

SCOPSERV
INTERNATIONAL INC.

ScopTEL™ IP PBX Software
DHCP APS Configuration

DHCP Configuration

DHCP detection of new devices when the ScopTEL DHCP server is the only DHCP server on the LAN.

- During DHCP acquisition a newly installed and supported SIP device can be added to the APS list automatically.
- DHCP discovery can properly detect the model number of the following supported vendors and add the device to the APS list.
 - Aastra
 - Snom
 - Polycom
 - Yealink

Server Module Pre-requisites:

- Server>Configuration>Provisioning All fields must be properly defined

The screenshot displays the 'Server Configuration' interface, specifically the 'Configuration' section. It features a navigation bar with tabs for 'General', 'Provisioning', 'Proxy Settings', 'SMTP Settings', 'Performance Tuning', and 'Security (SSL)'. The 'Provisioning' tab is active. Below the navigation bar, the 'SIP Server Address' is set to 172.16.74.1. The 'TFTP Provisioning' section includes the following settings: 'Enable TFTP support?' (Yes), 'Enable Syslog Logging?' (Yes), 'Enable 'Write' permission?' (No), and 'TFTP Server Address' (172.16.74.1). The 'HTTP Provisioning' section includes: 'Enable HTTP support?' (Yes), 'Protocol' (HTTP), 'Server (Hostname or IP)' (172.16.74.1), 'Listen on Port' (5555), and 'TFTP Alias' (/tftpboot/).



DHCP Configuration, cont'd

Network Module Pre-requisites:

- Network>DHCP Server must be enabled and properly configured
- Classes and Subnet>Classes must be properly defined
- DHCP Server>Classes>Create Provisioning Classes

The screenshot displays the DHCP Server configuration page. At the top, the 'DHCP Server:' header is visible, with a 'Create Provisioning Classes' button highlighted by a red circle. Below this, a navigation bar contains tabs for 'Configuration', 'Subnet', 'Dynamic DHCP', 'Static DHCP', and 'Classes', with 'Classes' being the active tab. The main content area is titled 'DHCP Classes:' and includes a '+ Add a new DHCP Class' button. A warning message states 'No information have been specified.' At the bottom, there is an 'Action:' dropdown menu currently set to '- select an action -'.

