

SIP Trunking using the Optimum Business SIP Trunk Adaptor and the FortiVoice IP-PBX

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Overview

The purpose of this configuration guide is to describe the steps needed to configure the FortiVoice PBX for proper operation with Optimum Business SIP Trunking.

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 to download a copy. This configuration guide provides the configuration steps for both PBX registration and static or non-registration modes of operation.

PBX Information

Manufacturer:	Fortinet
Model:	FortiVoice 040S
Software Version:	7.31
Does the PBX send SIP Registration messages (Yes/No)?	Yes

FortiVoice Configuration

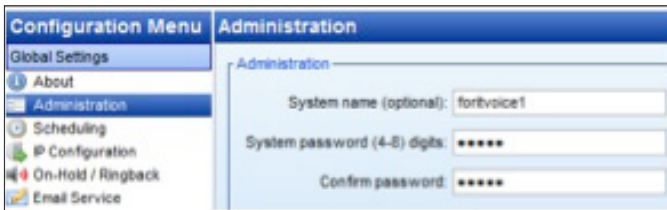
The steps below describe the basic configuration required to enable the FortiVoice IP-PBX to use a Optimum Business SIP Trunking for inbound and outbound calling. Please refer to the FortiVoice documentation to configure other advanced PBX features.

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 FortiVoice 040S.

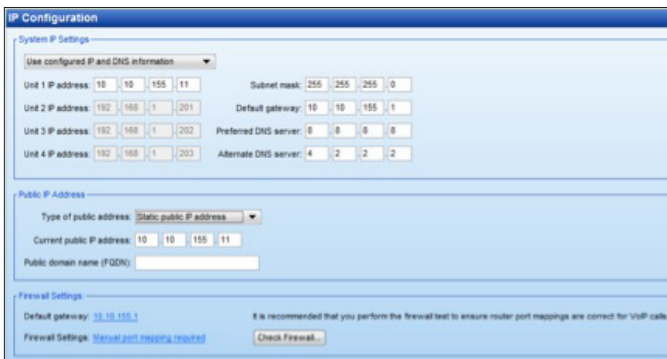
Global Settings

Both the FortiVoice PBX and the Optimum Business SIP Trunk Adaptor (Edgemarc) were placed in network 10.10.155.0/24 where the PBX was 10.10.155.11 and the Optimum SIP Trunk Adaptor (Edgemarc) was 10.10.155.1. Device access requires the FortiVoice Management Software that once installed can be used to configure device settings.

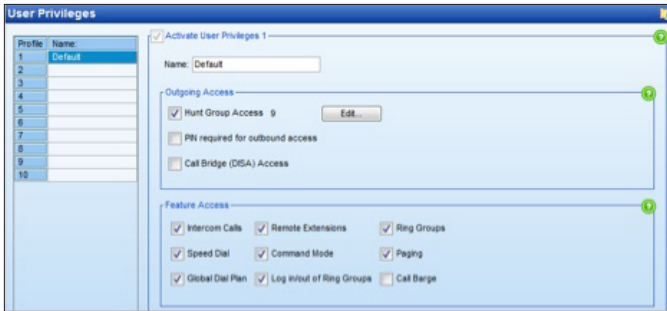
To begin, configure a system name and a password to access the system next to **Administration**.



To configure the IP address information, navigate from the **Configuration Menu** to **Global Settings** ▶ **IP Configuration** ▶ **System IP Settings**. Select **Use configured IP and DNS information** and enter the address of the PBX next to **Unit 1 IP address** then the address of the Optimum Business SIP Trunk Adaptor next to **Default gateway**. Under **Public IP Address** select **Static public IP address** then simply enter the address of PBX next to **Current public IP address**.



Now a User Privilege Profile needs to be created and activated for the users. Navigate to User Privileges and click a Profile ID row under **Name** then check **Activate User Privileges**. Give a name to the Profile next to **Name**. Under **Outgoing Access** check **Hunt Group Access 9** and under **Feature Access** select desired system features for the users.



Finally navigate to **Lines and Greetings** ► **Line Hunt Groups** and click the Hunt Group ID field of 9 under **Name**. After 9 is highlighted check **Activate Hunt Group 9** and assign it a name next to **Hunt Group name**. The Optimum Business SIP Trunk Adaptor's name should be selected next to **Line type** under **Hunt Group Line Assignments**.



When done navigate to **File** and **Save**.

SIP Registration

To register the PBX to the Optimum Business SIP Trunk Adaptor, navigate to **Global Settings**→**VoIP Configuration** and check **Activate Profile**. Next to **Service Provider** select **Manual Setup** from the drop-down menu and give a name to it next to **Profile name** (**EM-4552** was used for this example). Under **Registration Method** select **By Account Number – Master** from the drop-down menu and enter appropriate credentials under **Username and Password**.

Under **VoIP Provider**, simply enter the address of the Optimum Business SIP Trunk Adaptor in the fields below. Once configured, the registration can be verified by clicking **View All Registrations**.

