

Network-Communication: Required Ports & Domains

The following document lists the ports and domain addresses used by Loxone products. If these are blocked, certain functions or services may be limited.

Miniserver

- DNS
 - UDP Port 53
- mDNS
 - UDP 224.0.0.251:5353
- Search/Discovery
 - mDNS
 - Upnp
 - UDP Port 7070-7071
 - Necessary for discovery of Miniserver
 - Miniserver responds to search requests on port 7070. The response is sent to port 7071 and includes the serial number and version of the Miniserver
- Communication with App & Config
 - TCP Port 443
 - TCP Port [HTTP Port set in Miniserver settings]
- FTP
 - TCP Port 21 (Control)
 - TCP Port 20 (Data)
- NTP (Timeserver)
 - UDP Port 123
 - If no custom timeserver is set the Miniserver will try multiple ones and use the one which has the shortest ping time
 - Servers used:
 - *.pool.ntp.org
 - 0.europe.pool.ntp.org
 - time.nist.gov
- Cloud - Outgoing connections
 - Weather Service
 - TCP/HTTP weather.loxone.com:6066
 - TCP/HTTPS weather.loxonecloud.com:443
 - Caller Service
 - TCP caller.loxone.com:80/443
 - Cloud-Mailer
 - TCP mail.loxonecloud.com:443
 - Cloud-DNS
 - UDP dns.loxonecloud.com:7700
 - Push
 - TCP push.loxonecloud.com:443
 - Remote Connect
 - Configuration and IP requests

- Connect.loxonecloud.com:443
- MQTT Connection
 - TCP *.ccbroker.loxonecloud.com:8443
- SSH Tunneling Connection
 - SSH *.loxonecloud.com:22
 - Example: eu.ccd2.loxonecloud.com:22
- Connections to Miniservers via Remote Connect
 - TCP connect.loxonecloud.com:443 (for requesting the correct address)
 - TCP *.dyndns.loxonecloud.com:[Port]
 - **Attention:** Port is assigned randomly! (20000-65000)
 - Example: *.dyndns.loxonecloud.com:30357r
- Data Center Request
 - TCP api.loxonecloud.com:443
 - TCP secureapi.loxonecloud.com:443
- HTTPS Certificate Request
 - ca.loxonecloud.com:443
- Provisioning & Cloud Service Status
 - TCP api.loxonecloud.com:443
 - TCP secureapi.loxonecloud.com:443
- Services (e.g. Spot Prices)
 - TCP services.loxonecloud.com:80/443
- Debug-Monitor
 - UDP Port 7777 (Default)
 - Port can be set in Config
- Auto-Update
 - TCP update.loxone.com:80/443
 - TCP updatefiles.loxone.com:80/443
- Crash-Log Server
 - UDP log.loxone.com:7707
- BacNET
 - UDP+TCP Port 47808
- ⚡ Client/Gateway
 - UDP 7070 – 7077
 - Broadcasts must be allowed
- ⚡ KNX-IP (only Miniserver Gen.1)
 - IGMP Multicasts
- ⚡ Blink synchronization of Network Devices
 - UDP Broadcast to 255.255.255.255:7079
- Online Check
 - The Miniserver regularly checks if he has internet by pinging addresses
 - ICMP
 - The addresses are checked sequentially: if the first one succeeds, the Miniserver assumes it has internet, and no further addresses are checked. If the first one fails, the second is then checked.
 - Addresses:
 - dns.loxonecloud.com
 - icann.org
 - W3c.org

- TechReport
 - Techreport.loxone.com:443
 - Send of a TechReport to Loxone
- Trust
 - Locally
 - TCP Port 443
 - Remotely
 - TCP *.dyndns.loxonecloud.com:[Port]
 - **Attention:** Port is assigned randomly! (20000-65000)
 - Example: *.dyndns.loxonecloud.com:30357

Loxone Config

- Auto-Update
 - TCP update.loxone.com:80/443
 - TCP updatefiles.loxone.com:80/443
- Project Planning
 - Price List updates
 - TCP shop.loxone.com:443
- Local Connection to Miniserver
 - TCP Port 443
 - TCP Port [Defined HTTP Port]
- Remote Connection to Miniserver
 - TCP dns.loxonecloud.com:80/443
 - Starting with V16.3 this changes to TCP connect.loxonecloud.com:443
 - TCP *.dyndns.loxonecloud.com:[Port]
 - **Attention:** Port is assigned randomly! (20000-65000)
- Geo-Coordinates
 - TCP geo.loxonecloud.com:443
- Loxone-Library
 - Update of Templates and Template-Index
 - TCP api.library.loxone.com:443
- Data Center Request
 - Determination which loxonecloud.com datacenter the config should use for connecting to the Miniserver
 - TCP api.loxonecloud.com:443
 - TCP secureapi.loxonecloud.com:443
- Documentation
 - TCP loxone.com:80/443

App

- Local Connection to Miniserver
 - TCP Port 443
 - TCP Port [Defined HTTP Port]
- Detecting Remote Connection to Miniserver
 - TCP dns.loxonecloud.com:80/443
- Remote connection via Remote Connect
 - TCP *.dyndns.loxonecloud.com:[Port]

