Horizon Network Configuration Guidelines

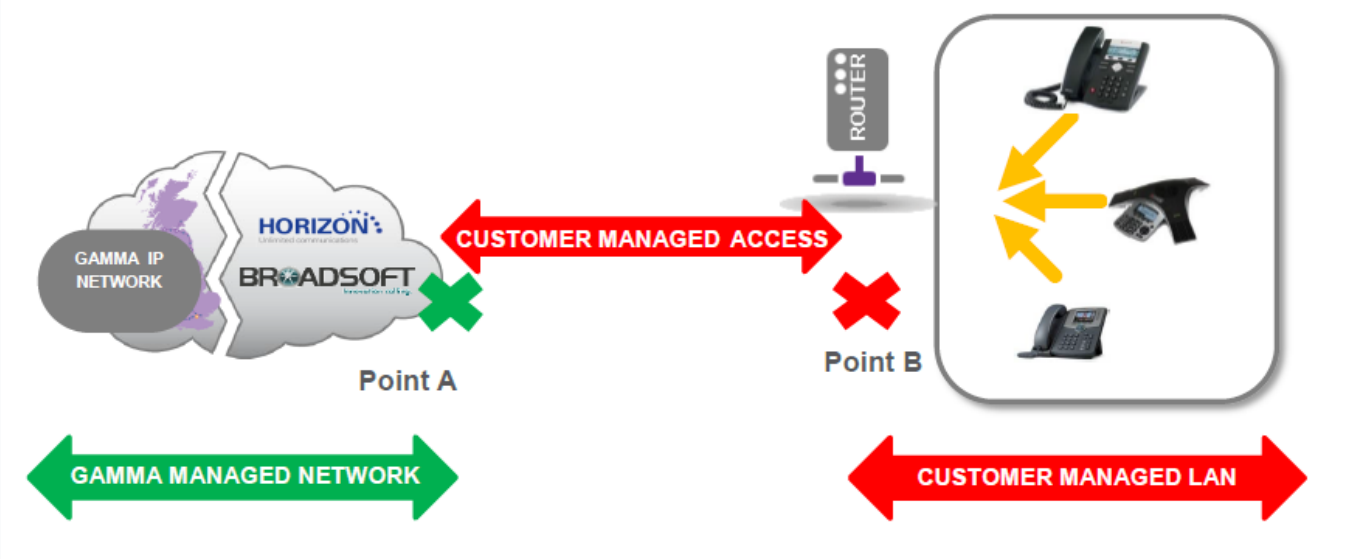
Introduction

The purpose of this document is to offer guidelines to Channel Partners and End Users on how the LAN & WAN environment should be configured to be able to run the Horizon and associated services successfully at a customer site.

Horizon is designed to work using public IP addressing for access and as such this provides more than just the provision of speech and signalling protocols; it also provides access to other publicly available services which Horizon requires to function correctly.

If a channel partner and/or end user wishes to utilise another, non-Gamma access solution, they need to ensure that the solution can meet the requirements and functionality set out in this document. Failure to meet these requirements will result in quality and setup/support issues.

Please note below the defined demarcation points when using third-party access and on the customer's LAN.



Configuration of Non-Gamma Access routers

Access Control

Network administrators must ensure that the following IP addresses and outbound ports are available and not blocked by firewalls. If these ports are not opened (i.e., a customer or network-based firewall is blocking them), or IP addresses allowed, Horizon will not function correctly.

There is no need to unblock the inbound ports because once the devices have registered and they've allowed outbound access, then we can route traffic based on the active registration so that we can see the IP address and ports etc .

DNS records utilised by Horizon are provided. These are informational only for most deployments as DNS will be learned from records populated on Gamma's authoritative public DNS servers. Customers who maintain private DNS servers may need to populate the DNS records in their servers.

Gamma recommends that only trusted IPs are allowed to send and receive traffic via ports 5060 and 5080.

The requirements need to be checked by the Channel Partner with the customer/access provider as part of the Sales process to ensure that the solution will be fit for purpose for Horizon. This applies to all ISPs.

If the Channel Partner has not checked the details with their ISP, or there is any doubt, they should opt for the Gamma Assured & Gamma Ethernet access products.

From the 1st of September 2021, Gamma expanded and modernised its network infrastructure as our service continues to grow. As such, updates are required for customers' firewalls for Horizon to be able to communicate with customers' hardware and software at site.