For Static mode only fill in **Proxy/Registrar server name** and leave other fields empty

Under **System VoIP Options**, the option of using system name or extension name as Caller ID is given and may be configured as preferred.

When done navigate to **File** and **Save**.

DID/Extensions

For extension creation navigate to **Extensions and Voicemail ▶ Local Extensions/ Fax** and click **Add**. Under the **Extension** tab, enter first and last name of the user next to **First name** and **Last name**. Enter the number of the extension next to **Extension number**. Next to **Extension type** select **IP Extension**. Select the brand and model of the phone next to **Manufacturer** and **Model**. Next to **User Privileges** select **1-Default**. Under **IP Extension Details** select **Internal** next to **Location**. Enter the physical address of the phone next to **MAC address** and select **1** next to **Unit**. The **Call Handling** tab simply allows to modify behavior of the phone depending on user status.

The screenshot shows the configuration page for Extension 100. It is divided into three main sections:

- Extension 100:** Contains fields for First name (user1), Last name (fortinet), Extension number (100), Extension type (IP Extension), Manufacturer (Fortinet/TalkSwitch), Model (260i), and User Privileges (1 - Default).
- IP Extension Details:** Contains Location (Internal), Extension status (Registered), MAC address (B40EDCC25804), Unit (1), and IP address (10.10.155.60). There is a "Select..." button next to the MAC address and a "Configure Keys..." button at the bottom right.
- Call Handling:** Shows Mode 1 and Mode 2 tabs. Under Mode 1, there are options for Busy, No Answer, Answered, and Do Not Disturb. Below these are three rows of call handling rules, each with a dropdown menu (set to "go to voicemail") and a destination field (set to "100 - user1 fortinet").

Next, DIDs should be created. Navigate to **Lines and Greetings ▶ VoIP Numbers**. When there, simply click an ID row under the VoIP Number column on the left, then check **Activate VoIP Number**. Select the Optimum Business SIP Trunk Adaptor's name next to **VoIP Profile** that was created earlier, in this case "EM-4552". Enter the area code of the DID next to **City or area code** followed by the 7-digit number next to **Number**. On the right enter the appropriate SIP credentials. Repeat this process for remaining DIDs.

Activate VoIP Number

Select a VoIP Profile: EM-4552

Phone Number

Country code:

City or area code: 408

Number: 5555556

Username and Password

User/Account: 4085551234

Password: 4085551234

Registration Status

Status: Registered [View All Registrations...](#)

Call Handling

Mode 1 | Mode 2 | Holiday Mode

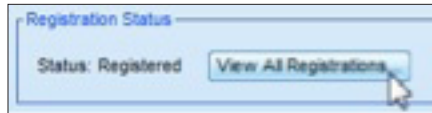
When a call comes in on this phone number, perform the following action:

ring extensions

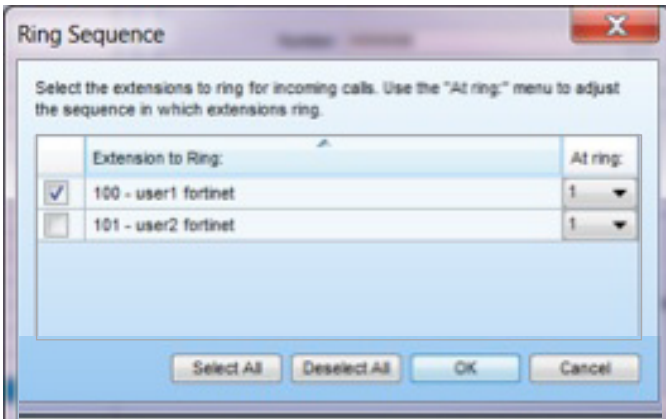
If all extensions are busy or the call is not answered:

go to auto attendant after 5 rings.

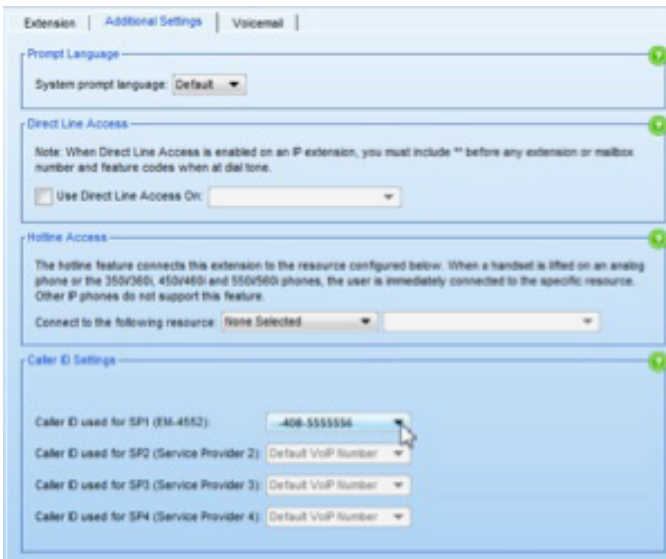
To verify registration click on **View All Registrations** under **Registration Status** and the current registration status will appear.



