 2007 dialog box

Eile Window Help				
Office Communications Server 2007	Enabled Renabled	Display name Ken Riggs	SIP URI sip:riggs@EBC.PRV	Type User
Content of the second sec	Enabled Enabled	Gary Gordon Mike Storrie	sip:ggordon@ebc.prv sip:mstorrie@EBC.PRV	User User
😟 💼 Users 🗄 🛅 nec-lcs-test.ebc.prv	Enabled Enabled Enabled	Mike Steinmetz ebc demo James Francis	sip:steinmetz@EBC.PRV sip:demo@ebc.prv sip:ifrancis@EBC.PRV	User User User
	Enabled Read	Mary Mantz Theodore Martin	sip:mmantz@EBC.PRV sip:tmartin@EBC.PRV	User User
Live Communications Server 2				

A Property dialog box for the user displays (Figure 2-8).

Figure 2-8 Property dialog box

Sign-in name: sip:mstorrie	r Office Communicati	ons Server	•
Server or pool:			
nec-lcs-test.	EBC.PRV		•
Meetings	mous participants		
Policy:	Default Policy	/	~
	ettings cannot be ch	anged unless the glol	bal
	er user configuration		
	er user configuration	Co <u>n</u> fic	jure
setting allows p	er user configuration		jure
setting allows p	er user configuration		jure

Step 1 Click the Configure button. A User Options dialog box displays (Figure 2-9)

User Options
Telephony Select a telephony option. These settings affect only those calls that are routed through
IP-PSTN or remote call control gateways.
Enable PC-to-PC communication only Enable Remote call control
C Enable Enterprise Voice
□ Enable PB⊻ integration
Note: To enable both remote call control and PBX integration, you must specify a Server URI below.
Policy: Default Policy Y
Server URI: sip:22510@nec-Ics-test.ebc.prv
Line URI: tel:22510;phone-context=ebc.prv
Federation
Enable federation Enable remote user access
Enable public IM connectivity
Archiving
Archive internal IM conversations
Archive federated IM conversations
Note: Archiving settings cannot be changed unless the global setting allows per user configuration.
Enable enhanged presence
Note: Enhanced presence cannot be changed once it has been set.

Step 2 Select **Enable Remote call control** in the **Telephony** field and then enter the server URI and Line URI.



Enterprise Voice, including the PBX integration, is not supported.

- Step 3 Enter the Server URI in the format of sip:<user identifier>@<domain name>. The part of <domain name> needs to be the same as the domain name entered on the Edit Static Route dialog box (Figure 2-3). Enter an extension number into <user identifier>.
- Step 4 Enter the Line URI in the format of tel:<extension number>;phonecontext=<scope>. Enter the domain name of the company into <scope>.

For an open numbering network configuration, the local prefix (access code + exchange number) should also be included in <extension number>. The line URI needs to match the tel URI set through OW5000 Administrator—Extension Management. Refer to the UNIVERGE OW5000 System Manual for more information.

Step 5 Click OK.

Address Book Server Setting

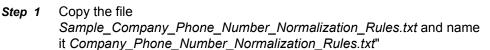
To edit the normalization rules for the OCS address book server, follow the steps below.

When the application has been installed to the default location, the configuration file is located in the following directory:

C:\Program Files\Microsoft Office Communications Server 2007\Web Components\Address Book Files\Files

Figure 2-10 Address Book Files Folder

<u>File Edit View Favorites I</u>	ools <u>H</u> elp			
🔇 Back 🔹 🕤 👻 🍠 🔎 Searc	h 📂 Folders 🛛 🔊 🗙 🍤 🛄 -			
Address 🗀 C:\Program Files\Micro	soft Office Communications Server 2007\Web Components\Address Book Files\	Files	•	🔁 Go
Folders	× Name	Size	Туре 🔻	Dat -
Program Files	Sample_Company_Phone_Number_Normalization_Rules.txt	4 KB	Text Document	7/1-
Adobe	Invalid_AD_Phone_Numbers.txt	4 KB	Text Document	7/2
Cmak	Company_Phone_Number_Normalization_Rules.txt	4 KB	Text Document	7/1
Common Files	F-Oacd.Isabs	3 KB	LSABS File	7/2
ComPlus Applications	F-Oacc.Isabs	3 KB	LSABS File	7/2
InstallShield Installation Inform	F-Oacb.Isabs	3 KB	LSABS File	7/2
Internet Explorer	F-Oaca.lsabs	3 KB	LSABS File	7/2
🔁 Java	F-0ac9.lsabs	3 KB	LSABS File	7/2
Microsoft ActiveSync	F-Oac8.Isabs	3 KB	LSABS File	7/2
	A George A	- VP	1	-17-



Step 2 Open the file Company_Phone_Number_Normalization_Rules.txt, and delete the sample descriptions for Microsoft Corporation and describe the necessary normalization rules.



