

SIP Trunking using the  
Optimum Business Sip  
Trunk Adaptor and the Wave  
500 IP PBX v4.5

## Table of Contents

1. Overview .....	3
2. Prerequisites .....	3
3. PBX Configuration .....	3
4. Creating Extensions .....	4
5. Inbound/Outbound Call Routing .....	7
6. Registration Parameters .....	11
7. Static IP mode .....	12
8. Call Forward .....	13
9. Backup/Restore .....	14

## 1 Overview

The purpose of this configuration guide is to describe the steps needed to configure the Vertical Wave 500 IP PBX for proper operation with Optimum Business Sip Trunking.

## 2 Prerequisites

Please follow the instructions in the Optimum Business SIP Trunk Set-up Guide. The Set-up Guide was left by the Optimum Business technician at installation. If you do not have the Set-up Guide, go to [optimumbusiness.com/sip](http://optimumbusiness.com/sip) to download a copy. The guide describes the steps needed to configure the LAN side of the Optimum Business SIP Trunk Adaptor.

This configuration guide provides the configuration steps for both PBX registration and static IP or non-registration modes of PBX operation.

### PBX Information

<b>Manufacturer:</b>	Vertical
<b>Model:</b>	Wave 500
<b>Software Version:</b>	v4.5
<b>Does the PBX send SIP Registration messages (Yes/No)?</b>	Yes
<b>Vendor Contact:</b>	<a href="http://www.vertical.com">www.vertical.com</a>

## 3 PBX Configuration

The steps below describe the minimum configuration required to enable the PBX to use Optimum Business SIP trunking for inbound and outbound calling. Please refer to the Wave 500 product documentation for more information on other advanced PBX features.

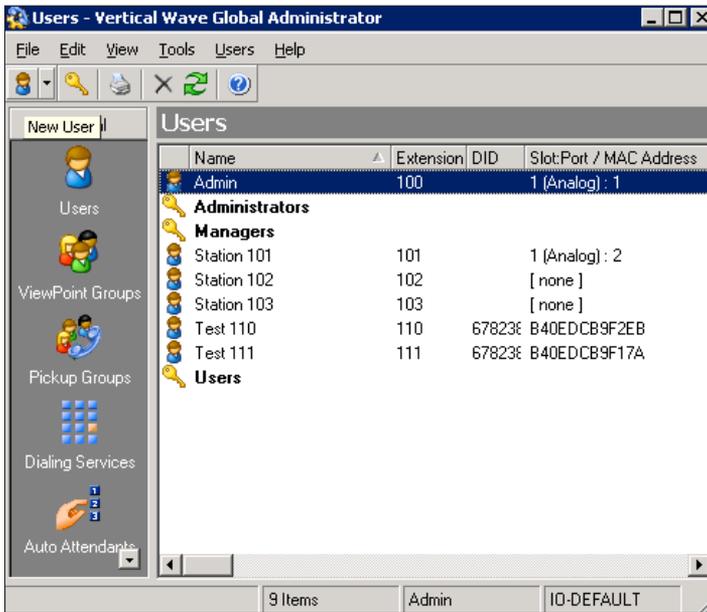
The configuration described here assumes that the PBX is already configured and operational with station side phones using assigned extensions or DIDs. This configuration is based on Wave 500 IP PBX version 4.5.

The Wave 500 Phone System is a hardware-based VoIP IP-PBX the Optimum Business Sip Trunk Adaptor's (Edgewater Networks) LAN port and the PBX's Ethernet port have been assigned with IP addresses of 10.10.126.1 and 10.10.126.11 respectively.

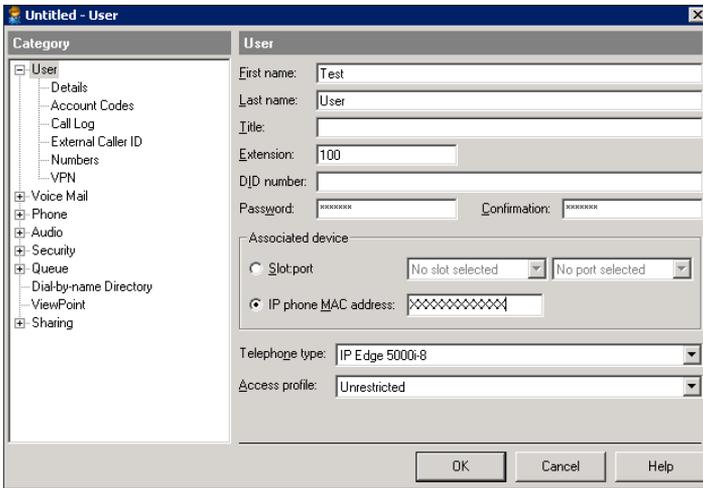
## 4 Creating Extensions

Start configuring the PBX by navigating to **Start → TVAdmin → Users** and click **New User** to start setting up extensions for the phone.

