



DINOMI Call Center Module

Quick start guide v 1.1

DINOMI
April 2017

Table of contents

Welcome to Dinomi Call Center.....	4
Step 1: Install Dinomi.....	5
Step 2: Connect to an external PBX and configure Dinomi	8
Create an AMI user	8
Create a MySQL user.....	9
Test user in Dinomi.....	9
Additional considerations	10
Access from browser and configure Dinomi.....	10
Configure a remote PBX connection.....	12
Install <i>auxiliary dialplan contexts</i> file.....	13
Install remote recordings script.....	13
Create Campaigns.....	14



Dinomi setup

Copyright Elastix®

Elastix is a third party, unified communication PBX solution. This manual uses referential information based on versions 2.4, 2.5 and 4 of Elastix. The Elastix brand and its logo are property of 3CX.



Dinomi setup

Welcome to Dinomi Call Center

We will guide you through the configuration steps to get your call center operations running in no time. You will follow a very similar process to that of a CentOS Linux install.

The process is divided in three major steps:

1. Install Dinomi
2. Connect to an external PBX
3. Configure Dinomi
4. Create Campaigns

After these steps, you will be able to run campaigns in no time.

Enjoy Dinomi Call Center!

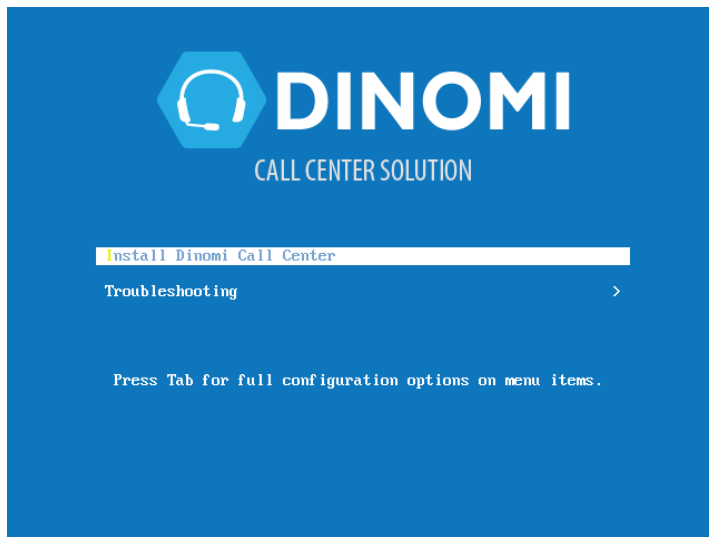




Dinomi setup

Step 1: Install Dinomi

Once you have downloaded our ISO image, burn it to a bootable optical disk and start your server with it. After boot process completes and files are loaded, you shall see a screen similar to this one:



Dinomi installation boot screen

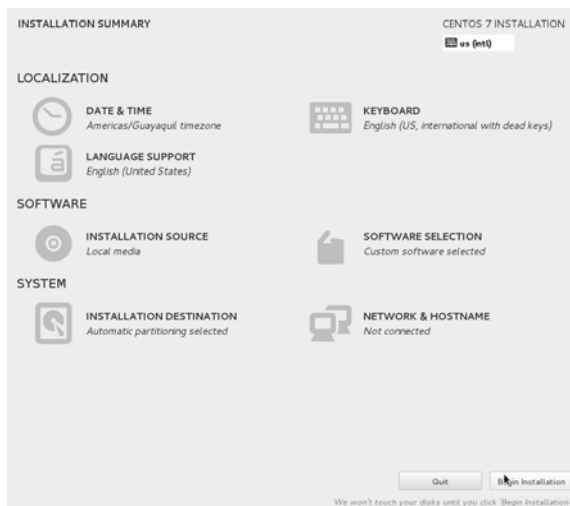
Press ENTER to start the installation of Dinomi. As the distro is based on CentOS, you shall see a similar interface. Following up, configure the items that have the (⚠️) icon.



