

Distributed Installation

This page contains instructions on how you can provision a distributed VoipNow infrastructure.

- [Install MySQL master node](#)
- [Install the Infrastructure Controller](#)
- [Add new nodes](#)
 - [PBX node setup](#)
 - [Add more nodes](#)

Check the Time

 Before proceeding with the installation of VoipNow on a new node, ensure that the date and time on that node are correct. If possible, use a NTP service to keep the clock synchronized.

Install MySQL master node

The first step is to install the MySQL master node on a virtual machine that meets the SQL role hardware requirements: high memory, very high I/O performance and high CPU power.

You **must** perform the MySQL installation using the installer script with the **mysql** argument. Run the following command.

Run the installer with the mysql argument.

```
sh voipnowinstaller.sh mysql
```

When asked, enter the local server IP. This will be used later on, [when installing the Infrastructure Controller](#).

Customize configuration taking into account the machine's hardware characteristics.

A file called voipnowcredentials.conf will be generated. Its contents will be required [when installing the Infrastructure Controller](#). If you want to add MySQL slaves, you can provision the infrastructure now and add them later. This will not affect the system uptime. However, to provision slave MySQL nodes, run the following command.

```
sh voipnowinstaller.sh mysql slave
```

Please note that this command will only add the node. No MySQL replication will be performed.

Install the Infrastructure Controller

The node where you install VoipNow for the first time is relevant because **it will work as an Infrastructure Controller for your entire infrastructure**.

Make sure that VoipNow knows where MySQL is installed by setting the shell environment variables below. You can copy these variables from the voipnowcredentials.conf file generated on the [MySQL node installation](#).

```
export ALT_DB_HOST=<hostname>
export ALT_DB_PORT=<port>
export ALT_DB_USER=<user>
export ALT_DB_PASSWD=<password>
export ALT_DB_NAME=<database>
```

VoipNow will provision the system using the MySQL node that has been specified in the ALT_DB_HOST value as the master.

 VoipNow saves the root username/password in /etc/voipnow/.sqldb. **If this represents a security threat, remove the file.** If you remove the file, you will have to export the variables in ALT* in order to upgrade VoipNow in the future!

Install VoipNow using the [Command Line Installer](#). Once the installation is complete, you will have a functional VoipNow system with:

1. Most of the roles installed on the same node as the Infrastructure Controller.
2. A node with the SQL role assigned.

Login to VoipNow's web management interface as administrator. Navigate to **VoipNow >> Cloud Management**. You will see an image like this one.

Node Listing

Status	Node	Role(s)	Shard/Group	IP Addresses	Hostname	Exposure	Info
Online	020ca1f0f5	Distributed DB Elasticsearch Web Management Interface Infrastructure Controller Jabber Mail Queue SQL Worker	N/A	10.150.5.20, 10.150.5.20	controller.intern.pch	Public	View Info
Online	d9jiesnh3q	SQL	main	10.150.5.98, 10.150.5.98	sql.intern.pch	Public	View Info

2 nodes Number of entries per page: 10 25 100

Screenshot: Your infrastructure should look like this.

Click on the **Infrastructure Properties** button. Set up the infrastructure properties according to your physical infrastructure organization as described in the [Infrastructure Advice](#) section.

In order to be able to add new nodes, you need to enable the distributed firewall rules by running the following command:

```
 /usr/local/voipnow/admin/sbin/voipnow_firewall -o apply -d -t false
```

Add new nodes

You cannot add new nodes unless you have a distributed license. To do that, go to **Unified Communications >> License Management** page. Get the **Infrastructure ID** from the **License Key Status** in the upper page and supply it to your Account Manager to receive the license key.

We will showcase the process of adding a new node with a PBX node, **which is similar for all roles and consists in two steps**:

1. [Provisioning the Node on the Infrastructure Controller Database](#)
2. [Provisioning the Container to run the Node](#)

PBX node setup

PBX nodes are added whenever you want to balance calls between two servers or whenever a PBX server won't handle the number of concurrent calls you have reached.

Requirements

Make sure you understand the requirements for the role you are going to provision. Based on these requirements, you can choose different parameters for the container that will run the node (or a different cloud instance).

- [General Description of the Role](#)
- [Networking Requirements](#)
- [High Availability](#)
- [Hardware Requirements](#)
- [Distributed Installation](#)

Provisioning on Infrastructure Controller database

For more details on the Infrastructure Controller provisioning, check the [Infrastructure Controller installation](#). Cloud Management is the web management interface area where **everything related to your infrastructure cloud is managed**.

1. Log in to the Infrastructure Controller node as administrator (if you are not already logged in). First, add a new node in the management infrastructure. Go to VoipNow **Cloud Management -> Add Node**. This document describes how to add nodes to the distributed infrastructure and how to assign them roles.
2. Assign the role on the node. Once you have added the node, it will appear in **Cloud Management** (with status 'Offline' and no role on it). Click on the [\[Assign a Role\]](#) link next to the the **NodeID** row.
 - **Eligible roles:** This is an informative field. You will see here all eligible roles based on the networking parameters of the node. For example, if the node does not have any public IP address assigned, it will not be possible to run a SIP role.
 - **Role Type:** Select the PBX role from the list.
 - **Bind IP : Port:** Fill in the IP and port you want to bind the role to. While it is possible to use any (0.0.0.0), this is strongly not recommended.
 - **Connection IP : Port:** Fill in the IP and port where other roles must connect to this role. Usually, it is identical to Bind IP : Port.

The role will be added, but it will still be offline. You have to build a container that will run it. You will get a command with a session key that needs to be copied. You will need this key in the following step.

Provisioning the container

Install VoipNow on the server where you want to run the Node. This container might have been already prepared. The installation of VoipNow must be performed in **Stand-By Mode**. For this purpose, run the following commands:

```
export VNSTANDBY=1
sh voipnowinstaller.sh
```

VoipNow will be installed, but beware that this installation will not be able to run independently! The container is prepared to run a node at a later point, once it receives indications from the Infrastructure Controller.

Use the command below to get the node on this container.

```
/usr/local/voipnow/bin/nodeconfig --scenario activate --controller <infrastructure controller ip> --sessionkey <sessionkey>
```

The command is the one you got when you [assigned the role on the offline node](#).

Check the node in the **Cloud Management** area. You will see the node status as being **online**.

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Online	awlp8mpzy5	PBX	-	10.150.5.22, 10.150.5.22	pbx.intern.pch	Public	View Info
Online	d9jiesnh3q	SQL	main	10.150.5.98, 10.150.5.98	sql.intern.pch	Public	View Info

3 nodes

Number of entries per page: 10 25 100

Screenshot: The Infrastructure after the PBX node is added

Add more nodes

You can now start building your planned infrastructure by adding more nodes [the same way you did above](#).

For more info on VoipNow's upgrade procedure, visit [this page](#).

Related Topics

[Set Up Infrastructure Properties](#)

[Add Node and Role](#)

[Set Up Role Parameters](#)