These changes are: 151.2.128.0/19 (subnet mask 255.255.224.0)

As a cloud service Horizon server may be present at any IP address in this range so it is recommended that firewall ACLs allow outbound access to the whole range, on all TCP and UDP ports, that is port range 0-65535

New IPv4 Public Address	Subnet Mask	Ports	Function
151.2.128.0 /19	255.255.224.0	All TCP and UDP ports, that is port range: 0-65535 *Further detail below	Device provisioning, including soft clients and software downloads

The most commonly used ports are listed below and as a minimum, we would recommend that these ports are opened. However please note that Gamma will, over time, introduce new devices on the 151.2.128.0/19 range and on ports not previously listed or used. We would endeavour to provide as much notice as we can on these changes, but there may be occasions where no notice can be given and therefore recommend that all TCP and UDP ports in the 0-65535 range are opened.

• No permanent inbound ports are required for Horizon.

Portocol and Ports	Function
TCP 5060 UDP 5060 TCP 5080 UDP 5080	SIP signalling
TCP 80	Provisioning, soft-clients, downloads
TCP 443 TCP 8443	Soft-clients, TAPI etc.
TCP 389 TCP 636	LDAP Directories
TCP 3478 UDP 3478 TCP 5349 UDP 5349	STUN
TCP 5222 TCP 5269	Instant Messaging
RTP 6000 – 60000	Media

Portocol and Ports	Function
TCP 5222 TCP 5269 TCP 443	Collaborate Instant messaging and Presence server.
TCP 5280-5281	
TCP 1081-1082	
TCP 8060	Collaborate WebRTC server signalling, media and STUN port
TCP 8070	
UDP 1024-3024	
UDP 3478	
TCP 443	

Horizon phones and clients will open and keep alive any outbound firewall pinholes, so specific incoming ACL should not be required.

Gamma will not provide individual IP addresses for these services. The entire IP range can be trusted to only host Gamma UCaaS and voice services and therefore it is safe to open the specified ports for this IP range.

Domain Name	Record Type	IP Address	Ports	Function
xsp.unlimitedhorizon.co.uk	A	88.215.61.171 88.215.61.173 88.215.50.177 88.215.50.178	TCP 80, 443	Device provisioning, including soft clients and software downloads
dms.mypabx.co.uk	A	88.215.60.165 88.215.60.167	TCP 80, 443	Soft client provisioning and software downloads
xsi.unlimitedhorizon.co.uk	A	88.215.60.155 88.215.60.166 88.215.50.193 88.215.50.194 88.215.50.195	TCP 443	Soft clients
xsit1.unlimitedhorizon.co.uk	A	88.215.60.155	TCP 443	Soft clients

Domain Name	Record Type	IP Address	Ports	Function
xsih1.unlimitedhorizon.co.uk	A	88.215.50.193	TCP 443	Soft clients
xsij1.unlimitedhorizon.co.uk	A	88.215.50.194	TCP 443	Soft clients
xsip2.unlimitedhorizon.co.uk	A	88.215.60.166	TCP 443	Soft clients
xsip3.unlimitedhorizon.co.uk	A	88.215.50.195	TCP 443	Soft clients
xsi-int.unlimitedhorizon.co.uk	A	88.215.60.156 88.215.60.168 88.215.50.196	TCP 443	Integrator, TAPI
xsip1.unlimitedhorizon.co.uk	A	88.215.60.156	TCP 443	Integrator, TAPI
xsit2.unlimitedhorizon.co.uk	A	88.215.60.168	TCP 443	Integrator, TAPI
xsij2.unlimitedhorizon.co.uk	A	88.215.50.196	TCP 443	Integrator, TAPI
N/A	A	127.0.0.1	TCP 21050	Tapi
clients.unlimitedhorizon.co.uk URLs https://clients.unlimitedhorizon.co.uk/receptionist https://clients.unlimitedhorizon.co.uk/callcentre	A	88.215.60.162 88.215.60.163	TCP 443	Receptionist, Call Centre Clients
clientp.unlimitedhorizon.co.uk	A	88.215.60.162	TCP 443	Receptionist, Call Centre Clients
clientt.unlimitedhorizon.co.uk	A	88.215.60.163	TCP 443	Receptionist, Call Centre Clients
im.unlimitedhorizon.co.uk	A	89.149.156.75	TCP 5222	Instant messaging and presence (for softphone clients)
www.gointegrator.com	A	104.24.109.175 104.24.108.175	TCP 80, 443	Integrator
ntp.business-access.co.uk	A	88.215.61.81 88.215.63.145	UDP 123	NTP for time/date display

