FortiVoice Lab Guide

for FortiVoice 6.0

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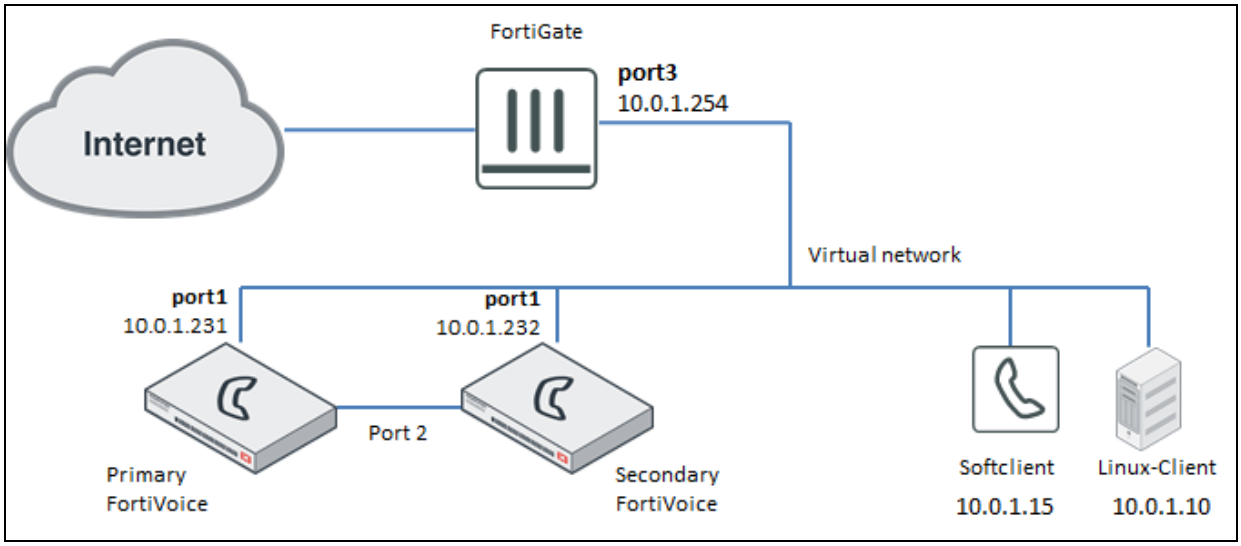
TABLE OF CONTENTS

Virtual Lab Basics

In this course, you will use a virtual lab for hands-on exercises. This section explains how to connect to the lab and its virtual machines. It also shows the topology of the virtual machines in the lab.

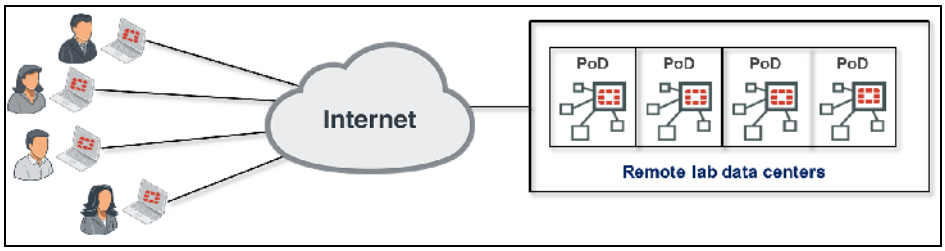
If your trainer asks you to use a different lab, such as devices physically located in your classroom, then ignore this section. This section applies only to the virtual lab accessed through the Internet. If you do not know which lab to use, please ask your trainer.

Network Topology



Lab Environment

Fortinet's virtual lab for hands-on exercises is hosted on remote data centers that allow each student to have their own training lab environment or point of deliveries (PoD).



Remote Access Test

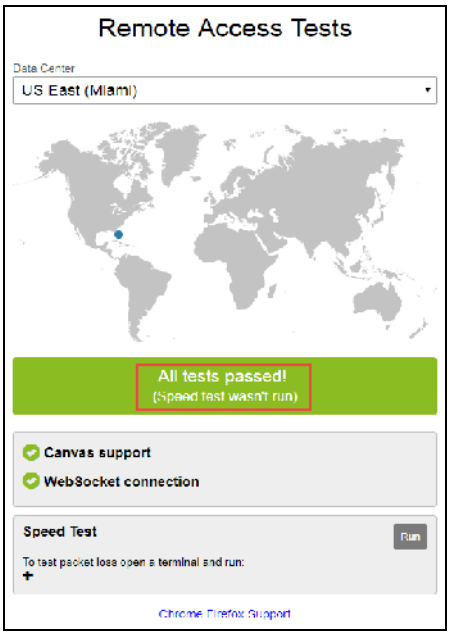
Before starting any course, check if your computer can connect to the remote data center successfully. The remote access test fully verifies if your network connection and your web browser can support a reliable connection to the virtual lab.

You do not have to be logged in to the lab portal in order to run the remote access test.

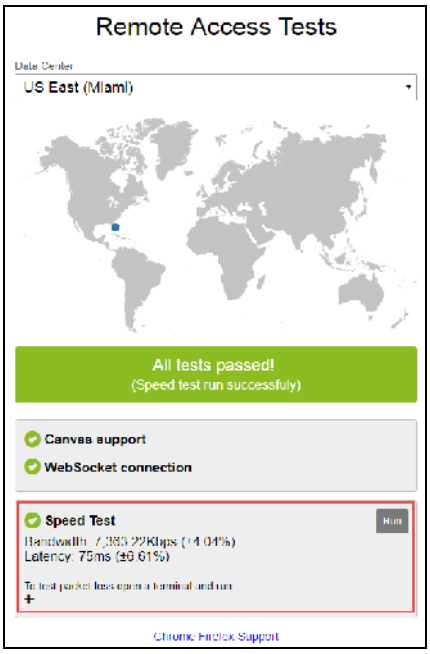
To run the remote access test

1. From a browser, access the following URL:
   `https://use.cloudshare.com/test.mvc`

   If your computer connects successfully to the virtual lab, you will see the message **All tests passed!**:



2. Inside the **Speed Test** box, click **Run**.
   The speed test begins. Once complete, you will get an estimate for your bandwidth and latency. If those estimations are not within the recommended values, you will get any error message:



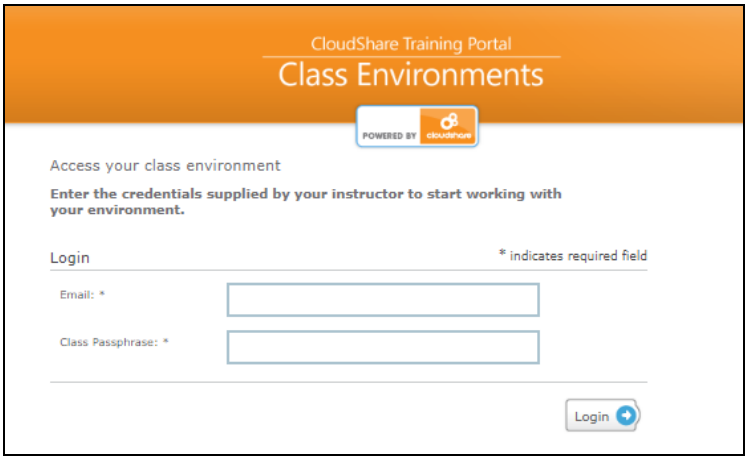
Logging In

After you run the remote access test to confirm that your system can run the labs successfully, you can proceed to log in.

You will receive an email from your trainer with an invitation to auto-enroll in the class. The email will contain a link and a passphrase.

To log in to the remote lab

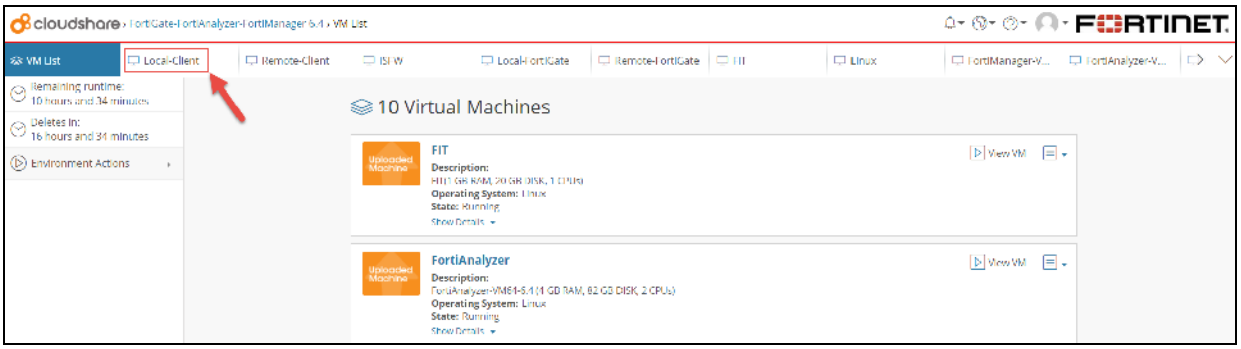
1. Click the login link provided by your instructor over email.
2. Enter your email address and the class passphrase provided by your trainer over email, and then click **Login**.



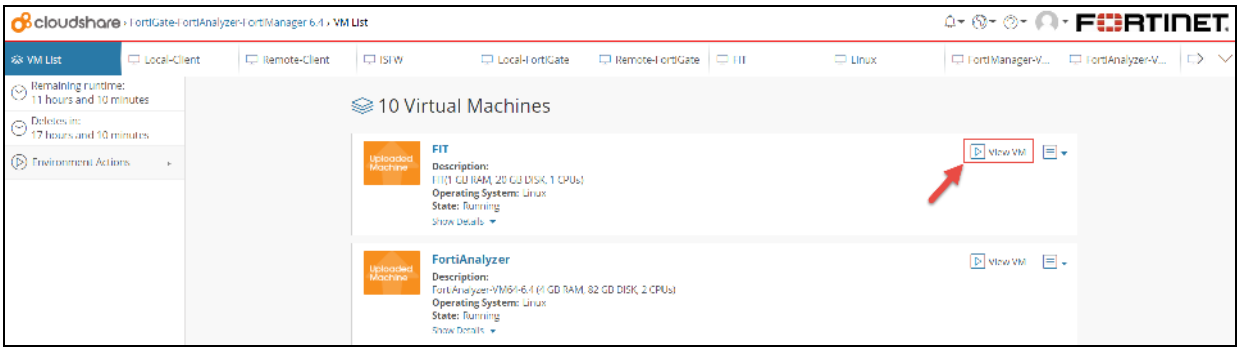
3. Enter your first and last name.
4. Click **Register and Login**.

Your system dashboard appears, listing the virtual machines (VMs) in your lab topology.

5. To open a VM from the dashboard, do one of the following:
   - From the top navigation bar, click a VM's tab.

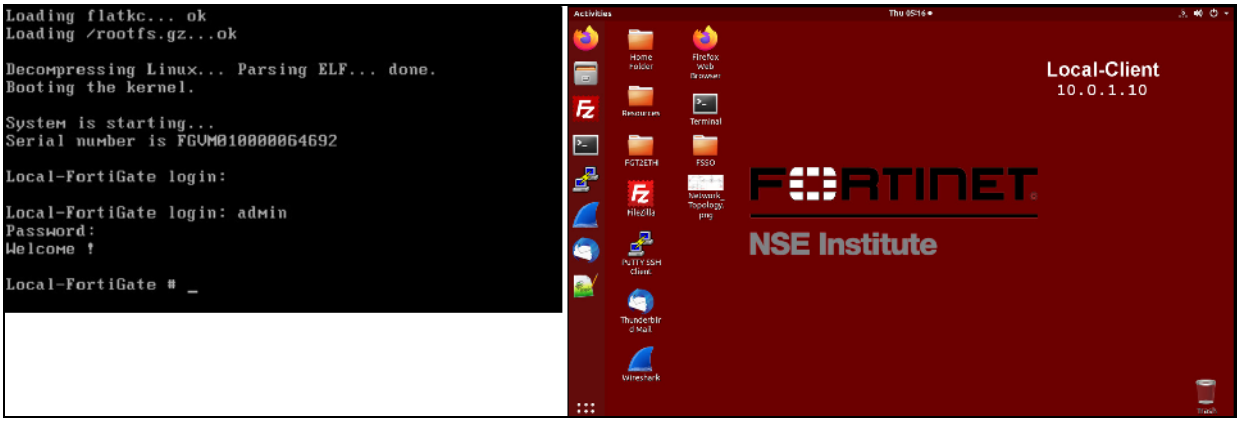


   - From the box of the VM you want to open, click **View VM**.



Follow the same procedure to access any of your VMs.

When you open a VM, your browser uses HTML5 to connect to it. Depending on the VM you select, the web browser provides access to either the GUI of a Windows or Linux VM, or the CLI-based console access of a Fortinet VM.



For most lab exercises, you will connect to a jumpbox VM, that could be either a Windows or a Linux VM. From the jumpbox VM, you will connect over HTTPS and SSH to all other Fortinet VMs in the lab environment.

Disconnections and Timeouts

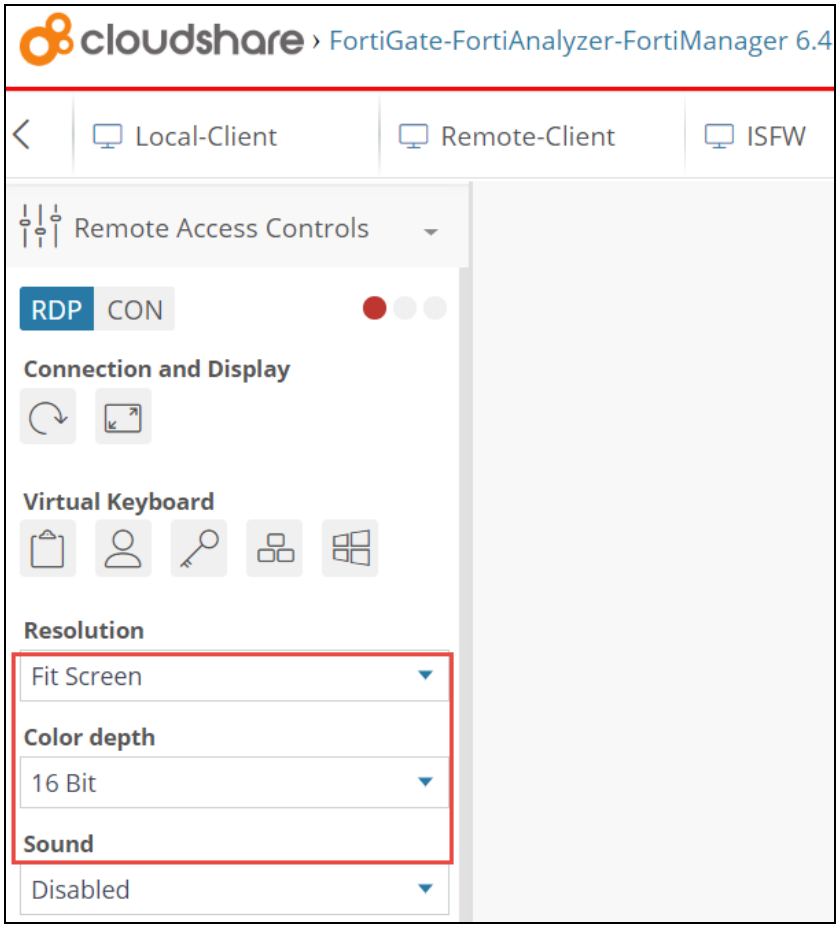
If your computer's connection to the VM times out or closes, to regain access, return to the window or tab that contains the list of VMs for your session, and reopen the VM.

If that fails, see Troubleshooting Tips on page 13.

Screen Resolution

The GUIs of some Fortinet devices require a minimum screen size.

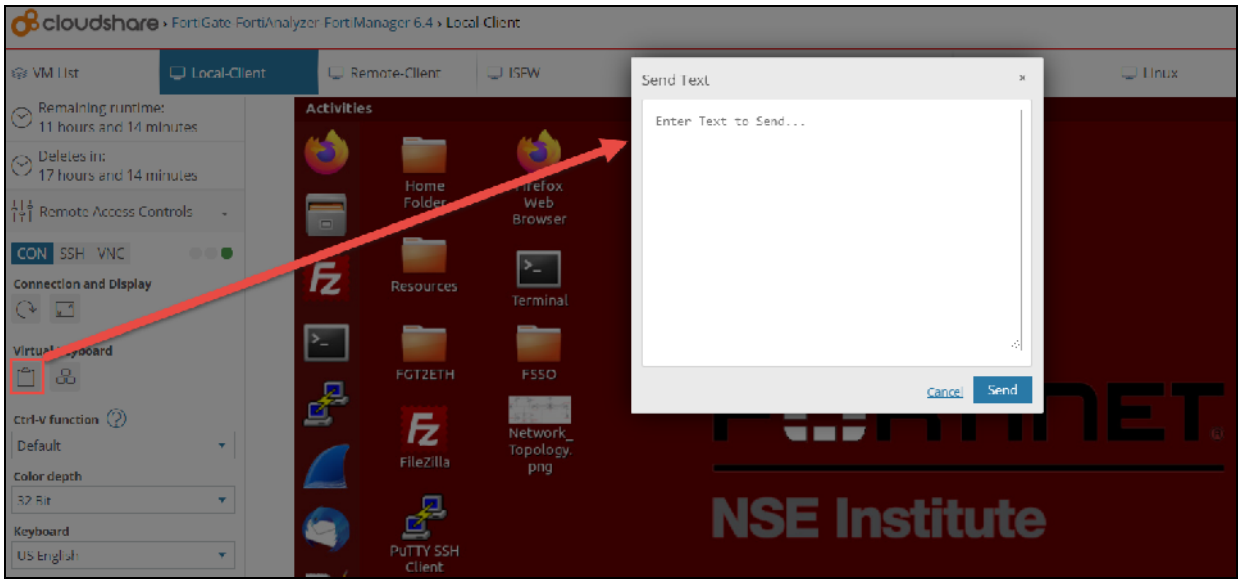
To configure screen resolution in the HTML5 client, use the **Resolution** drop-down list on the left. You can also change the color depth:



Sending Special Keys

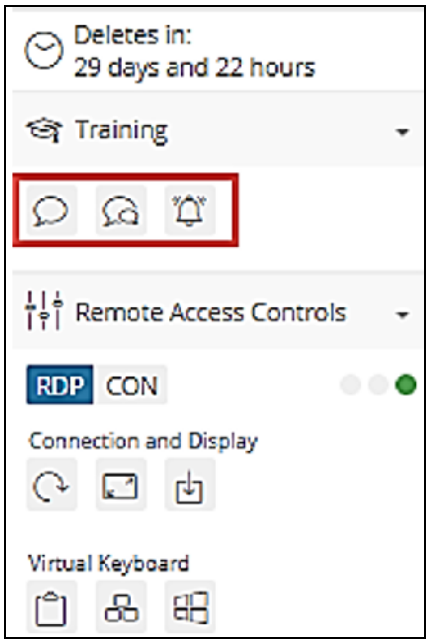
You can use the **Virtual Keyboard** panel to either send the Ctrl-Alt-Del combination, or the Windows key:

From the **Virtual Keyboard** panel, you can also copy text to the guest VM's clipboard:



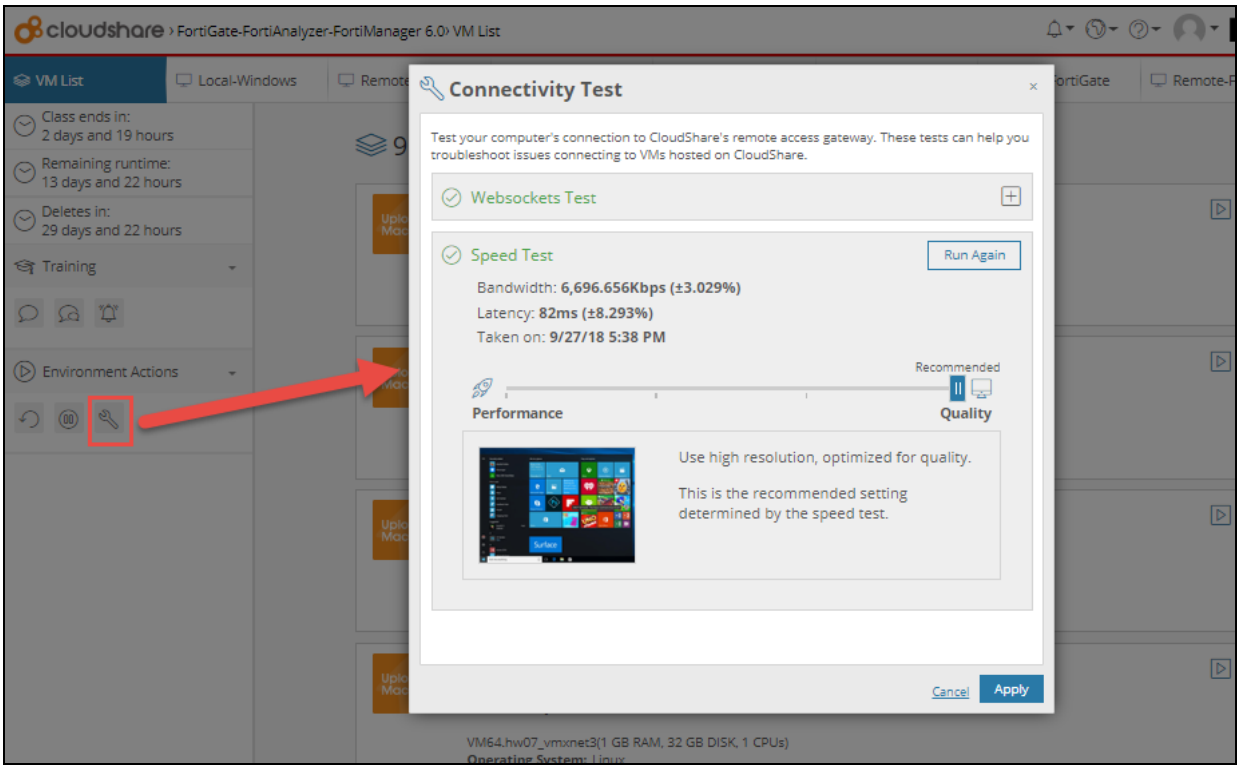
Student Tools

There are three icons on the left for messaging the instructor, chatting with the class, and requesting assistance:



Troubleshooting Tips

- *Do not* connect to the virtual lab environment through Wi-Fi, 3G, VPN tunnels, or other low-bandwidth or high-latency connections.
- Prepare your computer's settings by disabling screen savers and changing the power saving scheme so that your computer is always on, and does not go to sleep or hibernate.
- For best performance, use a stable broadband connection, such as a LAN.
- You can run a remote access test from within your lab dashboard. It will measure your bandwidth, latency and general performance:



- If the connection to any VM or the virtual lab portal closes unexpectedly, try to reconnect. If you can't reconnect, notify the instructor.
- If you can't connect to a VM, on the dashboard, open the VM action menu, and select **Reset**:

- If that does not solve the access problem, you can try to revert the VM back to its initial state. Open the VM action menu, and select **Revert**:

Reverting to the VM's initial state will undo all of your work. Try other solutions first.