^ and **\$**, which indicates the beginning and end of a line, does not need to be described

Step 3 Describe a regular expression on one line and describe a conversion pattern on the next line. Lines beginning with # are treated as comment lines.



tel: does not need to be described in the conversion pattern.

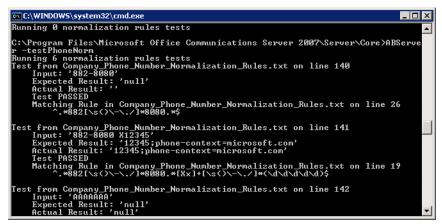
Figure 2-11 Example of Normalization Rules Text File

100000	Edit Format View Help	100
## ## ##	This is a read-only file that contains an example of company specify phone normalization rules used by Microsoft Corporation. You shou make a copy this file in the same folder, with the name Company_Phone_Normalization_Rules.txt and make it writable. You ca then edit the file to adapt it to your needs. The file will not be uninstalled when you uninstall the Address Book Service,	"1,▲ id in
## ## ##	Microsoft specific rules	
# # . #	882 8080 ×ddddd	
.*8 \$1;	382[\s()\-\./]*8080.*[xx]+[\s()\-\./]*(\d\d\d\d\d) phone-context=microsoft.com	
# # . #	882 8080	
.*8 nu	382[\s()\-\./]*8080.* I1	
•		١

Step 4 Save the file *Company_Phone_Number_Normalization_Rules.txt*" after editing.

You can verify if the normalization rules have been appropriately described by using the normalization rule tests described at the end of the file.

Figure 2-12 Verify the Normalization Rules



Step 5 To update the address book file with the normalization rules applied, execute the following command via the command prompt screen.

C:\Program Files\Microsoft Office Communications Server 2007\Server\Core\ABServer -syncNow

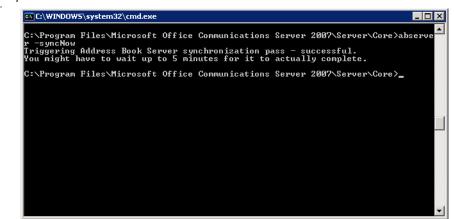


Figure 2-13 Update the Address Book File

When this operation is completed, an address book file is created in the directory listed below. If a phone number does not match the normalization rules, a file named *Invalid_AD_Phone_Numbers.txt* is created. Check the file content and edit the normalization rules appropriately.

C:\Program Files\Microsoft Office Communications Server 2007\Web Components\Address Book Files\Files

MOC obtains the address book data at the time you sign-in and retains them in the *galcontacts.db* file located under the following directory.

C:\Documents and Settings\<username>\Local Settings\Application Data\Microsoft\Communicator

To update the address book data on the MOC side immediately, delete *galcontacts.db* and then sign into MOC again.

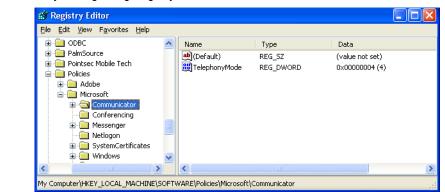
MOC2007 Policy Settings

To use Remote Call Control, the policy setting is required for MOC2007. Set the following registry value to 2 or 4.

Name: TelephonyMode Type: REG_DWORD Data: 2 or 4

- 0 = Enables calls between computers only. Call control is not enabled (predetermined)
- 1 = Enables the enterprise VoIP telephony function
- 2 = Enables calls between RCC and computer
- 3 = Enables both the enterprise VoIP and RCC
- 4 = Enables RCC for calls other than between computers
- 5 = Enables IM and presence only. Voice is not enabled

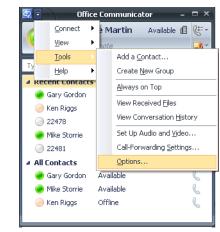
Figure 2-14 Set Policy Setting Using Registry Editor



MOC2007 Option Settings

Display the MOC2007 option screen by selecting **Tools** > **Options**.

Figure 2-15 Display MOC2007 Option Screen



An Options—Phones Tab dialog box displays (Figure 2-16).

My phone numbers To enter or edit your phone numbers, click the relat others, select the adjacent check box. Work Phone	ted button. To share the number with
Work Phone 22472	Publish this phone number
Mobile Phone	Publish this phone number
Home Phone	Publish this phone number
Other Phone	Publish this phone number
Phone integration	
Enable integration with your phone system	Advanced

- Step 1 Check Enable integration with your phone system in the Phone integration field.
- Step 2 Click the Advanced button.
- Step 3 Select Automatic configuration on the Advanced phone Integration Configuration screen.

