

# NEC UNIVERGE BLUE – CONNECT

## Network Setup – North America IPv4

### Quick Setup Guide

- Internet service provider (ISP) delivers the internet over a wired connection
- Allow or white list IP Addresses
  - 72.53.160.0/20 (allow traffic to and from this IP range in the firewall)
  - SNTP: 64.28.115.137
  - WAN Ping Response: 64.28.122.110 and 64.28.121.110
  - NetMasq: 255.255.240.0
- SIP signalling occurs on UDP port 5060 or TCP port 5061 (TLS 1.2). SIP information comes from Kamailio.
- SecureSIP Registration (SIP TLS)
  - TCP 5061
- RTP occurs in the UDP port rang 30000-65000(with secure SIP enabled: SRTP on TCP port range 30000-65000). Assigned Dynamically
- The following TCP ports are utilized by the telephones to contact a configuration server:
  - 80 (destination port, image files)
  - 443 (destination port, polycom phones, chat application)
  - 636 (secure LDAP for corporate directory access of the phones)
  - 1443 (destination port, cloud softphone)
  - 5222 (desktop and mobile applications presence servers)
  - 5280 (presence server)
  - 2443 (destination port, Cisco phones)
  - 6716 (destination port, Yealink phones)
  - 6718 (destination port, NEC phones)
  - *See firewall set up example at end of the document*
- Power for IP Phones
  - PoE L2/L3 switches in place (802.3af Ethernet standards)
    - IP Telephone Power Info
      - Yealink – PoE Max 4.0W, Idle 2.7W (Class 2)

### **OR**

- Outlet for each phone to connect power adapter

- *Recommended* - VLAN set up for IP telephones
- *Recommended* – Setup Bandwidth Management (BWM)/Rate Control/Traffic Shaping to reserve the exact amount of bandwidth your phones needed at all times
  - Default Codec is G.729 for voice
  - G.711 is used for fax and some voice where the carrier does not support G.729
  - Each conversation will utilize 80K of data
- QoS for voice is required
- **Verify SIP ALG and/or SIP Helper Fix Up is turned off on internet router**
- Ensure the router/firewall does not block the phones' NAT binding/Keep-Alive packets that are sent every 15 seconds
- DHCP is required. DHCP Scope Options/recommendations...
  - Recommended – Set DNS to Google's DNS servers 8.8.8.8 and 8.8.4.4
    - By default most networks are setup to use ISPs DNS servers and we frequently see these have intermittent slowdowns that cause the phones to lose registration.
    - Another option for DNS servers are OpenDNS 208.67.222.222 and 208.67.220.220
    - If you have your own DNS servers outside of ISP DNS, these can be used.

Item	DHCP Option	Data Value	Notes
IP Address	1	0.0.0.0	Network provided
Subnet Mask	1	0.0.0.0	Network provided
Default Gateway	3	0.0.0.0	Network provided
Primary DNS Server	6	0.0.0.0	Network provided (Server Option)
Secondary DNS Server	6	0.0.0.0	Network provided (Server Option)
Tertiary DNS Server	6	0.0.0.0	Network provided (Server Option)
DNS Domain Name	15	Site-specific	Server Option
SNTP Server	42	0.0.0.0	Network provided
LAN Port VLAN ID	128	VLANID=xyz;	Network provided
Vendor Specific Information	43	**See Option 43 note**	Vendor Class - if necessary

**Note for Option 43...for NEC phone is NECDT700 and Yealink phone is yealink**

- IF REQUIRED - Custom MOH or AA greeting format
  - Supports both .wav or .ogg forma
    - Mono
    - WAV/OFF, u-Law
    - 16 MB maximum
    - 64kbits/s
    - 8000Hz sample rate