- **Attention:** Port is assigned randomly! (20000-65000)
- Firewalls may not allow domain based rules and the IPs of the servers behind the domain are not fixed per MS, they are assigned to the MS on the connection attempt:
 - [195.201.222.243](#) / 2a01:4f8:1c1c:57c8::1
 - [168.119.185.175](#) / 2a01:4f8:c010:2f7::1
 - **please beware:** they will change at some point in 2023 to the following
 - [5.75.128.138](#) / 2a01:4f8:1c1c:cbb4::1
 - [88.99.85.148](#) / 2a01:4f8:c012:494f::1
- Remote connection via CloudDNS
 - TCP [IP]:[Port]
 - **Attention:** Both the IP and the Port are dynamically provided by dns.loxonecloud.com, as configured on the Miniserver.
- Miniserver Search
 - UDP Port 7070-7071
 - Upnp
- Auto-Update
 - TCP update.loxone.com:80/443
 - TCP updatefiles.loxone.com:80/443
- News/Infos/Device-Documentation
 - TCP loxone.com:80/443
- Air/Tree Pairing- and Battery-Device-Information
 - TCP extended-app-content.s3.eu-central-1.amazonaws.com:443
- Push Service
 - TCP push.loxonecloud.com:443
- SIP (Intercom Audio)
 - UDP Ports
 - 5060 (default)

Audioserver

- Search/Discovery
 - mDNS
 - Upnp
 - UDP Ports 7070-7071
- Communication with Miniserver
 - TCP Port 7095
 - TCP Port 80
 - TCP Port 443
- Communication with App
 - TCP Port 7091
- PTPv2 Protocol
 - **Ensure the PTPv2 protocol is not blocked. On managed switches, VLANs, or firewalls, verify that PTP packets are allowed to pass through to maintain synchronization.**
- Communication AudioStreams Audioserver <-> Audioserver
 - UDP Port 7788
 - UDP Ports 14000 – 14999
- General Communication Audioserver <-> Audio Extensions
 - Boot & NFS TCP + UDP 111,

- Boot II TCP + UDP 2049
- Exception for internet radio streams:
 - All listening and request ports from / to radio stream stations are assigned dynamically, Radio station provider assigns the http / TCP streaming ports
- Apple AirPlay
 - TCP Ports 7000-7004 AirPlay streaming data
 - **Ensure that additional required ports (typically 7000 and 7100) are open and forwarded throughout the network.**
 - TCP/UDP Ports 49152-65535 Random high ports for dynamic sessions during streaming.
- Online Check
 - **The Audioserver regularly pings the Default Gateway.**
 - **If the Gateway does not respond to these ICMP pings, the Audioserver will automatically reboot.**
- TechReport
 - Techreport.loxone.com:443
 - Send of a TechReport to Loxone

Stereo Extension + Speaker Master

- Communication
 - Mainly on TreeTurbo internaly
- Apple AirPlay
 - TCP Ports 7000-7004 AirPlay streaming data
 - **Ensure that additional required ports (typically 7000 and 7100) are open and forwarded throughout the network.**
 - TCP/UDP Ports 49152-65535 Random high ports for dynamic sessions during streaming.
- Spotify connect
 - mDNS, DLNA, and multicast (UDP ports 5353/1900) for device discovery
 - TCP/UDP 57621 - used for local device discovery and connecting to Spotify Connect devices.
 - TCP 4070 - The default port used by the Spotify application for local communication and streaming

Loxone Intercom

- Search/Discovery
 - mDNS
 - Upnp
 - UDP Port 7070-7071
- Communication with Miniserver
 - TCP Port 7091
- Communication with App
 - TCP Port 7091
 - Video/Audio: UDP Ports are assigned dynamically
 - External Video/Audio: UDP stun.loxonecloud.com:3478

- The Loxone STUN server is used to reflect the public IP to the Intercom which then can be used as connection candidate for video/audio connection.
- As fallback the google STUN server is used:
 - `stun.l.google.com:19302`
- Auto-Update
 - `TCP update.loxone.com:80/443`
 - `TCP updatefiles.loxone.com:80/443`
- TechReport
 - `Techreport.loxone.com:443`
 - Send of a TechReport to Loxone

Intercom Gen.1

- Search/Discovery
 - UDP Port 5000
 - UDP Port 8110 (Video-Module)
 - UDP Port 8112 (Audio-Module)
- Communication with Miniserver
 - UDP Port 8110 (Video-Module)
 - UDP Port 8111 (Video-Module)
 - UDP Port 8112 (Audio-Module)
 - UDP Port 8113 (Audio-Module)
- Communication with App
 - TCP Port 80

Remote Connect (> Version 17.0)

With Miniserver version 17.0 the Remote Connect service was completely reworked and the Miniserver will use different servers for Remote Connect.

Miniserver Requirements

The Miniserver must be able to establish **outbound** connections to the SSH relay servers.

Outbound Connections

Protocol	Destination	Port	Purpose
TCP	*.remcov3.loxonecloud.com	22	SSH tunnel to relay servers
TCP	registry.loxonecloud.com	443	Configuration API (HTTPS)
TCP	eu.ccbroker.loxonecloud.com	8443	MQTT broker communication

Client Requirements

Clients (Loxone App, Loxone Config, Web Browser) connect to the relay servers to reach the Miniserver through the established SSH tunnel.

Outbound Connections

Protocol	Destination	Port Range	Purpose
TCP	*.remcov3.loxonecloud.com	20000-49000	Connection to Miniserver via relay
TCP	connect.loxonecloud.com	443	Connect Service API (HTTPS)

Port Range Details

The SSH relay servers allocate dynamic ports in the range **20000-49000** for client connections to Miniservers. Firewalls must allow outbound TCP connections to this entire port range on the relay servers.