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## From Bicom Systems Wiki

Networks are a transmission lines between two systems. But unlike trunks, which use PSTN and VOIP technologies, networks use DUNDi.

DUNDi is a peer-to-peer system for locating Internet gateways to telephony services. DUNDi itself is not a Voice over IP signaling or media protocol. Instead, it publishes routes which are in turn accessed via industry standard protocols such as IAX, SIP, and H.323.



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## Server

This window displays location and PBXware network information used by peers to connect to our system



General

### General

This section contains the PBXware location information.

- **Department:**

Department name  
(ex. Sales Department)  
([a-z][0-9])

- **Organization:**

Organization name  
(ZX Company)  
([a-z][0-9])

- **Locality:**

Company Surrounding/Nearby location  
(ex. NYC)  
([a-z][0-9])

- **State/Province:**

Company State/Province location  
(ex. NY)  
([a-z][0-9])

- **Country:**

Company Country location  
(ex. United States)  
([a-z][0-9])

- **Email:**

Company contact email address  
(info@domain.com)  
([a-z][0-9])

▪ **Phone:**

Company contact phone number  
(ex. 2122443040)  
([a-z][0-9])

## Networking

This section contains the PBXware network details

▪ **Enable lookup:**

#	Codec	Priority
1		N/A
2		N/A
3		N/A
4		N/A
5		N/A
6		N/A
7		N/A
8		N/A
9		N/A
10		N/A

Networking

Enable peer lookup for this server  
(ex. Setting this option to 'Yes' will allow other peers to find information about this server.  
It is recommended to keep this option set to 'Yes')  
(Option buttons)

▪ **Network Prefix:**

The prefix number assigned to the server  
(ex. This number is similar to the Area Code. It has to be dialed by other peers in order to  
access extensions on our side. Setting this option to '6' means that other peers will dial  
6+1000 to dial extension 1000 on our server)  
([0-9])

▪ **IP Address:**

The PBXware IP address that other peers will connect to. Replace default `{IPADDR}`  
with a working IP.  
(ex. If PBXware is located on a public IP address 89.223.12.93, type that IP here)  
([0-9])

- **Entity ID:**

PBXware MAC address. If PBXware has more than one MAC address, provide one of the first 'eth' device

(ex. 00:07:E9:3B:76:60)

([a-z][0-9])

- **Bind Address:**

Set the Bind Address allowed to connect to our peer

(ex. To allow all IP addresses to connect to us, set '0.0.0.0', or 192.168.1.20 to allow access from this IP address only)

([0-9])

- **Port:**

Port through which other peers will connect to our server

(ex. Default Bind Address Port is '4520')

([0-9])

- **Allow codecs:**

Codecs are allowed to other peers when connecting to our PBXware. See 'Codec Bandwidth' below for more

(ex. It is recommended that you check the boxes next to ulaw, alaw, g719, gsm and ilbs codecs)

([0-9])

- **Cache time:**

Time in seconds during which peers will cache our query responses

(ex. Default value '3600')

([0-9])

- **TTL:**

Time in milliseconds that the system will wait for a response

(ex. Default value '32')

(0-9)

- **Auto-kill:**

Cancels the connection if there is no response within 2 seconds

(ex. It is recommended that you keep this option set to 'Yes')

(Option buttons)

- **Store history**

Should PBXware keep track of the last several queries and their execution time  
(ex. Set to 'Yes' only when debugging for it impacts the performance. The default value is 'No')  
(Option buttons)

### Codec Bandwidth:

- **ITU G.711 ulaw** - 64 Kbps, sample-based, used in the US
- **ITU G.711 alaw** - 64 Kbps, sample-based, used in Europe
- **ITU G.723.1** - 5.3/6.3 Kbps, 30ms frame size
- **ITU G.726** - 16/24/32/40 Kbps
- **ITU G.729** - 8 Kbps, 10ms frame size
- **GSM** - 13 Kbps (full rate), 20ms frame size
- **iLBC** - 15Kbps, 20ms frame size: 13.3 Kbps, 30ms frame size
- **Speex** - 2.15 to 44.2 Kbps
- **LPC10** - 2.5 Kbps
- **H.261 Video** - Used over ISDN lines with a resolution of 352x288
- **H.263 Video** - Low-bit rate encoding solution for video conferencing
- **H.263+ Video** - Extension of H.263 that provides additional features that improve compression over packet switched networks.