- During the labs, if the VM is waiting for a response from the authentication server, a license message similar to the following example appears:

To expedite the response, enter the following command in the CLI:

```
execute update-now
```

Lab 1: System Overview

In this lab, you will connect to FortiVoice and configure system-wide settings. These settings control how you can connect to FortiVoice, create a system backup, and create extension privileges.

Objectives

- Connect to FortiVoice and adjust network settings
- Create administrator accounts with restrictions
- Configure high availability
- Create a local dial plan
- Configure storage limits for voicemail and call detail records (CDRs)
- Configure caller ID modification, user privileges, locations, and schedules

Time to Complete

Estimated: 75 minutes

Exercise 1: Connecting to FortiVoice and Adjusting Network Settings

In this exercise, you will connect to the administrator portal of FortiVoice using the default IP address. You will use default network settings throughout this lab, with the exception of a network route and DNS settings.

To connect to FortiVoice

1. On the Linux-Client, open a Firefox browser.
2. In the address bar, type the default administrator portal address of FortiVoice: `https://10.0.1.231/admin`.
3. Log in with the username `admin` and password `password`.
4. Click **Login**.

If you can't connect to FortiVoice, ensure that you typed the correct address. The FortiVoice address must start with `https://`.

Create a Network Route

You can adjust FortiVoice to suit your network requirements. For VoIP trunks to work correctly, you must create a network route. In this exercise, a route was already created for you, which you can now verify.

To verify the network route

1. Continuing on the administrator portal, click **System** > **Network**.
2. Click the **Routing** tab.
3. Confirm the following settings:

Field	Value
Enabled	Checked
Destination IP/netmask	0.0.0.0/0
Gateway	10.0.1.254
Interface	port1

Add DNS Server Addresses

By default, FortiVoice DNS address fields are populated with FortiGuard DNS. For this exercise, the DNS servers were already added, which you can now verify.

To verify the DNS addresses

1. Continuing on the administrator portal, click **System** > **Network**.
2. Click the **DNS** tab.
3. Verify that the **Primary DNS server** and **Secondary DNS server** are configured.

Exercise 2: Changing the Administrator Password and Creating an Administrator Account With Restrictions

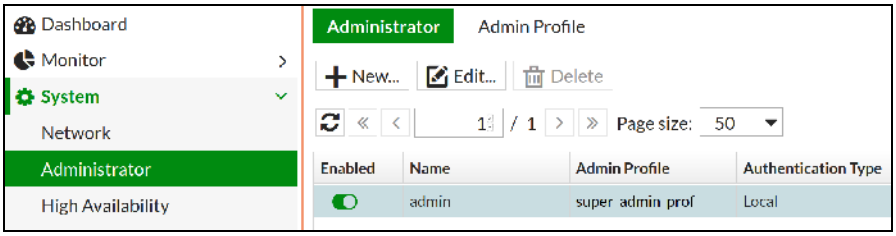
To keep FortiVoice secure, you should change the administrator password periodically. In some cases, there may be more than one administrator on FortiVoice. You can configure restrictions on administrator accounts to limit what administrators can edit and create. In this exercise, you will change the current administrator password and create one that is restricted to only viewing call logs.

Change the Administrator Password

By default, when the administrator sets up FortiVoice, they are required to set a password. You will change the administrator password to keep FortiVoice secure.

To change the administrator password

1. On the FortiVoice administrator portal, click **System** > **Administrator**.
2. Click the default administrator account.



3. Click **Edit**.
4. In the **Authentication type** field, click **Change Password**.
5. In the **Current password** field, type `password`.
6. In the **New password** field, type a new password.
7. In the **Confirm password** field, type the new password again. It is recommended that you use a simple password for this lab exercise.
8. Click **OK**, and then click **OK** again.

   FortiVoice will log out the current session after you change the password.

If the current session is not logged out, in the upper-right corner of the screen, click **admin**, and then click **Log Out** in the drop-down list.

To test the new password

1. Continuing on the administrator portal, on the login screen, in the **Name** field, type `admin`.
2. In the **Password** field, type the new password.

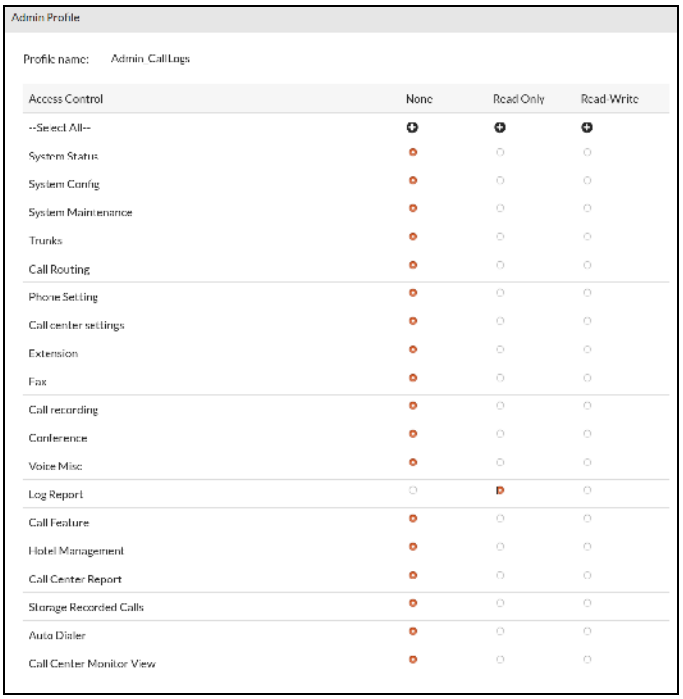
3. Click **Login**.

Create an Administrator Account With Restrictions

To create an administrator account with restrictions, you must first create a new administrator profile.

To create a new administrator profile

1. Continuing on the administrator portal, click **System** > **Administrator**.
2. Click the **Admin Profile** tab.
3. Click **New**.
4. In the **Profile name** field, type `Admin_CallLogs`.
5. In the **Read Only** column, select **Log report**, and leave all other settings as **None**.



6. Click **Create**.

   Now that you created the administrator profile, you must create the administrator account.

To create the administrator account

1. Continuing on the administrator portal, click the **Administrators** tab.
2. Click **New**.
3. Configure the following settings:

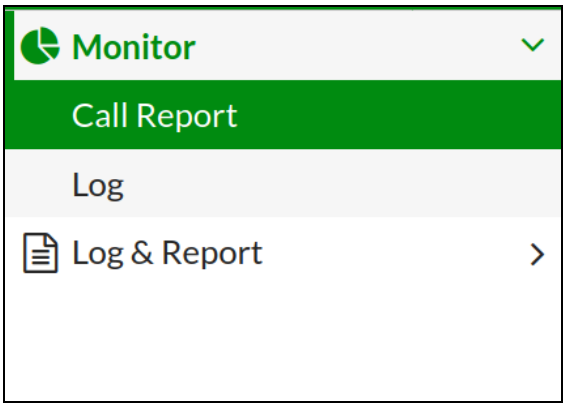
Field	Value
Administrator	CallLogs

Field	Value
Admin profile	Admin_CallLogs
New password	calllogs
Confirm password	calllogs

4. Click **Create**.

To test the new administrator account

1. Continuing on the administrator portal, in the upper-right corner of the screen, click **admin**.
2. In the drop-down menu, click **Log Out**.
3. On the login screen, log in with the username `CallLogs` and password `calllogs`.
4. Click **Login**.
   Notice that the left menu now shows only items related to logging and reports. This administrator cannot create any items or edit any features—they are restricted to only viewing logs and reports.



Exercise 3: Configuring HA

High availability (HA) creates a clone of a FortiVoice device that can be used as a backup in the case of a failure. HA uses a secondary IP address on the interface ports, which is a virtual IP address. The primary and secondary devices are both configured to use this virtual IP address, but only the acting primary device communicates over it. Any network traffic that is forwarded to FortiVoice should be forwarded to the virtual IP address. If a failover occurs, the secondary device assumes the role of primary device, and starts using the virtual IP address. The system is then able to continue operating normally. For example, the primary device has an IP address of `10.0.1.231` and the secondary device has an IP address of `10.0.1.232`. The virtual IP address is `10.0.1.235`, which is shared by both the primary and secondary devices, and is where all port forwarding to FortiVoice is sent. Ensure that you determine your virtual IP address before you begin this exercise.

In this exercise, you will configure the following:

- A secondary network port
- Port1 as the communication port for general use and VoIP traffic
- Port2 as the heartbeat link between primary and secondary devices, to determine a failover event
- A service monitor for additional failover security, using remote HTTP, SIP UDP, interface monitor, and the local hard drive

Configure a Secondary Network Port

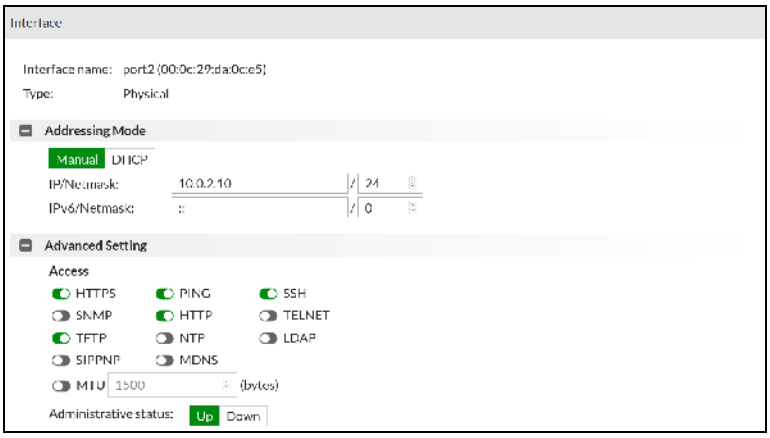
You must perform the following steps on the primary and secondary devices.

To configure a secondary network port

1. Log in to the FortiVoice administrator portal with the username `admin` and the password that you set in the previous exercise.
2. Click **System** > **Network**.
3. Select **port2**, and then click **Edit**.
4. Configure the following settings:

Field	Value
IP/Netmask	10.0.2.10/24
Advanced Setting	Enable HTTPS, PING, HTTP, TFTP, and SSH.

The settings should look like the following example:



5. Click **OK**.

Configure the Primary Device

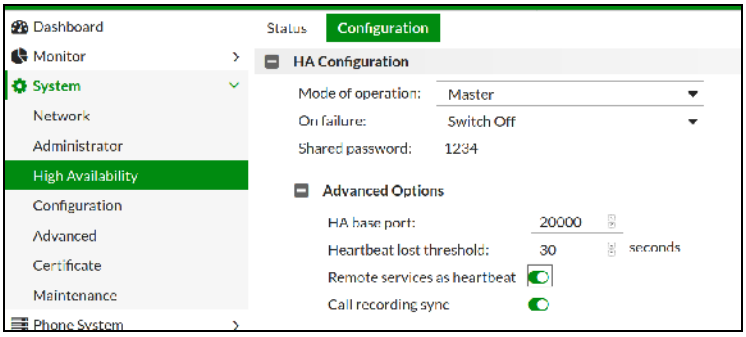
The primary device is the FortiVoice device that is handling all call activity. You must configure the primary device to communicate with the secondary device in order to create an active backup, and so the devices can change roles if the primary device becomes unavailable.

To configure the primary device

1. Continuing on the administrator portal, click **System** > **High Availability**.
2. Click the **Configuration** tab.
3. In the **HA Configuration** section, configure the following settings:

Field	Value
Mode of operation	Master
Shared password	1234

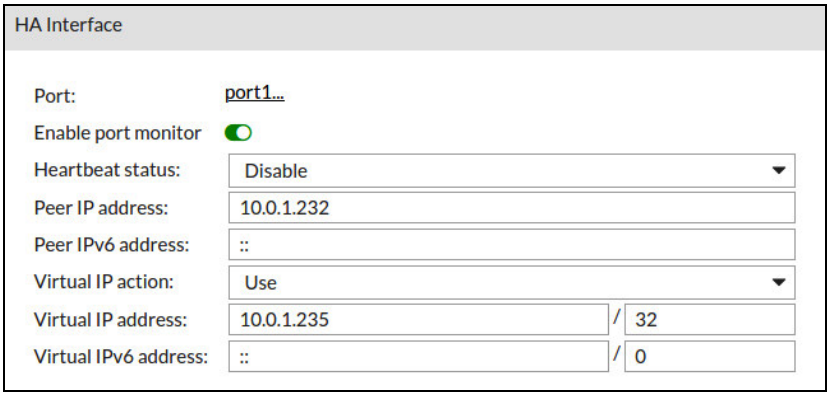
4. Expand the **Advanced Options** section, and then enable **Remote services as heartbeat**.



5. Click **Apply**.
6. In the **Interface** section, select **port1**, and then click **Edit**.
7. Configure the following settings:

Field	Value
Enable port monitor	Enable
Peer IP address	10.0.1.232
Virtual IP action	Use
Virtual IP address	10.0.1.235/32

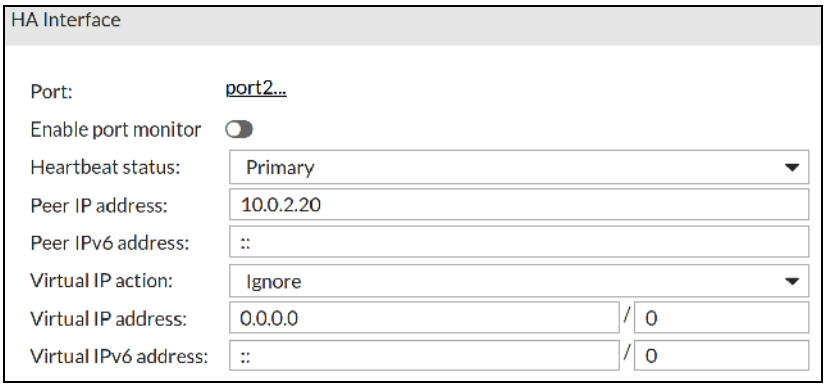
The settings should look like the following example:



8. Click **OK**.
9. In the **Interface** section, select **port2**, and then click **Edit**.
10. Configure the following settings:

Field	Value
Heartbeat status	Primary
Peer IP address	10.0.2.20

The settings should look like the following example:



11. Click **OK**.
12. In the **Service Monitor** section, select **Remote HTTP**, and then click **Edit**.
13. Configure the following settings:

Field	Value
Enable	Enable
Remote IP	10.0.1.232

14. Click **OK**.
15. Select **SIP UDP**, and then click **Edit**.
16. Configure the following settings:

Field	Value
Enable	Enable
Remote IP	10.0.1.232
Port	5060 (or the port that you are using for SIP)

17. Click **OK**.
18. Select **Local hard drives**, and then click **Edit**.
19. Click the **Enable** switch, and then click **OK**.
20. Click **Apply**.

Configure the Secondary Device

The secondary device acts as a backup for the primary device. You must configure the secondary device to communicate with the primary device in order to back up information, and so the devices can change roles if the primary device becomes unavailable.

To configure a secondary network port on the secondary device

1. In the browser address bar, type the default administrator portal address of the FortiVoice device that will be acting as the secondary device: `https://10.0.1.232/admin`.
2. Log in with the username `admin` and password `password`.
3. Click **Login**.
4. Click **System** > **Network**.
5. Select **port2**, and then click **Edit**.
6. Configure the following settings:

Field	Value
IP/Netmask	10.0.2.20
Advanced Setting	Enable HTTPS, PING, HTTP, TFTP, and SSH

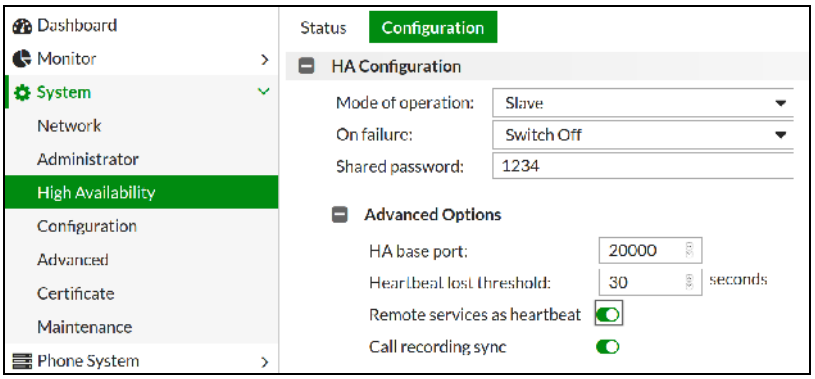
7. Click **OK**.

To configure high availability settings on the secondary device

1. Continuing on the administrator portal of the secondary device, click **System** > **High Availability**.
2. Click the **Configuration** tab.
3. In the **HA Configuration** section, configure the following settings:

Field	Value
Mode of operation	Slave
Shared password	1234

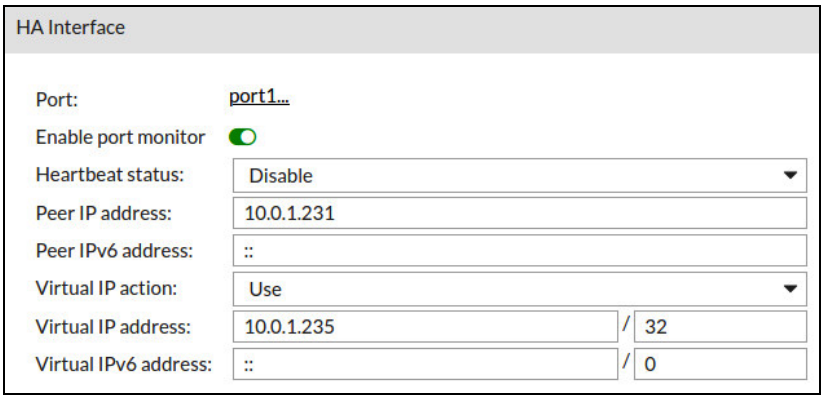
4. Expand the **Advanced Options** section, and then enable **Remote services as heartbeat**.



