



Untangled OS Router Configuration
For Absolute VOICE Cloud Telephony Deployment
Document Version 1.0

March 21st, 2018

www.callabsolute.com

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Read Me!

1. These changes must be applied before client implements their Absolute VOICE hosted telephony solution.
2. If you are not experienced with business class firewalls and routers, please have your IT staff/contractor perform these changes for you.
3. Please read this entire document before attempting to make any changes.
4. If you have questions about this document, you can call 800-955-6703 to schedule an appointment with one of our firewall support specialists. We will attempt schedule your appointment within 24- 48 hours of your call to us, we ask that you please allow adequate time.
5. After changes are completed please let your client or Absolute VOICE Customer Support specialist know.
6. Once completed, an Absolute VOICE technician will be requesting access or a collaborative web session to verify settings prior to customer cut over.

Introduction

This document is for IT administrators and illustrates configuration changes required on Untangled firewall & router appliances to support Absolute VOICE's cloud communications telecommunications platform. This document assumes a basic network deployment consisting of one internal LAN network containing IP phones and one WAN interface connected to the Internet. While we strongly recommend a dedicated network for VoIP traffic, the instructions below can be used for a “converged” network whereby both VoIP and non-VoIP traffic share one physical WAN network. With basic modifications (such as adding access rules for additional interfaces); this configuration can be extrapolated for other network layouts. The screenshots below may vary slightly from what is displayed while configuring the device depending on model and software version. Setting values not mentioned may be left at default or changed as required for specific purposes.



Please call Absolute VOICE Customer Support at 800-955-6703 if you need any further information. Firewall changes can be in depth and you will need to schedule time with one of our specialists if you need assistance.

Screenshots and instructions are based on Untangled OS running Software Build 14.1.1

We recommend loading the latest software version (firmware).

Firewall Checklist

Please provide screen shots to Absolute VOICE for verification of settings. This will allow the implementation process to be smooth and ensure quality audio and proper signaling.

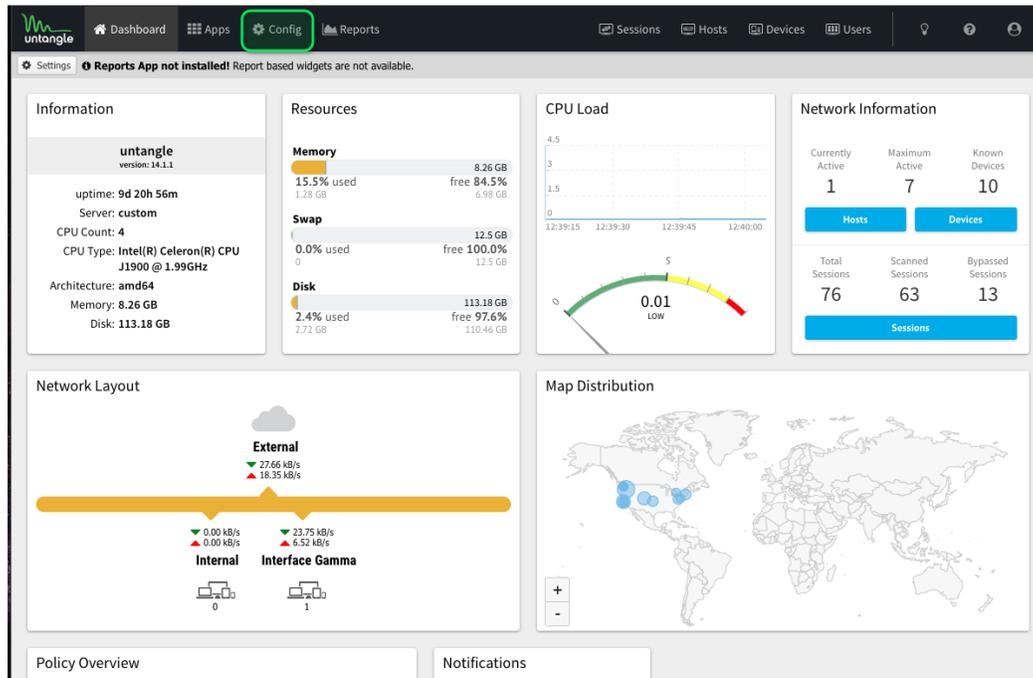
| Screen Shot #: | Configuration: | Completed: |
|----------------|---|------------|
| 1 | Config → Network → Advanced → Uncheck Enable Sip helper | |
| 3 | Config → Network → Advanced → QOS | |
| 4 | Config → Network → Advanced → QOS → WAN Bandwidth | |
| 5 | Config → Network → Advanced → QOS → QOS Rules | |
| 6 | Config → Network → Bypass Rules | |