## Peers



Peer Entity ID	Host	Status
00-4b-94c3-39-1f	192.168.1.2	OK (1 min)

Peers

This section contains information about the peer systems that PBXware connects to. This screen lists all of the system network peers with the following details:

- **Peer Entity ID:**


PBXware MAC address  
(ex. 00:07:E9:3B:76:60)  
(Display)

- **Host:**

PBXware IP address  
(ex. 192.168.1.2)  
(Display)

- **Status:**

Peer connection status  
(ex. OK (1ms))  
(Display)

-  Edit peer settings

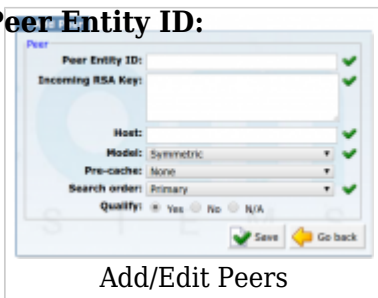
(ex. Click to edit peer settings)  
(Button)

-  Delete peer

(ex. Click to delete peer from the system)  
(Button)

## Add/Edit

- **Peer Entity ID:**



Add/Edit Peers

MAC address of the PBXware we are connecting to. If PBXware has more than one MAC address, provide one of the first 'eth' device  
(ex. 00:07:E9:3B:76:60)  
([a-z][0-9])

- **Incoming RSA Key:**

RSA key of the PBXware to which we are connecting

Example:

```
|-----BEGIN PUBLIC KEY-----  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIb  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIbMIGfMA  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIb  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIbMIG  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIb  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIb  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIb  
|-----END PUBLIC KEY-----  
|
```

([a-z][0-9])

▪ **Host:**

Peer IP address to which PBXware is connecting  
(ex. If PBXware is located on public IP address 89.223.12.93, type that IP here)  
([0-9])

▪ **Model:**

Set the peer pre-caching method  
Example:  
Select from the available options:

- incoming** - permit peer to send pre-cache routes
- outgoing** - send pre-cache routes to this peer
- symmetric** - both

(Select box)

**NOTE:** To pre-cache means to provide an answer when no request was made and is used so that machines with few routes can push those routes up a to a higher level. **Outgoing** means we send pre-cache routes to this peer, **incoming** means we permit this peer to send us pre-cache routes, and **symmetric** means we do both.

▪ **Pre-cache:**

Utilize/Permit pre-caching with this peer

**NOTE:** You cannot mix a symmetric/outbound model with a symmetric/inbound precache, nor can you mix a symmetric/inbound model with a symmetric/outbound precache.

▪ **Search order:**

Set the search order  
Example:  
Select from the available options:

- Primary
- Secondary
- Tertiary
- Quaternary

(Select box)

▪ **Qualify:**

Should PBXware test if the peer is alive  
(Option buttons)

## Routes



By default DUNDi shares local extensions and DIDs with other servers, but if you want to share an additional range of destinations, this is the place where you would enter those.

## RSA keys



This is the PBXware RSA key used for authentication with all network peers

### ▪ Create new key

Generate a new RSA key. This key will be used for PBXware connection authentication.

**NOTE:** Do not generate new RSA keys if connected to peers. If you do generate a new RSA key, be sure to pass it to all servers you are registered with as a peer



Example:

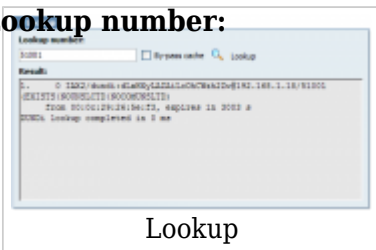
```
|-----BEGIN PUBLIC KEY-----  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIb  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIbMIGfMA  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIb  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIbMIG  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIb  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIb  
|MIGfMA0GCsGSIbMIGfMA0GCsGSIb  
|-----END PUBLIC KEY-----  
|
```

([a-z][0-9])

## Lookup

The DUNDi lookup feature determines if a number can be reached via the service. Additional information is displayed with what is actually happening with the call

- **Lookup number:**



Lookup

Provide a fool lookup number here

(ex. \$NETWORKPREFIX + \$NETWORK NUMBER (e.g. 51001. 5=Network prefix and 1001 is local extension))

([0-9])

- **By-pass cache:**

By-pass cache when performing lookup

(ex. It is recommended to keep this option checked)

(Option button)

- **Lookup**

Select this button to perform the lookup. The result will be displayed in a new window below

(ex. Provide the lookup number, by-pass the cache and click this button to perform a lookup)

(Button)

Next -> 14.Reports

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