5. Click **Apply**.
6. In the **Interface** section, select **port1**, and then click **Edit**.
7. Configure the following settings:

Field	Value
Enable port monitor	Enable
Peer IP address	10.0.1.231
Virtual IP action	Use
Virtual IP address	10.0.1.235/32

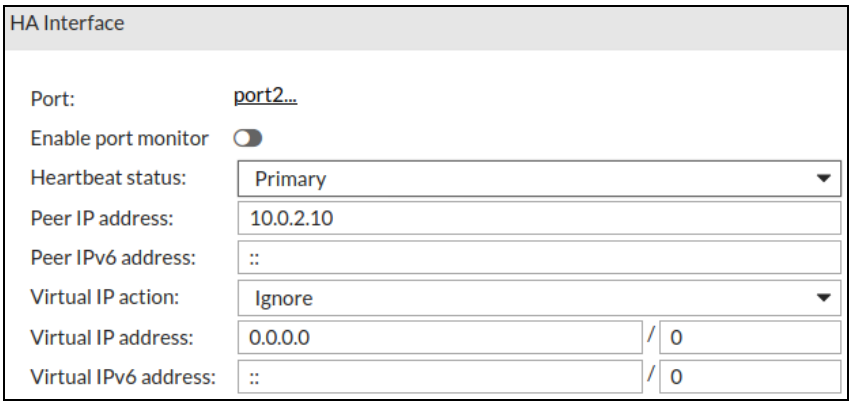
The settings should look like the following example:



8. Click **OK**.
9. In the **Interface** section, select **port2**, and then click **Edit**.
10. Configure the following settings:

Field	Value
Heartbeat status	Primary
Peer IP address	10.0.2.10

The settings should look like the following example:



11. Click **OK**.

The secondary port on both devices should now be synchronizing the configuration to the secondary device. Part of the configuration is the administrator login information. If you are logged out during the remaining steps in this exercise, log in again using the administrator password you set in the previous exercise.

12. In the **Service Monitor** section, select **Remote HTTP**, and then click **Edit**.
13. Configure the following settings:

Field	Value
Enable	Enable
Remote IP	10.0.1.231

14. Click **OK**.
15. Select **SIP UDP**, and then click **Edit**.
16. Configure the following settings:

Field	Value
Enable	Enable
Remote IP	10.0.1.231
Port	5060 (or the port that you are using for SIP)

17. Click **OK**.
18. Select **Local hard drives**, and then click **Edit**.
19. Click the **Enable** switch, and then click **OK**.
20. Click **Apply**.

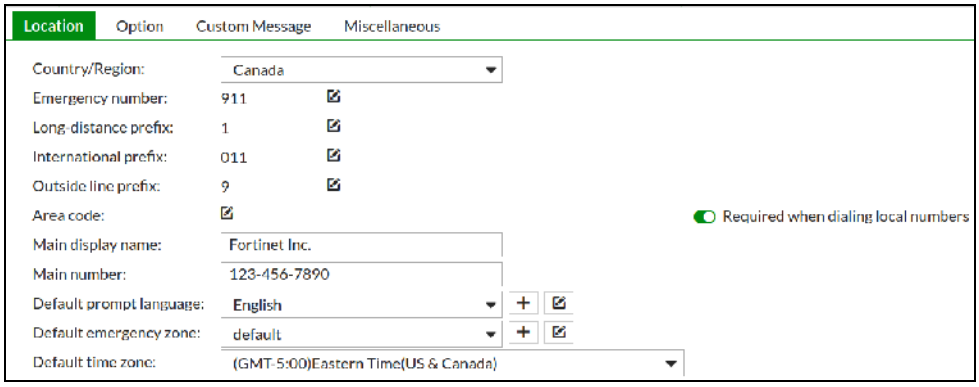
The preceding steps will keep a backup of your FortiVoice on a separate device and VoIP communication will remain functional. If you are using PSTN or PRI trunks and a failover occurs, you must manually move the trunks from the primary device to the secondary device.

Exercise 4: Adjusting Location Settings, Extension Number Patterns, and Settings

In this exercise, you will change the FortiVoice location and set up an emergency alert email.

To change the FortiVoice location

1. In the address bar, type the default administrator portal address of the FortiVoice device that will be acting as the primary: `https://10.0.1.231/admin`.
2. Log in with the username `admin` and the password that you set in a previous exercise.
3. Click **Login**.
4. Click **Phone System** > **Setting**.
5. In the **Country/Region** drop-down list, select your country.
   Notice that the **Emergency number**, **Long-distance prefix**, **International prefix**, and **Outside line prefix** were automatically created. You can edit each of these items by clicking the number. You can add more numbers to each item by separating them with a comma.



6. Click the icon beside **Area code** to add area codes.
   You can add multiple area codes by separating them with a comma.
7. Enable **Required when dialing local numbers**, if this is necessary for your location.
   This checkbox is a reminder to the administrator that an area code is required to dial local numbers and does not affect the operation of FortiVoice.
8. In the **Main display name** field, type the caller ID name that your service provider gave you.
9. In the **Main number** field, type the main phone number that your service provider gave you.
10. In the **Default prompt language** drop-down list, select the language that you want to use on FortiVoice.
    This setting affects all the prompts on FortiVoice, such as the default auto attendant recording and voicemail instructions.
11. In the **Default emergency zone** drop-down list, select **default**.
    This setting allows you to create a new emergency zone for newly created extensions or use the default option which is the system emergency setting.
12. In the **Default time zone** drop-down list, select your time zone to set the FortiVoice time zone.
13. Click **Apply**.

Configure an Emergency Alert Email

The emergency alert email is sent when an emergency number is dialed on the FortiVoice system.

To configure an emergency alert email

1. Continuing on the administrator portal, click **Phone System** > **Setting**.
2. Complete the fields in the **Contact Information** section.
   This contact information is included in the emergency alert email.
3. In the **Emergency Setting** section, select **Send Alert Email**, and then type an email address.
   You can add multiple email addresses if more than one person must be notified about an emergency situation.
4. Click **Apply**.

Configure the Extension Number Pattern

You can configure FortiVoice to use a specific number pattern for extensions, such as 200–299.

To configure the extension number pattern

1. Continuing on the administrator portal, click **Phone System** > **Setting**.
2. Click the **Option** tab.
3. In the **Extension number pattern** field, type `NXX`.
   This will allow 3-digit extension numbers that start with 2.
4. Click **Apply**.

Keep the FortiVoice dial pattern syntax in mind:

- **X** - Matches any single digit from 0–9
- **Z** - Matches any single digit from 1–9
- **N** - Matches any single digit from 2–9
- **[15-7]** - Matches a single character from the range of digits specified. In this case, the pattern matches a single 1, as well as any number in the range 5, 6, 7.
- **.** - Wildcard match—matches one or more characters, no matter what they are
- **!** - Wildcard match—matches zero or more characters, no matter what they are
- **, ; or (space)** - Pattern delimiters—allow you to type multiple pattern strings at a time (for example, `NXXX,6XXXX;[3-5]X`)

Configure Default Extension Settings

There are a number of default settings that are shared by all new extensions, including the SIP user password, user PIN, user ID prefix, and ring duration.

To customize default settings

1. Continuing on the administrator portal, click **Phone System** > **Setting**.
2. Click the **Options** tab, and then scroll to the **Default Setting** section.
3. To configure the **Default SIP user password** (used for IP phones to register with FortiVoice), select **Specified** to create your own, or **Generated** to have FortiVoice create a random password.
4. To configure the **Default user password** (used to log in to the user portal), select **Specified** to create your own, or **Generated** to have FortiVoice create a random password.
5. To configure the **Default Voicemail PIN** (used to log in to the user voicemail), select **Specified** to create your own, or **Generated** to have FortiVoice create a random password.
6. To configure the **User ID prefix**, type the numbers that you want to have generated before an extension user ID (not used in this lab).
7. To configure the **Default ring duration** (how long a caller will hear ringing before the extension call handling is triggered), type how many seconds to play ringing for. The default is 18 seconds.
8. Leave **Internal calls ring pattern** and **External calls ring pattern** at the default values.
9. Click **Apply**.

Exercise 5: Configuring SIP, Auto Provisioning, Miscellaneous Administration, and Log Settings

In this exercise, you will configure SIP and auto provisioning settings that are not configured by default. You will also configure various administration and logging settings.

Configure Non-Default SIP Settings

FortiVoice has SIP settings that cannot be configured by default and must be configured by the administrator. These settings affect external IP extensions as well as VoIP trunk traffic.

To configure non-default SIP settings

1. On the administrator portal, click **System** > **Advanced**.
2. In the **Advanced Setting** section, enable **SIP session helper**.
3. Type one or more IP address ranges in the **Internal network** fields.
4. Click **Apply**, and then click **OK**.
5. Click the **External Access** tab.
6. Type your WAN IP address in the **SIP server external hostname/IP address** field.
7. Type your WAN IP address in the **Other service external hostname/IP address** field.
   This is not required for this lab.
8. Click **Apply**, and then click **OK**.

Configure Auto Provisioning

The default settings for auto provisioning are sufficient for most situations. You should only change these settings if you are using different ports on FortiVoice, or if you are not using FortiVoice as a server to provision IP phones.

To change the server settings

1. Continuing on the administrator portal, click **System** > **Advanced**.
2. Click the **Auto Provisioning** tab.
3. In the **Server Setting for Phone Configuration** section, confirm that **port1 10.0.1.235** is selected as the interface.
   You can enable **Override** on any of the servers to use another interface on FortiVoice.
4. Click **Apply**.

Configure Miscellaneous Administration and Log Settings

Miscellaneous settings include various administration and user log settings. These are system-wide settings.

To allow administrators to override an extensions schedule

1. Continuing on the administrator portal, click **Phone System** > **Setting**.
2. Click the **Miscellaneous** tab.
3. In the **PBX Setting** section, in the **Administrator PIN** field, type the PIN.
   This PIN gives the administrator the ability to override extension schedule settings.
4. In the **Schedule Override** section, enable **Allow admin user to override schedule**.
5. Click **Apply**.

To configure system-wide voicemail settings

1. Continuing on the administrator portal, click **Phone System** > **Setting**.
2. Click the **Miscellaneous** tab.
3. In the **Voicemail** section, configure the **Maximum messages length** (in seconds), **Maximum greeting length** (in seconds), and the **Voicemail volume** (percentage) settings.
4. Click **Apply**.

To configure dial-by-name directory settings

1. Continuing on the administrator portal, click **Phone System** > **Setting**.
2. Click the **Miscellaneous** tab.
3. In the **Directory** section, configure the **Dial-by-name option** and **Dial-by-name digits** settings.
4. Enable **Read back number** if a match is found.
5. Click **Apply**.

To configure CDR and queue log records

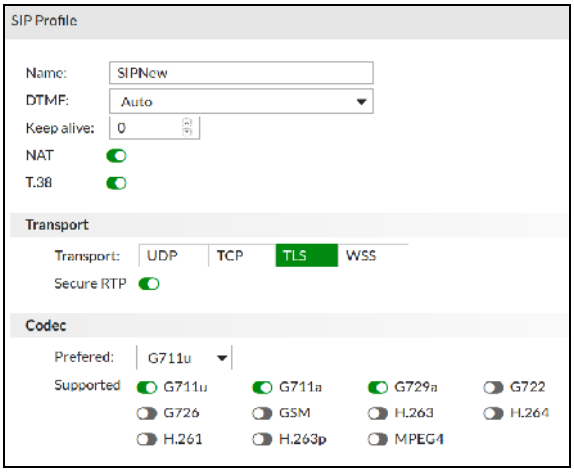
1. Continuing on the administrator portal, click **Phone System** > **Setting**.
2. Click the **Miscellaneous** tab.
3. In the **CDR** and **Queue log** sections, configure the **retention time** (in months) and the **max records** (in thousands) settings to store on FortiVoice.
   Once these limits are reached, FortiVoice will start to overwrite the oldest records.
4. Click **Apply**.

Exercise 6: Creating a SIP Profile

In this exercise, you will create a new SIP profile that can be used with IP phones and VoIP trunks.

To create a new SIP profile

1. On the FortiVoice administrator portal, click **Phone System** > **Profile**.
2. Click **New**.
3. In the **Name** field, type `SIPNew`.
4. In the **DTMF** drop-down list, select **Auto**.
   When you select **Auto**, FortiVoice negotiates the best option with the VoIP service provider.
5. In the **Keep alive** field, type the amount of time that you want FortiVoice to send SIP notify messages.
6. Leave **NAT** disabled.
   You can enable NAT if the VoIP service provider supports SIP NAT translation.
7. Enable **T.38** to support fax over VoIP.
8. In the **Transport** section, select the packet type that is supported.
   The TLS protocol is used for encrypted communication.
9. If you selected **TLS** as the transport protocol, enable **Secure RTP**.
10. In the **Codec** section, in the **Preferred** drop-down list, select **G711u**.
    You can enable the codecs that are supported by the VoIP service provider. Clear the other options.



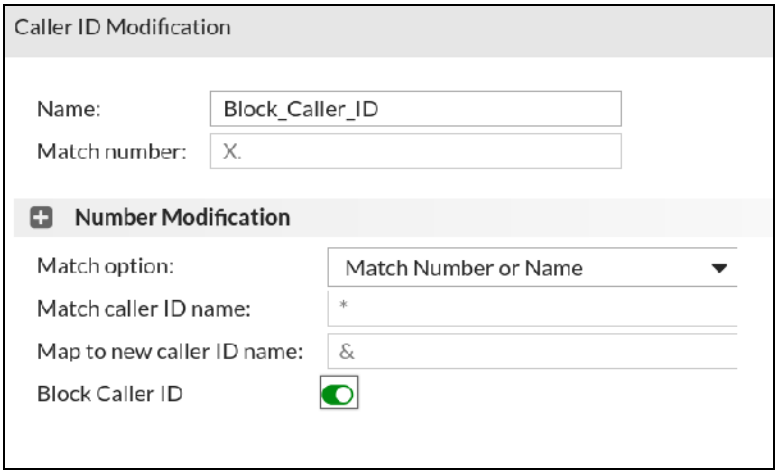
11. Click **Create**.

Exercise 7: Creating Caller ID Modification Profiles

In this exercise, you will create one caller ID modification profile that will block the caller ID on outbound calls, and another caller ID modification profile that will change the caller ID on inbound calls from a specific phone number.

To block the caller ID on outbound calls

1. On the FortiVoice administrator portal, click **Phone System** > **Profiles**.
2. Click the **Caller ID Modification** tab.
3. Click **New**.
4. In the **Name** field, type `Block_Caller_ID`.
5. Enable **Block Caller ID**.



6. Click **Create**.
   This caller ID modification profile can now be used on any trunk or extension to block the caller ID on outbound calls.

Blocking the caller ID can be done only if it's supported by the service provider.

To change the caller ID on inbound calls

1. Continuing on the administrator portal, click **Phone System** > **Profiles**.
2. Click the **Caller ID Modification** tab.
3. Click **New**.
4. Configure the following settings:

Field	Value
Name	Caller_ID_Modify
Match number	8668683678
Match option	Match number or name
Match caller ID name	Fortinet
Map to new caller ID name	TAC Support

5. Click **Create**.

Exercise 8: Creating User Privileges

User privileges control what users are allowed to access. In this exercise, you will create a user privilege to use with an IP extension.

To create a new user privilege

1. On the FortiVoice administrator portal, click **Phone System** > **Profiles**.
2. Click the **User Privileges** tab.
3. Click **New**.
4. In the **Name** field, type `All`.
5. In the **Basic Setting** section, enable all settings to apply this user privilege.

It is recommended to always have auto provisioning selected so that FortiFone IP phones will be automatically configured with FortiVoice.

6. Enable **Operator Role** to allow access to the operator options on the user portal.
7. Confirm that **Voicemail** is enabled.
8. In the **Voicemail** section, set **Maximum messages** allowed to `100` and **Voicemail retention days** to `30` days.
9. In the **Music** section, confirm that **default** is selected for **Music on hold** and **Early media**.
10. Confirm that **Fax** is enabled.
11. Set **Max incoming message** and **Max outgoing messages** to `20`.
12. Set **Max outgoing fax retention days** to `15`.
13. In the **Call Restriction** section, under **Miscellaneous**, set **The max number of concurrent calls** to `2`.
14. In the **Monitor/Recording** section, enable the following settings:
    - **Personal recording**
    - **System recording**
    - **Allow being barged**
    - **Allow barging**
15. In the **Hot-desking** section, enable **Enable hot-desking login** and **Enable hosting hot-desking**.
16. Confirm that the **User Portal** section is enabled and all options are selected.
17. In the **Advanced Setting** section, configure the following settings:

Field	Value
Conference number	Allow All
Paging/Intercom	Allow All
Trusted hosts	Type the subnet that can register with the SIP server.
Permitted outgoing rules	Enabled

18. Click **Create**.

Exercise 9: Creating an Emergency Zone

In this exercise, you will create an emergency zone profile that will be used on extensions. The settings in this profile include the caller ID that will be used when an emergency call is placed, and contact information that will be included in an emergency email.

To create an emergency zone

1. On the FortiVoice administrator portal, click **Phone System** > **Profile**.
2. Click the **Emergency Zone** tab.
3. Click **New**.
4. In the **Name** field, type `Main_Zone`.
5. In the **Emergency caller ID** field, type `SOS Caller`.
6. In the **Emergency Setting** section, select **Send Alert Email**.
7. In the **Emergency contact emails** field, type the email address of the emergency contact.
8. In the **Contact Information** section, type the contact information to send in the emergency alert.

To apply the emergency zone to all extensions

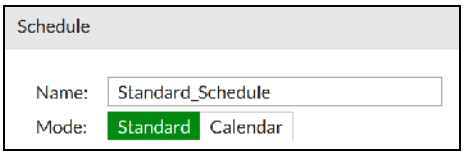
1. Continuing on the administrator portal, click **Phone System** > **Setting**.
2. In the **Default emergency zone** field, select **Main_Zone**.
   Main_Zone is the zone you created in the previous procedure.
3. Click **Apply**.

Exercise 10: Creating Schedules

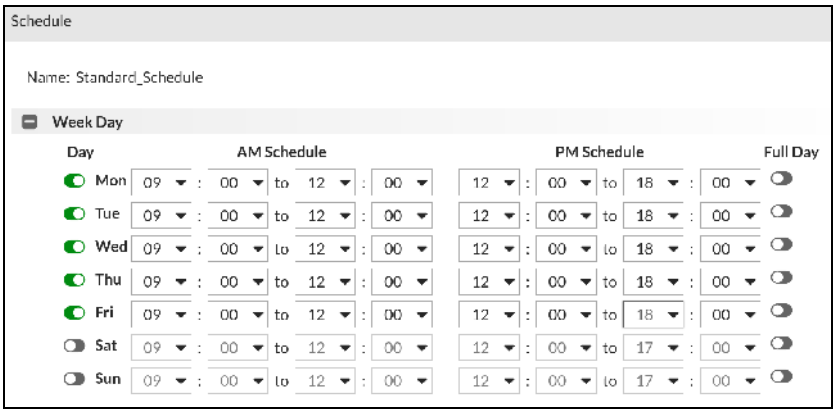
In this exercise, you will create new schedules using the two different types of schedule views: standard and calendar.

To create a standard schedule

1. On the FortiVoice administrator portal, click **Phone System** > **Profile**.
2. Click the **Schedule** tab.
3. Click **New**.
4. In the **Name** field, type `Standard_Schedule`.
5. In the **Mode** field, click **Standard**.



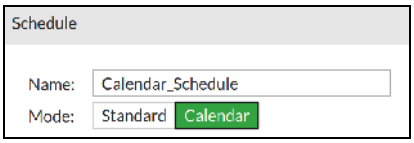
6. Click **Create**.
7. Select **Standard_Schedule**, and then click **Edit**.
8. Enable **Mon**, **Tues**, **Wed**, **Thu**, and **Fri** to include these days in this schedule.
9. Set the **AM Schedule** to **9:00 to 12:00** and **PM Schedule** to **12:00 to 18:00** for each day that you enabled.



