CLEVERTOUCH

CLEVERTOUCH NETWORK REQUIREMENTS

The purpose of this document is to quickly assist IT administrators in understanding the basic network requirements (IP's and ports) for each of the Clevertouch services.

Using the information provided below we hope will help with successfully integrating Clevertouch products onto customers networks.

Over-The-Air (OTA) Update Service
- ota.clevertouch.com & ota2.clevertouch.com
- Server IP: 134.213.213.174 & 54.203.29.115
- TCP Port: 80 (HTTP)

NTP Server used on all Clevertouch LUX OS for keeping time in synch
- Server hostname: 2.android.pool.ntp.org
- UDP Port: 123 (NTP)

Cleverstore – On Plus LUX only
The Cleverstore app connects to our servers over port 443 (standard https); The NewRelic and Google Analytics analytic packages use 443 (https) and 80 (http) (but these are not critical for Cleverstore to function)

Cleverstore Hosts:
- prod.sahara-admin.appcarousel.com
- sahara-stage-public.s3.amazonaws.com
- Ports: 80 (HTTP) & 443 (HTTPS)

URL's to whitelist if preferred over the hosts above:
https://prod.sahara-admin.appcarousel.com/api/v1/export-products
https://prod.sahara-admin.appcarousel.com/api/v1/export-categories
https://sahara-stage-public.s3.amazonaws.com

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Lynx **- Annotation and lesson planning software**

Please ensure the firewall permits access to the following websites:

Lynx Hosts:
- auto.saharasupport.com
- registration.saharasupport.com
- Ports: 80 (HTTP) & 443 (HTTPS)

Clevershare 2nd Generation Service and Applications

Important Note: No matter which Clevershare 2nd Generation software or hardware (dongle) being used the Clevershare 2 receiver (server) app on Clevertouch should be activated first.

Network requirement of activation:
1. TCP Port：80 & 443 & 5224
2. DNS：linkmsg.seewo.com/seewo-link/api/v1/register
3. IP：Access using DNS
    a. IP number you will see are likely to see are
        i. Subnet starting 203.xx.xx.xx
        ii. 116.62.84.143
        iii. 101.37.44.92
        iv. 121.199.255.161
        v. 118.178.158.12

Please Note: If activation fails, you can enter the https://linkmsg.seewo.com/seewo-link/api/v1/register via the Clevertouch Browser to check and test whether or not the network connectivity between Clevertouch and the activation server is ok.

Important Note:
Clevershare 2 previously could only work when both the Clevershare receiver (server app on Clevertouch) and the Clevershare client where on the same subnet*, in our latest version of Clevershare 2 receiver v1.0.8.2070 we removed the boundary within our 'Advanced Mode' option within the settings menu of the Clevershare receiver app. This means that the Clevershare receiver and client can now be on totally different subnets on the same LAN, as long as those subnets are routable and the ports are allowed to traverse those subnets. This is accomplished by the new 9 digit code required to be used, it decodes all 32bits of the Clevershare receiver IP instead of just of just the first 13bits as previously.

Software and hardware solution use the same ports, see TCP Ports below.

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TCP Ports between Clevershare 'Server' app and client :

- 7385
- 29736
- 2067
- 39458

We use the above 4 ports for protocol handshake and control signal, each of the above ports are tried one by one until one of them is available.

Clevershare 2 app Video/display mirroring, touch, sound and Airplay services are then transferred between server and client using multiple dynamic ports, which are currently 1000 ~ 65535

TOP TIP: Above ports can be tested if there open or not using via "telnet" command on PC or other network port testing tool.