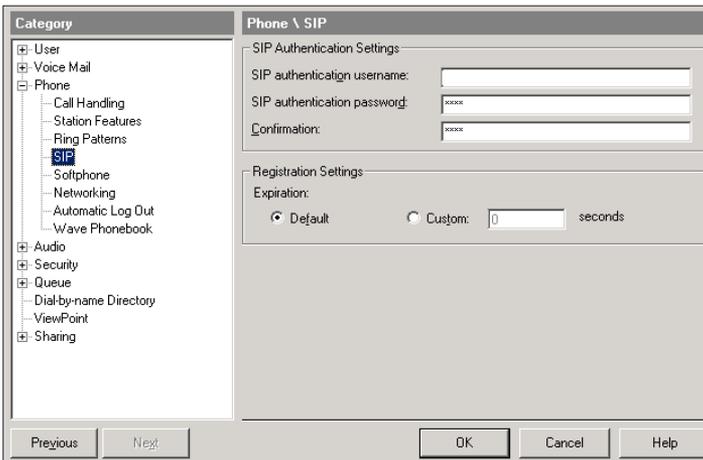




In the **User** tab, enter the first name of the user in the **First Name** field, enter the last name of the user in the **Last Name** field, enter a password in the **Password** field, and enter the desired extension in the **Extension** field. Under **Associated Device** select the radial next to **IP phone MAC address** and enter the phone's MAC address. Select the telephone type from the drop-down menu and set the **Access Profile** to **Unrestricted**.



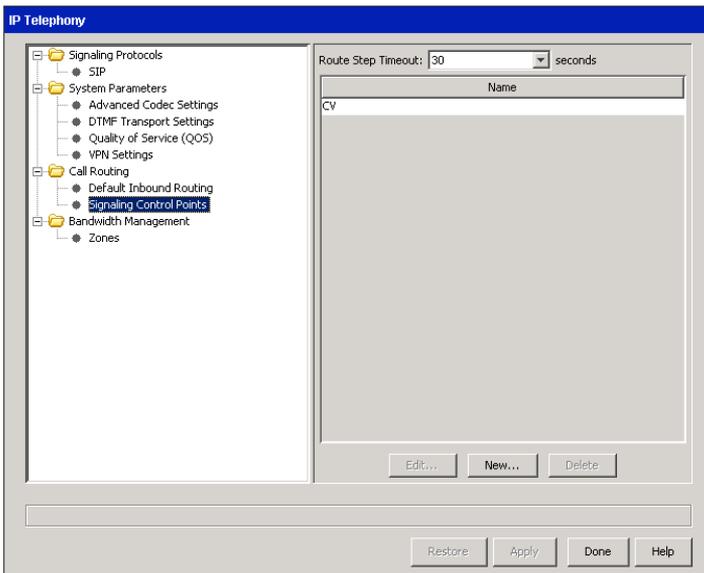
Select the **Phone** tab then select **SIP**. Under **SIP authentication password** enter a password.



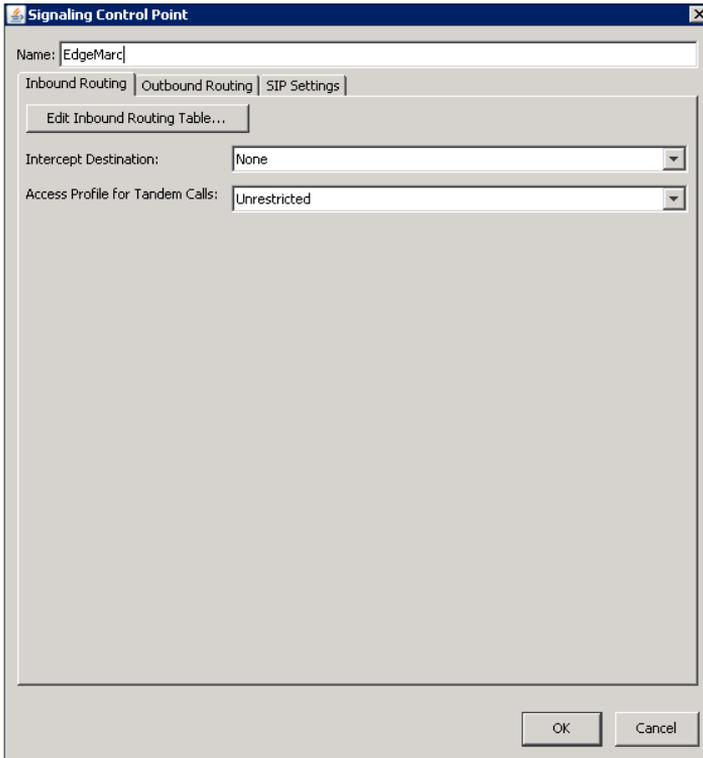
## 5 Inbound/Outbound Call Routing

To allow the PBX to make outbound calls, the Optimum Business Sip Trunk Adaptor needs to be set as a **Signaling Control Point**.

