

NFON Plug & Play Network Requirements

GENERAL INFORMATION

Please note the following network settings are required to your network in order for the IP Devices to connect with the NFON Cloud Telephone system;

- In general, every NFON end device (IP Phone) requires its own IP address via a DHCP server.
- When using a DHCP server please be sure you have sufficient IP addresses available for assignment. Option 66 should be disabled.
- Inbound Port forwarding does not need to be set up.
- SIP ALG (some devices refer to this as SIP Helper) must be deactivated!

SWITCH CONFIGURATION

- If the LAN uses "Spanning Tree", it is advisable to deactivate on the end device switch, unless you have an option to use "Port Fast" or "Edge Mode".
- Deactivate load-dependent Spanning Tree for Cisco switches (PVST + Mode).
- Deactivate proxy ARP mechanisms and set up protection against MAC spoofing.
- To achieve the best performance it is recommended that your network is set to CoS5 setting (NFON Auto provisioned devices are set for CoS5).

ROUTER & FIREWALL CONFIGURATION

- Inbound Port forwarding does not need to be set up.
- Based on the assumption that firewalls are 'stateful' and answers in open TCP and UDP sessions are accepted, note the following settings:
 - Any current SIP ALG as well as Store & Forward must be deactivated!
 - Use an IDS/IPS and make sure it has no negative effect on the telephony. You might need to adjust settings or deactivate the system. (Or write 109.68.96.0/21 into IDS Whitelist)
 - We recommend a protection against ICMP redirect, route injection and DoS.
 - The UDP-NAT timeout should be set to between 120 and 130 seconds.
 - Activation of a consistent NAT mode (required especially for SonicWall!)
 - NFON devices cannot work in networks that have automatic load balancing policy for WAN connections.

Encryption (SRTP):

- Once encryption is activated for a customer, all devices approved for encryption will automatically be switched to this setting (not FMC, Panasonic IP Phones or the DECT TGP500 DECT). It is not possible to selectively approve individual devices of this type for encryption or to exclude them from it.

In order to communicate with the NFON IP telephone system, the end devices must be able to communicate **outbound** via the following ports:

Protocol	Target port	Purposes	Targets
TCP	80, 83, 443, 18443	Provisioning	All networks
UDP	123	NTP	All networks
UDP	53	DNS	Customer DNS server
UDP	all ports	SIP, RTP, T-38, FMC, etc.	109.68.96.0/21
TCP	all ports	SIP/TLS, SIP, FMC	109.68.96.0/21

Note 1- Please see more detailed information on PORTS and IP Addresses below

Please inform your email provider to whitelist inbound traffic from NFON network (**109.68.96.0/21**), otherwise it could be possible that you cannot receive your emails (for email SPAM filtering). Please ADD this IP Range (NFON) as **Trusted network**.

Note1:

1.1 SPECIFIC PORTS AND IP ADDRESS SETTINGS for OUTBOUND

Also please see the following list of IP Addresses that we use with our system (redirect servers):

- redirect.complus.de 83.169.33.24 TCP Port 80,83,443
- provisioning.snom.com 80.237.155.31 TCP Port 80,83,443
- rca.aastra.com 72.48.119.220 TCP Port 80,83,443
- provisioning.nfon.net 109.68.97.131 TCP Port 80,83,443
- rps.yealink.com TCP Port 80,83,443
- NTP 109.68.96.128 UDP Port 123
- Openstage Provisioning TCP Port 18443
- customer-log.nfon.net; between IP-Phone and Syslog UDP 514

(The IP Phone will point to these IP Addresses after Factory Default Reset).

1.2 SPECIFIC PORTS - OUTBOUND

The following services are used under target IP address range - 109.68.96.0/21

UDP:

- 123 (NTP)
- 514 (Syslog)
- 3478 (STUN)
- 6060 (NCTI)

UDP/TCP :

- 5060 (SIP)
- 6050 (SIP alternative)
- 4000-4999 (dyn. Ports for T.38 / RTP)
- 10000-60000 (dyn. Ports for RTP)

TCP:

- 80 (HTTP)
- 83 (MIT ML Device)
- 443 (HTTPS)
- 5061 (SIP/TLS)
- 5062 (FMC)

1.3 ETHERNET PORT FOR IP PHONE – RJ45 PORT

The settings shown above would allow NFON Certified (*) IP Phones to access the NFON network. For best results, we recommend a separate internet connection to an Ethernet Port with RJ45 connection via a PoE switch, for an IP Phone. This guide encompasses settings for Lync, NSoftphones, Nfon Mobile and NCTI.

(*) - List of NFON certified devices is available at;
<http://www.mynfon.com/en/overviews/produktuebersichten/certified-devices/>