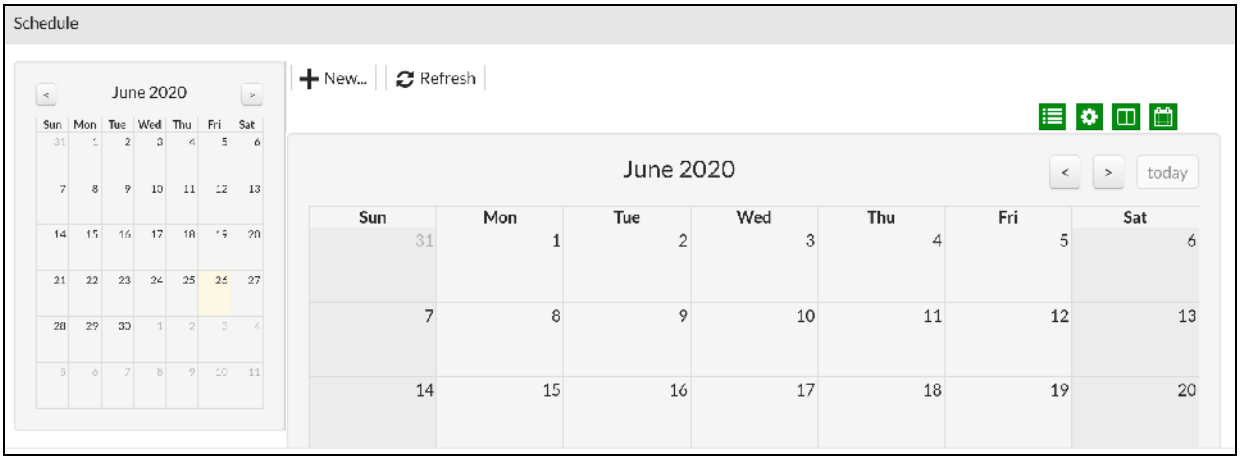
10. Click **OK**.
    This schedule can now be used when configuring call handling for trunks or extensions.

To create a calendar schedule

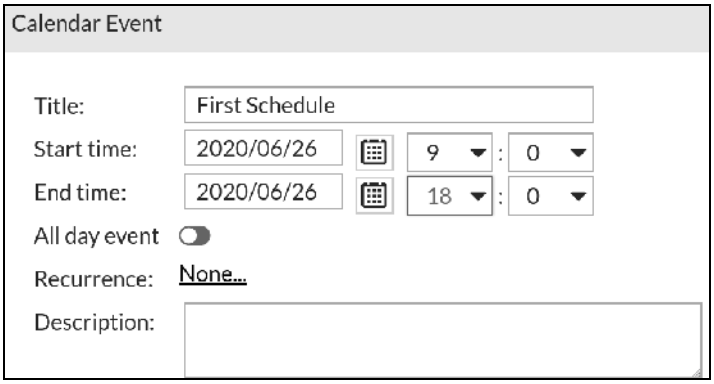
1. Continuing on the administrator portal, click **Phone System** > **Profile**.
2. Click the **Schedule** tab.
3. Click **New**.
4. In the **Name** field, type `Calendar_Schedule`.
5. In the **Mode** field, click **Calendar**.



6. Click **Create**.
7. Select **Calendar_Schedule**, and then click **Edit**.
8. Select specific days of the month to create a schedule for.

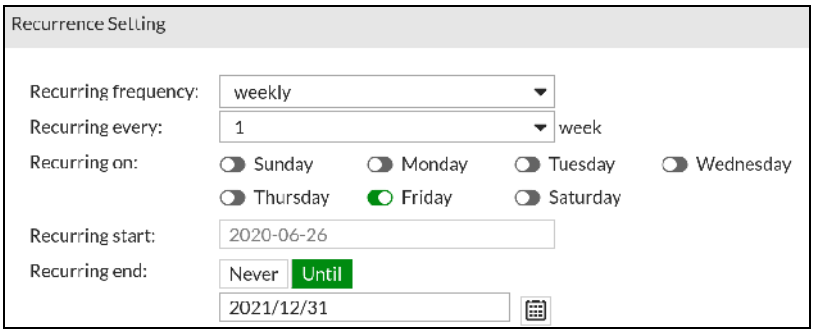


9. Double-click a day to set the schedule.
10. In the **Title** field, type `First Schedule`.
11. Set **Start time** to **9:00**, and then set **End time** to **18:00**.



To copy the schedule that you created for this day to other days, click **Recurrence**.

12. Set **Recurring frequency** to **weekly**, and then set **Recurring end** to **Until** and `2021-12-31`.



13. Click **OK**.
14. In the **Calendar Event** window, click **Create**.

    Notice that the calendar section now has the times that you scheduled, and the agenda section has been updated.
15. Click **Close** to create this schedule.

    This schedule can now be used when configuring call handling for trunks or extensions.

Lab 2: Extensions

In this lab, you will connect to FortiVoice and configure various types of extensions and their preferences.

Objectives

- Add a local extension
- Modify extension preferences
- Add a remote extension
- Add a fax extension
- Back up and import an extension list

Time to Complete

Estimated: 20 minutes

Prerequisites

You must complete the previous lab before beginning this lab.

Exercise 1: Adding a Local Extension

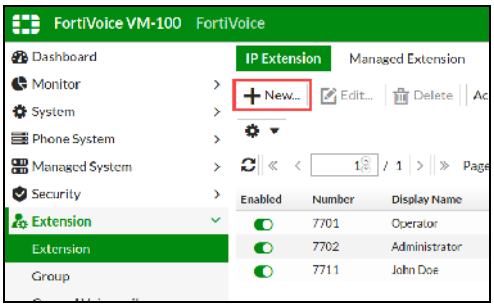
In this exercise, you will add a local extension to FortiVoice.

Add an Extension

You can manually configure extensions that are not detected automatically or are not yet connected to the network.

To manually configure an extension

1. On the Linux-Client, open the Firefox browser.
2. In the address bar, type the default administrator portal address of FortiVoice: `https://10.0.1.231/admin`.
3. Log in with the username `admin` and the password that you set in the previous lab.
4. Click **Login**.
5. Click **Extension** > **Extension**.
6. Click **New**.

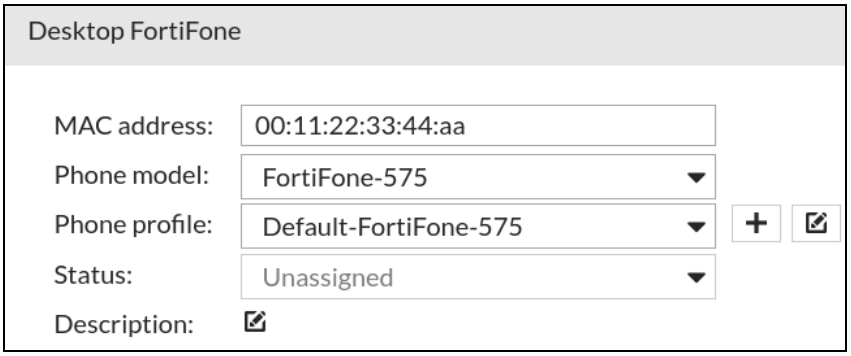


7. In the **IP Extension** section, configure the following settings:

Field	Value
Number	700
Enable	Enabled
Display name	John Doe Click **+** to expand
External caller ID	John Doe <55551234>
Emergency caller ID	SOS Caller

8. In the **Device Setting** section, configure the following settings:

Field	Value
Device	Click **+** to add a new device.
MAC address	00:11:22:33:44:aa
Phone model	FortiFone-575



9. Click **Create**.
10. Click **Advanced**.
11. In the **SIP password** field, type `password1234`.
12. Click **OK**.
13. In the **User Setting** section, click the **Web Access** tab.
14. In the **User password** field, type `userpassword`.
15. Click the **Phone Access** tab.
16. In the **Voicemail PIN** field, type `12341234`.
17. Click **Create**.
    The newly created extension will be listed under **Extension** > **Extension**.

Exercise 2: Configuring Extension Preferences and Call Handling

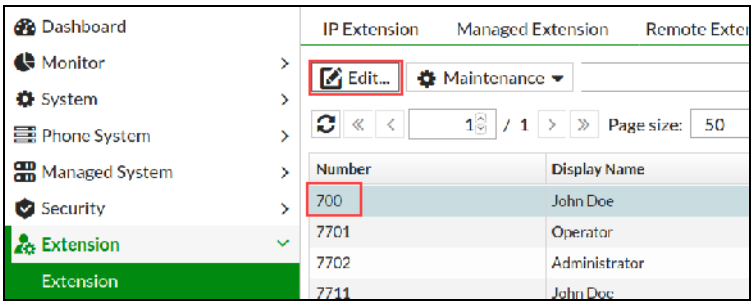
In this exercise, you will configure extension preferences, which determine what happens when a call reaches an extension.

Configure Voicemail and Notification Options

Voicemail and notification options contain settings that determine how an extension operates and is notified of new voicemail messages.

To configure voicemail and notification options

1. On the FortiVoice administrator portal, click **Extension** > **Extension**.
2. Click the **Preference** tab.
3. Select **700**, and then click **Edit**.



Many of the settings here were configured when the extension was originally created. Configure any settings that are not configured.

4. In the **Setting** section, configure the following settings:

Field	Value
Ring duration	24
Call forward	Enable this setting if you want to forward calls to another number.
Do not disturb	Enable this setting if you want to put the extension into do not disturb mode (effective once you save the preferences).
Voicemail handling	Enable

5. In the **Notification Options** section, configure the following settings (optional):

Field	Value
Voicemail	Select how voicemail notifications are sent by email.
Fax	Select how fax notifications are sent by email.
Missed call	Enable or disable the email notification of a missed call on the extension.
Email address	Type the email address to send voicemail and fax notifications to.

6. In the **Voicemail Options** section, configure the following settings:

Field	Value
Name	Standard, which is the default message
Greeting	Standard, which is the default greeting

7. In the **Display Preference** section, configure the following settings:

Field	Value
Phone language	English
Web language	English
Theme	Red
Time zone	(GMT-5:00) Eastern Time (US & Canada)
Idle timeout	60

Change the User PIN

You will change the PIN that a user must use to access the user portal and voicemail.

To change the user PIN

1. Continuing on the administrator portal, in the **Account Management** section, click **Change PIN Number**.
2. In the **Enter existing PIN number**, type `12341234`, which is the old voicemail PIN that you set in the previous exercise.
3. In the **Choose a new PIN number** field, type `43214321` as the new PIN.
4. In the **Confirm new PIN number** field, type `43214321` again.
5. Click **OK**.

Configure Call Handling

You will configure call handling, which determines how a call is directed to this extension.

To configure call handling

1. Continuing on the administrator portal, in the **Call Handling** section, click the **Normal call handling** link.

The **System default action** for each tab is to go to voicemail for this extension—the exception is the **Voicemail** tab. The voicemail feature has a dial 0 option, which directs the caller elsewhere if they dial 0 while they are listening to the voicemail greeting. The system default is to go to the operator extension.

2. Click the **No answer** tab, and then enable **User Defined**.
3. Click **New**.
4. In the **Schedule** drop-down list, select **business_hour**.
5. In the **Action** drop-down list, select **Go to Voicemail**.
6. Click **Create**.
7. Click **OK**.
8. Click **OK** to save the settings.

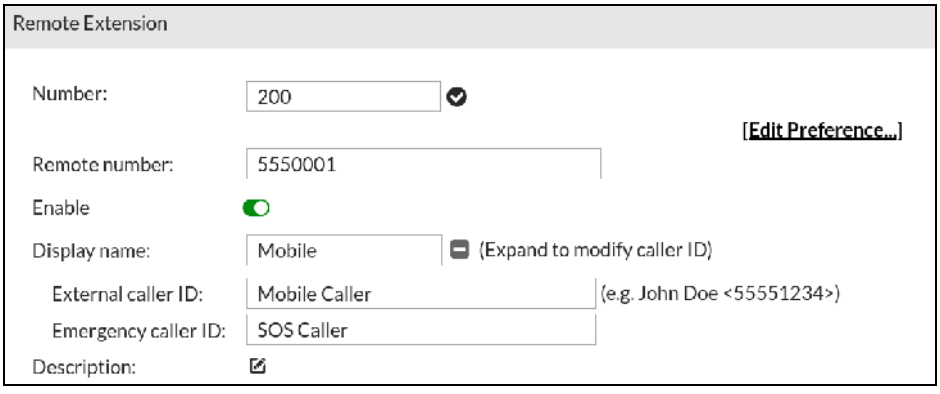
Exercise 3: Adding a Remote Extension

In this exercise, you will add a remote extension to FortiVoice. A remote extension is a phone that is located outside of the FortiVoice network, such as a mobile or home phone.

To configure a remote extension

1. On the FortiVoice administrator portal, click **Extension** > **Extension**.
2. Click the **Remote Extensions** tab.
3. Click **New**.
4. Configure the following settings:

Field	Value
Number	200
Remote number	5550001
Enable	Enable
Display name	Mobile Click **+** to expand
External caller ID	Mobile Caller
Emergency caller ID	SOS Caller



5. In the **User Setting** section, click the **Web Access** tab.
6. In the **User password** field, type `password1234`.
7. Click the **Phone Access** tab.
8. In the **Voicemail PIN** field, type `12341234`.
9. Click **Create**.

Exercise 4: Adding a Fax Extension

In this exercise, you will add a fax extension to FortiVoice. You can add only VoIP-based fax extensions to FortiVoice.

Add a fax extension

You will add a VoIP-based fax extension to FortiVoice.

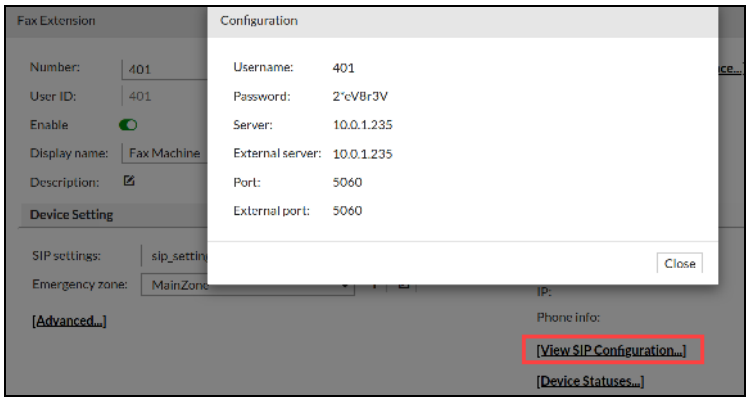
To add a fax extension

1. On the FortiVoice administrator portal, click **Extension** > **Extension**.
2. Click the **Fax Extension** tab.
3. Click **New**.
4. Configure the following settings:

Field	Value
Number	401
Display name	Fax Machine

5. Click **Create**.

FortiVoice cannot automatically detect the fax machine. After you create the extension, you must configure the fax machine with the **View SIP Configuration** information located in the **Device Setting** section.



Exercise 5: Performing Extension Maintenance

The maintenance options in the extensions section allow you to add, edit, and delete extensions. You can also export and import extension lists, and reset extension preferences and voice messages. In this exercise, you will export and import an extension list, reset extension preferences to their default values, and reset voice messages.

Export an Extension List

You can export an extension list to back up basic extension settings, such as user ID, number, SIP password, user PIN, MAC address, email address, display name, phone type, and phone profile. The exported list is saved as a CSV file.

To export an extension list

1. On the FortiVoice administrator portal, click **Extension** > **Extension**.
2. Click the **IP Extension** tab.
3. Click **Actions** > **Export** > **All Extensions**.
4. Save the exported file.

Import an Extension List (Optional)

You can upload a CSV file to FortiVoice with a list of extensions. This can be useful if you have a backup to load on the system, or if you preconfigured the extensions and want to upload them to FortiVoice.

To import an extension list

1. Continuing on the administrator portal, click **Extension** > **Extension**.
2. Click the **IP Extension** tab.
3. Click **Actions** > **Import**.
4. Select the CSV file that you saved in the previous procedure.
5. Click **Open**.
6. Click **Import** to continue.
   The extensions that were in the CSV file are now listed on the **IP Extensions** tab.

Your CSV file must be a valid CSV file to work with FortiVoice.

Reset Extension Preferences to Default Values (Optional)

You can reset extension preferences to system default values, which removes any customization that was added to the extension.

To reset extension preferences

1. Continuing on the administrator portal, click **Extension** > **Extension**.
2. Click the **Preference** tab.
3. Select the extension preferences that you want to reset to their default values.
4. Click **Maintenance**.
5. Click **Reset**.
6. Click **OK** to confirm the request.

Reset Voice Messages (Optional)

You can reset voice messages, which removes all voice messages from the selected voicemail box.

To reset voice messages

1. Continuing on the administrator portal, click **Extension** > **Extension**.
2. Click the **Preference** tab.
3. Select the extension that you want to reset the voice messages for.
4. Click **Maintenance**.
5. Click **Reset Voice Messages**.
6. Click **Yes**, and then click **OK** to confirm the request.
   All settings are now set to their default values, and all voice messages were deleted.

Lab 3: Groups

In this lab, you will configure the various types of groups that are available on FortiVoice.

Objectives

- Configure a user group
- Configure a department
- Configure a ring group
- Configure a paging group
- Configure a multicast paging group
- Configure a message group
- Configure a pickup group
- Configure a general voicemail box
- Configure a virtual number

Time to Complete

Estimated: 20 minutes

Prerequisites

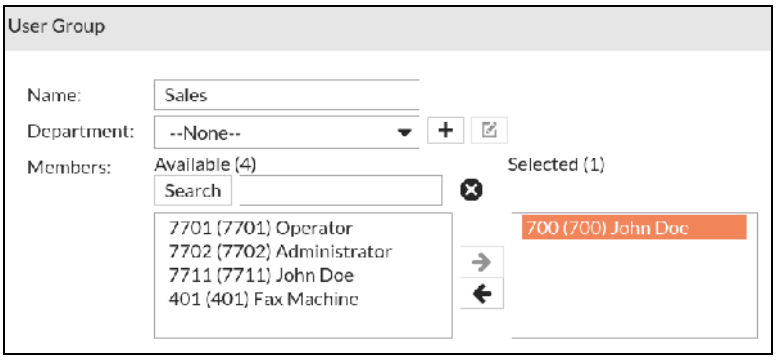
You must complete the previous lab before beginning this lab.

Exercise 1: Configuring a User Group

In this exercise, you will create a user group and add extensions to it. You can configure user groups to make it easier to add many extensions to other groups.

To configure a user group

1. On the Linux-Client, open the Firefox browser.
2. In the address bar, type the default administrator portal address of FortiVoice: `https://10.0.1.231/admin`.
3. Log in with the username `admin` and the password that you set in a previous lab.
4. Click **Login**.
5. Click **Extension** > **Group**.
6. Click **New**.
7. In the **Name** field, type `Sales`.
8. In the **Members** section, select the **700 (700) John Doe** extension.
9. Click the arrow to move this extension from the **Available** window to the **Selected** window.



10. Click **Create**.

Exercise 2: Configuring a Department

In this exercise, you will create a department. You can add extensions to departments, which makes it easier to sort them in the directory.

To configure a department

1. On the FortiVoice administrator portal, click **Extension** > **Group**.
2. Click the **Department** tab.
3. Click **New**.
4. In the **Name** field, type `Inbound_Sales`.
5. Click **Create**.

Departments can be helpful for managing and reporting purposes.

Some FortiVoice settings require that extensions are members of a department, and you must specify the department before you can select the extensions.

Exercise 3: Configuring a Ring Group

In this exercise, you will create a ring group. A ring group allows multiple extensions to ring at the same time. You can use a ring group to ensure that important calls, such as calls to the Sales or Support departments, are answered.