Once these parameters have been set, the *begin installation* button will be enabled to continue. After all operations have been made

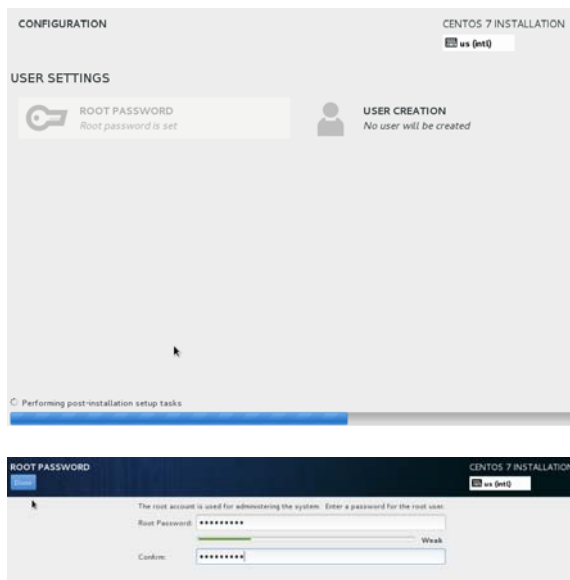


Dinomi setup



For this guide the password *Dinomi123* will be used as every password, in production environments please consider using stronger and a different set of passwords to prevent security breaches.

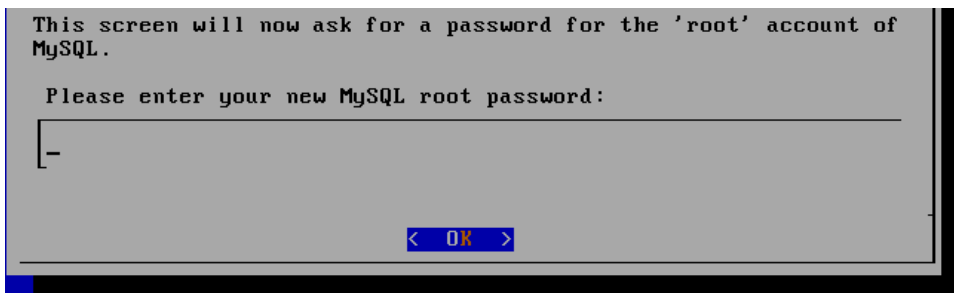
Dinomi will create the necessary users once the process has completed, so just set up the *root* user password.



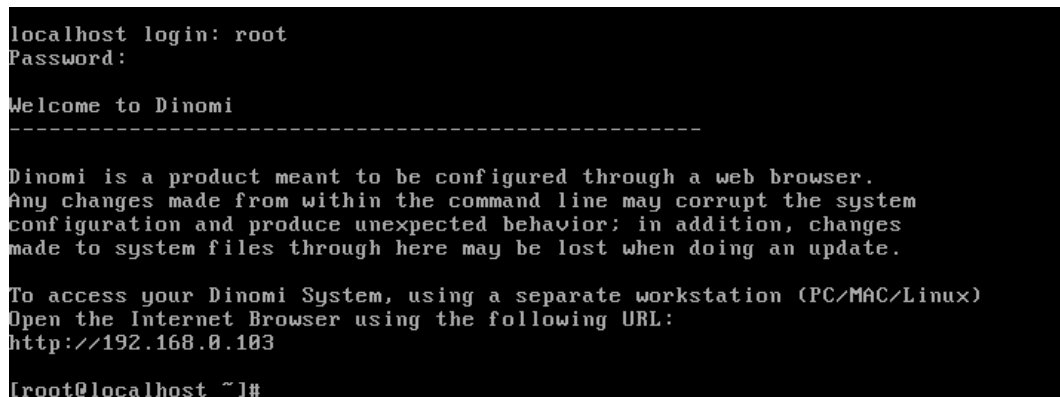


Dinomi setup

After installation process finishes, the server will be rebooted. After this, Dinomi will prompt for additional passwords and minor settings.