Figure 2-17 Advanced Phone Integration Configuration dialog box

Advanced Phone Integration Configuration	
O Automatic configuration	
 Configure settings 	
Type the remote call control URI and phone URI below. If you do not have this information, contact your system administrator.	
Remote call control URI (sip):	sip:22472@ebc.prv
Phone URI (tel):	tel:22472;phone-context=10.ebc.prv
	OK Cancel Help

- *Step 4* When selecting **Configure settings**, enter the Remote Call Control URI and Phone URI.
- *Step 5* Enter the server URI and the line URI which have been entered in user option settings for Remote Call Control URI and Phone URI, respectively.

Operation Check

This is the end of the OCS and MOC2007 configurations. Check the operation after configuring the OW5000 Remote Call Control Service.

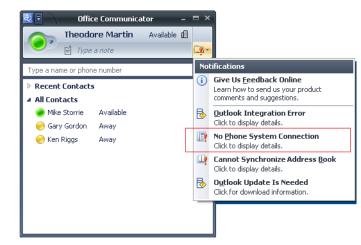
After you sign-in, if the phone-shaped mark is displayed on the right side of your name, as shown below, the Remote Call Control has appropriately been configured.





If the following error displays, confirm the settings again.

Figure 2-19 Confirm MOC2007 Setting

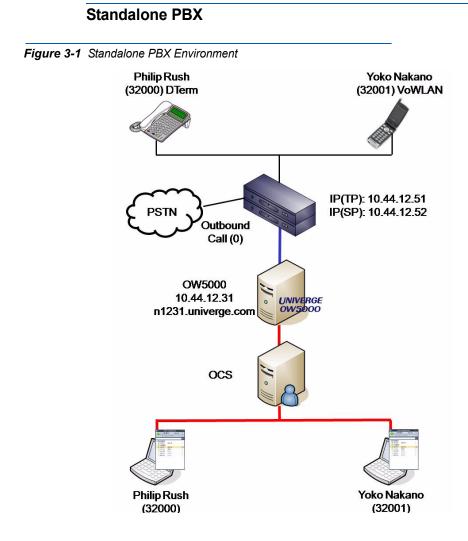


2-14 Microsoft OCS Configuration

Configuration Examples

This chapter provides examples of the OW5000 configurations required to collaborate with OCS and MOC.

Managing Single IP Telephony Server



Active Directory								
Name	Phone No.	Mobile phone No.	Server URI	Line URI				
Phillip Rush	32000	090-1234-5678	sip:32000@n1231.univer ge.com	tel:32000;phone- context=univerge.com				
Yoko Nakano	32001	080-1234-5678	sip:32001@n1231.univer ge.com	tel:32001;phone- context=univerge.com				

Table 3-1 OCS side configuration

Address Book Server (normalization rules)

0(/d/d)-(/d/d/d)-/d/d/d/d)

+81\$1\$2\$3

([0-9*#]{5}]

\$1;phone-context=univerge.com

Static Route						
Domain	Next Hop IP Address	Next Hop Port				
n1231.univerge.com	10.44.12.31	5060				

Table 3-2 OW5000 Side Configuration

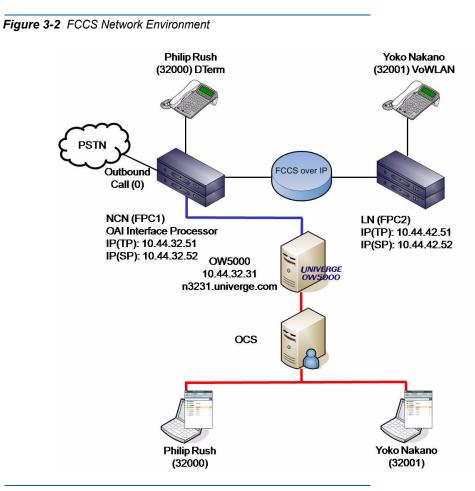
PBX Management								
PBX Name	IP Add	ress	Office Code	РВХ Туре	Locations	G UGN	Prefix	Sip Server
Kanda	10.44.1	2.51 1		UNIVERGE SV7000	Tokyo	False		
	PBX Management - Locations							
Location Name		untry ode	City/A Cod	Acc	cess A	22201	nt. Direct Dial Code	National Code
Tokyo	81		03	0	0	0.	10	
	PBX Management - Area Code Rule							
Location I	Name	Ar	ea Code	Exch	ange	Access Co	ode Inc	lude Area Code
Tokyc		0						

PBX Management - Reserved Number							
PBX	Number	Tenant	Reserved Type	Application			
Kanda	39000	1	Monitored Number	OW5000 API			

Extension Management							
Extension	PBX	Phone Type	Tenant	Tel URI	SIP URI	Is Monitored	
32000	Kanda	DTerm	1	32000;phone- context=unive rge.com		(False)	
32001	Kanda	DTerm	1	32001;phone- context=unive rge.com		(False)	