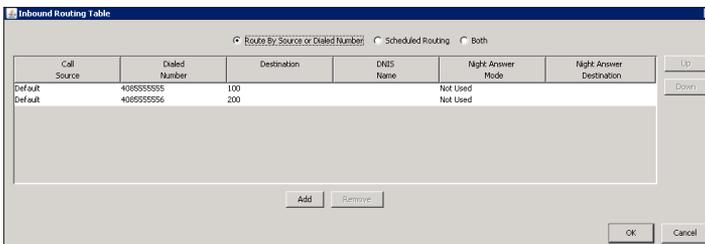
To set the Optimum Business Sip Trunk Adaptor as a **Signaling Control Point** log in to the **Wave Global Administrator Management Console**, go to **IP Telephony**, and select **Signaling Control Points** under **Call Routing**.



Select **New**, the **Name** given in this example is “Edgemarc”.



Select **Unrestricted** from the **Access Profile for Tandem Calls** drop-down menu then select **Edit Inbound Routing Table**.



Select **Add** to create a new inbound routing rule. When done, click **OK**. Select the **Outbound Routing** tab and click the radial next to **Use External Caller ID from User Configuration**. Select the **SIP Settings** tab and enter the Optimum Business SIP Trunk Adaptor's IP address in the **Proxy Server** field and **5060** in the **Port** field. Set the **Preferred DTMF Transport** to **Inband** and click **OK** when finished. Please note that the Cablevision network only supports **Inband** DTMF.

**Signaling Control Point**

Name: EdgeMarc

Inbound Routing | Outbound Routing | **SIP Settings**

User Name:

Proxy Server: 10.10.126.1

Port: 5060

Inbound/Outbound Settings

SCP is located outside of Wave's network

This SCP will:

Receive registration from Contact

Register with a Proxy/Registrar

Authentication Settings

Authentication: Not Required

Authenticate Register

Optionally Authenticate:

Invite  Re-Invite  BYE

Authentication Name:

Password:

Verify Password:

Registration Settings

Registration Required

Registration Expires (secs)

Use System Default

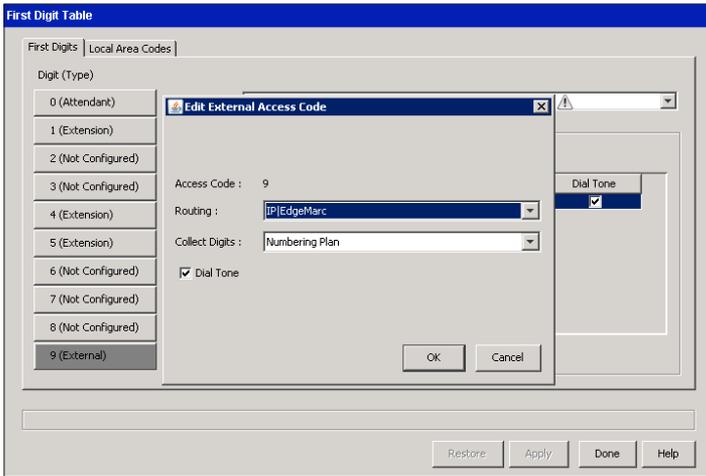
Custom: 300

Preferred DTMF Transport: Inband

Advanced Settings...

OK Cancel

From the **Wave Global Administrator Management Console** select **First Digit Table**. Select **9 (External)** and click **Edit....** From the Routing drop-down select **IP|EdgeMarc** (this will be IP|Name given to the signaling control point) then click **OK** and apply the changes.



From the **Wave Global Administrator Management Console** select **General Settings** and go to the **PBX (Advanced)** tab. Check the box next to **Allow Trunk-to-Trunk Connections** and apply the settings.

## 6 Registration Parameters

Navigate to **IP Telephony** → **Signaling Control Point** → **Edit** → **SIP Settings** and check the radial net to **Register with a Proxy/Registrar**. Check the box next to **Authentication Required** and **Registration Required**. Enter the authentication and registration information and click **OK**. The authentication name and password must match what was entered the Optimum Business Sip Trunk Adaptor. This was configured in step 3 of the Optimum Business Sip Trunk Set-Up Guide.