Domain Name	Record Type	IP Address	Ports	Function
europe.pool.ntp.org	A	178.79.162.34 178.238.232.141 94.198.159.15 77.95.79.99 88.99.30.99 78.47.138.42 148.251.127.15 46.165.212.205	UDP 123	NTP for time/date display Polycom
ldap.unlimitedhorizon.co.uk	A	88.215.60.129 88.215.60.132	TCP 389, 636	Corporate Directory Service

Voice and Video Traffic

Voice and video traffic from all Horizon IP phones and soft-clients route via Horizon Access SBCs as defined below. Occasionally new Horizon Access SBCs will be added to the list and the change will be communicated via regular channels.

IP Address	Protocol and Ports	Function
88.215.63.171	UDP 5060 TCP 5080	SBC SIP signalling
88.215.63.21	UDP 5060 TCP 5080	SBC SIP signalling
88.215.58.1	UDP 5060 TCP 5080	SBC SIP signalling
88.215.55.33	UDP 5060 TCP 5080	SBC SIP signalling
88.215.54.1	UDP 5060 TCP 5080	SBC SIP signalling
88.215.58.129	UDP 5060 TCP 5080	SBC SIP signalling
88.215.58.161	UDP 5060 TCP 5080	SBC SIP signalling
88.215.58.2	UDP 10000- 60000	SBC RTP Traffic

IP Address	Protocol and Ports	Function
88.215.63.172	UDP 10000- 60000	SBC RTP Traffic
88.215.54.2	UDP 10000 – 60000	SBC RTP Traffic
88.215.55.34	UDP 10000 – 60000	SBC RTP Traffic
88.215.63.22	UDP 10000- 60000	SBC RTP Traffic
88.215.58.130	UDP 10000- 60000	SBC RTP Traffic
88.215.58.162	UDP 10000- 60000	SBC RTP Traffic
88.215.48.0 /25	UDP 5060 TCP 5080 UDP 10000- 60000	SBC SIP signalling SBC RTP Traffic
138.248.17.0/24	UDP 5060 TCP 5080 UDP 10000- 60000	SBC SIP signalling SBC RTP Traffic
138.248.19.128/25	UDP 5060 TCP 5080 UDP 10000- 60000	SBC SIP signalling SBC RTP Traffic

Note: From August 2019 Gamma will not provide SBC IP addresses for individual SBCs. Instead, the entire 88.215.48.0/25 range (88.215.48.1 to 88.215.48.126), 138.248.17.0/24 & 138.248.19.128/25 can be trusted to only host Gamma Horizon SBCs. It is therefore safe to open the specified ports for this IP address range.

SBC Discovery

DNS SRV records are used to provide high-availability service for Horizon IP phones and soft clients. DNS SRV records resolve to two or more DNS A-records, which in turn resolve to IP addresses of Horizon Access SBCs. This mechanism provides each Horizon device with multiple SBCs to send or receive calls.

Domain Name	Record Type	Service Name	Protocol	Port	Function
sipX.unlimitedhorizon.co.uk **Example:** _sip._udp.sip1.unlimitedhorizon.co.uk _sip._udp.sip9.unlimitedhorizon.co.uk	SRV	SIP	UDP	5060	SRV Records for Horizon Voice Signalling Traffic X being the variable for any number (previous version showed 1-8)
siptX.unlimitedhorizon.co.uk **Example:** _sip._tcp.sipt3.unlimitedhorizon.co.uk	SRV	SIP	TCP	5080	SRV record for SIP ALG bypass for Horizon Desktop Clients
sipmX.unlimitedhorizon.co.uk **Example:** _sip._tcp.sipm3.unlimitedhorizon.co.uk	SRV	SIP	TCP	5080	SRV record for SIP ALG bypass for Horizon Mobile Clients
mobile-sipX.unlimitedhorizon.co.uk **Example:** _sip._tcp.mobile-sip1.unlimitedhorizon.co.uk	SRV	SIP	TCP	5080	SRV Records for Horizon Mobile Client Voice Signalling Traffic
nodex.sip.unlimitedhorizon.co.uk **Example:** node4.sip.unlimitedhorizon.co.uk	A	NA	NA	NA	A Records for Horizon Voice Signalling Traffic

Horizon Contact

Channel Partners who are deploying Unified Communications features with Horizon Contact can use the IP address and port information below to configure firewalls.