Business Policy Configuration

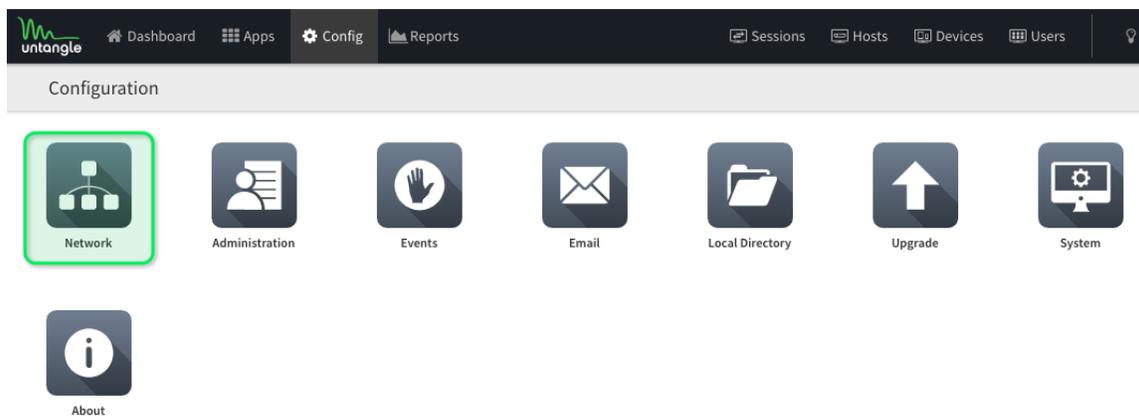
Config → Network → Advanced → Disable SIP NAT Helper

Note: This document assumes the untangle router is using single WAN interface, for multiwan setup please consult with our Level 2 team by calling 1-800-955-6703 and scheduling an appointment to discuss multi-wan setup.

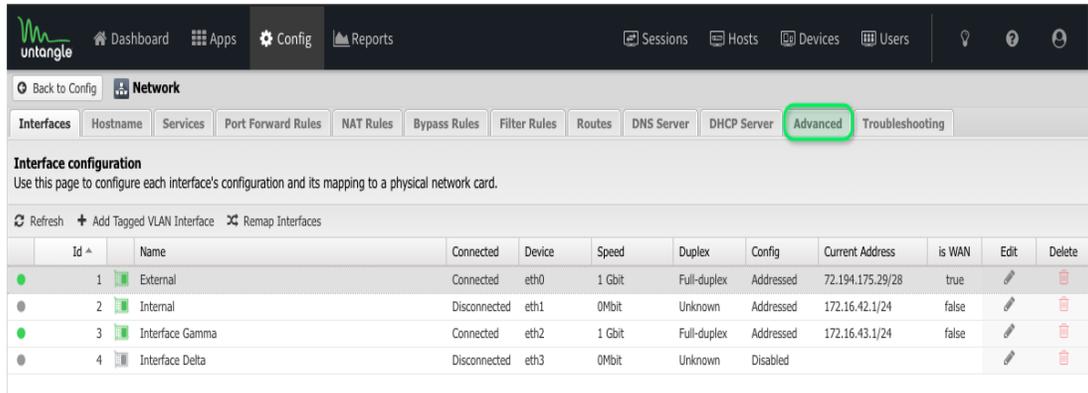
Browse to the Config Tab:



Click on Network:



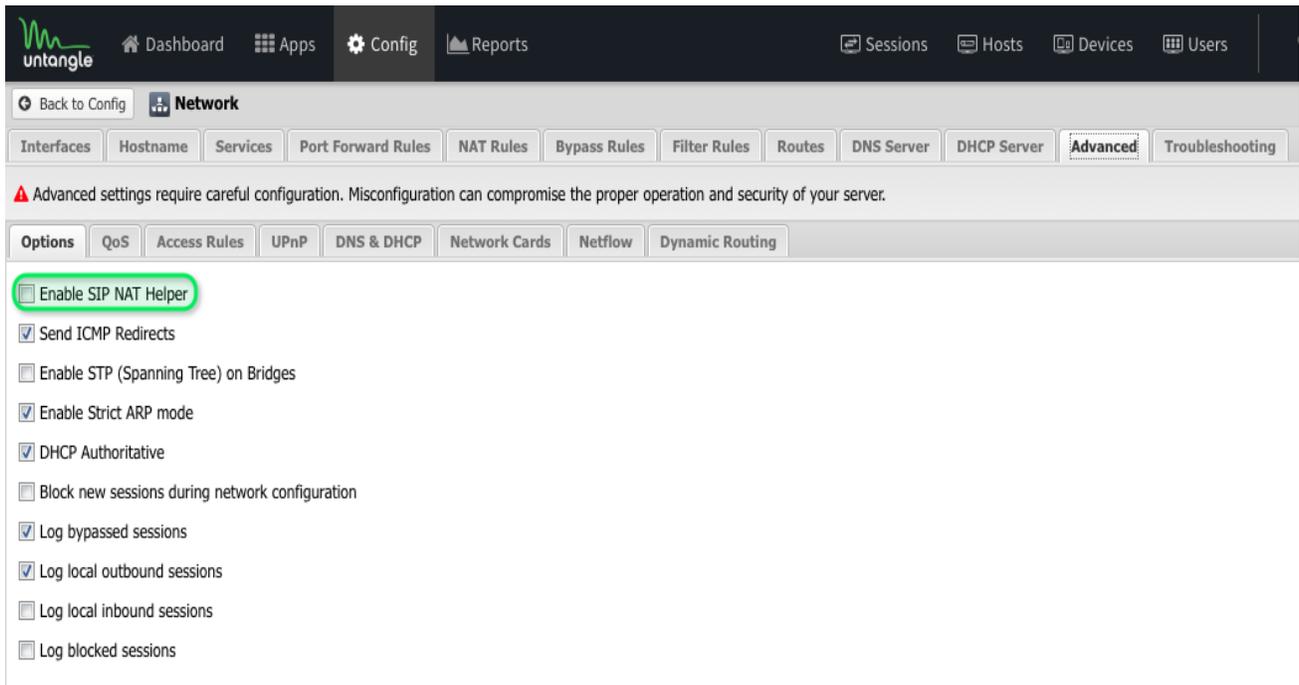
Click on the Advanced Tab:



The screenshot shows the Untangle configuration interface. The top navigation bar includes 'Dashboard', 'Apps', 'Config', and 'Reports'. The 'Config' section is expanded to show 'Network'. Under 'Network', the 'Advanced' tab is highlighted with a green circle. Below the tabs, there is a section for 'Interface configuration' with a table of interfaces.

| Id | Name | Connected | Device | Speed | Duplex | Config | Current Address | is WAN | Edit | Delete |
|----|-----------------|--------------|--------|--------|-------------|-----------|------------------|--------|------|--------|
| 1 | External | Connected | eth0 | 1 Gbit | Full-duplex | Addressed | 72.194.175.29/28 | true | | |
| 2 | Internal | Disconnected | eth1 | 0Mbit | Unknown | Addressed | 172.16.42.1/24 | false | | |
| 3 | Interface Gamma | Connected | eth2 | 1 Gbit | Full-duplex | Addressed | 172.16.43.1/24 | false | | |
| 4 | Interface Delta | Disconnected | eth3 | 0Mbit | Unknown | Disabled | | | | |

Uncheck Enable SIP Helper:



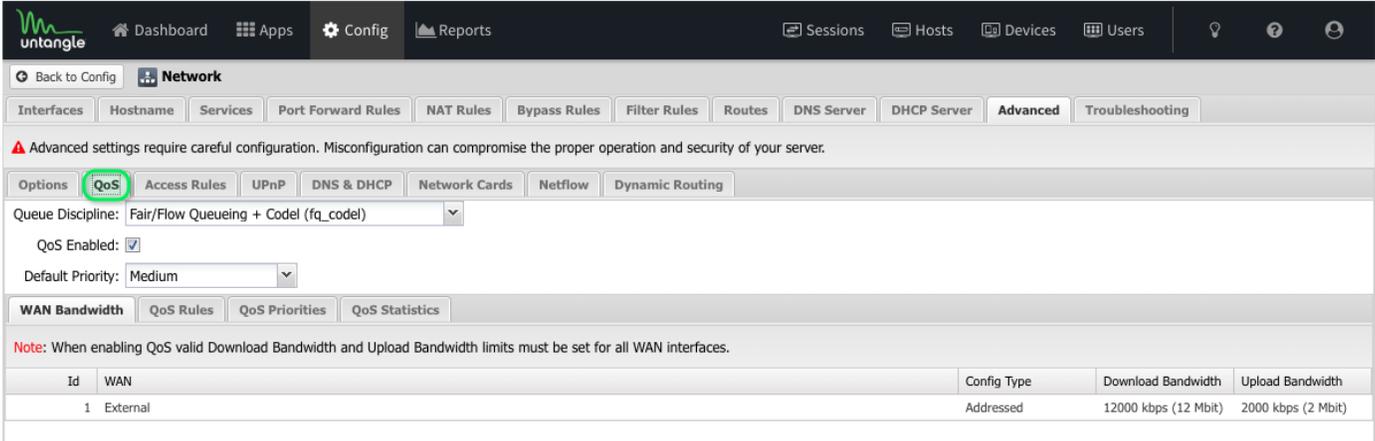
The screenshot shows the 'Advanced' settings for the Network configuration. The 'Advanced' tab is highlighted with a dashed box. A warning message states: 'Advanced settings require careful configuration. Misconfiguration can compromise the proper operation and security of your server.' Below the warning, there are several options, with 'Enable SIP NAT Helper' highlighted by a green circle and its checkbox unchecked.

- Enable SIP NAT Helper
- Send ICMP Redirects
- Enable STP (Spanning Tree) on Bridges
- Enable Strict ARP mode
- DHCP Authoritative
- Block new sessions during network configuration
- Log bypassed sessions
- Log local outbound sessions
- Log local inbound sessions
- Log blocked sessions

Config → Network → Advanced → QOS

When configuring QOS you will need to know the Upload and Downlaod speed from your Internet Service Provider to configure QOS accurately.

Click on the QOS Tab:



Options: **QoS** Access Rules UPnP DNS & DHCP Network Cards Netflow Dynamic Routing

Queue Discipline: Fair/Flow Queueing + Codel (fq_codel)

QoS Enabled:

Default Priority: Medium

WAN Bandwidth QoS Rules QoS Priorities QoS Statistics

Note: When enabling QoS valid Download Bandwidth and Upload Bandwidth limits must be set for all WAN interfaces.

| Id | WAN | Config Type | Download Bandwidth | Upload Bandwidth |
|----|----------|-------------|----------------------|--------------------|
| 1 | External | Addressed | 12000 kbps (12 Mbit) | 2000 kbps (2 Mbit) |

Config → Network → Advanced → QOS → WAN Bandwidth

Change your WAN to the correct Download and Upload Bandwith, and convert your provided ISP speeds to kbps.