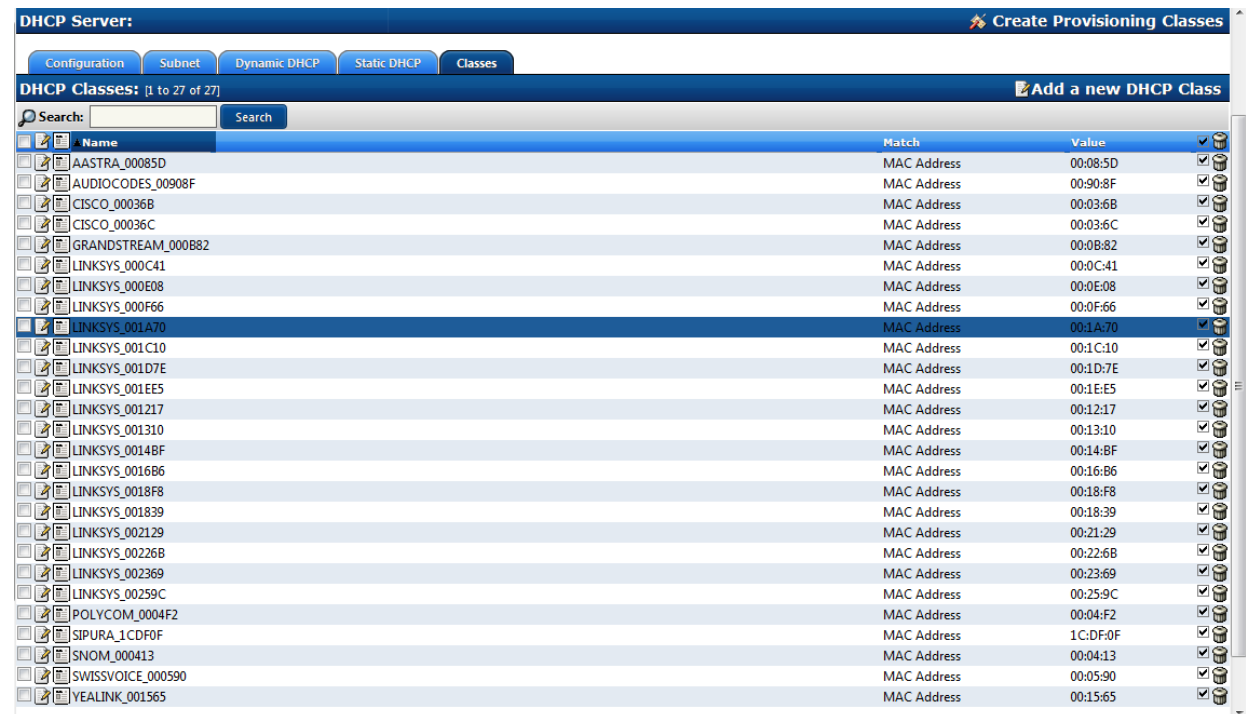


DHCP Configuration, cont'd

DHCP detection of new devices when the ScopTEL DHCP server is the only DHCP server on the LAN.

Network Module Pre-requisites:

- DHCP Server>Classes>Create Provisioning Classes
- Result



The screenshot shows the 'DHCP Server' configuration page, specifically the 'Classes' tab. The page title is 'DHCP Server: Create Provisioning Classes'. Below the navigation tabs (Configuration, Subnet, Dynamic DHCP, Static DHCP, Classes), there is a section for 'DHCP Classes: [1 to 27 of 27]' with an 'Add a new DHCP Class' button. A search bar is present above a table listing various DHCP classes. Each class has a checkbox, a name, a match type, a value, and a status column with a checkmark and a refresh icon.

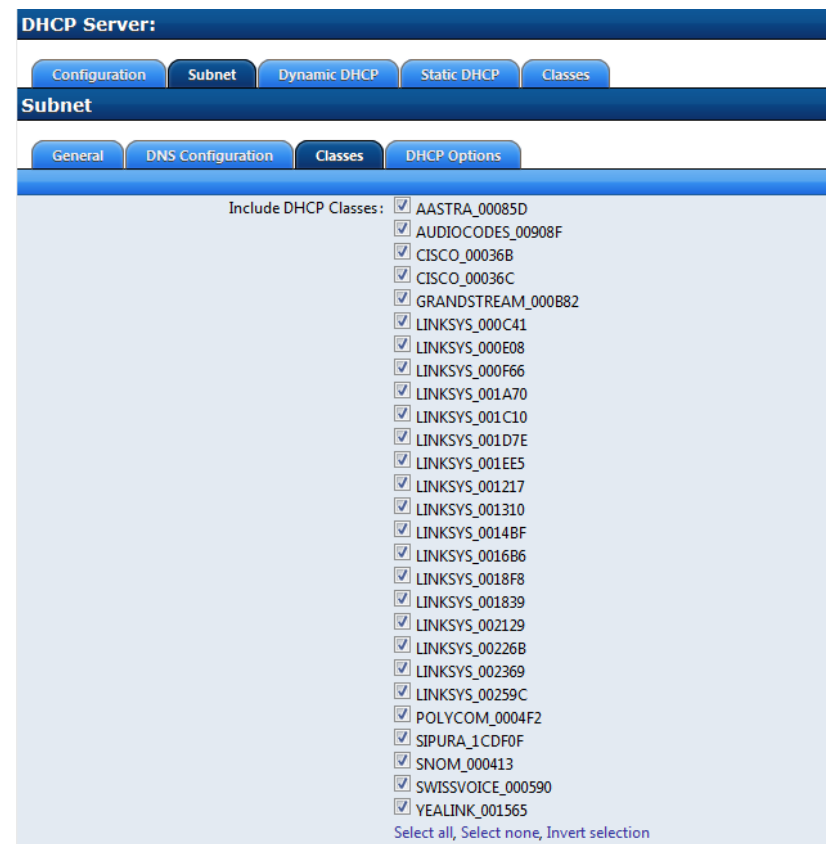
<input type="checkbox"/>	Name	Match	Value	<input checked="" type="checkbox"/>
<input type="checkbox"/>	AASTRA_00085D	MAC Address	00:08:5D	<input checked="" type="checkbox"/>
<input type="checkbox"/>	AUDIOCODES_00908F	MAC Address	00:90:8F	<input checked="" type="checkbox"/>
<input type="checkbox"/>	CISCO_00036B	MAC Address	00:03:6B	<input checked="" type="checkbox"/>
<input type="checkbox"/>	CISCO_00036C	MAC Address	00:03:6C	<input checked="" type="checkbox"/>
<input type="checkbox"/>	GRANDSTREAM_000B82	MAC Address	00:0B:82	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_000C41	MAC Address	00:0C:41	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_000E08	MAC Address	00:0E:08	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_000F66	MAC Address	00:0F:66	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	LINKSYS_001A70	MAC Address	00:1A:70	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_001C10	MAC Address	00:1C:10	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_001D7E	MAC Address	00:1D:7E	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_001EE5	MAC Address	00:1E:E5	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_001217	MAC Address	00:12:17	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_001310	MAC Address	00:13:10	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_00148F	MAC Address	00:14:8F	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_001686	MAC Address	00:16:86	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_0018F8	MAC Address	00:18:F8	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_001839	MAC Address	00:18:39	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_002129	MAC Address	00:21:29	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_00226B	MAC Address	00:22:6B	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_002369	MAC Address	00:23:69	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LINKSYS_00259C	MAC Address	00:25:9C	<input checked="" type="checkbox"/>
<input type="checkbox"/>	POLYCOM_0004F2	MAC Address	00:04:F2	<input checked="" type="checkbox"/>
<input type="checkbox"/>	SIPURA_1CDF0F	MAC Address	1C:DF:0F	<input checked="" type="checkbox"/>
<input type="checkbox"/>	SNOM_000413	MAC Address	00:04:13	<input checked="" type="checkbox"/>
<input type="checkbox"/>	SWISSVOICE_000590	MAC Address	00:05:90	<input checked="" type="checkbox"/>
<input type="checkbox"/>	YEALINK_001565	MAC Address	00:15:65	<input checked="" type="checkbox"/>