License Management						
PBX	Extension	CSTA				
Kanda	32000	TRUE				
Kanda	32001	TRUE				

Caller Number Normalization Rules						
# External termination (domestic)						
81 ^0([0-9]{9,10})\$ tel:+81\$1						
# Extension termination (5 digits)						
81 ^([0-9*#]{5})\$ tel:\$1;phone-context=univerge.com						
# Anonymous termination						
81 ^\$ tel:notknown;phone-context=univerge.com						
# For the trunk identifier						
81 ^([0-9]{8,10})\$ tel:\$1;phone-context=univerge.com						
# International termination						
81 ^(1 20 21\d 22\d 23\d 24\d 25\d 26\d 27 28\d 29\d 30 31 32 33 34 35\d 36 37\d 38\d 39 40 41 42\d						
43 44 45 46 47 48 49 50\d 51 52 53 54 55 56 57 58 59\d 60 61 62 63 64 65 66 67\d 68\d 69\d 7 80\d 81 82 83\d 84 85\d 86 87\d 88\d 89\d 90 91 92 93 94 95 96\d 97\d 98 99\d)(\d+)tel:+\$1\$2						



FCCS Network

Table 3-3 OCS Side Configuration

Active Directory							
Name	Phone No.	Mobile phone No.	Server URI	Line URI			
Phillip Rush	32000	090-1234-5678	sip:32000@n1231.univer ge.com	tel:32000;phone- context=univerge.com			
Yoko Nakano	32001	080-1234-5678	sip:32001@n1231.univer ge.com	tel:32001;phone- context=univerge.com			
	Address Book Server (normalization rules)						
	0(/d/d)-(/d/d/d/d)-/d/d/d/d)						
+81\$1\$2\$3							
	([0-9*#]{5}]						

\$1;phone-context=univerge.com

Static Route							
Domain	Next Hop IP Address	Next Hop Port					
n3231.univerge.com	10.44.32.31	5060					

Table 3-4 OW5000 Side Configuration

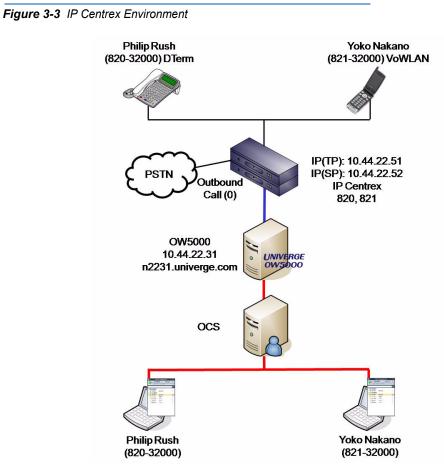
				PBX	Mana	igement	:			
PBX Name	IP Addr	ess	Office Code	PBX 1	ype l	Locatior	ns UGI	N F	Prefix	Sip Serve
Kanda	10.44.32	2.51 1		UNIVE SV700		Tokyo	False			
			PBX	(Mana	geme	nt - Loc	ations			
Location Name		intry ode	City/A Code	rea	Long tAcce Coc	ess	Local Access Code	Int. D Dial (National Code
Tokyo	81		03	0		0		010		
			PBX M	anagei	ment ·	- Area C	ode Rule			
Location Name Area Code Exchange Access Code				Inc	lude Area Code					
Tokyo)	0								
	PBX Management - Reserved Number									
PBX		N	umber	_	Tena		Reserve		A	oplication
Kanda		39000		1			Monitorod	Number	0\\/5	000 API

	Extension Management							
Extension	PBX	Phone Type	Tenant	Tel URI	SIP URI	Is Monitored		
32000	Kanda	DTerm	1	32000;phone- context=unive rge.com		(False)		
32001	Kanda	DTerm	1	32001;phone- context=unive rge.com		(False)		

License Management						
РВХ	Extension	CSTA				
Kanda	32000	TRUE				
Kanda	32001	TRUE				

# External termination (domestic) 81 ^0([0-9]{9,10})\$ tel:+81\$1							
H Fritzer to main the main stars (F slight)							
# Extension termination (5 digits)							
81 ^([0-9*#]{5})\$ tel:\$1;phone-context=univerge.com							
# Anonymous termination							
81 ^\$ tel:notknown;phone-context=univerge.com							
# For the trunk identifier							
81 ^([0-9]{8,10})\$ tel:\$1;phone-context=univerge.com							
# International termination							
81 ^(1 20 21\d 22\d 23\d 24\d 25\d 26\d 27 28\d 29\d 30 31 32 33 34 35\d 36 37\d 38\d 39 40 41 42\d							
43 44 45 46 47 48 49 50\d 51 52 53 54 55 56 57 58 59\d 60 61 62 63 64 65 66 67\d 68\d 69\d 7 80\d 81 82 83\d 84 85\d 86 87\d 88\d 89\d 90 91 92 93 94 95 96\d 97\d 98 99\d)(\d+) tel:+\$1\$2							