WAN Bandwidth QoS Rules QoS Priorities QoS Statistics

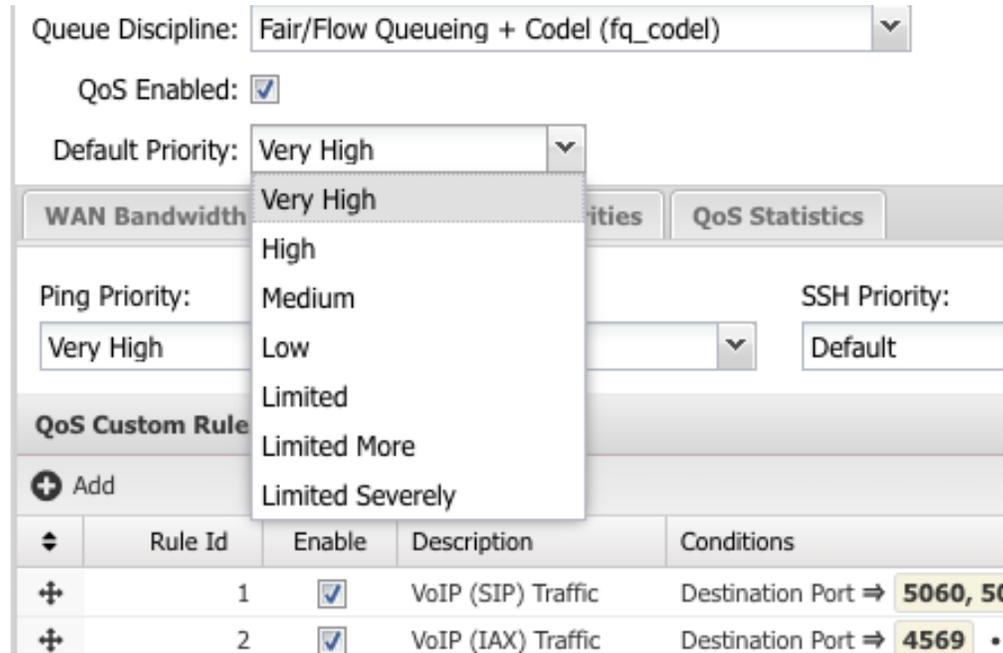
Note: When enabling QoS valid Download Bandwidth and Upload Bandwidth limits must be set for all WAN interfaces.

| Id | WAN | Config Type | Download Bandwidth | Upload Bandwidth |
|----|----------|-------------|----------------------|--------------------|
| 1 | External | Addressed | 12000 kbps (12 Mbit) | 2000 kbps (2 Mbit) |

Press save at the bottom to apply these settings

Config → Network → Advanced → QoS → QoS Rules

Ensure the Default Priority to **Medium**:



Queue Discipline: Fair/Flow Queueing + Codel (fq_codel)

QoS Enabled:

Default Priority: **Very High** (dropdown menu open showing: Very High, High, Medium, Low, Limited, Limited More, Limited Severely)

Ping Priority: Very High

SSH Priority: Default

| Rule Id | Enable | Description | Conditions |
|---------|-------------------------------------|--------------------|-------------------------------|
| 1 | <input checked="" type="checkbox"/> | VoIP (SIP) Traffic | Destination Port ⇒ 5060, 5061 |
| 2 | <input checked="" type="checkbox"/> | VoIP (IAX) Traffic | Destination Port ⇒ 4569 |

Click Add under Custom Rules and Apply the following Variables as “Priority” to “Very High”:

| Rule Id | Enable | Description | Conditions | Priority |
|---------|-------------------------------------|--------------------|---|-----------|
| 1 | <input checked="" type="checkbox"/> | VoIP (SIP) Traffic | Destination Port ⇒ 5060, 5061 • Protocol ⇒ TCP, UDP | Very High |
| 2 | <input checked="" type="checkbox"/> | VoIP (IAX) Traffic | Destination Port ⇒ 4569 • Protocol ⇒ TCP, UDP | Very High |
| 3 | <input checked="" type="checkbox"/> | Absolute VOICE In | Destination Address ⇒ 184.178.213.0/24 | Very High |
| 4 | <input checked="" type="checkbox"/> | Absolute VOICE Out | Source Address ⇒ 184.178.213.0/24 | Very High |
| 5 | <input checked="" type="checkbox"/> | Abs9000 | Destination Port ⇒ 9000 | Very High |
| 6 | <input checked="" type="checkbox"/> | Abs16000-17999 | Destination Port ⇒ 16000-17999 | Very High |
| 7 | <input checked="" type="checkbox"/> | Abs11780-118000 | Destination Port ⇒ 11780-11800 | Very High |