DHCP Configuration, cont'd

DHCP detection of new devices when the ScopTEL DHCP server is the only DHCP server on the LAN.

Network Module Pre-requisites:

- DHCP Server>Subnet>Interface>Classes>Include DHCP Classes
- Select all that apply to your environment and save.



DHCP Configuration, cont'd

Navigate to Configuration>Network>General and click Edit Services

Logged as: admin

- ScopServ
- Configuration
 - Server
 - Network
 - General
 - Network
 - Firewall
 - Traffic Shaper
 - DHCP Server
 - DNS Server
 - VPN Client/Server
 - Radius Server
- Telephony
- ScopSTATS
- Tools
- Organizing

Configuration saved.

You must click on Commit button in order to apply Change.

Services Status:

Network:	Running
Firewall:	Running
Traffic Shaper:	Service Disabled
DHCP Server (IPv4):	Service Disabled
DHCP Relay Agent:	Service Disabled
Dynamic DNS:	Service Disabled
DNS Server:	Running
VPN Server (PPTP):	Service Disabled
OpenVPN Client/Server:	Service Disabled
Radius Server (AAA):	Service Disabled

Edit Services Refresh



DHCP Configuration, cont'd

- Check the option for DHCP Server (IPv4)
- Apply Change

Bootup Services:

Start at bootup:

Network:	<input checked="" type="checkbox"/>
Firewall:	<input checked="" type="checkbox"/>
Traffic Shaper:	<input type="checkbox"/>
DHCP Server (IPv4):	<input checked="" type="checkbox"/>
DHCP Relay Agent:	<input type="checkbox"/>
Dynamic DNS:	<input type="checkbox"/>
DNS Server:	<input checked="" type="checkbox"/>
VPN Server (PPTP):	<input type="checkbox"/>
OpenVPN Client/Server:	<input type="checkbox"/>
Radius Server (AAA):	<input type="checkbox"/>