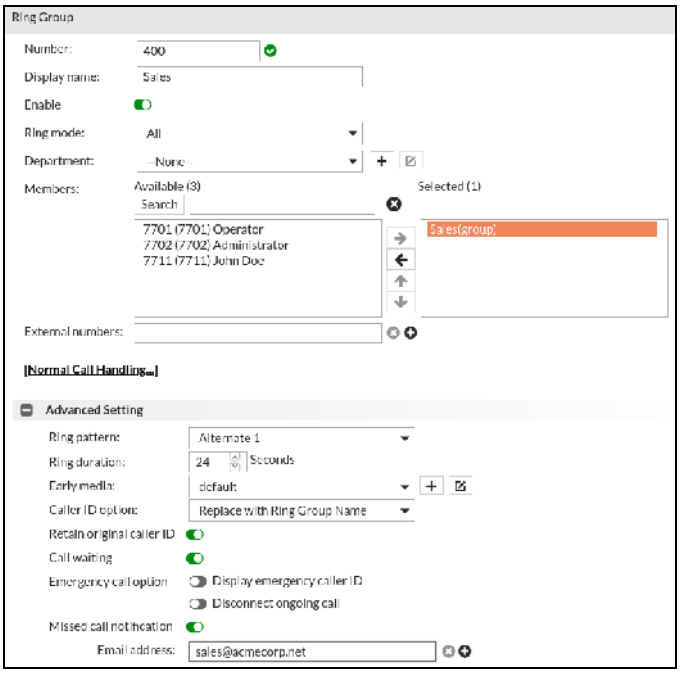
To configure a ring group

1. On the FortiVoice administrator portal, click **Extension** > **Group**.
2. Click the **Ring Group** tab.
3. Click **New**.
4. Configure the following settings:

Field	Value
Name	Sales_group
Number	400
Display name	Sales
Enable	Enable
Ring mode	All

5. In the **Members** section, select **Sales(group)**.
6. Click the arrow to move this group from the **Available** window to the **Selected** window.
7. Expand **Advanced setting**, and then configure the following settings:

Field	Value
Ring pattern	Alternate 1
Ring duration	24
Early media	default
Caller ID option	Replace with Ring Group Name
Missed call notification	Enable
Email address	sales@acmecorp.net



8. Click **Create**.
9. Select the new ring group, and then click **Edit**.
10. Click the **Normal Call Handling** link.

The default call handling option for a ring group is to hang up. It is recommended that you always create user defined call handling.

11. On the **No answer**, **Busy**, and **Phone not connected** tabs, enable **User defined**.
12. Click **New**.
13. In the **Schedule** drop-down list, select **any_time**.
14. In the **Action** field, select **Go to voicemail**.
15. In the **Voicemail** drop-down list, select **700(700) John Doe**.
16. Click **Create**.
17. Repeat the same steps for **Busy** and **Phone not connected**.
18. Click **OK**, and then click **OK** again.

Exercise 4: Configuring a Paging Group

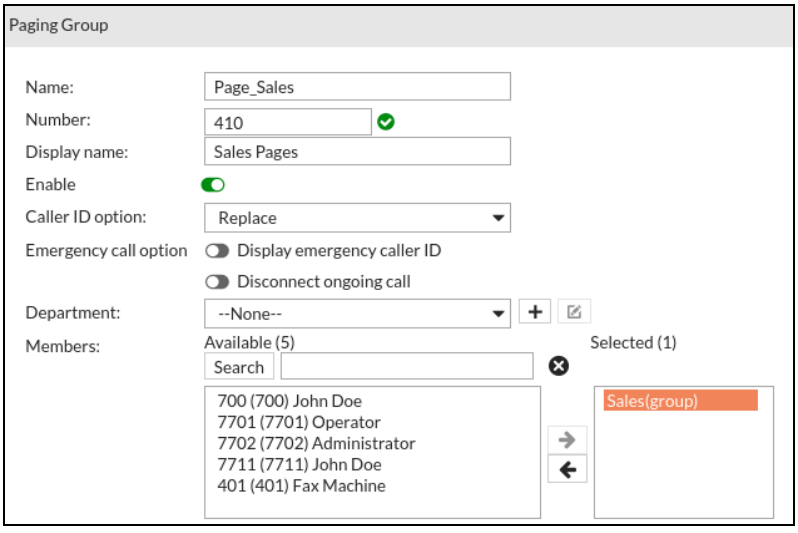
In this exercise, you will create a paging group, which allows extensions in the group to page or communicate over intercom with other extensions in the group.

To configure a paging group

1. On the FortiVoice administrator portal, click **Extension** > **Group**.
2. Click the **Paging Group** tab.
3. Click **New**.
4. Configure the following settings:

Field	Value
Name	Page_Sales
Number	410
Display name	Sales Pages
Enable	Enable
Caller ID option	Replace

5. In the **Members** section, select **Sales(group)**.
6. Click the arrow to move this group from the **Available** window to the **Selected** window.



7. Click **Create**.

Exercise 5: Configuring a Multicast Paging Group

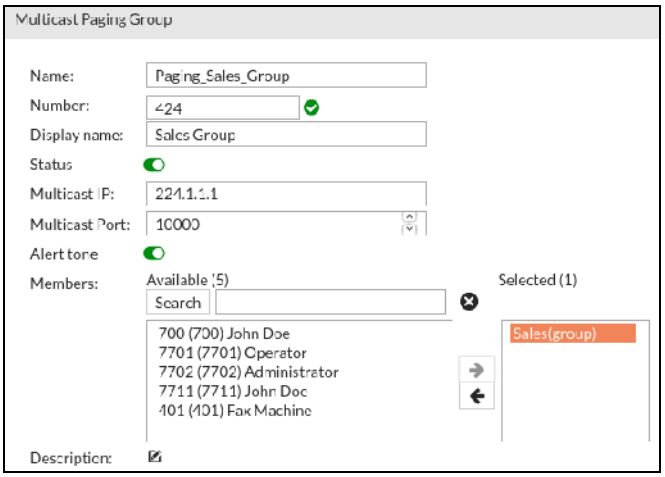
In this exercise, you will configure a multicast paging group, which uses IP multicast to provide a more robust and efficient mechanism for delivering audio and text messages to larger paging groups.

To configure a multicast paging group

1. On the FortiVoice administrator portal, click **Extension** > **Group**.
2. Click the **Multicast Paging Group** tab.
3. Click **New**.
4. Configure the following settings:

Field	Value
Name	Paging_Sales_Group
Number	424
Display name	Sales Group
Multicast IP	224.1.1.1

5. In the **Members** section, select **Sales(group)**.
6. Click the arrow to move this group from the **Available** window to the **Selected** window.



7. Click **Create**.
8. Click **OK** to continue.

When you create a multicast group, FortiVoice pushes an update to the IP phones. After the update is installed, the phones require a reboot. The update installs the new multicast IP group address, which enables the phones to join the group and receive paging messages.

Exercise 6: Configuring a Message Group

In this exercise, you will configure a message group to send a mass notification when delivering audio and text messages to FortiFones in user groups or a multicast paging group.

To configure a message group

1. On the FortiVoice administrator portal, click **Extension** > **Group**.
2. Click the **Message Group** tab.
3. Click **New**.
4. Configure the following settings:

Field	Value
Name	Message_Notification
Number	425
Display name	Notification

5. In the **Message type** section, click **Text**.

You can review and change the predefined title and message fields, which you can customize to match the standard that you use to send automated messages.

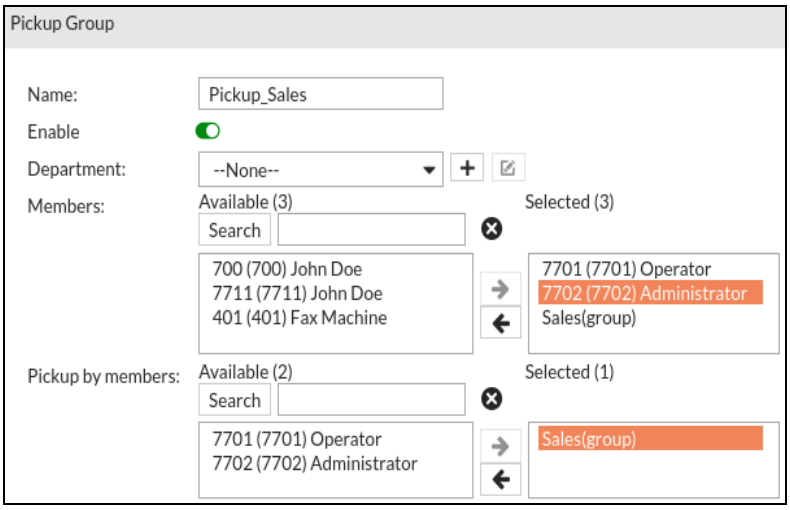
6. In the **User group** drop-down list, select **Sales(group)**.
7. Click **OK**.
8. Enable, and then click the **Audio** link.
9. In the **Sound file** drop-down list, select **greeting_default**.
10. In the **Multicast group** drop-down list, select **Paging_Sales_Group**.
11. Click **OK**.
12. Click **Create**.

Exercise 7: Configuring a Pickup Group

In this exercise, you will configure a pickup group, which allows an extension to pick up a call that is ringing at another extension, using either a key that has been programmed for pickup or an extension number command.

To configure a pickup group

1. On the FortiVoice administrator portal, click **Extension** > **Group**.
2. Click the **Pickup Group** tab.
3. Click **New**.
4. In the **Name** field, type `Pickup_Sales`.
5. In the **Members** section, select **Sales(group)**, **7701 (7701) Operator**, and **7702 (7702) Administrator**.
6. Click the arrow to move these members from the **Available** window to the **Selected** window.
7. In the **Pickup by members** section, select **Sales(group)**.
8. Click the arrow to move this group from the **Available** window to the **Selected** window.



9. Click **Create**.

If an extension is not selected in the **Pickup by members** section, it will not be able to pick up any calls at another extension.

Exercise 8: Configuring a General Voicemail Box

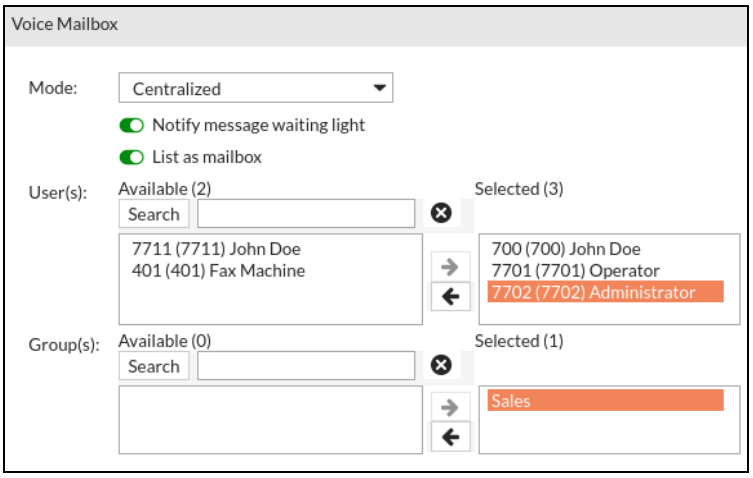
In this exercise, you will create a general voicemail box and configure preferences for it. A general voicemail box is not assigned to an extension directly, and can be used as a voicemail box for a group of people, such as employees in the Sales or Support departments.

To configure a general voicemail box

1. On the FortiVoice administrator portal, click **Extension** > **General Voicemail**.
2. Click **New**.
3. Configure the following settings:

Field	Value
Number	420
Display name	Sales General

4. In the **User Setting** section, click the **Management** tab.
5. Click the **Voicemail** link.
6. In the **User(s)** section, select **700(700) John Doe)**, **7701 (7701) Operator**, and **7702 (7702) Administrator**.
7. Click the arrow to move these users from the **Available** window to the **Selected** window.
8. In the **Group(s)** section, select **Sales(group)**.
9. Click the arrow to move this group from the **Available** window to the **Selected** window.



10. Click **OK**.
11. Click the **Web Access** tab.
12. In the **User password** field, type `password1234`.
13. Click the **Phone Access** tab.
14. In the **Voicemail PIN** field, type `12341234`.
15. Click **Create**.

Exercise 9: Configuring a Virtual Number

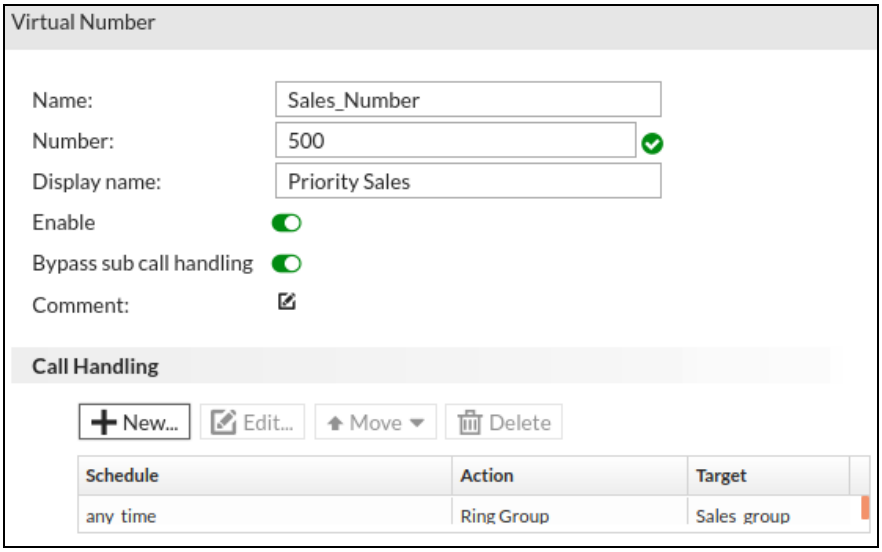
In this exercise, you will configure a virtual number, which has similar features to an extension but is not assigned to a physical phone.

To configure a virtual number

1. On the FortiVoice administrator portal, click **Extension** > **Virtual Number**.
2. Click **New**.
3. Configure the following fields:

Field	Value
Name	Sales_Number
Number	500
Display name	Priority Sales

4. In the **Call Handling** section, click **New**.
5. In the **Action** drop-down list, select **Ring Group**.
6. In the **Ring group** drop-down list, select **Sales_group**.
7. Click **Create**.



8. Click **Create**.

Lab 4: Trunks

In this lab, you will configure the various types of trunks that are available on FortiVoice.

Objectives

- Configure a VoIP trunk
- Configure an office peer
- Configure outbound call routing
- Configure inbound call routing
- Configure individual DID rules
- Test an outbound call routing rule
- Configure an auto attendant

Time to Complete

Estimated: 25 minutes

Prerequisites

You must complete the previous lab before beginning this lab.

Exercise 1: Configuring a VoIP Trunk

In this exercise, you will configure a VoIP trunk on FortiVoice.

To configure a VoIP trunk

1. On the FortiVoice administrator portal, click **Trunk** > **VoIP**.
2. Click **New**.
3. Configure the following settings:

Field	Value
Name	VoIP_trunk
Display name	Company ABC
Main number	6132259381

4. In the **SIP Setting** section, configure the following settings:

Field	Value
SIP server	sip.domain.com
User name	username
Password	password
Max channel	Set to 4
Overflow check	Enable
Max outgoing channel	Set to 4
Inband ringtone (Early media)	Enable

5. In the **Caller ID Option** section, in the **From header** drop-down list, select **Main number**.
6. In the **Registration** section, in the **Type** drop-down list, select **Disable**.
7. In the **Fax** section, enable **Automatic fax detection**.
8. Click **Create**.

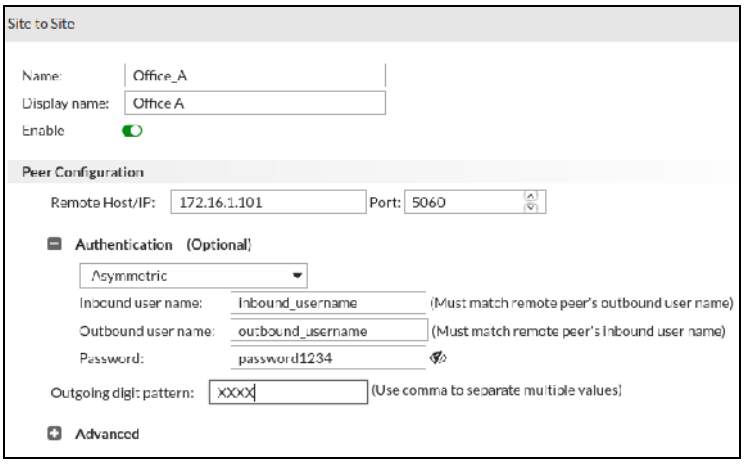
Exercise 2: Configuring an Office Peer

In this exercise, you will configure an office peer, which allows multiple locations to act as one location when they receive calls or when users call from extension to extension between systems. Keep in mind that these steps must be implemented at each of the locations that will become an office peer.

To configure an office peer

1. On the FortiVoice administrator portal, click **Trunk** > **Office Peer**.
2. Click **New**.
3. In the **Office peer type** field, click **Site to Site**.
4. Click **Next**.
5. Configure the following settings:

Field	Value
Name	Office_A
Display name	Office A
Remote Host/IP	172.16.1.101
Authentication	Asymmetric
Inbound user name	inbound_username
Outbound user name	outbound_username
Password	password1234
Outgoing digit pattern	XXXX



6. Click **Create**.

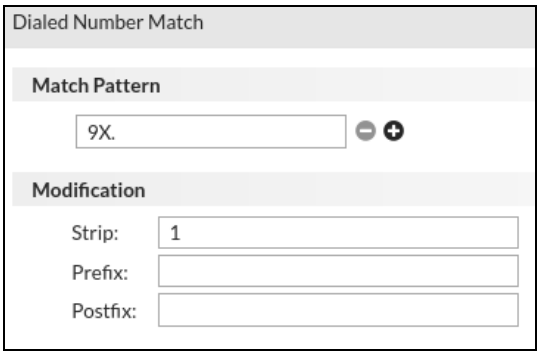
Remote office peers can be configured similar to **Office_A**, and they must match certain parameters, such as inbound and outbound usernames and passwords.

Exercise 3: Configuring Outbound Call Routing

In this exercise, you will configure an outbound call routing rule that extensions will follow on FortiVoice. Inbound and outbound call routing is configured separately.

To configure an outbound call routing rule

1. On the FortiVoice administrator portal, click **Call Routing** > **Outbound**.
2. Click **New**.
3. In the **Name** field, type `all_outbound` to identify the outbound call routing rule.
4. Enable the **Emergency Call** option to allow emergency calls on the outbound call routing rule.
5. In the **Dialed Number Match** section, click **New**.
6. In the pop-up window, in the **Match Pattern** section, type `9X.`.
7. To have the 9 removed automatically, in the **Strip** field, type `1`.



The pattern matching syntax is case sensitive and follows these rules:

- **X** - Matches any single digit from 0–9
- **Z** - Matches any single digit from 1–9
- **N** - Matches any single digit from 2–9
- **[15-7]** - Matches a single character from the range of digits specified. In this case, the pattern matches a single 1, as well as any number in the range 5, 6, 7.
- **.** - Wildcard match—matches one or more characters, no matter what they are
- **!** - Wildcard match—matches zero or more characters, no matter what they are
- **, ; or (space)** - Pattern delimiters—allow you to type multiple pattern strings at a time (for example, `NXXX,6XXXX;[3-5]X`)

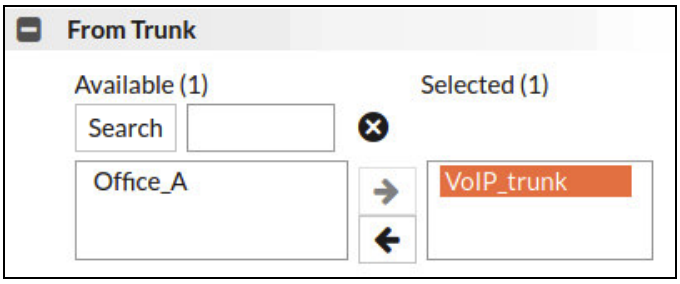
8. In the pop-up window, click **Create**.
9. In the **Call Handling** section, click **New**.
10. In the **Outgoing trunk** drop-down list, select **VoIP_trunk (sip-peer)**.
11. Click **Create**.
12. In the pop-up window, click **Create**.

Exercise 4: Configuring Inbound Call Routing

In this exercise, you will configure FortiVoice inbound call routing to accept all calls on a selected trunk, and then route the calls to an auto attendant, DID, and an office peer. Call routing determines how calls are initially routed through FortiVoice.