Destination Address – 184.178.213.0/24

Source Address – 184.178.213.0/24

Destination Port – 9000

Destination Port – 16000-17999

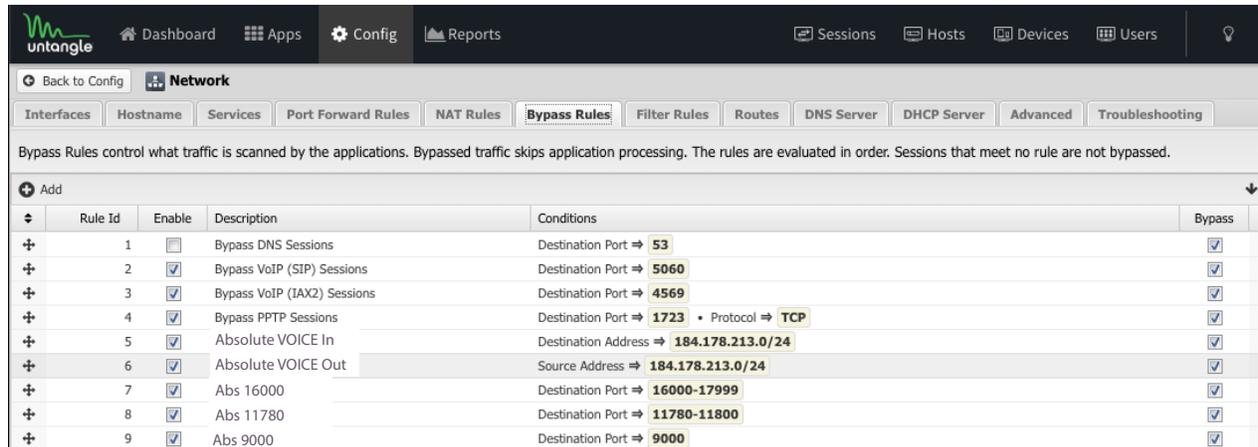
Destination Port – 11680 – 11800

Please save the changes at the bottom of page.

Config → Network → Bypass Rules

Create a Business Policy for Absolute VOICE Traffic

Please enter the following variables as By Pass rules:



| Rule Id | Enable | Description | Conditions | Bypass |
|---------|-------------------------------------|-----------------------------|--|-------------------------------------|
| 1 | <input type="checkbox"/> | Bypass DNS Sessions | Destination Port ⇒ 53 | <input checked="" type="checkbox"/> |
| 2 | <input checked="" type="checkbox"/> | Bypass VoIP (SIP) Sessions | Destination Port ⇒ 5060 | <input checked="" type="checkbox"/> |
| 3 | <input checked="" type="checkbox"/> | Bypass VoIP (IAX2) Sessions | Destination Port ⇒ 4569 | <input checked="" type="checkbox"/> |
| 4 | <input checked="" type="checkbox"/> | Bypass PPTP Sessions | Destination Port ⇒ 1723 • Protocol ⇒ TCP | <input checked="" type="checkbox"/> |
| 5 | <input checked="" type="checkbox"/> | Absolute VOICE In | Destination Address ⇒ 184.178.213.0/24 | <input checked="" type="checkbox"/> |
| 6 | <input checked="" type="checkbox"/> | Absolute VOICE Out | Source Address ⇒ 184.178.213.0/24 | <input checked="" type="checkbox"/> |
| 7 | <input checked="" type="checkbox"/> | Abs 16000 | Destination Port ⇒ 16000-17999 | <input checked="" type="checkbox"/> |
| 8 | <input checked="" type="checkbox"/> | Abs 11780 | Destination Port ⇒ 11780-11800 | <input checked="" type="checkbox"/> |
| 9 | <input checked="" type="checkbox"/> | Abs 9000 | Destination Port ⇒ 9000 | <input checked="" type="checkbox"/> |

Destination Address – 184.178.213.0/24

Source Address – 184.178.213.0/24

Destination Port – 9000

Destination Port – 16000-17999

Destination Port – 11680 – 11800

Please add the rules, ensure that they are enabled and press Save at the bottom of the page.

Document Revision History

| Version | Reason for Change | Date |
|---------|------------------------|----------------|
| 1.0 | Initial Draft Document | March 28, 2019 |