IP Centrex



Active Directory Line URI Name Phone No. Mobile phone No. Server URI sip:82032000@n2231.un tel:82032000;phone-Phillip Rush 820-32000 090-1234-5678 iverge.com context=univerge.com sip:82132000@n2231.un tel:82132000;phone-Yoko Nakano 821-32000 080-1234-5678 iverge.com context=univerge.com

Table 3-5 OCS Side Configuration

Address Book Server (normalization rules)

0(\d\d)-(\d\d\d)-(\d\d\d))

+81\$1\$2\$3

([0-9*#]{3})-([0-9*#]{5})

\$1\$2;phone-context=univerge.com

Static Route						
Domain	Next Hop IP Address	Next Hop Port				
n2231.univerge.com	10.44.22.31	5060				

Table 3-6 OW5000 Side Configuration

				PB	X Man	agemei	nt				
PBX Name	IP Addi	ress	Office Code	PBX	Туре	Locatio	ons	UGN	P	refix	Sip Server
Takatsu	10.44.2	2.51 1		UNIV SV70	ERGE 00	Tokyo		False			
	PBX Management - Locations										
Location Name		untry ode	City/A Cod		tAcc	l Dis- cess de	A	.ocal ccess Code	Int. D Dial C		National Code
Tokyo	81		03		0	(0		010		
	PBX Management - Area Code Rule										
Location I	Name	Ar	ea Code		Exch	ange		Access (Code	Inc	lude Area Code
Tokyc		0									

PBX		Nur	nber	Tenant	Reserved	d Type	A	pplication		
Takatsu		8203900	0 1		Monitored I	Number	OW	5000 API		
Extension Management										
Extension	P	BX	Phone Type	Tenant	Tel URI	SIP (JRI	Is Monitored		
82032000	Takat	su	DTerm	1	82032000;ph one- context=unive rge.com			(False)		
82132000	Takat	su	VoWLAN	1	82132000;ph one- context=unive rge.com			(False)		
			Lice	ense Manage	ment					
	PBX			Extension			CST	A		
T	akatsu		8203200	00	TRU	TRUE				
Takatsu 82			8203200	82032000 TR				IRUE		
Caller Number Normalization Rules										

- # Extension termination (8 digits)
- 81 ^8([0-9*#]{7})\$ tel:\$0;phone-context=univerge.com
 - # Anonymous termination
 - 81 ^\$ tel:notknown;phone-context=univerge.com
 - # For the trunk identifier
 - 81 ^([0-9]{8,10})\$ tel:\$1;phone-context=univerge.com

International termination

81 ^(1|20|21\d|22\d|23\d|24\d|25\d|26\d|27|28\d|29\d|30|31|32|33|34|35\d|36|37\d|38\d|39|40|41|42\d|

43|44|45|46|47|48|49|50\d|51|52|53|54|55|56|57|58|59\d|60|61|62|63|64|65|66|67\d|68\d|69\d|7|80\d|81| 82|83\d|84|85\d|86|87\d|88\d|89\d|90|91|92|93|94|95|96\d|97\d|98|99\d)(\d+) tel:+\$1\$2

Managing Multiple IP Telephony Servers

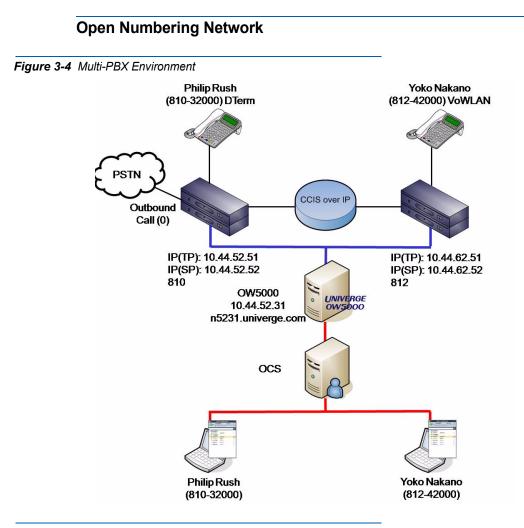


Table 3-7 OCS Side Configuration

Active Directory							
Name	Phone No.	Mobile phone No.	Server URI	Line URI			
Phillip Rush	8-10-32000	090-1234-5678	sip:81032000@n1231.un iverge.com	tel:81032000;phone- context=univerge.com			
Yoko Nakano	8-12-42000	080-1234-5678	sip:81242000@n1231.un iverge.com	tel:8124000;phone- context=univerge.com			