After completing these steps, installation will be completed and the login screen will be shown.





Dinomi setup

Step 2: Connect to an external PBX

Dinomi is a web-based system, once you log into the command line directly in the server you will obtain the IP address, which you can use it to access the web configuration from a computer in the same network as your server.

Before configuring Dinomi, we need to grant it permissions in the remote PBX server, permissions needed are:

- An AMI user to connect and control the designed queues and extensions needed for the call center operations.
- A MySQL user to read and write operation parameters to the PBX server database.

For the moment, Dinomi is compatible with an Asterisk-based system with FreePBX v.11 or higher installed. The remote PBX uses MySQL tables to store information related to dialplans, CRD, extensions, queues and other parameters. Dinomi needs to modify information on some tables as well to control the PBX or to keep its operational registries updated.

For performing the following operations, a direct command line is needed on the server or a connection using an SSH client like *Putty*.

Create an AMI user

To configure the AMI user, you need to modify the `manager.conf` configuration file that exists in the PBX where Dinomi will connect to. For this example the remote PBX server is located at address 192.168.0.102.

We will use an SSH connection using a terminal client in Linux:

```
1 hgaibor@hgaibor-G53JW:~$ ssh root@192.168.0.102
2 root@192.168.0.102's password:
```

Enter the PBX server and modify the `manager.conf` file:

```
1 hgaibor@hgaibor-G53JW:~$ ssh root@192.168.0.102
2 root@192.168.0.102's password:
3 [root@localhost ~]# cd /etc/asterisk
4 [root@localhost asterisk]# vim manager.conf
```

This is the structure of the file

```
1 ; AMI - Asterisk Manager interface
2 ;
3 ; FreePBX needs this to be enabled. Note that if you enable it on a
4 ; different IP, you need
5 ; to assure that this can't be reached from un-authorized hosts with the
6 ; ACL settings (permit/deny).
7 ; Also, remember to configure non-default port or IP-addresses in
8 ; amportal.conf.
9 ;
10 ; The AMI connection is used both by the portal and the operator's panel
11 ; in FreePBX.
12 ;
13 ; FreePBX assumes an AMI connection to localhost:5038 by default.
14 ;
15 [general]
16 enabled = yes
17 port = 5038
18 bindaddr = 0.0.0.0
19 displayconnects=no ;only effects 1.6+
```




Dinomi setup

```
17 [admin]
18 secret = Dinomi123
19 deny=0.0.0.0/0.0.0.0
20 permit=127.0.0.1/255.255.255.0
21 read =
22     system,call,log,verbose,command,agent,user,config,command,dtmf,reporting
23     ,cdr,dialplan,originate
24 write =
25     system,call,log,verbose,command,agent,user,config,command,dtmf,reporting
26     ,cdr,dialplan,originate
27 writetimeout = 5000
28
29 #include manager_additional.conf
30 #include manager_custom.conf
```

Pay attention to the `[admin]` section in this file, we will copy this code to create an AMI user for Dinomi as follows:

```
1 [dinomi_ami_user]
2 secret = Dinomi123
3 deny=0.0.0.0/0.0.0.0
4 permit=191.168.0.103/255.255.255.255
5 read =
6     system,call,log,verbose,command,agent,user,config,command,dtmf,reporting,
7     cdr,dialplan,originate
8 write =
9     system,call,log,verbose,command,agent,user,config,command,dtmf,reporting,
10    cdr,dialplan,originate
11 writetimeout = 5000
```

Highlighted sections can be modified, for precaution use lower case letters and no spaces in the user name between `[]`. Use a strong secret to enforce security and only allow the IP addresses that will have Dinomi call center installed, the format is IP / mask. Using `255.255.255.255` as a mask will allow only that one address.