Subnet limitations for the various versions of Clevershare to work

Clevershare v1.0.6 *(TBC)* and earlier
- Default/normal mode = Clevershare in normal mode (6 digit PIN code) requires for the subnet to be no larger than 255.255.224.0 to work (8190 hosts)
- Advanced Mode = N/A
- **Server and client have to be within same subnet.**

Clevershare v1.0.7.x
- Default/normal mode = Clevershare in normal mode (6 digit PIN code) requires for the subnet to be no larger than 255.255.224.0 to work (8190 hosts)
- Advanced mode = Clevershare in 'Advanced Mode' requires for the subnet to be no larger than 255.248.0.0 to work (524286 hosts)
- **Server and client have to be within same subnet no matter which mode is used.**

Clevershare v1.0.8.2070 version
- Normal mode (6 digit PIN code) requires for the subnet to be no larger than 255.248.0.0 to work (524286 hosts). **Server and client have to be within same subnet.**
- Advanced mode (9 alpha numeric PIN code) , code identifies 'Server' IP, subnet is 0.0.0.0. **Server and client can now be in separate subnets that are routable between each other.**

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MDM – **Mobile Device Management**

There are two areas to be considered for network requirements: -

- **Browser Side** = MDM web portal that the Agent Side communicates to.
- **Clevertouch LUX (Android) Agent Side** = The service running on Clevertouch Android Module which communicates to the Browser Side.

Browser Side:

1. **MDM Application Server:** https://clevertouch.glbth.com – If possible we recommend to whitelist https://*.glbth.com (Port: 443 & dynamic IP)
2. **Location resolve by IP service**: https://pro.ip-api.com
3. **Open Street Map**: https://*.tile.openstreetmap.org
4. **Online chat:** https://static-v.tawk.to
5. **Streaming protocol servers to support "Remote" function:** Webrtc over UDP *.glbth.com (Port: 443 & dynamic IP)
   a. 52.11.103.125
   b. 34.240.200.142
   c. UDP ports range: 30100-40000

Clevertouch LUX (Android) Agent Side:

1. **MDM Application Server:** https: //clevertouch.glbth.com – If possible we recommend to whitelist https://*.glbth.com (Port: 443 & dynamic IP)
2. **Streaming protocol servers:** https://*.glbth.com (Port: 443 & dynamic IP)
3. **Push notification system:**
   - **Primary:** Port 443 to clevertouch.glbth.com or preferably *.glbth.com
   - **Secondary:** Should the primary fail or be too slow uses Google's Firebase Cloud Messaging (FCM), for completeness of setup please read the following and allow the three ports either to all public IP's are just the Google ASN ranges as listed below.
   - **The ports to open are:** 5228, 5229, and 5230. GCM typically only uses 5228, but it sometimes uses 5229 and 5230.
   - **Google ASN:**
     - 104.132.0.0/23
     - 104.132.11.0/24
     - 104.132.141.0/24
     - 104.132.34.0/24
     - 104.132.5.0/24
     - 104.132.51.0/24
     - 104.132.7.0/24
     - 104.132.8.0/24
     - 104.133.0.0/24
     - 104.133.2.0/23

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Name of Applications	TCP/UDP	Ports			Functions
OTA	TCP	80	External	ota.clevertouch.com & ota2.clevertouch.com	OTA http request and file download
		443		134.213.213.174 & 54.203.29.115	
MDM	TCP	443	External	clevertouch.glbth.com	MDM Application Server and primary push notifications
	UDP	30100 to 40000	External	52.11.103.125 & 34.240.200.142	To support "Remote" function
Clevershare 2	TCP	80	External	54.203.29.115 linkmsg.seewo.com/seewo-link/api/v1/register	Clevershare OTA Update
		443			
		7385	Internal	Primary Control signal	
		29736		Control signal #2	
		2067		Control signal #3	
		39458		Control signal #4	
		1000 to 65535		Dynamic ports used for display, touch, sound and more	
UWSD (Clevershare Dongle)	TCP	6060 7886 7887 7888 7889	Internal	Clevershare wireless hotspot	Clevershare service supporting the hardware product via it's own wireless hotspot.
SAMBA (server)	TCP	137 138 139 445	Internal	Clevertouch local IP	Samba for simple file sharing between Clevertouch IFP's
AirClass	TCP	Mainboard : 4860 Android Module : 4880	Internal	Clevertouch local IP	AirClass - voting system accessed from annotation tool either via HDMI1, 2 etc or LUX Android Module input