Address Book Server (normalization rules)

0(\d\d)-(\d\d\d\d)-(\d\d\d\d)

+81\$1\$2\$3

8-([0-9*#]{2})-([0-9*#]{5})

8\$1\$2;phone-context=univerge.com

Static Route						
Domain	Next Hop IP Address	Next Hop Port				
n5231.univerge.com	10.44.52.31	5060				

 Table 3-8
 OW5000 Side Configuration (n5231.univerge.com)

	PBX Management						
PBX Name	IP Address	Office Code	РВХ Туре	Locations	UGN	Prefix	Sip Server
Kanda	10.44.52.51	10	UNIVERGE SV7000	Tokyo	False	810	
Kanda	10.44.62.51	12	UNIVERGE SV7000	Tokyo	False	812	
PBX Management - Locations							
Location	Countr		Long	Dis- L	ocal In	t Direct	National

Location Name	Country Code	City/Area Code	tAccess Code	Local Access Code	Int. Direct Dial Code	National Code
Tokyo	81	03	0	0	010	

PBX Management - Area Code Rule							
Location Na	Location Name Area Co		ange Acce		ess Code	Include Area Code	
Tokyo	0						
PBX Management - PBX -> PBX Dialing							
PBX	Destination PBX	Dialing Prefix	Extens	ion	Source PBX	Incoming Prefix	
Kanda	Sumida	812			-	-	
Kanda	-	-	-		Sumida	812	
Kanda	-	-	-		Kanda	810	
Sumida	Kanda	810			-	-	
Sumida	-	-	-		Kanda	810	

PBX Management - PBX -> PBX Dialing							
PBX	Destination PBX	Dialing Prefix	Extensio	n Source PB	x Incoming Prefix		
Sumida	-	-	-	Sumida	812		
PBX Management - Reserved Number							
PBX	Numbe	er Ten	ant R	leserved Type	Application		
Kanda	39000	1	Mo	onitored Number	OW5000 API		
Sumida	39000	1	Mo	onitored Number	OW5000 API		

Extension Management								
Extension	PBX	Phone Type	Tenant	Tel URI	SIP URI	Is Monitored		
32000	Kanda	Dterm	1	81032000;ph one- context=unive rge.com		(False)		
42000	Sumida	Dterm	1	81242000;ph one- context=unive rge.com		(False)		

License Management - Enable PBXs						
PBX	Enabled					
Kanda	True					
Sumida	True					

License Management - Enable PBXs					
PBX	Enabled	CSTA			
Kanda	32000	True			
Sumida	42000	True			

Caller Number Normalization Rules
External termination (domestic)
81 ^0([0-9]{9,10})\$ tel:+81\$1
Extension termination (8 digits)
81 ^8([0-9*#]{7})\$ tel:\$0;phone-context=univerge.com
Anonymous termination
81 ^\$ tel:notknown;phone-context=univerge.com
For the trunk identifier
81 ^([0-9]{8,10})\$ tel:\$1;phone-context=univerge.com
International termination
81 ^(1 20 21\d 22\d 23\d 24\d 25\d 26\d 27 28\d 29\d 30 31 32 33 34 35\d 36 37\d 38\d 39 40 41 42\d
43 44 45 46 47 48 49 50\d 51 52 53 54 55 56 57 58 59\d 60 61 62 63 64 65 66 67\d 68\d 69\d 7 80\d 81 82 83\d 84 85\d 86 87\d 88\d 89\d 90 91 92 93 94 95 96\d 97\d 98 99\d)(\d+) tel:+\$1\$2

Configuring with Multiple OW5000 Units

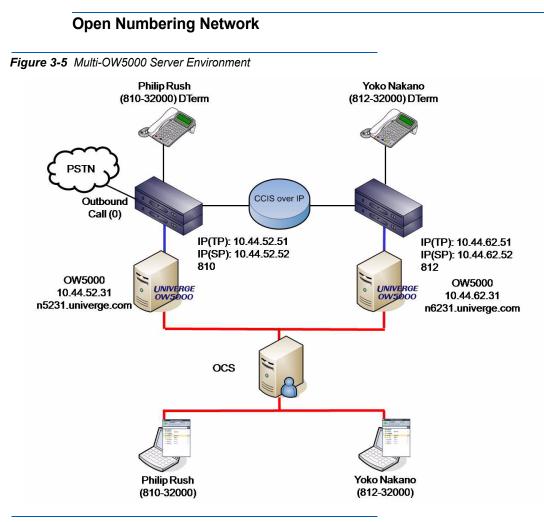


Table 3-9 OCS Side Configuration

	Active Directory						
Name	Phone No.	Mobile phone No.	Server URI	Line URI			
Phillip Rush	810-32000	090-1234-5678	sip:81032000@n5231.un iverge.com	tel:81032000;phone- context=univerge.com			
Yoko Nakano	812-32000	080-1234-5678	sip:81232000@n6231.un iverge.com	tel:81232000;phone- context=univerge.com			