Now restart the asterisk service to load changes using the command:

```
1 [root@localhost asterisk]# service asterisk restart
```

Create a MySQL user

Access the remote PBX server via SSH like before; then enter MySQL with an admin user. For this guide, the remote server is located at IP `192.168.0.102`:

```
1 hgaibor@hgaibor-G53JW:~$ ssh root@192.168.0.102
2 root@192.168.0.102's password:
3 [root@localhost ~]# mysql -u root -pDinomi123
```

Then, we will create an user for Dinomi, `dinomi_user@your-dinomi-server-IP`. For this guide all passwords will be `Dinomi123`

```
1 MariaDB [(none)]> grant select, insert, update, delete on asterisk.* to
2 dinomi_user@192.168.0.103 identified by 'Dinomi123';
```

Test user in Dinomi

To test the MySQL user, enter via SSH to the Dinomi server, then try to connect to the remote PBX database. Remember, for this guide the Dinomi IP is `192.168.0.103` and the PBX IP is `192.168.0.102`, all passwords for are `Dinomi123`:

```
1 hgaibor@hgaibor-G53JW:~$ ssh root@192.168.0.103
2 root@192.168.0.103's password:
3 [root@localhost ~]# mysql -h 192.168.0.102 -u dinomi_user -pDinomi123
4 asterisk
5 MariaDB [asterisk]> show tables;
```



Dinomi setup

If the commands above returned the tables from the asterisk table, then the configuration was done correctly.

Additional considerations

Advanced PBX configurations may need to consider other configurations related to their installation environment like:

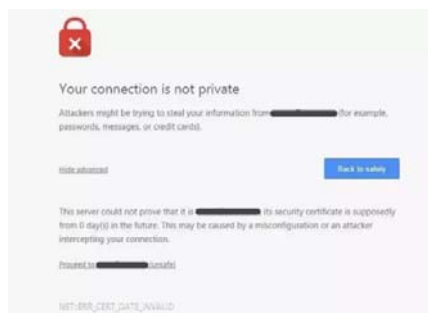
- Firewalls and DMZs
- Open ports related to MySQL and AMI
- Network redirections

These configurations exceed the scope for this guide, but need to be considered in case of errors affecting the previous setup.

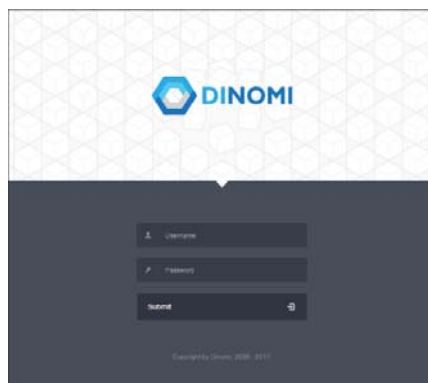
Step 3: Configure Dinomi

After all users for remote PBX have been created, enter the IP address that was shown on the command window once you logged into the Dinomi server, in this case the IP is 192.168.0.103

Your browser may show a warning, this is normal as the security certificate is generated at your server and is not from a root authority entity.



Proceed to the server's address, after that, you'll see Dinomi's login screen:



The default user is *admin*, and the password is the one set in the command prompt after the server rebooted, for this demonstration, all passwords will be *Dinomi123*.



Dinomi setup

You will be redirected to the home screen:

The screenshot displays the Dinomi dashboard interface. On the left is a dark sidebar with a search bar and a menu of modules including System, Dashboard, Network, Users, Shutdown, Updates, Backup/Restore, Preferences, and various administrative tools. The main content area shows a breadcrumb trail 'System / Dashboard / Dashboard' and a top navigation bar with user information 'admin'. The dashboard features several data visualizations: a line graph at the top, a large green bar chart below it, and a 'Hard Drives' widget at the bottom. The 'Hard Drives' widget shows a donut chart with 20% used and 80% available, along with text indicating a capacity of 6.70GB, mount point '/', and manufacturer 'VBOX HARDDISK'. A 'Fetch directory report' button is located below the widget. A warning message is also present: 'Click below to fetch directory report. WARNING: this operation may take a long time AND impact system performance.'