Domain Names Where Applicable	IP Address	Ports	Function
horizon.contact.gammagroup.co contact.unlimitedhorizon.co.uk	18.98.165.64/26 151.2.128.0/19 88.215.52.205 88.215.52.89	TCP 443	Contact web services (for Agents) Contact web interface App integrations
autologin-horizon.contact.gammagroup.co autologincontact.unlimitedhorizon.co.uk autologincontact2.unlimitedhorizon.co.uk	18.98.165.64/26 151.2.128.0/19 88.215.52.205 88.215.52.89	TCP 443	Contact integration services (for Partners) Portal SSO logins

Sub-domains of the above addresses are also used:

- If using name-based filtering then wildcards *.horizon.contact.gammagroup.co, *.contact.unlimitedhorizon.co.uk and *.autologin-horizon.contact.gammagroup.co must also be added where necessary.

- If wildcards are not supported then add all addresses h0-h5 for all domains, eg. h0.horizon.contact.gammagroup.co

Domain Names Where Applicable	IP Address	Ports	Function
xmpp-horizon.contact.gammagroup.co xmpp-contact.unlimitedhorizon.co.uk tcc.xmpp-contact.unlimitedhorizon.co.uk xmpp-contact2.unlimitedhorizon.co.uk tcc.xmpp-contact2.unlimitedhorizon.co.uk	18.98.165.64/26 151.2.128.0/19 88.215.52.205 88.215.52.89	TCP 443	Webchat integration (for Agents)

Domain Names Where Applicable	IP Address	Ports	Function
	18.98.165.64/26 151.2.128.0/19 88.215.58.192/28 13.41.209.141 18.171.121.114 35.178.47.230	UDP 30000 – 65535	Voice traffic (RTP/RTCP) for WebRTC Agents
	18.98.165.64/26 151.2.128.0/19 88.215.58.192/28 13.42.98.68 18.134.173.134 18.168.231.15	TCP 3478 TCP 5349 UDP 3478 UDP 5349	Voice traffic (STUN/TURN) for Agents
	18.98.165.64/26 151.2.128.0/19 88.215.55.65 3.9.214.229 13.41.93.163 35.177.158.10	Various ports	Contact integration services (to customer systems) Call recording file transfer Email server integration Call flow web services integration Offline reporting

UDP Fragmentation during Horizon communications.

In some instances, the size of the UDP packets transmitted between the Horizon platform and customer handsets will exceed the default 1500-byte payload, when this happens packet fragmentation will occur. It is the responsibility of the Channel Partner and/or End User to ensure that any in-path CPE is able to support UDP fragmentation. It is also advised that a check is made to confirm that any further applications/functions running on the CPE do not interfere with the reassembly of fragmented UDP packets.

If UDP fragmentation is not allowed on CPE network devices the following features may not function correctly.

- BLF (Busy Lamp Field)

- Feature Synchronisation (DND, Call Forward Busy, Call Forward Always & Call Forward Unreachable/No Answer)

- Incoming calls to Horizon devices after a series of call forwards within the same Horizon Company

SIP ALG

SIP Application Layer Gateway (ALG) is common in many of today's routers and in most cases enabled by default on enterprise, business and home broadband routers. Its primary use is to prevent problems associated with the router's firewalls by inspecting VOIP traffic packets, and if necessary, modifying them to allow connection to the required protocols or ports.

On many business and home class routers Active SIP ALG will cause a mixture of problems by adjusting or terminating Horizon traffic packets in such a manner that they are corrupted and cause issues with the service, manifesting in a range of intermittent issues such as; one-way audio, dropped calls, problems transferring calls, handset dropping registration and making or receiving internal calls.

SIP ALGs should be disabled on all CPE routers, we will not accept any faults or issues raised against Horizon if a SIP ALG is enabled.

For instructions on disabling this feature please refer to the specific router user guide. We have a limited selection of instructions for completing this via telnet which are available here.

Desktop client SIP ALG bypass

Summary

For deployments featuring Horizon Desktop Client, on Windows and Mac OS, please ensure that firewalls allow access to Gamma SBCs on TCP port 5080. TCP 5080 is a non-standard port for SIP traffic so SIP ALGs will not inspect and alter the traffic.