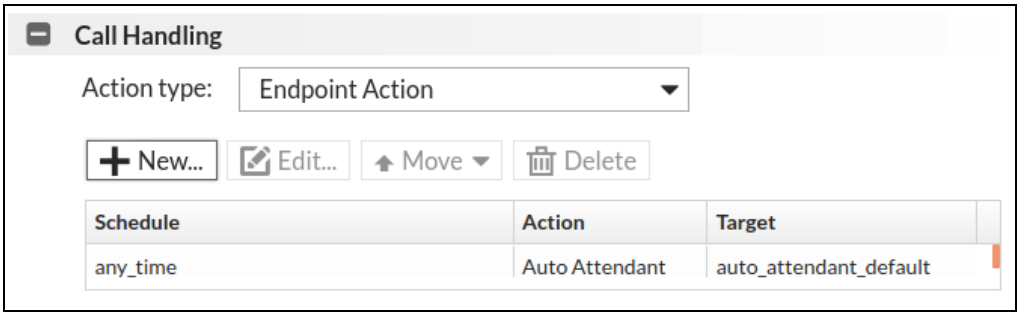
To configure inbound call routing to go to an auto attendant

1. On the FortiVoice administrator portal, click **Call Routing** > **Inbound**.
2. Click **New**.
3. In the **Name** field, type `all_inbound` to identify the call routing rule.
4. In the **Available** section, select **VoIP_trunk**.
5. Click the arrow to move the trunk from the **Available** window to the **Selected** window.
   This call routing rule will activate when an inbound call is received.



Dialed Number Match allows all dialed numbers on the selected trunk to follow the inbound call routing rule. **Caller ID Match** also allows all callers to follow the rule. You can select the **Caller ID Modification** rule if you want to change the inbound caller ID, but you must first create it in **Phone System** > **Profile** > **Caller ID Modification**.

6. In the **Call Handling** section, click **New**.
7. In the **Action** drop-down list, select **Auto Attendant**.
8. In the **Auto attendant** drop-down list, select **auto_attendant_default**.
9. Click **Create**.



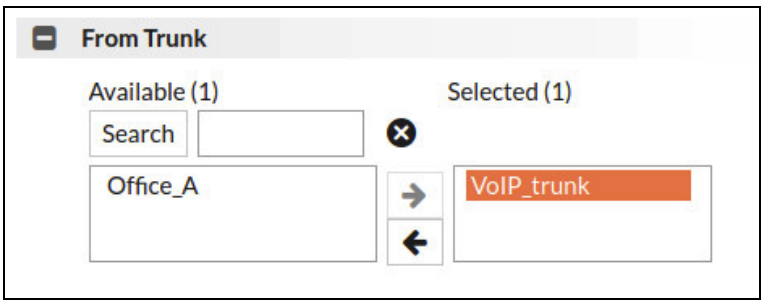
10. Click **Create** to create this inbound call routing rule.

Configure Inbound Call Routing to Go to a DID

This configuration is useful if you set up your extension numbers to match the last four digits of DID numbers from your service provider. You can also modify these steps to apply them to three digit extensions. The result is that a caller will dial a DID where the last four digits match an extension number, and the extension is dialed directly.

To configure inbound call routing to go to a DID

1. Continuing on the administrator portal, click **Call Routing** > **Inbound**.
2. Click **New**.
3. In the **Name** field, type `did_inbound` to identify the call routing rule.
4. In the **Available** section, select **VoIP_trunk**.
5. Click the arrow to move the trunk from the **Available** window to the **Selected** window.



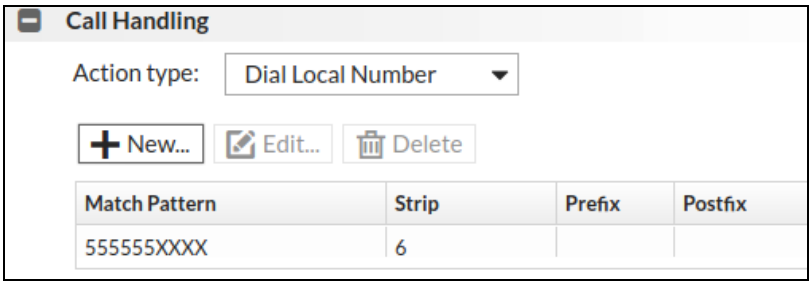
6. In the **Call Handling** section, in the **Action type** drop-down list, select **Dial Local Number**.
7. Click **New**.
8. In the **Match Pattern** section, type `55555XXXX`.
9. In the **Modification** section, set the **Strip** value to `6`.

If you have a DID of 555-555-1234 and configure **Dial Local Number** to match the pattern **555555XXXX**, FortiVoice will match all ten numbers that start with 555-555—the **XXXX** is a placeholder for your extension numbers. Setting the strip value to 6 removes the first seven numbers of a matching pattern string. In this example, this now leaves the DID number that the caller dials as the last four digits.

10. Click **Create**.

The pattern matching syntax is case sensitive and follows these rules:

- **X** - Matches any single digit from 0–9
- **Z** - Matches any single digit from 1–9
- **N** - Matches any single digit from 2–9
- **[15-7]** - Matches a single character from the range of digits specified. In this case, the pattern matches a single 1, as well as any number in the range 5, 6, 7.
- **.** - Wildcard match—matches one or more characters, no matter what they are
- **!** - Wildcard match—matches zero or more characters, no matter what they are
- **, ; or (space)** - Pattern delimiters—allow you to type multiple pattern strings at a time (for example, `NXXX,6XXXX;[3-5]X`)



11. Click **Create** to create this DID inbound call routing rule.

Exercise 5: Configuring Individual DID Rules

In this exercise, you will create individual DID rules that direct a DID to an extension. These rules are different than the rules that you created in *Exercise 4* because these DID rules map to an individual extension.

To configure a DID rule

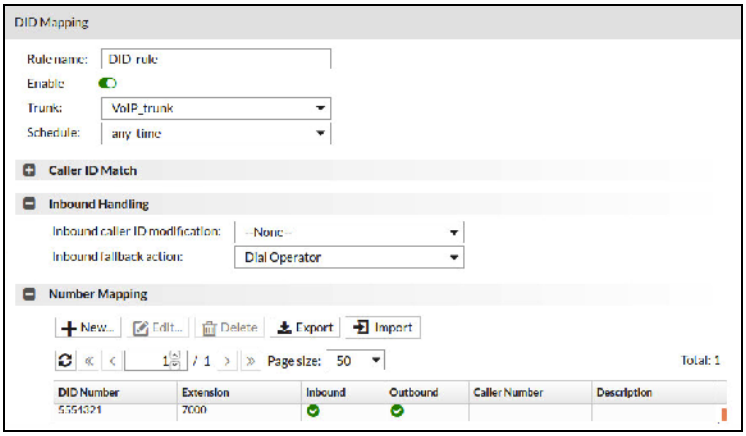
1. On the FortiVoice administrator portal, click **Call Routing** > **Inbound**.
2. Click the **DID Mapping** tab.
3. Click **New**.
4. In the **Rule name** field, type `DID_rule`.
5. In the **Trunk** drop-down list, select **VoIP_trunk**.
6. Expand the **Inbound Handling** section.
7. In the **Inbound fallback action** drop-down list, select **Dial Operator**.

The **Inbound fallback action** determines what happens to calls that do not match the DID mapping but come into the select trunk.

8. In the **Number Mapping** section, click **New**.
9. Configure the following settings:

Field	Value
DID number	5554321
Extension	7000
Option	Enable inbound and outbound.

10. Click **Create**.



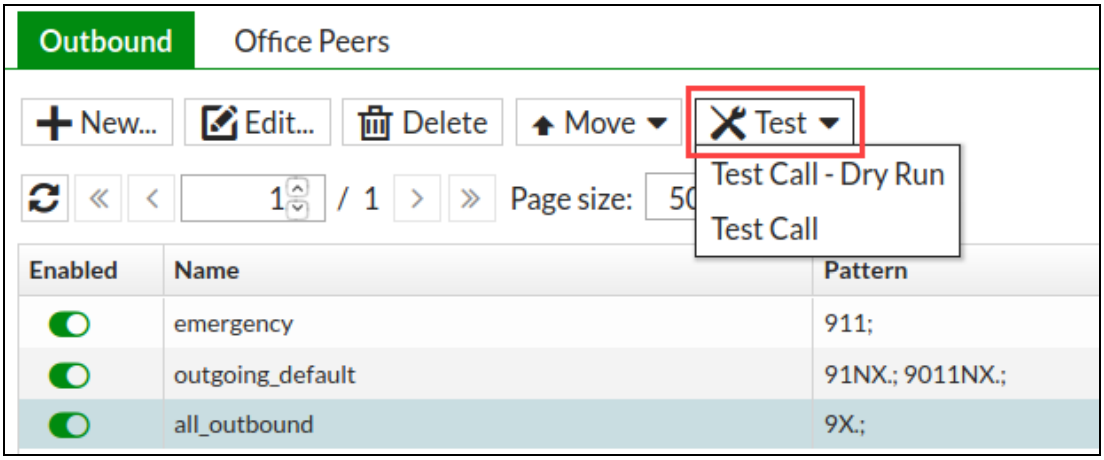
11. At the bottom of the **DID Mapping** pop-up window, click **Create**.

Exercise 6: Testing the Outbound Call Routing Rule

In this exercise, you will test your outbound call routing rule. This test ensures that the configuration will function correctly when users attempt to make outbound calls.

To test the outbound call routing rule

1. On the FortiVoice administrator portal, click **Call Routing** > **Outbound**.
2. Select the outbound call routing rule that you want to test.
3. Click the **Test** button at the top of the page.



4. On the **Test Call – Dry Run** button, type a **Destination number** to call, and in the **From number** field, type an extension number that can use the outbound call routing rule.
5. At the bottom of the pop-up window, click **Test**.
   The test is performed and displays the results in the **Test result** section.

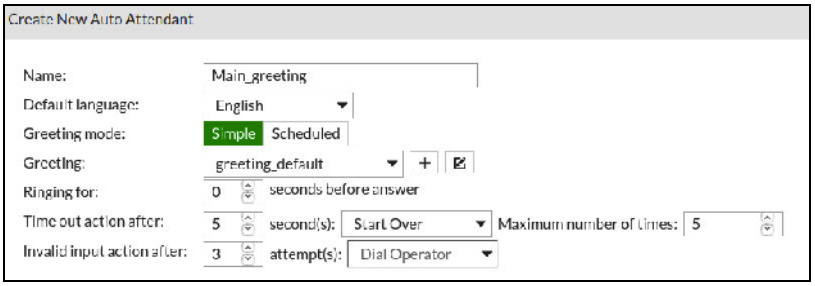
Exercise 7: Configuring an Auto Attendant

In this exercise, you will create an auto attendant. An auto attendant directs calls when they are initially received by FortiVoice. After you create an auto attendant, you can select it as an action in the inbound call routing rule.

To configure an auto attendant

1. On the FortiVoice administrator portal, click **Call Feature** > **Auto Attendant**.
2. Click **New**.
3. In the **Name** field, type `Main_greeting`.
4. In the **Greeting** drop-down list, select **greeting_default**.
5. In the **Ringing for** field, set the value to `0` to answer immediately.
6. In the **Time out action** field, configure the following settings:

Field	Value
After	5 seconds
Action	Start Over
Maximum number of times	5
Invalid input action after	3
Invalid input action	Dial Operator



7. In the **Dial Pad Key Action** section, click **New**.
8. In the **Key** field, type the digit that the caller will dial.
9. Choose the **Language** for the prompts that will play to the caller.
10. In the **Action** field, type where to direct the caller to when they dial the key.
11. Select the **Music on hold** that will play when the caller is transferred to the action location.
12. Click **Create**.
13. Click **Create** to save the new auto attendant.

Lab 5: Call Features

In this lab, you will configure the various call features that are available on FortiVoice.

Objectives

- Configure speed dial
- Configure conference rooms
- Configure automatic call recording
- Configure call queues
- Configure call parking
- Configure fax settings

Time to Complete

Estimated: 25 minutes

Prerequisites

You must complete the previous lab before beginning this lab.

Exercise 1: Configuring Speed Dial

In this exercise, you will configure a speed dial. Speed dials are system wide, and available for any extension on the system to dial.

To configure a system speed dial

1. On the FortiVoice administrator portal, click **Phone System** > **Setting**.
2. Click the **Option** tab.
3. In the **Speed dial pattern** field, erase the current value, and then type `300`.
4. Click **Apply**.
5. Click **Call Feature** > **Speed Dial**.
6. Click **New**.
7. Configure the following settings:

Field	Value
Name	SpeedDial1
Dialed Code	*300
Mapped Number	5551234

8. Click **Create**.

Exercise 2: Configuring Conference Rooms

In this exercise, you will create the two types of conference rooms that are available on FortiVoice: static and dynamic. Static conference rooms use one conference room number with one administrator and one user PIN code. Dynamic conference rooms allow for one conference room number with multiple event ID numbers, which allows one conference room number to behave like many conference room numbers.

To configure a static conference room

1. On the FortiVoice administrator portal, click **Call Feature** > **Conferencing**.
2. Click the **Admin Conferencing** tab.
3. Click **New**.
4. Configure the following settings:

Field	Value
Name	Room1
Number	7000
Display name	Conference room 1
Attendee PIN	121314
Organizer PIN	123654
Music on hold	Enable this setting, and then select the default option.

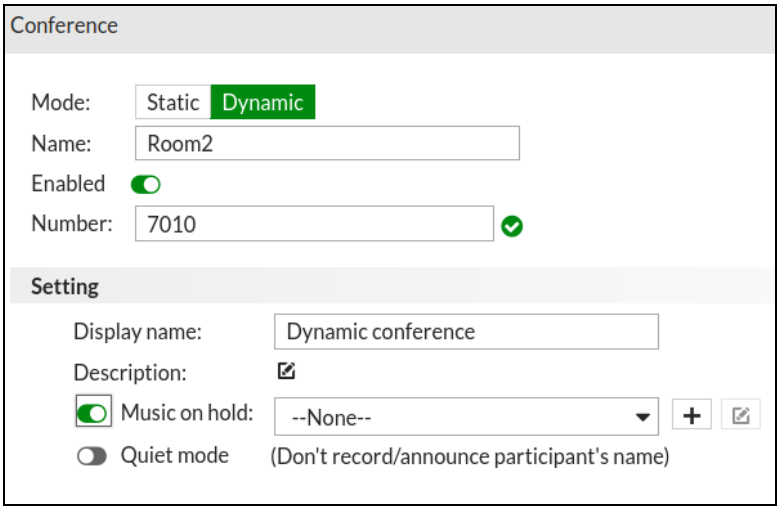
5. Click **Create**.
   You can now dial in to the conference room from an extension or from a trunk that is answered by an auto attendant. Follow the prompts to enter the conference room as a participant.

You can add a recursive schedule or a one time schedule to your static conference room. These options require you to enter a new attendee PIN in the **Password** field. This password is used only during the times configured in the schedule.

To configure a dynamic conference room

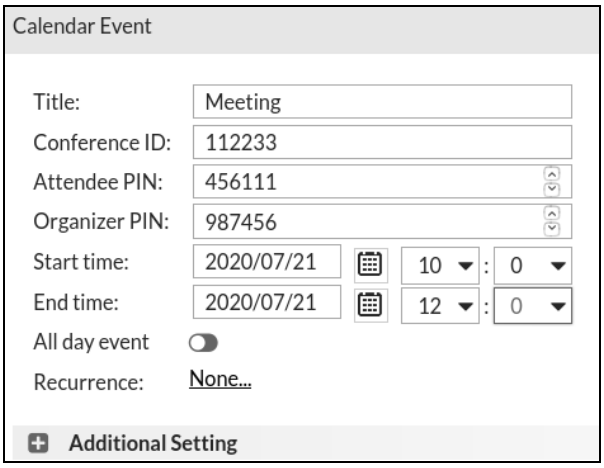
1. Continuing on the administrator portal, click **Call Feature** > **Conferencing**.
2. Click the **Admin Conferencing** tab.
3. Click **New**.
4. Configure the following settings:

Field	Value
Mode	Dynamic
Name	Room2
Number	7010
Display name	Dynamic conference
Music on hold	Enable this setting, and then select the default option.



5. Click **Create**.
6. Select the new conference room that you created, and then click **Edit**.
7. Click the **View Scheduled Conferences** link.
8. Click **New**.
9. Configure the following settings:

Field	Value
Title	Meeting
Conference ID	112233
Attendee PIN	456111
Organizer PIN	987456
Start time	Set the time to activate this conference room.
End time	Set the time to deactivate this conference room.



10. Click **Create**.
11. Click **Close**, and then click **OK** to save the settings.

    You can now dial in to the conference room from an extension or from a trunk that is answered by an auto attendant. Follow the prompts to enter the conference room as a participant.

Exercise 3: Configuring Automatic Call Recording

In this exercise, you will configure the automatic call recording feature of FortiVoice. This allows FortiVoice to record and store all calls or a percentage of calls.

To configure automatic call recording

1. On the FortiVoice administrator portal, click **Call Feature** > **Call Recording**.
2. Click **New**.
3. Configure the following settings:

Field	Value
Name	Recording
Caller number pattern	X.
Record ratio	100
Retention duration	30

4. Click **Create**.
5. Click **Accept** to accept the message.
6. Click the **Archive** tab.
7. In the **Recording rotation time** field, set the value to `7` days.
8. In the **Destination Setting** section, in the **Local disk quota**, set the value to `50` GB.
9. Click **Apply**, and then click **OK** to continue.

To listen to recorded calls stored on FortiVoice (Optional)

1. Continuing on the administrator portal, click **Monitor** > **Storage**.
2. Double-click one of the archive folders.
3. Select the recording that you want to listen to, and then click **Play**.

There are currently no recorded calls to play back.

Exercise 4: Configuring Call Queues

In this exercise, you will configure a call queue. FortiVoice can have multiple call queues available to handle calls, which is very useful for departments that handle a large volume of calls.

To configure a call queue

1. On the FortiVoice administrator portal, click **Call Feature** > **Call Queue**.
2. Click **New**.
3. Configure the following settings in the **Call Queue** and **Queue Setting** sections:

Field	Value
Queue ID	SalesQueue
Number	4000
Display name	Sales Queue
Description	Inbound sales
Department	Inbound_Sales
Ring duration	30

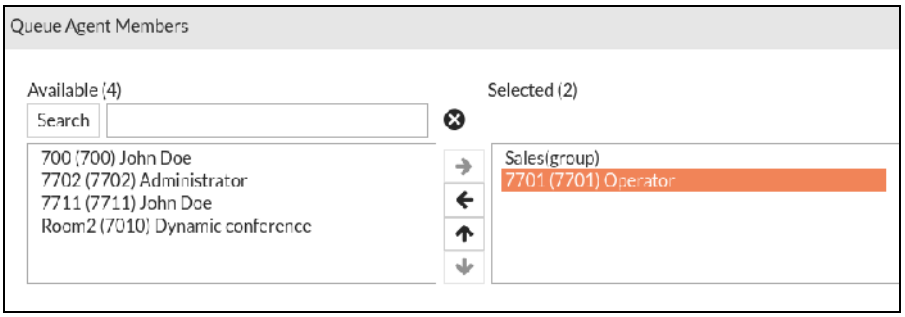
4. Click **Additional Setting** > **Distinctive Setting for agent**.
5. In the **Caller ID option** drop-down list, select **Prefix**.
6. In the **Ring pattern** drop-down list, select **Alternate-1**.
7. Click **Additional Setting** > **Business schedule**.
8. Select the schedule that determines when this call queue will be active.

Calls that are directed to this call queue outside of the selected business schedule will follow the settings configured in the **Call Handling** > **Non Scheduled Business Hour Call Handling** section.

9. Click **Create**.

To add agents to the call queue

1. Continuing on the administrator portal, click **Call Features** > **Call Queue**.
2. Select the call queue that you just created, and then click **Edit**.
3. In the **Agent** section, click the **Agent Members** link.
4. In the **Available** section, select the agents that you want to add to this call queue.
5. Click the arrow to move the agents from the **Available** window to the **Selected** window.



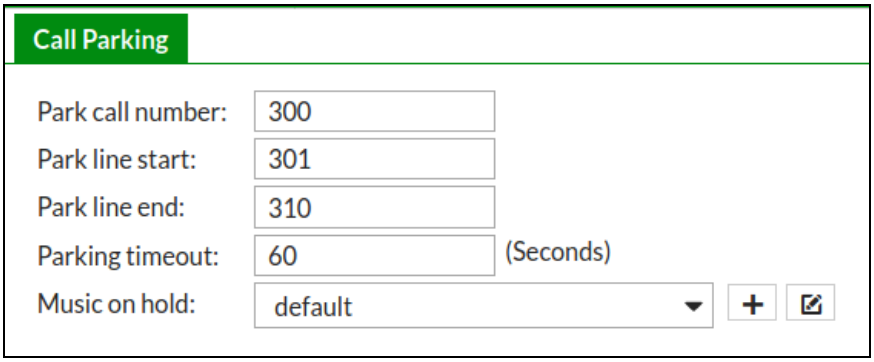
6. Click **OK**.
7. In the **Call Handling** section, click the **Non Scheduled Business Hour Call Handling** link.
8. Click **New**.
9. Select a **Schedule** to follow and an **Action** to take during this schedule.
10. Click **Create**.
11. Click **OK**.
12. Click **OK** at the bottom of the page.