Dinomi setup

Configure a remote PBX connection

Now, go to *Main configuration* → *PBX Configuration* menu, to set the parameters to connect to an external PBX. Dinomi needs a PBX with Asterisk and FreePBX version 11 or higher, for this example, we will use an Elastix© 4.x system with the unembedded version of FreePBX.

The screenshot shows the Dinomi web interface for PBX Configuration. The left sidebar contains a menu with options like System, DINOMI Admin, and Main Configuration. The main content area is titled 'General Settings' and includes a 'Save' button. It is divided into several sections: 'MySQL Database Connection' with fields for Type (Local/Remote), Server Host (localhost), Username, and Password; 'Asterisk/FreePBX Connection' with fields for PBX Location (Local/Remote), Asterisk/FreePBX Server (127.0.0.1), Asterisk Login, Asterisk Password, AMI Session Duration (0), and FreePBX Database Username/Password; 'Dialer Parameters' with fields for Short Call Threshold (10), Answering delay (8), Service percent (97), Per-call dial timeout (0), and Agent inactivity timeout (15), plus checkboxes for debugging and predictive dialer behavior; 'Dialer Status' showing 'Current Status: STOPPED' and a 'START' button; and 'Auxiliary dialplan contexts' with a 'Test dialplan contexts' button. A footer note reads 'Copyright by Dinomi. 2006 - 2017.'

Enter the user credentials created for AMI in `Asterisk login`, enter the database user credentials in the `FreePBX` fields.

Then click on `Save` button above to store changes, after that, click on `Test dialplan contexts` to test the configuration. If everything went right, you will see the message: `Auxiliary extensions not present, installation needed`. Now we can proceed to install this file in the remote PBX server.

Note: If the error message `Error when connecting to Asterisk Manager` appears then there is an issue that prevents Dinomi from connecting via AMI. Check the `manager.conf` file or if there is a network restriction that prevents Dinomi from connecting the Asterisk Manager (firewall, NAT, etc).



Dinomi setup

Install auxiliary dialplan contexts file

Download the context to your local machine file by clicking [Download dialplan contexts](#) for manual installation. Now copy this file to the remote PBX server, we will use the command SCP, remember, for this guide, all passwords are *Dinomi123*:

```
1 hgaibor@hgaibor-G53JW:/$ scp extensions-dinomi.conf
  root@192.168.0.102:/etc/asterisk
2 root@192.168.0.102's password:
3 extensions-dinomi.conf          100% 765    0.8KB/s   00:00
```

To see the copied file in the remote PBX server, access via SSH:

```
1 hgaibor@hgaibor-G53JW:~$ ssh root@192.168.0.102
2 root@192.168.0.102's password:
3 [root@localhost ~]# cd /etc/asterisk
4 [root@localhost asterisk]# ls -l | grep dinomi
> -rwxr-xr-x 1 root    root      765 mar 20 01:21 extensions-
> dinomi.conf
```

As you can see the file exists, we need to change its permissions and user to be used by Asterisk:

```
1 [root@localhost asterisk]# chown asterisk:asterisk extensions-dinomi.conf
2 [root@localhost asterisk]# chmod 644 extensions-dinomi.conf
```

Now, we need to include the new context files to be used by Asterisk:

```
1 [root@localhost asterisk]# vim extensions_custom.conf
```

Copy the line `#include extensions-dinomi.conf` into the opened file as follows:

```
1 ; This file contains the contexts the agents login for the module call
  center.
2 ; and contains the context conferences for module conferences of elastix
  1.0.
3
4 #include extensions-dinomi.conf
```

Restart the Asterisk service to apply changes:

```
1 [root@localhost asterisk]# service asterisk restart
```

Now you when you click on [test dialplan contexts](#) back at the Dinomi server, you shall see the following message, telling that the configuration for AMI has been done correctly:

Auxiliary dialplan contexts

[Download dialplan contexts for manual installation](#)

Test dialplan contexts

Auxiliary extensions present.