Detail

Prior to January 2019 all Horizon Desktop clients used standard SIP protocol and port UDP 5060 to communicate with Horizon SBCs.

Due to its portability Horizon Desktop Client is often used in remote access situations, at home or on public internet connections where SIP ALG may be present, and it is outside the user's control to disable it.

From January 2019 Horizon Desktop client used new DNS SRV records as defined in the SBC Discovery section of this document. These records route SIP traffic to the Horizon Access SBCs via TCP 5080 first choice. TCP 5080 is a non-standard port for SIP traffic so SIP ALGs will not inspect and alter the traffic.

Between January 2019 and August 2019 Horizon Desktop client used DNS records to provide a fallback to UDP 5060 if TCP 5080 was blocked on the customer firewall. This is being phased out due to compatibility issues with the Desktop client.

From August 2019 the Horizon Desktop client will only send SIP signalling to the Horizon SBCs on TCP 5080.

Keep-Alives

Handsets are pre-configured to send UDP keep-alive messages towards the Horizon platform every 45 seconds using the SIP port. These messages keep the firewall pin-holes open which ensures the success of incoming calls.

UDP NAT Timeout

Set UDP NAT Timeout > 572 seconds.

Some routers have been reported to close NAT pinholes despite Horizon phones sending keep-alives every 45 seconds. To protect against this occurring, it is recommended that UDP NAT Timeout on

the router is set higher than the SIP registration refresh interval for Horizon phones. That is higher than 572 seconds.

NAT Port Translation

For Horizon handsets to register correctly, if using a router that requires setting up Dynamic Port Address Translation – Port Multiplexing option must be selected.

DNS

A public DNS service must be available to the Horizon handsets so that the domain names can be resolved to the associated IP addresses. SRV and A record types are used by the Horizon service. As best practice resilience of DNS needs to be considered hence both a primary and secondary DNS service should be configured as part of any deployment.

Gamma's DNS servers are detailed below, please note these can only be used with Gamma access.

Primary DNS Server	Secondary DNS Server
88.215.61.255	88.215.63.255

The LAN

Support for VLANS

Both Cisco and Polycom phones provided as part of the Horizon service have CDP (Cisco Discovery Protocol) and LLDP (Link Layer Discover Protocol) enabled as default on delivery. Yealink Dect supports LLDP only. These protocols, CDP (Cisco proprietary), and LLDP including LLDP-MED (vendor neutral), are link layer protocols used by network devices for advertising their identities and capabilities in order to assist with management of the local area network environment, specifically VLAN segregation.

If you wish to support either of these functions for VLAN configuration/selection on the customer LAN, then you should enable the desired function on the customer's network equipment and disable the alternative option. For example, if you wish to support CDP for a particular end user you should make sure LLDP is not configured as a live option on their network equipment and that CDP is enabled as a live option.

When using LLDP or CDP the Horizon phones will support and use any VLAN ID configured on the customer switching infrastructure (as part of the LLDP and CDP configuration) for both Voice and Data. If the customer wishes to daisy chain laptops or PCs using the switch port on the Horizon phones, any traffic from this port will be entered into the data VLAN.

An example VLAN set-up (using CDP/LLP)

Example Data VLAN: 20

Example Voice VLAN: 30

What we don't support:

- Fixed VLAN ID's
- Static VLAN assignment either directly from the phone or from the core network.
- We cannot enable only one of the VLAN options (either CDP or LLDP). Both will always be enabled on Horizon phones, and it is the customer's responsibility to enable/disable the required function on their network.

Please be aware the Softphone Clients & ATAs do not support VLAN.

Yealink devices support VLAN Tagging on LLDP Not CDP (W52p/W73 & T46U)

Firmware Upgrades

Horizon handsets are pre-configured to check for configuration and firmware updates every evening between 00:00 and 05:00.

Horizon handsets will only download new configuration or firmware files when they detect that a change has been made. Configuration files are typically ~70Kb or less, but firmware files are larger ranging between 3.5 to 57.5MB. Network administrators should consider these file downloads with regard to the bandwidth available on the access circuits the Horizon service runs over.