Exercise 5: Configuring Call Parking

In this exercise, you will configure the settings for call parking. This feature allows a user to put a call on hold in the system, and another user can pick the call up by dialing the park line.

To configure call parking

1. On the FortiVoice administrator portal, click **Call Feature** > **Call Parking**.
2. In the **Parking timeout** field, set the value to `120` seconds.
3. In the **Music on hold** drop-down list, select the **default** option.



It is recommended that you keep the **Park call number**, **Park line start**, and **Park line end** settings within the same numbering scheme. For example, if **Park call number** is set to `300`, **Park line start** should be `301`.

Exercise 6: Configuring Fax Settings

In this exercise, you will configure fax settings for FortiVoice in an eFax account. FortiVoice uses the eFax account to determine how to direct faxes that it receives. FortiVoice uses a separate sending rule to direct faxes that are sent from FortiVoice, which is also covered in this exercise.

To configure an eFax account

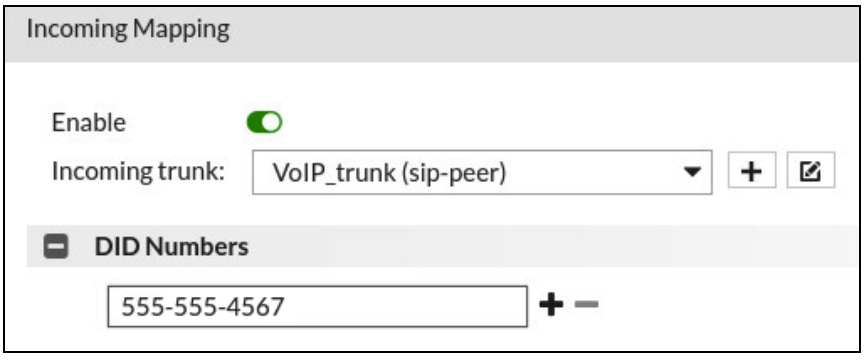
1. On the FortiVoice administrator portal, click **Call Feature** > **Fax**.
2. Click **New**.
3. In the **Incoming Fax Setting** section, configure the following settings:

Field	Value
Name	Sales_Fax
Number	8000
Display name	System Fax

4. Click the **External Numbers** section.

The **External Numbers** section is where you add any DID numbers that are used as your fax number. Faxes that are sent to the DID number go directly to the eFax account extension number.

5. Click **New**.
6. In the **Incoming trunk** drop-down list, select the trunk that hosts the DID numbers.
7. In the **DID Numbers** section, type the DID number.



8. Click **Create**.
9. Click the **Select Fax Monitors** section.

You can choose which extensions can receive faxes using this eFax account. The faxes will be available as PDF files in the user portal.

10. Select the extensions that you want to allow to access the eFax account.
11. Click the **Fax to Email** section.
12. Type the email addresses that you want FortiVoice to send received faxes to.
13. Click the **Archive** section.
14. Select the **Fax name format** that you want FortiVoice to use when it stores faxes under **Monitor** > **Storage** > **Fax Archive**.
15. Click **Create**.

To configure the fax sending rule

1. Continuing on the administrator portal, click the **Sending Rule** tab.
2. Click **New**.
3. In the **Name** field, type `fax`.
4. Click the **Dialed Number Match** section.
5. Click **New**.
6. In the **Match Pattern** section, type `9X.` to match.
7. Configure the **Strip**, **Prefix**, and **Postfix**, if required.

Example

Many companies like to use a dialing prefix in order to dial out from an extension. This must be configured as part of the match pattern. For example:

- Extensions must dial 9 first in order to dial out.
- Create a match pattern of 9X. (X means any number of any length).
- Configure the strip as 1.
- Now, numbers dialed that start with 9 will match this sending rule. The 9 is stripped off by FortiVoice and the rest of the dialed number is sent out over the trunk.

8. Click **Create**.
9. In the **Call Handling** section, click **New**.
10. In the **Outgoing trunk** drop-down list, select **VoIP_trunk(sip-peer)**.
11. Click **Create**.
12. Click **Create**.

To configure how sent faxes are transmitted

1. Continuing on the administrator portal, click the **Setting** tab.
2. Configure the following settings:

Field	Value
System station ID	8001
System fax header	Office Fax

3. Click **Apply**.

To configure how FortiVoice stores archived faxes

1. Continuing on the administrator portal, click the **Archive** tab.
2. Configure the following settings:

Field	Value
Fax rotation size	300
Fax rotation time	14
Archiving options when disk quota is full	Overwrite

3. Click **Apply**.

Lab 6: Logs and Maintenance

In this lab, you will configure logging and run maintenance on FortiVoice.

Objectives

- Configure logging
- Configure a network capture
- Use the phone system review
- Configure a system backup
- Configure system alerts

Time to Complete

Estimated: 20 minutes

Prerequisites

You must complete the previous lab before beginning this lab.

Exercise 1: Configuring Logging

In this exercise, you will configure the logging section of FortiVoice. The logs captured here can be very helpful to a Support team when they troubleshoot an issue.

To configure logging

1. On the FortiVoice administrator portal, click **Log & Report** > **Log Setting**.
2. Configure the following settings:

Field	Value
Log file size	50
Log time	14
Logging Policy Configuration	Enable all

3. Click **Apply**.
   Logging will now occur according to the settings.
4. Click **Monitor** > **Log** to access the logs.
5. Select a log event, and then click **View**.

On the dashboard page, you can click on the console tab to open a console window with the system. Here, you can issue advanced CLI commands to query or tweak the system from TAC on a case-by-case basis. The most common method used for troubleshooting is enabling a trace log.

To enable the trace log on FortiVoice

1. Continuing on the administrator portal, click **Dashboard**, and then click the **Console** tab.
2. Click **Click here to connect**.
3. Type the following command to enable the trace log: `diag debug application voiced trace-log enable`.
   You can reproduce the issue to collect the logs.
4. Click **Dashboard**, and then click the **Console** tab.
5. Click **Click here to connect**, or click the empty space, and then press `Enter`.
6. Type the following command to disable the trace log: `diag debug application voiced trace-log disable`.
7. Click **System** > **Maintenance**.
8. Click **Trace Log**, and then click the **Prepare** button.
9. After you prepare the trace-log, click **Download trace log** to download the log file.
10. Attach the logs to the support ticket.

Exercise 2: Configuring a Network Capture

In this exercise, you will configure a network capture. You can open this log in a program such as Wireshark, and it is excellent for troubleshooting VoIP issues.

To configure a network capture

1. On the FortiVoice administrator portal, click **System** > **Network**.
2. Click the **Traffic Capture** tab.
3. Click **New**.
4. Configure the following settings:

Field	Value
Capture file prefix	Test
Duration	Specify the length of time to run the traffic capture.
SIP Connection	Select the extensions or trunks to capture traffic on.
Filter	Select the traffic type that you want to capture.
Exclusion	Type specific IP addresses or ports that you do not want to capture.

5. Click **Create**.
   The capture will now be running.
6. Reproduce the issue, and then stop the traffic capture by selecting the running traffic capture, and then clicking **Stop**.

You can download captures while they are running, without having to stop them first.

7. Select the traffic capture, and then click **Download** to obtain a copy of the traffic capture.

Exercise 3: Using the Phone System Review

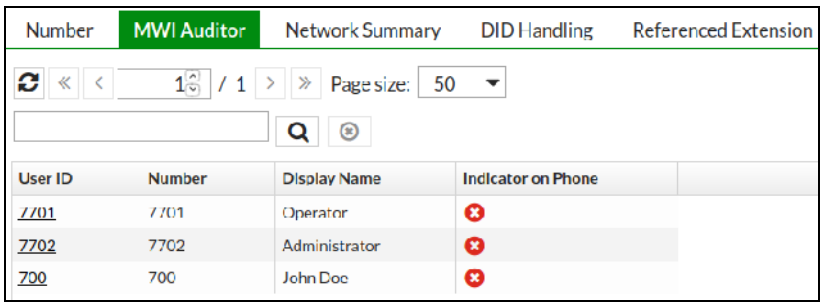
In this exercise, you will use the phone system review to see where there may be an issue with the configuration. The phone system review section offers you a quick way to gain access to the settings of extensions and trunks, if an issue is found.

Review the Phone System Numbers

Click **Phone System** > **Review**, and then click the **Number** tab. All the configured extensions and groups are listed here. To quickly access the settings of a particular extension or group, double-click their **User ID**.

Review the Phone System MWI Auditor

Click **Phone System**, and then click the **MWI Auditor** tab. This provides a list of configured extensions that are linked to voice mailboxes. Click a value in the **User ID** column to open a window that displays the mailboxes that are being monitored. If an extension or user does not appear in the list, it is not linked to a mailbox.

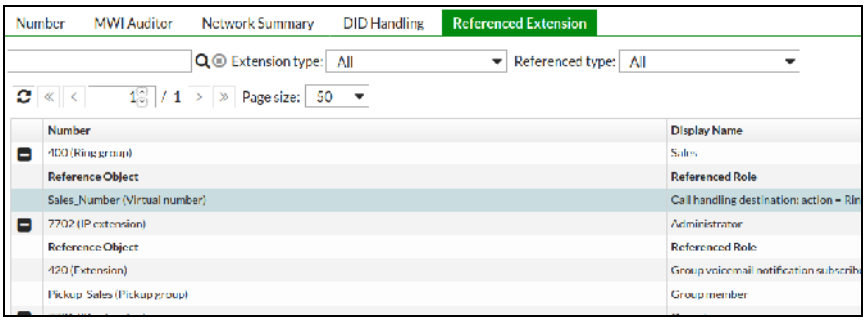


Review the Phone System Referenced Extension

The referenced extension tab provides an overview of where all extensions are referenced throughout FortiVoice. If an extension must be removed, you must remove the extension from every setting that references it.

To remove an extension from a reference point

1. On the FortiVoice administrator portal, click **Phone System** > **Review**.
2. Click the **Referenced Extension** tab.
3. Click the icon beside the extension.



4. Double-click the reference object that you want to edit.
5. In the pop-up window, remove the extension from that reference point.
6. At the bottom of the pop-up window, click **OK**.

Exercise 4: Configuring a System Backup

In this exercise, you will configure a backup of the system, manually back up the system, and schedule a system backup.

To manually back up the system

1. On the FortiVoice administrator portal, click **System** > **Maintenance**.
2. In the **Backup** section, verify that **System configuration** is enabled.
3. Click **Prepare** to gather the user data.
4. After a few seconds, click **Refresh**.
5. Enable the **User data** option.
6. Click **Backup**.
7. Save the backup file on your computer.

The user data that is backed up contains only system prompt recordings and personal greetings. Voicemail is not backed up.

To schedule a system backup

1. Continuing on the administrator portal, click **System** > **Maintenance**.
2. In the **Scheduled Backup** section, choose to back up daily or select specific days.
3. Select the hour when the backup should occur.
4. In the **Max backup number** field, type how many backups to keep.
5. Select whether to store the backup locally or remotely.
6. If you enabled **Remote backup**, type the information for your backup server.
7. Click **Apply**.

To restore a system backup from a manual or remote backup

1. Continuing on the administrator portal, click **System** > **Maintenance**.
2. At the bottom of the page, click the **Restore Configuration** link.
3. Select the backup file to restore.
   The restore process should start immediately.

To restore a local backup file

1. Continuing on the administrator portal, click **System** > **Maintenance**.
2. Click **Scheduled Backup** > **Local backup**.
3. Select the backup file from the list.
4. Click the **Restore** button.

Configure Storage for Recorded Calls, Faxes, and Voicemail

You can store recorded calls, faxes, and voicemail locally, or remotely using NAS. Storing the data using NAS provides a more flexible storage limit.

To configure storage for recorded calls, faxes, and voicemail

1. Continuing on the administrator portal, click **System** > **Configuration**.
2. Click the **Storage** tab.
3. Click **NAS**.
4. Configure the following settings:

Field	Value
Storage type	Select the protocol that the NAS uses.
Host name/IP address	Type the IP address or the hostname of the NAS.
Port	Type the port number that is used for the NAS.
Directory	Type the storage directory on the NAS.

5. Click **Apply**.

Exercise 5: Configuring System Alerts

In this exercise, you will configure system alerts. You can configure this feature to send a notification email when FortiVoice detects issues on the system.

To configure system alerts

1. On the FortiVoice administrator portal, click **Log & Report** > **Alert**.
2. Click **New**.
3. Type the email address that you want to send system alert notifications to.
4. Click **Create**.
5. Click the **Category** tab.
6. Select each category that should trigger a system alert email to be sent.
   Every email address on the configuration tab will receive the system alert emails.
7. Click **Apply**.

Lab 7: Call Reporting

In this lab, you will configure call reporting on FortiVoice.

Objectives

- Use the CDR
- Configure a call report

Time to Complete

Estimated: 15 minutes

Prerequisites

You must complete the previous lab before beginning this lab.

Exercise 1: Using the CDR

In this exercise, you will search the CDR, and then download a copy of the CDR.

To search the CDR

1. On the FortiVoice administrator portal, click **Monitor** > **Call History**.
2. In the **Direction** drop-down list, select the call type that you want to search for.
3. In the **Disposition** drop-down list, select the state of the call that you want to search for.

To view call flows

1. Continuing on the administrator portal, click **Monitor** > **Call History**.
2. Right-click the call that you want to investigate, and then select **View call flow**.

To download the CDR

1. Continuing on the administrator portal, click **Monitor** > **Call History**.
2. Click **Download**, and then click **All**.
3. Save the CSV file to your PC.

Enable the **With call flow** option when you download the CDR to receive the call flow for each call in the CSV file.

Exercise 2: Configuring a Call Report

In this exercise, you will configure a call report and then generate the report. Before creating reports, consider whether or not a rate must be applied to the calls. If a rate is not required, you do not need to configure the rate.

To configure a rate for call reports

1. On the FortiVoice administrator portal, click **Log & Report** > **Call Report**.
2. Click the **Rate** tab.
3. Click **New**.
4. Configure the following settings:

Field	Value
Name	Billing
Trunk	Select the trunk to apply this rate to.
Long distance	3
International	10
Other rate	20

5. Click **Create**.

To configure a call report

1. Continuing on the administrator portal, click **Log & Report** > **Call Report**.
2. Click the **Call Report** tab.
3. Click **New**.
4. In the **Name** field, type `Call_Report` to identify this call report.
5. In the **Time period** drop-down list, select **Last Month**.
6. In the **Query List** section, click **New**.
7. Configure the following settings:

Field	Value
Name	FirstReport
Category	Extensions
Subcategory	Summary
Call type	Both

8. In the **Select Extensions** section, select the extensions that you want the report to include.
9. Click **Create**.

10. In the **Email** section, type the email addresses that you want FortiVoice to send the report to.
11. In the **Schedule** section, select how often you want FortiVoice to generate the call report.
12. In the **Rate Setting** section, select the **Billing** rate for this call report.
13. Click **Create**.

To generate a call report

1. Continuing on the administrator portal, click **Log & Report** > **Call Report**.
2. Click the **Call Report** tab.
3. Select the **Call_Report** to generate.
4. Click **Generate**.
5. After you receive confirmation that the call report was generated, click **OK**.
6. Click **Monitor** > **Call Report**.
7. Select the call report that you want to view.
8. Click **Download**.
9. Select the format for the report (a PDF file is recommended).
10. Save the file to your PC.
11. Open the saved file on your PC to view the call report.

Lab 8: User Portal

In this lab, you will configure the various call features that are available on FortiVoice.

Objectives

- Access the user portal
- Manage voicemail
- Manage faxes
- Manage call recordings
- Manage call logs
- Configure call handling
- Configure programmable phone keys
- Add a reminder
- Configure preferences
- Create a new contact
- Use the operator console

Time to Complete

Estimated: 30 minutes

Prerequisites

You must complete the previous lab before beginning this lab.

Exercise 1: Accessing the User Portal

In this exercise, you will access the user portal for one of the extensions on FortiVoice.

To access the user portal

1. On the Linux-Client, open Firefox.
2. In the address bar, type the user portal address of FortiVoice: `https://10.0.1.231/voice/`.
3. In the **Extension** field, type an extension number that you created in a previous lab (for example, `700`).
4. In the **Password** field, type the user password of the extension (for example, `userpassword`).
5. Click **Login**.

You create the user password of the extension in the FortiVoice administrator portal, under **Extension** > **Extension**. To view or edit the user password, select the extension that you want to modify, and then click **Edit**.

Exercise 2: Managing Voicemail

In this exercise, you will use the FortiVoice user portal to manage voicemail for an extension.

To access voicemail

1. On the FortiVoice user portal, click **Voicemail**.
2. In the **Voicemail** section, click the drop-down list.
3. Select the folder that you want to view, for example, **Inbox** for new voicemail messages or **Old** for voicemail messages that were already listened to or saved.

To play a voicemail message

1. Continuing on the user portal, select a voicemail message to listen to.
2. Click **Play**.

To put a voicemail message in the old folder

1. Continuing on the user portal, select a voicemail message to archive in the **old** folder.
2. Click the **Mark As Read** button at the top.

To forward a voicemail message

1. Continuing on the user portal, select a voicemail message to forward.
2. Click the **Forward** button at the top.
3. In the drop-down list, select a voicemail box to forward the voicemail message to.
4. Click **OK**.

To download a voicemail message

1. Continuing on the user portal, select a voicemail message to download.
2. Click the **Download** button at the top.
3. Save the voicemail message on your computer.

To delete a voicemail message

1. Continuing on the user portal, select a voicemail message to delete.
2. Click the **Delete** button at the top.
3. Click **Yes** to confirm that you want to delete the voicemail message.

Exercise 3: Managing Faxes

In this exercise, you will manage and send a fax using the FortiVoice user portal.

To view a fax

1. On the FortiVoice user portal, click the **Fortinet** icon at the top.
2. Click **Fax**.
3. Click **Inbox** to view the faxes that were received by this extension.
4. Click **Sent** to view the faxes that were sent from this extension.

If the extension was added as a monitor to an eFax account, in the FortiVoice administrator portal, click **Call Feature** > **Fax** > **eFax Account**, and then click the **Monitor** folder to view the fax.

5. Select the fax that you want to view.
6. Click **View**.

To send a fax

1. Continuing on the user portal, click **New**.
2. In the **To** field, type the recipient's phone number.
3. In the **Attachment** field, click the add icon, and then select the file that you want to send.
4. Click **Send**.

Files sent by fax must be PDF or JPEG files.

To resend a fax

1. Continuing on the user portal, in the **Sent** folder, select the fax that you want to resend.
2. Click the **Resend** button at the top.

Exercise 4: Managing Call Recordings

In this exercise, you will manage call recordings through the FortiVoice user portal. These are personal call recordings only and do not include automatically recorded calls or system recorded calls.

To play a call recording

1. On the FortiVoice user portal, click the **Fortinet** icon at the top.
2. Click **Call Recording**.
3. Select a recorded call to listen to, and then click **Play**.

To download a call recording

1. Continuing on the user portal, select a call recording to download.
2. Click the **Download** button at the top.
3. Save the call recording on your computer.

To forward a call recording

1. Continuing on the user portal, select a call recording to forward.
2. Click the **Forward** button at the top.
3. Select the extension to forward the call recording to.
4. Click **OK**.

To delete a call recording

1. Continuing on the user portal, select a call recording to delete.
2. Click the **Delete** button at the top.
3. Click **Yes** to confirm that you want to delete the call recording.

Exercise 5: Downloading Call Logs

In this exercise, you will use the FortiVoice user portal to download the call log for an extension.

To download a call log

1. On the FortiVoice user portal, click the **Fortinet** icon at the top.
2. Click **Call History**.
3. Click the **Download** button.
4. Select **All**.
5. Save the CSV file on your computer.

Exercise 6: Configuring Call Handling

In this exercise, you will use the FortiVoice user portal to configure call handling for an extension.