Install remote recordings script

This script will allow Dinomi call center to retrieve the files of the recorded calls from the remote PBX, as the storage and processing of these files is inherent to the Asterisk/FreePBX part of the remote server.

Download the script `ccprorecordings.php` to your local machine file by clicking [Download script](#) to be installed in remote server.



Dinomi setup

Remote Recordings

Web access protocol:

HTTP

HTTPS

Web access port:

[Download script to be installed in remote server](#)

Now copy `ccprorecordings.php` to the remote PBX server's HTTP root directory so it can be called using an URL like `https://[server-IP]/ccprorecordings.php`.

We will use the command SCP, for this guide, all passwords are *Dinomi123*:

```

1 hgaibor@hgaibor-G53JW:~$ scp ccprorecordings.php
2 root@192.168.0.102:/var/www/html
3 root@192.168.0.102's password:
> ccprorecordings.php                               100% 5326    5.2KB/s   00:00

```

To see the copied file in the remote PBX server, access via SSH:

```

1 hgaibor@hgaibor-G53JW:~$ ssh root@192.168.0.102
2 root@192.168.0.102's password:
3 [root@localhost ~]# cd /var/www/html
4 [root@localhost html]# ls -l | grep ccprorecordings.php
> -rw-r--r--. 1 root root 5326 feb 24 11:42 ccprorecordings.php

```

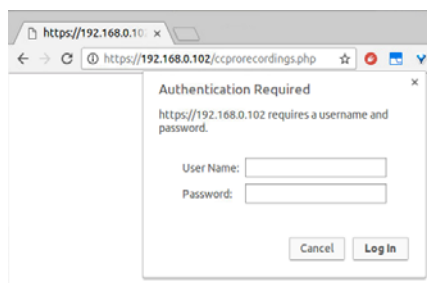
As you can see the file exists, just make sure it has root set as the user and group, and its file permissions as shown above (644). If not, please change them using the commands:

```

1 [root@localhost html]# chown root:root ccprorecordings.php
2 [root@localhost html]# chmod 644 ccprorecordings.php

```

You can test the script by accessing the IP address of your remote PBX server, for this guide the url is `https://192.168.0.102/ccprorecordings.php`, if an authentication prompt appears, then the script has been successfully installed.



Step 4: Create Campaigns

Congrats! With all the preliminary settings done, you now are ready to create and configure campaigns.

You can start the dialer service from the *general settings* section, by clicking the start/stop button in the section Dialer status:



Dinomi setup

Dialer Status

Current Status: **RUNNING**

STOP

After this you can start creating campaigns in the Call Center interface, just make sure you have the extensions and queues that you will be using created in the remote PBX accordingly.

Extensions created in the remote PBX will be seen in the Call Center interface, for example when you create a callback extension:

Basic
Extensions
Feature Codes
Outbound Routes
Trunks
Inbound Call Control
Inbound Routes
DAHDI Channel DIDs
Announcements
Blacklist
CallerID Lookup Sources
Call Flow Control
Follow Me
IVR
Queue Priorities
Queues
Ring Groups
Time Conditions
Time Groups

Add an Extension

Please select your Device below then click Submit

- Device

Device:

Submit

Add Extension
100 <100>

Extension 100 was created at the remote PBX system, in this case is an Elastix© 4.x PBX



New Callback Extension

Save Cancel

*Required field

Callback extension: *

Name: *

Password: *

Retype password: *

ECCP Password:

Retype ECCP password:

Extension 100 created at the remote PBX can be seen in Dinomi thanks to the AMI connectivity



Dinomi setup

The same happens to the queues, when you create a campaign:

Queues created at the remote PBX system, in this case is an Elastix© 4.x PBX

Queues visible at *Dinomi* → *configuration* → *Queues* section. These queues exist at the remote PBX system and are being queried via AMI.

Detailed Campaign, forms, agents, and other configurations exceed the scope of this quick guide, but can be seen at our Dinomi user manual, at: <http://dinomi.com/>