The screenshot shows the 'Signaling Control Point' dialog box with the 'SIP Settings' tab selected. The 'Name' field contains 'EdgeMarc'. The 'Inbound Routing', 'Outbound Routing', and 'SIP Settings' tabs are visible. The 'User Name' field is empty. The 'Proxy Server' field contains '10.10.126.1' and the 'Port' field contains '5060'. Under 'Inbound/Outbound Settings', the checkbox 'SCP is located outside of Wave's network' is unchecked. The radio button 'Register with a Proxy/Registrar' is selected. The 'Authentication Settings' section has 'Authentication Required' checked, with 'Authentication Name' set to '4085555555', 'Password' set to '\*\*\*\*\*', and 'Verify Password' set to '\*\*\*\*\*'. The 'Registration Settings' section has 'Registration Required' checked, 'Registrar Server' set to '10.10.126.1', and 'Registrar Port' set to '5060'. The 'Registration Expires (secs)' section has 'Use System Default' selected. The 'Preferred DTMF Transport' dropdown is set to 'Inband'. There is an 'Advanced Settings...' button and 'OK' and 'Cancel' buttons at the bottom.

Signaling Control Point

Name: EdgeMarc

Inbound Routing | Outbound Routing | SIP Settings

User Name:

Proxy Server: 10.10.126.1

Port: 5060

Inbound/Outbound Settings

SCP is located outside of Wave's network

This SCP will:

Receive registration from Contact

Register with a Proxy/Registrar

Authentication Settings

Authentication Required

Authentication Name: 4085555555

Password: \*\*\*\*\*

Verify Password: \*\*\*\*\*

Registration Settings

Registration Required

Registrar Server: 10.10.126.1

Registrar Port: 5060

Registration Expires (secs)

Use System Default

Custom: 300

Preferred DTMF Transport: Inband

Advanced Settings...

OK Cancel

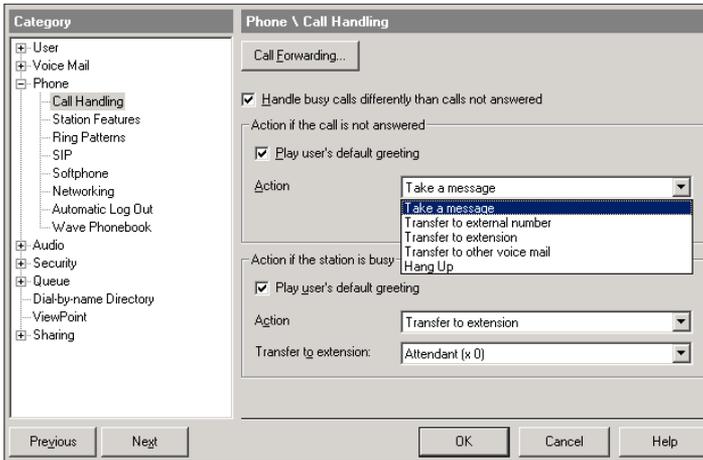
## 7 Static IP mode

Navigate to **IP Telephony** → **Signaling Control Point** → **Edit** → **SIP Settings** and check the radial net to **Receive Registration from Contact**. Make sure the drop-down under **Authentication Settings** is set to **Not Required**.

The screenshot shows the 'Signaling Control Point' configuration window with the 'SIP Settings' tab selected. The 'Name' field contains 'EdgeMarc'. The 'User Name' field is empty. The 'Proxy Server' field contains '10.10.126.1' and the 'Port' field contains '5060'. Under 'Inbound/Outbound Settings', the checkbox 'SCP is located outside of Wave's network' is unchecked. The 'This SCP will:' section has two radio buttons: 'Receive registration from Contact' (selected) and 'Register with a Proxy/Registrar'. The 'Authentication Settings' section has a dropdown menu set to 'Not Required', with checkboxes for 'Authenticate Register', 'Optionally Authenticate', 'Invite', 'Re-invite', and 'BYE'. Below these are fields for 'Authentication Name', 'Password', and 'Verify Password'. The 'Registration Settings' section has a checkbox for 'Registration Required' (unchecked) and a 'Registration Expires (secs)' section with 'Use System Default' (selected) and a 'Custom' option with a value of '300'. The 'Preferred DTMF Transport' dropdown is set to 'Inband'. An 'Advanced Settings...' button is at the bottom left, and 'OK' and 'Cancel' buttons are at the bottom right.

## 8 Call Forward

From the **TVAdmin** console select the desired extension. Go to **Phone** then **Call Handling**. Check the box next to **Handle busy calls differently than calls not answered**. Select the desired action from the drop-down menu and click **OK**.



## 9 Backup/Restore

To Backup/Restore, from the **Wave Global Administrator Management Console** select **System Backup/Restore**. Select the radial next to **Backup** and click **Apply**. To restore, click the radial next to **Restore** and click **Apply**.

**System Backup/Restore**

Operation

Backup  Restore

Options

Remove Previous Backup (preserves disk space)

Include Voice Mail Messages and Music On Hold Files

FTP Directory Name: Private\jocabfiles

Log:

Apply Done Help