Now each DID must be mapped to its appropriate extension. Under **Call Handling** select **ring extensions** and click **Edit**. Select the extension to be mapped to this specific DID which in this case is extension 100 and then click **OK**.



To configure Caller ID for each configured extension simply go back to **Local Extensions/Fax** and under the **Additional Settings** tab choose the Caller ID desired under **Caller ID Settings**.

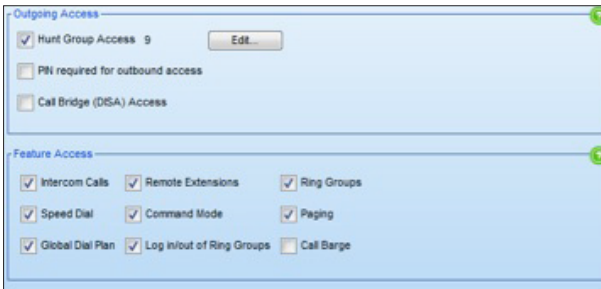


When done navigate to **File** and **Save**. Repeat this process for remaining DIDs.

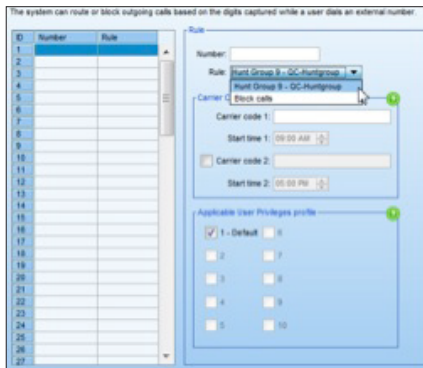
Note: Both RFC2833 and Inband DTMF are hardcoded onto the device. Whatever is negotiated will be the DTMF option sent. If RFC2833 gets negotiated, then that is what will be sent. If Inband gets negotiated, then that is what will be sent. In addition tone-duration modification is not an option on the PBX device yet may be changed through phones. The recommended setting is 600ms.

Dial Plan

For Dial Plan, navigate to **Global Settings ▶ User Privileges** and activate the User Privileges profile for the users from above. Under **Outgoing Access** check **Hunt Group Access 9**. The **Feature Access** section controls user access to specific system features and should be set in accordance to desired setup.



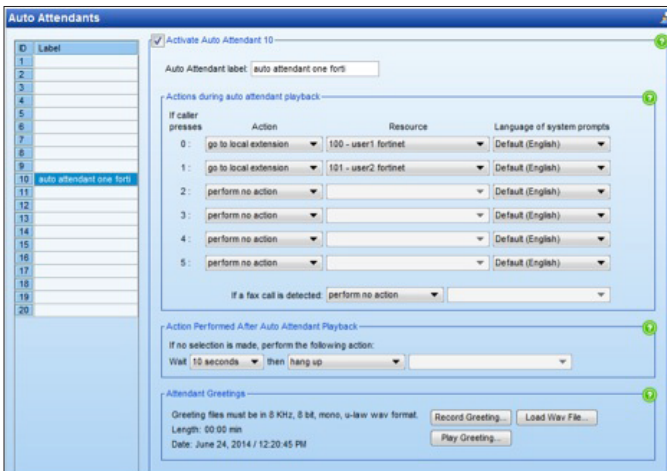
From below, under **Routing and blocking**, click **Edit Rules** and there outgoing calls can be routed or blocked based on digits specified. The digits should be entered next to **Number**. Next to **Rule** either assign the rule to a specific Hunt group or choose **Block calls**. Under **Carrier Code Prefix** a carrier code may be entered and prefixed for a number. Under **Applicable User Privileges profile** the profile number of the users should be checked.



When finished click **Done** then navigate to **File** and **Save**.

Auto Attendant

To configure Auto Attendant navigate to **Lines and Greetings > Auto Attendants**. Click on an ID field from left side and then check **Activate Auto Attendant**. Assign it a label next to **Auto Attendant label** and under **Actions during auto attendant playback** simply configure the actions the Auto Attendant should take upon digits dialed. In this case if 0 is entered extension 100 will be called and if 1 is entered extension 101 will be called.



Next the Auto Attendant needs to be mapped to a DID. Navigate to **Lines and Greetings**→**VoIP Numbers** and select the VoIP Number or DID desired for Auto Attendant. Under **Call Handling** select **go to auto attendant** followed by the ID of the configured Auto Attendant, in this case 10.

To assign Auto Attendant an extension navigate to **Extensions and Voicemail**→**Remote Extensions** and click **Add**. Enter a first/last name and an **extension number** next to Extension Number. Enter the DID of the Auto Attendant next to **Remote phone number**. The appropriate Hunt Group needs to be selected next to **Connect Using**.

When done click **Finish** and finally navigate to **File** and **Save**.