Address Book Server (normalization rules)

0(\d\d)-(\d\d\d\d)-(\d\d\d))

+81\$1\$2\$3

([0-9*#]{3})-([0-9*#]{5})

\$1\$2;phone-context=univerge.com

Static Route					
Domain	Next Hop IP Address	Next Hop Port			
n5231.univerge.com	10.44.52.31	5060			
n6231.univerge.com	10.44.62.31	5060			

 Table 3-10
 OW5000 Side Configuration (n5231.univerge.com)

				F	PBX Man	agemen	t				
PBX Name	IP Addı	ress	Offic Code	- DF	ВХ Туре	Locatio	ns	UGN	Pre	əfix	Sip Server
Kanda	10.44.5	52.51 ⁻	10		NIVERGE /7000	Tokyo	Fa	lse	810		
				PBX M	anagem	ent - Loc	ation	S			
Location Name		untry ode		ty/Area Code	tAco	l Dis- cess de	Loc Acce Cod	ss n	nt. Dire Dial Co		National Code
Tokyo	81		03		0	0		01	0		
lonyo			PB	X Mana	agement	- Area C	ode F	Rule			
Location I		A 1 0	PB. rea Co			: - Area C ange		Rule cess Co	ode	Inc	lude Area Code
Location I			rea Co	de	Exch	ange	Ac	cess Co	ode	Inc	
Location I)		rea Co PBX ation	de Manag	Exch	ange PBX -> F	Ac PBX D	cess Co ialing	ode e PBX		
Location I Tokyc)	0 estina	rea Co PBX ation	de Manag	Exch Jement -	ange PBX -> F	Ac PBX D	cess Co ialing			Code
Location I Tokyc)	0 estina	rea Cor PBX ation X	de Manag Dialing	Exch Jement - g Prefix	ange PBX -> F Extens	Ac PBX D sion	cess Co ialing Sourc			Code
Location I Tokyc) D(0 estina PB)	rea Cor PBX ation X	de Manag Dialing	Exch Jement - g Prefix gement -	ange PBX -> F	Ac PBX D sion	cess Co ialing Sourc	e PBX		Code

			sion Manag			
Extension	PBX	Phone Type	Tenant	Tel URI	SIP URI	Is Monitored
32000	Kanda	Dterm	1	81032000;ph one- context=unive rge.com		(False)
		License Ma	nagement -	Enable PBXs		
	PBX		lagement -		nabled	
	Kanda		True			
1 :	Monor	mont Enchl	F utancian			
		ement - Enable		S	CST	
	PBX	00005	Extension			A
ŀ	Kanda	32000		True	;	
		Caller Num	ber Normali	zation Rules		
			al termination			
		·	[0-9]{9,10})\$ ion terminatio			
	81	# ⊏xtens ^8([0-9*#]{7})\$		-context=univer	no oom	
	01		nymous term		ye.com	
	81 ^		•	e-context=univer		
	01	• •••••	r the trunk ide		96.0011	
	81			-context=univerg		
	01		rnational term		j0.0011	
81 ^(1 20 2 [,]	1/4122/4123/412			31 32 33 34 35\	4136137\4138\4	4139140141142\4
				0 61 62 63 64 65 95 96\d 97\d 98		

Table 3-11 OW5000 Side Configuration (n6231.univerge.com)

			PBX Man	agement			
PBX Name	IP Address	Office Code	РВХ Туре	Locations	UGN	Prefix	Sip Server
Sumida	10.44.62.51	12	UNIVERGE SV7000	Tokyo	False	812	
		PB	(Managem	ent - Locati	ions		
Location Name	Country Code	y City/A Cod	rea tAco	cess A	.ocal ccess Code	Int. Direct Dial Code	National Code
Tokyo	81	03	0	0		010	

Location N	ame	Are	PB a Co		agemen Excł	t - Area nange	a Co			Code	lr	nclude Area Code
Tokyo		0										
PBX	D	estinati PBX			jement - g Prefix					ırce PB	X	Incoming Prefix
			PBX	Mana	gement	- Rese	rve	d Nun	nber			
PBX		Nu	imbe	er	Tei	nant		Rese	erved	Туре	4	Application
Sumida		39000			1			Monito	ored N	lumber	OW	5000 API
				Ext	ension I	Manage	eme	ent				
Extension	F	PBX	Pho	one Typ	e Tei	nant		Tel UI	રા	SIP L	JRI	Is Monitore
32000	Sumi	da	Dter	m	1		on co	23200 e- ntext= e.com				(False)
	License Management - Enable PBXs											
		PBX								nabled		
		Sumida	à			True						
Lice	ense I	lanage	men	t - Enal	ble Exte	nsions	;					