Device Type	Firmware File Size
Cisco 122	10.0 MB
Cisco 192	31.0 MB
Cisco 232	11.3 MB
Cisco 501	4.2 MB
Cisco 502	4.2 MB
Cisco 504	4.2 MB
Cisco 509	4.2 MB
Cisco 525	11.6 MB
Cisco CP-7832	41.4 MB
Cisco MPP 8841	105MB
Cisco MPP 8851	105MB
Cisco MPP 886	105MB
Polycom 331	3.5 MB
Polycom 335	3.5 MB
Polycom 450	4.1 MB
Polycom 650	3.5 MB
Polycom 5000	3.7 MB
Polycom 7000	11.3 MB

Device Type	Firmware File Size
Polycom VVX 150	34.8 MB
Polycom VVX 201	33.4 MB
Polycom VVX 250	46.2MB
Polycom VVX 310	51.1 MB
Polycom VVX 411	51.1 MB
Polycom VVX 450	46.2 MB
Polycom VVX 500	58.9 MB
Polycom VVX 600	57.5 MB
Polycom Trio 8500	294.3 MB
Polycom Trio 8800	294.3 MB
Yealink W52P	9.2 MB
Yealink W73P	9.2 MB

Mobile Clients Customer Firewall Requirements (R22+)

Since August 2017 Horizon Mobile Clients have used cloud messaging systems from Apple and Google to receive incoming call notifications. In 2019 instant messages will be sent to Mobile Clients in the same way.

When an incoming call is received by a user who is logged into the Horizon Mobile Client on Android or iOS (R22+) Horizon servers will send a notification to Apple or Google's servers. Apple or Google will forward the notification to the device and the app will wake up, alert for an incoming call and will set up the voice call with the Horizon servers if the call is answered.

Any Horizon Mobile Clients (R22+) operating behind firewalls must therefore allow access to Apple and Google push notification servers at the IP addresses and via the ports below.

These rules are derived from advice from Google and Apple. They specify wide ranges of IP

addresses as their push notification servers scale to millions of requests so new servers may be commissioned at new IP addresses in their ranges with no way to provide prior notice.

For the Mobile client to receive push notifications from Apple or Google servers, when running on a phone behind a firewall access must be allowed to Apple and Google servers on the following ports:

Apple
TCP: 443, 5223

Google
TCP: 443, 5228, 5229, and 5230

The connections are outbound originated only, from the phone to the cloud messaging server. The phone will keep the connection alive and set up a new connection when required.

Apple and Google may commission new servers, at new IP addresses at any time to manage the load across the systems. As a result, it is not possible to provide customers with a list of IP addresses to configure the firewall. Push Notification servers are discovered using DNS requests, but these are managed by Operating System processes so, again, it is not possible to state a list of hostnames that could be entered into a firewall that can allow traffic based on configured FQDNs.

Apple provide a straight-forward solution, their servers will appear somewhere in their class A subnet: 17.0.0.0/8

Google, however, only states that the IPs will appear in their ASN 15169. This contains hundreds of IP subnets which would be impractical to input into a firewall. Gamma have summarised the subnets to a more manageable list. This list is subject to change by Google and Gamma will not be notified so use of it is at the maintainer’s own risk.

IP Subnet	Ports	Function
8.0.0.0/10 23.224.0.0/11 35.128.0.0/9 64.0.0.0/4 104.0.0.0/5 128.0.0.0/3 162.216.0.0/13 185.0.0.0/8 172.96.0.0/12 172.192.0.0/10 173.192.0.0/10 192.104.160.0/23 192.158.28.0/22 192.178.0.0/15 199.192.0.0/11 207.223.160.0/20 208.0.0.0/4	TCP: 443, 5228, 5229, 5230	Push Notifications for Horizon Mobile Client – Android These ranges, and the servers behind them are operated by Google. Horizon Mobile clients R22 and up use Google's Firebase Cloud Messaging service to deliver notifications: https://firebase.google.com/docs/cloud-messaging/
17.0.0.0/8	TCP 443 TCP 5223	Push Notifications for Horizon Mobile Client – iOS. These ranges and the servers behind them are operated by Apple. Horizon Mobile clients R22 and up use Apple's Push Notification service to deliver notifications: https://developer.apple.com/library/content/documentation/NetworkingInternet/Conceptual/RemoteNotificationsPG/APNSOverview.html

3rd Party Access – Handsets

- The phones require a DHCP address, hence must have access to a DHCP server.
- (Fixed static IPs are not supported).
- NAT must be used and enabled for the DHCP pool supplied to phones.