To configure call handling

1. On the FortiVoice user portal, click the **Fortinet** icon at the top.
2. Click **Call Handling**.
3. In the **Setting** section, click the **Configure how to handle calls when in status** drop-down list.
4. Select **No answer**.
5. In the **Call Process** section, select **User defined**.
6. Click **New**.
7. Select a **Schedule** to follow in the drop-down list.
8. Select an **Action** to follow in the drop-down list.
9. Click **OK**.
10. Repeat the process for the **Busy**, **Do not disturb**, **Phone Not Connected**, and **Voicemail** statuses.

The **System default action** for each status is to go to voicemail for this extension—the exception is the **Voicemail** status. The voicemail feature has a dial 0 option that directs the caller elsewhere if they dial 0 while they are listening to the voicemail greeting. The system default is to go to the operator extension.

Configure Quick Call Handling and a Follow Me Number

Quick call handling allows users to dial a code to change their call handling settings for a set period of time.

To configure quick call actions

1. Continuing on the user portal, in the **Quick call handling** section, click the **Configure how to handle calls when in status** drop-down list.
2. Select **Out of office**.
3. In the **Call Process** section, click **New**.
4. Select a **Schedule** to follow in the drop-down list.
5. Select an **Action** to follow in the drop-down list.
6. Click **OK**.
7. Repeat the process for the **Away** and **Other** statuses.
8. Click **OK** to return to the user portal.

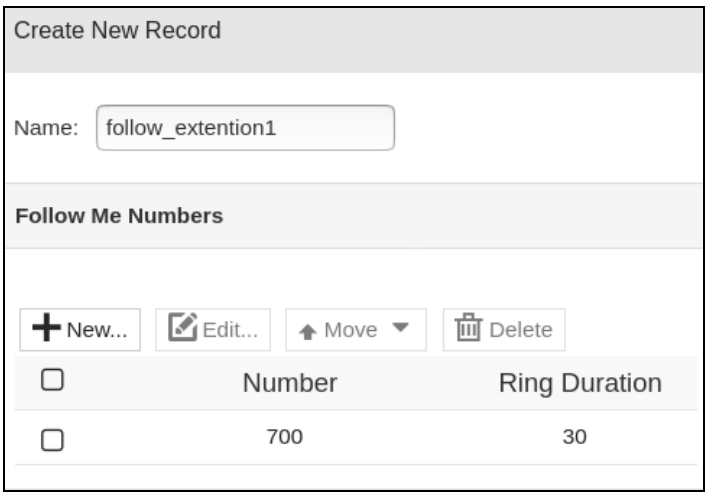
To configure quick call times

1. In the user portal menu, click the extension preference menu in the upper-right corner.
2. Click **Preferences**.

3. In the **Quick Mode** section, click the **Out of office** link.
4. Select when you want quick call handling to switch back to regular call handling.
5. Click **OK**.
6. Repeat the process for the **Away** and **Other** statuses.
7. Click **OK** at the bottom to return to the user portal main page.

To configure a follow me number

1. Continuing on the user portal, click **Call Handling**.
2. In the **Follow Me Setting** section, click **New**.
3. In the **Name** field, type `follow_extention1`.
4. Click **New** in the **Follow Me Numbers** section.
5. In the **Number** field, type an extension (for example, `700`).
6. In the **Ring duration** field, type how long the rings should last before the call is transferred to the next follow me number (for example, `30`).
7. Click **OK**.



You can add several follow me numbers so that if one follow me number does not answer, the next follow me number in the list is called.

8. Click **OK**.
9. Click **OK** at the bottom.

Exercise 7: Configuring Programmable Phone Keys

In this exercise, you will program phone keys. If your extension supports programmable phone keys (extension and line appearances), you can configure them in the phone profile section.

To configure programmable phone keys

Users can make changes to this page only if the administrator has configured their programmable key profiles to allow user defined keys. You can do this in the FortiVoice administrator portal, under **Phone System** > **Profile** > **Programmable Keys**.

1. In the FortiVoice user portal menu, click the extension preference menu in the upper-right corner.
2. Click **Programmable Keys**.
3. In the **Main Screen** section, select the **Function** that you want to program the key for.
4. In the **Resource** column, select the resource for the selected function, if required.
5. In the **Label** column, type a name for this programmable key.
   This will appear as the name on the programmable key on the extension.
6. Click **OK**.

Exercise 8: Adding a Reminder

In this exercise, you will use the FortiVoice user portal to add a reminder.

To add a reminder

1. In the FortiVoice user portal menu, click the extension preference menu in the upper-right corner.
2. Click **Calendar**.
3. Click **New**.
4. In the pop-up window, configure the following settings:

Field	Value
Title	Reminder
Start time	Type a date and time for the reminder.
Reminder audio	Click **Customized**, and then click **Create New** to upload your audio reminder message.
Recurrence	Configure how often this reminder should be sent.
Location	Office
Guest	Click **Add** to add other extensions or external numbers to this reminder—these extensions will also be sent a reminder message.

5. Click **OK** at the top.
6. Close the browser tab.

Exercise 9: Configuring Preferences

In this exercise, you will configure what happens when a call reaches an extension. These are the extension preferences.

To configure voicemail and notification options

1. In the FortiVoice user portal menu, click the extension preference menu in the upper-right corner.
2. Click **Preferences**.

Many of the fields here were configured when the extension was created—configure any settings that have not been configured.

3. In the **User Setting** section, enable call forward.
   After it is enabled, type a number to forward calls to (effective after preferences are saved).
4. In the **Idle timeout** field, set the amount of time that FortiVoice should wait before it automatically logs the user out because of inactivity.
5. Click **Change PIN number** to change the user PIN.
6. Click **Change User Password** to change the user password.
7. Click **Click and scan to login softclient** to autoprovision FortiFone softclient by scanning the QR code.
8. In the **Incoming Calls** section, configure the following settings:

Field	Value
Retain original caller ID	Enable or disable whether to display the caller ID of the original caller.
Call screening	Enable or disable whether to display the caller information, along with an option to accept or reject the call.
Ring duration	Set how long, in seconds, to call the extension before call handling settings are followed.
Call waiting	Enable or disable call waiting.

9. In the **Notification Options** section, configure the following settings:

Field	Value
Voicemail	Select how voicemail notifications are sent using email.
Fax	Select how fax notifications are sent using email.
Missed call	Enable or disable the notification of a missed call on the extension.
Email address	Type the email address that you want to send voicemail and fax notifications to.

Configure a Voicemail Greeting

The preferences also contain options for configuring your voicemail greeting and recording your name for the dial by name directory.

To configure a voicemail greeting

1. In the **Voicemail Options** section, configure the following settings:

Field	Value
Voicemail handling	Enable or disable whether callers can dial 0 during the voicemail greeting.
Name	Select **Standard** to use a default message or **Personal** to either record your name (**Call me**) or load a recording on FortiVoice (**Upload**).
Greeting	Select the greeting type. **Standard** uses a default greeting. If you select another option, you can click **Audio file**, and then choose to record or upload a new greeting.

Configure Display Preferences

The display preference section contains options for the user portal interface for this extension.

To configure display preferences

1. In the **Display Preference** section, configure the following settings:

Field	Value
Default portal	Select the version of the user portal that will be initially displayed to the user.
Phone language	Select the language to use on the extension.
Web language	Select the language to display the user portal in.
Theme	Select the color scheme to use on the user portal.
Time zone	Select the time zone of this extension.

2. Click **OK** at the bottom.

Exercise 10: Creating a New Contact

In this exercise, you will use the **Contact** section in the FortiVoice user portal to provide users with access to the FortiVoice directory, which is a business directory maintained on FortiVoice, and a user's personal directory. You will also create a new contact.

To add a personal contact

1. On the FortiVoice user portal, click the **Fortinet** icon at the top.
2. Click **Contact**.
3. In the **Contact** section, select **Personal Contact** in the drop-down list.
4. Click the add icon.
5. Complete the new contact information.
6. Click **Create**.

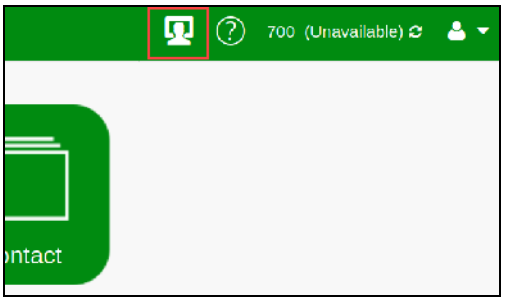
Exercise 11: Using the Operator Console

In this exercise, you will use the operator console to manage calls to and from your extension.

The **Operator Role** must be enabled in the user privilege that the extension is assigned to. Ensure that the operator role is enabled in the FortiVoice administrator portal, under **Phone System** > **Profile** > **User Privilege**.

To log in to the operator console

1. On the FortiVoice user portal, click the **Fortinet** icon at the top.
2. Click the **Operator Console** icon at the top.



To modify the module view

1. On the **Operator Console**, click the **X** in the right-hand corner of a module to close it, for example, the **Active Call** module.
2. Click **Settings** > **Add content** to add modules to the operator console or reopen closed modules.

Calls With the Operator Console

You can use the operator console to **Hangup**, **Transfer**, **Call Park**, and **Hold** calls. With an active call in place on your extension, use these options at the top of the operator console to manage the call.

Unpark a Call

With a call that has been parked in place, perform the following procedure.

To unpark a call

1. In the operator console, select the parked call in the **Parked Call** module.
2. Click the **Unpark** button.

To pick up a call

1. Select a call in the **Active Calls** module.
2. Click the **Pickup** button at the top of the screen.

To transfer a call

1. While you are on a call, click the **Transfer** button at the top of the screen.
2. In the pop-up window, select the extension that you want to transfer the call to.
3. Select **Blind transfer**, **Attended transfer**, or send the call directly to **Voicemail**.

To call another extension

1. In the **Directory** module, select the extension that you want to call.
2. Click the **Call** button at the top of the screen.

Lab 9: Auto Dialer

In this lab, you will configure the auto dialer feature on FortiVoice.

Objectives

- Add contacts
- Configure a campaign
- Run a campaign
- View a campaign report

Time to Complete

Estimated: 10 minutes

Prerequisites

You must complete the previous lab before beginning this lab.

Exercise 1: Adding Contacts

In this exercise, you will add contacts to the auto dialer section, and then create a contact group.

To add contacts

1. On the Linux-Client, open Firefox.
2. In the address bar, type the default administrator portal address of FortiVoice: `https://10.0.1.231/admin`.
3. In the **Name** field, type `admin` and use the password that you set in a previous lab.
4. Click **Login**.
5. Click **Auto Dialer** > **Contact**.
6. Click **New**.
7. In the **Name** field, type the name of the contact.
8. In the **Main number** field, type the phone number of the contact (for example, `7001`).

You can continue entering additional information in the **Family Setting**, **Business Setting**, and **Emergency Setting** sections.

9. Click **Create**.

To add a contact group

1. Continuing on the administrator portal, click **Auto Dialer** > **Contact**.
2. Click the **Contact Group** tab.
3. Click **New**.
4. In the **Name** field, type a name to identify this contact group.
5. In the **Members** section, select available contacts that were created on the contact tab.
6. Click **Create**.

Exercise 2: Configuring a Campaign

In this exercise, you will configure a campaign for the auto dialer.

To configure a campaign

1. On the FortiVoice administrator portal, click **Auto Dialer** > **Setting**.
2. In the **Maximum channel** field, type the maximum number of concurrent calls that can be made during the campaign (for example, `15`).
3. Click **Apply**.
4. Click **Auto Dialer** > **Campaign**.
5. Click the **Audio** tab.
6. Click **New**.
7. In the **File name** field, type a name to describe this sound file.
8. Click **Upload** or **Record** to add the sound file to FortiVoice.

If you choose **Record**, the process requires you to select an extension to send the voice recording request to, and then click **OK** when the recording is finished.

9. Click **Create**.
10. Click the **Campaign** tab.
11. Click **New**.
12. Configure the following settings:

Field	Value
Name	Type a name for this campaign.
Caller ID	Type the caller ID to display when the auto dialer makes a call.
Sound file	Select the sound file to use.
Retry	Type the number of times the auto dialer will attempt to reach a contact if it receives a busy signal or if there is no answer.
External Numbers	Select contacts or contact groups to call with the auto dialer.
Internal Numbers	Select the extensions that should also be called as part of this campaign.

13. Click **Create**.

Exercise 3: Running a Campaign

In this exercise, you will run the campaign that you created in the previous exercise.

To run a campaign

1. On the FortiVoice administrator portal, click **Auto Dialer** > **Campaign**.
2. Select the campaign that you want to run.
3. Click the **Start** button at the top of the campaign section.
4. Type a **Start time** and **End time** for the campaign to run.
5. Click **OK**.

An administrator can pause, resume, and stop the campaign at any time using the controls on the campaign tab.

Exercise 4: Viewing a Campaign Report

In this exercise, you will view a report for the campaign that you ran in the last exercise.

To view a campaign report

1. On the FortiVoice administrator portal, click **Auto Dialer** > **Report**.
2. Select the campaign that you want to view.
3. Click **View**.
   The report opens in a pop-up window, and includes information, such as each number that was dialed, how many calls were answered and unanswered, and how many retries were attempted.

Lab 10: Gateway Management

This lesson does not have an associated lab.

Lab 11: FortiFone SoftClient

In this lab, you will configure the FortiFone desktop softclients.

Objectives

- Configure the softclient extension on FortiVoice
- Complete first time setup of the softclient account
- Add, edit, and delete accounts
- Configure account preferences
- Handle phone calls
- Use the call history
- Use contacts
- Use voicemail

Time to Complete

Estimated: 20 minutes

Prerequisites

You must complete the previous lab before beginning this lab.

Exercise 1: Configuring the Desktop Softclient on FortiVoice

In this exercise, you will configure a user privilege to allow access to user preferences, and then you will configure an extension to use the softclient on the desktop.

FortiFone desktop softclient supports Windows and macOS platforms. For the purpose of this training lab, FortiFone desktop softclient is available on Linux.

To enable user preferences in the user privilege

1. On the Linux-Client VM, open a Firefox browser.
2. In the address bar, type the default administrator portal address of FortiVoice: `https://10.0.1.231/admin`.
3. In the **Name** field, type `admin` and use the password that you set in a previous lab.
4. Click **Login**.
5. Click **Phone System** > **Profile**.
6. Click the **User Privilege** tab.
7. Select the **default** user, and then click **Edit**.
8. In the **User Portal** section, verify that **User preference** is enabled.
9. Click **OK**.

To configure the extension to use the softclient

1. Continuing on the administrator portal, click **Extension** > **Extension**.
2. Click the **IP Extension** tab.
3. Select **700**, and then click **Edit**.
4. In the **Device Setting** section, click the **Soft Phone** tab.
5. Set the **License allocation** to `1`.
6. In the **SIP Setting** section, verify that **Windows/MacOS** is set to use the **sip_desktop_default** profile.
7. In the **User Setting** section, verify that the default is selected as **User privilege**.
8. Click **OK**.

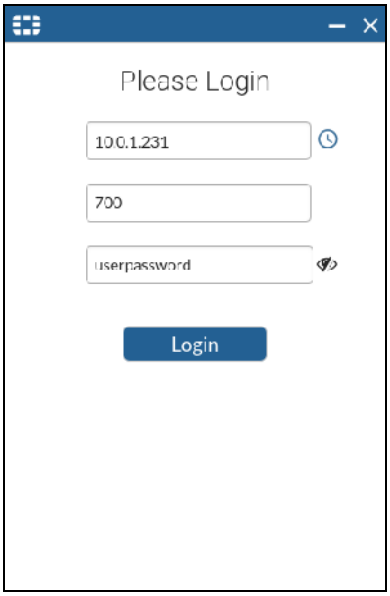
Exercise 2: Configuring a Desktop Softclient Account

In this exercise, you will configure an account on the desktop softclient.

To configure an account on the desktop softclient

1. On the Softclient VM, open FortiFone.
2. Configure the following settings:

Field	Value
Server	10.0.1.231
Username	700
Password	userpassword



3. Click **Login**, and then click **OK**.

FortiVoice provides telephone services which require resources such as a microphone and speakers. Because of limitations in this lab, FortiFone will present a warning to confirm that the audio hardware is not detected.

Exercise 3: Configuring Account Preferences for the Desktop Softclient

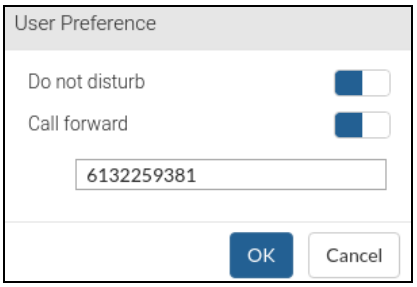
In this exercise, you will enable and configure the call forward and do not disturb features on the desktop softclient.

To enable and configure call forward

1. Click **John Doe 700** in the top right.
2. Click **Preference**.
3. In **User Preference** window, enable the **Call forward** option.
4. In the **Call Forward Number** field, type the phone number that you want to forward the calls to (for example, `6132259381`).

To enable do not disturb

1. In the **User Preference** window, enable the **Do not disturb** option.



2. Click **OK**.

Exercise 4: Making Phone Calls on the Desktop Softclient

In this exercise, you will place a call on hold, perform a call transfer, and place a call by pasting a number.

To place a call on hold

In this procedure, you will alternate between two VMs: Linux-Client and Softclient. When you make an end-to-end call, make sure that you complete the steps to switch between the VMs quickly.

1. On the Softclient VM, open FortiFone.
2. Dial the extension `7711`, and then click the call button to place the call.
3. On the Linux-Client VM, answer the incoming call on FortiFone.
4. Click **Hold**.
5. Click **Resume** to retrieve the call.

To transfer a call

1. Continue the call that you started in the previous procedure, and then click **Transfer**.
2. Click **Blind Transfer** or **Attended Transfer**.
3. Type another extension number to transfer the call to (for example, `7702`).
4. Click the off-hook button to transfer the call.

To paste a number and place a call

1. On the Softclient VM, end the current call.
2. Copy a phone number from the Internet, a text message, or an email in the mobile phone.
3. On the FortiFone desktop softclient, click above the dialpad.
4. Press `Ctrl + V` to paste the number.
5. Click the call button to place the call.

Exercise 5: Reviewing the Call History on the Desktop Softclient

In this exercise, you will place a call from a log entry in the **History** section on FortiFone.

To place a call from the history

1. On the Softclient VM, click the icon located to the right of the dialpad.

2. Click the **History** tab.
3. Click the call icon beside the log entry of the phone number that you want to call.

Exercise 6: Adding New Contacts on the Desktop Softclient

In this exercise, you will add a new contact to the personal contact list, place a call to a contact, and delete a personal contact entry.

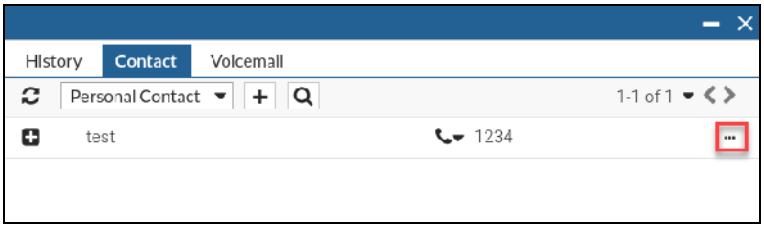
To add a contact to the personal contact list

1. On the Softclient VM, click the icon located to the right of the dialpad.

2. Click the **Contact** tab.
3. At the top, click the add icon beside the **Personal Contact** drop-down list.
4. Type the new contact information.
5. Click **Create**.

To delete a contact from the personal contact list

1. Continuing on the Softclient VM, click the icon located to the right of the dialpad.
2. Click the **Contact** tab.
3. Select an entry, and then click the more icon to the right.



4. Click **Delete**, and then click **Delete** again to confirm.

Exercise 7: Controlling Voicemail on the Desktop Softclient

In this exercise, you will control voicemail, call the messenger back, and delete voicemail.

To control voicemail

1. On the Softclient VM, click the icon located to the right of the dialpad.

2. Click the **Voicemail** tab.

Because voicemail requires additional steps and resources to generate and listen to audio content, it is not possible to play or demonstrate voicemail in this exercise because of lab environment limitations.

To call the messenger back from the voicemail list

1. Continuing on the Softclient VM, select the voicemail entry.
2. Click the call icon beside the voicemail entry of the phone number that you want to call.

To delete voicemail from the voicemail list

1. Continuing on the Softclient VM, select the voicemail entry.
2. Select a voicemail entry, and then click the more icon to the right.
3. Click **Delete**.

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