Apply Change Cancel

Navigate to Configuration>Network>DHCP Server and click Edit to Enable the DHCP Server

Logged as: admin

- ScopServ
- Configuration
 - Server
 - Network
 - General
 - Network
 - Firewall
 - Traffic Shaper
 - DHCP Server**
 - DNS Server
 - VPN Client/Server
 - Radius Server
- Telephony

ScopSTATS

Tools

Organizing

Administration

Options

Configuration Wizard

Log out

DHCP Server:

Configuration

Configuration

General

Enable the DHCP Server? : No

Enable the DHCP Relay? : No

Dynamically update DNS server? : No

Edit



DHCP Configuration, cont'd

- Check the Enable the DHCP Server?: [x]
- Save

DHCP Server:

Configuration

Configuration

General

Enable the DHCP Server?

Options

Restrict DHCP query to static Clients?:

Allow Unknown (Dynamic) Clients?: Default: True

Allow IP Forwarding?: Default: True

Allow BOOTP requests?: Default: True

Dynamically update DNS server?

* Default Lease time: 1 Day(s)

* Maximum Lease time: 1 Week(s)

Failover / Load Balancing

Enable Failover support?

Save Cancel

- Click on Subnet
- Click on Add

DHCP Server:

Configuration Subnet Dynamic DHCP Static DHCP Classes

Subnet: Add

No information have been specified.

Action: - select an action -



DHCP Configuration, cont'd

Fill in the Scope Range, Gateway, and other details into the General Tab, then Click on DNS Configuration.

Subnet

General | DNS Configuration | Classes | DHCP Options

Interface: LAN (eth1) ▾

Description:

* Start IP Address: . . .

* End IP Address: . . .

* Gateway: . . .

Subnet: . . .
If empty, the value will be auto-detected.

Netmask: . . .
If empty, the value will be auto-detected.

Broadcast: . . .
If empty, the value will be auto-detected.

Create Dummy (empty) Subnet ?



DHCP Configuration, cont'd

- Enter in your Custom Domain Name
- Enter your DNS Server IP address(es)
- Click on Classes

Subnet

General DNS Configuration **Classes** DHCP Options

Domain Name:

* Primary: . . .

Secondary: . . .

- Select all relevant DHCP Classes for your environment
- Click on DHCP Options

Subnet

General DNS Configuration **Classes** DHCP Options

Include DHCP Classes:

- AAastra_00085D
- AUDIOCODES_00908F
- CISCO_00036B
- CISCO_00036C
- CYBERDATA_0020F7
- GRANDSTREAM_000B82
- LINKSYS_000C41
- LINKSYS_000E08
- LINKSYS_000F66
- LINKSYS_001A70
- LINKSYS_001C10
- LINKSYS_001D7E
- LINKSYS_001EE5
- LINKSYS_001217
- LINKSYS_001310
- LINKSYS_0014BF
- LINKSYS_0016B6
- LINKSYS_0018F8
- LINKSYS_001839
- LINKSYS_002129
- LINKSYS_00226B
- LINKSYS_002369
- LINKSYS_00259C
- PANASONIC_0080F0
- PANASONIC_080023
- POLYCOM_0004F2
- SIPURA_1CDF0F
- SNOM_000413
- SWISSVOICE_000590
- YEALINK_001565

Select all, Select none, Invert selection

DHCP Configuration, cont'd

- Enter in your custom NTP server
- Enter in your GMT time offset in seconds
- Click Add

Subnet

General | DNS Configuration | **DHCP Options**

Default WINS server:	<input type="text"/>
TFTP Server Name:	<input type="text"/>
Next Server (Bootp):	<input type="text"/>
Bootfile Name:	<input type="text"/>
Time Server (NTP):	<input type="text" value="pool.ntp.org"/>
Time Offset (in seconds):	<input type="text" value="-18000"/>
HTTP Server Address (Option 120):	<input type="text"/>
TFTP Server Address (Option 128):	<input type="text"/>
802.1Q VLAN ID (Option 132):	<input type="text"/>
802.1P L2 Priority (Option 133):	<input type="text"/>
Diffserv Code Point (Option 134):	<input type="text"/>
TFTP Server Address (Option 150):	<input type="text"/>
Avaya Support (Option 242):	<input type="text"/>
SVP Server Address (Option 151):	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
OAI Server Address (Option 152):	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>

Add Cancel

- Commit Network changes
- Restart the DHCP Server Service to enable the changes

General | Network | Firewall | Traffic Shaper | **DHCP Server** | DNS Server | VPN Client/Server | Radius Server | Options Commit

You must click on Commit button in order to apply Change.