Extension

32000

PBX

Sumida

CSTA

True

Caller Number Normalization Rules
External termination (domestic)
81 ^0([0-9]{9,10})\$ tel:+81\$1
Extension termination (8 digits)
81 ^8([0-9*#]{7})\$ tel:\$0;phone-context=univerge.com
Anonymous termination
81 ^\$ tel:notknown;phone-context=univerge.com
For the trunk identifier
81 ^([0-9]{8,10})\$ tel:\$1;phone-context=univerge.com
International termination
81 ^(1 20 21\d 22\d 23\d 24\d 25\d 26\d 27 28\d 29\d 30 31 32 33 34 35\d 36 37\d 38\d 39 40 41 42\d
43 44 45 46 47 48 49 50\d 51 52 53 54 55 56 57 58 59\d 60 61 62 63 64 65 66 67\d 68\d 69\d 7 80\d 81 82 83\d 84 85\d 86 87\d 88\d 89\d 90 91 92 93 94 95 96\d 97\d 98 99\d)(\d+) tel:+\$1\$2

3-18 Configuration Examples

4

Troubleshooting Guide

Check the table below to find possible solutions to any problems you might encounter while using the OW5000 Remote Call Control.

Trouble	Cause	Action
	The OAI function is not valid on the PBX side.	Apply the OAI option software and verify the system data.
	The OAI connection with the PBX cannot be established.	Verify the network continuity.
	The USB dangle of OW5000 is not inserted.	Insert the USB dangle into the OW5000 server.
	The USB dangle of OW5000 is not identified.	Activate SerurityDeviceDlg.ex of OW5000 and verify that an in 16 digits is displayed in Security Device IDs.
The Remote Call Control Service does not start		If not, remove the USB dangle and insert it again. Then, click the Refresh Security ID List button and verify that the ID is displayed.
	PBX Configuration of OW5000 Administrator is wrong.	Verify the settings of the PBX address and the OAI port number.
	No Reserved Number is assigned to OW5000 API in PBX Configuration of OW5000 Administrator (when the used PBX is either APEX7600i or SV7000).	On the Reserved Numbers ta of PBX Configuration, register Reserved Number (the monito number) and assign it to OW5000 API. * Register Reserved Number the PBX by using the AMNO command.

Table 4-1 Troubleshooting Examples

Trouble	Cause	Action
	The license of the used PBX is not valid in License Manager of OW5000 Administrator.	On the screen of Select PBX, verify that "Enabled" of the PBX which uses RCC is checked.
The Remote Call Control Service does not start (cont'd)		If the PBX screen has been configured before installing RCC, Apply must be clicked again after installing RCC.
	SQL Server has not started.	Verify the SQL Server(SQLEXPRESS) service status by using the service manager of Windows Server 2003. If the status is other than Start , start the service.
	The Remote Call Control Service of OW5000 has not started.	Verify the Remote Call Control Service status by using the service manager of Windows Server 2003. If the status is other than Start , start the service.
The phone-shaped icon with the string Communicator is not properly configured for originating a call is displayed on	The OAIMonitor service of OW5000 has not started.	Verify the OAIMonitor service status by using the service manager of Windows Server 2003. If the status is other than Start , start the service.
Communicator and the PBX integration function does not works	There is a competition between the port number used by the Remote Call Control Service of OW5000 and the one used by another application.	Verify if the port number configured in Applications > OW5000 API > RCC Setting of OW5000 Administrator is competing with other application by using means like as the netstat command. Then, change the port number to an appropriate one.
	The license of the extension which uses Communicator is not valid in License Manager of OW5000 Administrator.	On the screen of Set License, verify that the CTSA license (API license in the case of Asian market) of the extension which uses Communicator is valid.

Trouble	Cause	Action
	The routing configuration of OCS is wrong.	Verify that the IP address and the port number of the OW5000 RCC service are configured as the routing destination.
Forwarding during termination cannot be executed by Communicator	The Reserved Number is not registered to the PBX (if the PBX being used is either APEX7600i or SV7000).	Register the Reserved Number by using the AMNO command.
When originating a call toward the associated PBX (CCIS) by using Communicator, the display of Communicator remains as Calling even after the response of the called party	The applied OAI option software is inappropriate.	Apply the specified OAI option software to the PBX.
In the termination pop-up of Communicator, the caller name is displayed in his/her extension instead of his/her name	The address book server (address book service) of OCS is not constructed correctly.	Construct the address book server (address book service) correctly.
The termination pop-up of Communicator is not displayed (only for OCS collaboration)	The caller number normalization rules are not configured correctly.	Edit AniTranslate.txt correctly.

4-4 Troubleshooting Guide