Phone RTP port ranges

Horizon phones will send/receive RTP from the following port ranges:

Device	RTP Port Minimum	PTP Port max
Mobile client (Android/iOS) Audio	8500	8599
Mobile client (Android/iOS) Video	8600	8699
Desktop client (Windows/Mac) Audio	8500	8599

Device	RTP Port Minimum	PTP Port max
Desktop client (Windows/Mac) Video	8600	8699
Polycom_xxx	2222	2268
Yealink_xx	16384	16538
Cisco_122	16384	16482
Cisco_232	16384	16482
Cisco_501	16384	16538
isco_502	16384	16538
Cisco_504	16384	16538
Cisco_509	16384	16538
Cisco_525	16384	16482

Horizon with Webex

Horizon with Webex utilises separate SBCs and API gateways. The Webex client apps also require access to Cisco Webex services as detailed below.

Gamma Services:

IP Address Range	Protocols and Ports	Function
151.2.128.0/19	TCP 443	HTTPS APIs
151.2.128.0/19 138.248.17.0/24 138.248.19.128/25	TCP 5082 UDP 10000 – 60000	SIPS signalling, SRTP media

If DNS based filtering is used, then access to the below domains should be allowed:

Domain	Function
*. pub.uhorizon.cloud	Gamma cloud services

SBC Discovery:

DNS SRV records are used to provide high-availability service for Webex client applications. DNS SRV records resolve to two or more DNS A-records, which in turn resolve to IP addresses of Horizon Access SBCs.

In the domain names below each X refers to any digit.

Domain Name	Record Type	Service Name	Protocol	Port
wasXXhjXX.pub.uhorizon.cloud **Example:** _sips._tcp.was03hj01.pub.uhorizon.cloud	SRV	sips	UDP	5082
wasXXjhXX.pub.uhorizon.cloud **Example:** _sips._tcp.was03jh01.pub.uhorizon.cloud	SRV	sips	UDP	5082
wasXXptXX.pub.uhorizon.cloud **Example:** _sips._tcp.was04pt01.pub.uhorizon.cloud	SRV	sips	UDP	5082
wasXXtpXX.pub.uhorizon.cloud **Example:** _sips._tcp.was04tp01.pub.uhorizon.cloud	SRV	sips	UDP	5082

Webex Services:

Destination	Protocols and Ports	Function
See “Webex Service Domains” below	TCP 443	HTTPS signalling and APIs
See “Webex Media Services” below	UDP 5004 & 9000	SRTP media

Destination	Protocols and Ports	Function
Any	UDP 123	NTP, not required if NTP available within customer network
Any	UDP 53 TCP 53	DNS, not required if DNS available within customer network

Webex Service Domains:

Domain/URL	Function
*.webex.com *.cisco.com *.wbx2.com *.ciscospark.com *.webexapis.com	Webex micro-services
*.webexcontent.com	Webex user content storage
*.accompany.com	People Insights Integration
*.sparkpostmail1.com *.sparkpostmail.com	E-mail service
*.giphy.com	GIF image sharing
safebrowsing.googleapis.com	URL safety checking
msftncsi.com/ncsi.txt captive.apple.com/hotspot-detect.html	Internet connectivity checking
*.appdynamics.com *.eum-appdynamics.com	Performance tracking
*.amplitude.com	Testing metrics
*.slido.com *.sli.do *.data.logentries.com slido-assets-production.s3.eu-west-1.amazonaws.com	Slido add-in
*.quovadisglobal.com *.digicert.com *.godaddy.com *.identrust.com *.lencr.org *.intel.com	Certificate revocation lists
*.google.com *.googleapis.com	Notifications to mobile apps

Domain/URL	Function
cdnjs.cloudflare.com cdn.jsdelivr.net static2.sharepointonline.com appsforoffice.microsoft.com	Webex Scheduler for Microsoft Outlook

Webex Media Services:

IP Address Range	Function
66.114.160.0/20 66.163.32.0/19 69.26.160.0/19 114.29.192.0/19 144.196.0.0/16 150.253.128.0/17 163.129.0.0/16 170.72.0.0/16 170.133.128.0/18 173.39.224.0/19 23.89.0.0/16 173.243.0.0/20 207.182.160.0/19 44.234.52.192/26 209.197.192.0/19 210.4.192.0/20 62.109.192.0/18 216.151.128.0/19 64.68.96.0/19	Webex meetings media