Services Status:

Network:	Running	Restart Network	
Firewall:	Running	Restart Service	Stop Service
Traffic Shaper:	Service Disabled		
DHCP Server (IPv4):	Running	Restart Service	Stop Service
Dynamic DNS:	Service Disabled		
DNS Server:	Running	Restart Service	Stop Service
VPN Server (PPTP):	Service Disabled		
OpenVPN Client/Server:	Service Disabled		
Radius Server (AAA):	Service Disabled		

Edit Services Refresh

DHCP Configuration, cont'd

If you want Asterisk to auto create peers to for the Automatic Provisioning System then proceed with these optional steps. Telephony Module Pre-requisites:

- Telephony>Configuration>Channels>SIP Channel>Auto-Create Peers=yes
- WARNING Auto-Create Peers can be vulnerable to malicious SIP attacks so the server should not have SIP ports exposed to the public (firewall your SIP ports to external subnets and follow ScopServ security best practices).

The screenshot shows the Asterisk web interface for configuring SIP Channels. The 'SIP Channel' tab is selected, and the 'Auto-create Peers' option is checked and circled in red. Other settings include Port (UDP) 5060, Bind Address (UDP), and various SIP options like 'Record SIP History' (No) and 'Enable RTP Auto Framing' (No).

Telephony Settings: Channels	
Channels	
Configuration	Channels
Language	Time Zones
Asterisk Manager	Monitoring
Scheduled Tasks	Hangup Causes
Synchronization	
Channels	
General	RTP Options
Codecs	SIP Channel
IAX Channel	UDPTL (T.38)
Jitter Buffer	Guest Account
Port (UDP): 5060	
Bind Address (UDP):	
Enable support for SIP TCP?: No	
Enable support for SIP TLS (secure)?: No	
Enable Outbound Proxy support?: No	
SIP Options	
Realm for Digest Authentication: scopserv	
User Agent: Asterisk PBX (ScopServ)	
Record SIP History: No	
Auto-create Peers: Yes	
Enable RTP Auto Framing?: No	
Enable DNS SRV lookups on outbound calls: No	
Max length of incoming registration: 3600	
Default length of incoming/outgoing registration: 120	



DHCP Configuration, cont'd

DHCP detection of new devices when the ScopTEL DHCP server is the only DHCP server on the LAN.

Telephony Module Pre-requisites:

- Telephony>Configuration>Provisioning
- Change the Unprovisioned Feature PIN to a complex number for security
- Enter the SIP Server address required for registration
- Save and Commit changes.

The screenshot displays the 'Telephony Settings: Configuration' page. The 'Configuration' tab is selected, and the 'Provisioning' sub-tab is active. The 'Unprovisioned Feature PIN' is set to 7788, and the 'Default SIP Server' is set to 172.16.74.1. Both values are circled in red. An 'Edit' button is visible at the bottom left of the configuration area.

Setting	Value
Unprovisioned Feature PIN	7788
Default SIP Server	172.16.74.1



DHCP detection of new devices when the ScopTEL DHCP server is the only DHCP server on the LAN

USAGE

- Plug a supported SIP device into the voice subnet
- Wait for it to boot (it may reboot after it downloads its configuration from the server for the first time)
- Once the phone boots up you should see its MAC address in the APS list as an unprovisioned device
- Once the phone displays UNPROV on its display you can begin the registration process
 - Dial any phone number to hear the password prompt
 - Enter the Provisioning PIN number defined in Telephony>Configuration>Provisioning using the keypad
 - Enter a defined but unused extension number using the keypad when prompted
 - Edit the MAC address in the APS list and change any required settings like the template used, name, soft key assignments etc.
 - Commit
 - Reboot the phone to download the final configurations

