



Tosibox Central Lock Instruction Manual

1. Introduction

The purpose of this document is to illustrate the deployment of Tosibox Central Lock and its most important properties. The creation and administration of Keys for Central Lock and the user interface are also presented here.

Please note that this document concentrates only on the properties of Central Lock. The basics of Key and Lock products are explained in the Key and Lock user manual.

1.1 Central Lock in brief

The Central Lock operates on the same basic properties as the Lock, but has better throughput and encryption capacity. This allows the building of large-scale systems that provide simultaneous access to as many as 4000 Locks and Keys and the devices behind them.

The Central Lock also has three additional features not found in the Lock, but are usually needed in more complex network systems. These are:

- » Concurrent usage of sites with overlapping IP addresses
- » Collecting audit log data
- » Monitoring and alert services to detect and notify the user about connection problems



The benefits of Tosibox



Take in use only in 5 minutes



High sophisticated information security



Flexible and scaling architecture



Operates trustworthy in all internet interfaces

2. Setup

Basic requirements

The deployment of Central Lock has a few basic requirements to operate. It needs:

1. A wired network
2. One non-firewalled public IP-address
3. An Internet connection with speed of at least 10/10 Mbit/s.

Physical installation

After the basic requirements of deployment are met, you can start the physical installation of the Central Lock. Please check that the following items are included in the sales package:

1. Ethernet cable – RJ45, 1 m
2. Power cord
3. Extension power cord

The steps of physical installation:

1. Proper mechanical mounting of device
2. Plugging in the power cord
3. Connecting the network cable to the WAN port of the Central Lock

Serialization

Powering on the Central Lock starts the deployment. After 2 minutes, the Key can be inserted to the Central Lock's USB port. Once the LED light in the Key stops blinking, the serialization is completed and the Key can be removed from the Central Lock.

Configuration

Configuring the Central Lock is done from the Web user interface (see chapter Web User Interface). The Internet connections for the Central Lock are configured in the WAN settings of the Network tab. The protocol can be set to a fixed IP-address or a DHCP-client, in which case the address is fetched from a DHCP server. By assigning the protocol to the static address, the IP-address and subnet mask are written to the fields below. When a static address is used, it is important to set the address of the domain name server.

Deployment

After the serialization and configuration are done, the deployment of Central Lock is completed and Locks, Keys and network devices can be added to the system.

3. System Description

3.1 Overview

The Central Lock makes it possible to build a system consisting of large number of Tosibox Locks and Keys.

3.2 Additional features

Features specific to the Central Lock can be found here.

1. Translation of networks with identical addresses. Using this feature it is possible to translate real IP addresses of the Lock and its LAN devices to different, configurable IP addresses. This feature enables using the same IP address range for several Locks so that the Locks and their devices can be used simultaneously with the Central Lock or a Key.
2. Audit log data collection and connection monitoring. The Central Lock collects log data about the events of serialized Locks. This feature logs the events of the Central Lock itself and also the events of any serialized Locks and sub Locks. Log collection and monitoring can be enabled from the Settings -> Industry settings view of both the Central Lock and the Locks that are expected to report events. Only Locks from which log data is desired should have the logging enabled.
3. Connection monitoring and alerts. The Central Lock can be set to send email alerts for connections being established and closed. The alerts can be set for any or all serialized Locks. Activating alerts does not require any additional services and can be done from the Settings -> Alerts view.

In other respects the functionality and usage of the Central Lock is identical with other Lock devices in the Tosibox product family. Please see Lock documentation for more detail.

3.3 System

Central Lock allows using up to 4000 serialized Locks and Keys simultaneously. First the Key is serialized with all Locks to be connected. The serialization process is presented in the Key and Lock User Manual. Serializing a Key to the Central Lock is carried out in the same way, but during the process the connection type is defined as L2 or L3. In the case of a L2 connection, a Lock to Sub Lock relationship is created, which means that both Locks are in the same network. Selecting L3 creates a routed connection where the Lock and the Central Lock have their own IP sub networks. If the L3 connection is chosen, the Key connection type must also be L3. Every serialized Key uses a bridged (L2) or routed (L3) connection. The bridged Key connection allows access to a specific LAN network only. The routed L3 Key connection allows the selection of multiple LAN networks that are bound and routed.

The desired connection type is selected in the Web user interface by clicking the Edit Tosibox Devices button. The default connection type for Keys serialized to a Central Lock is L3. More Keys to the Central Lock can be serialized in the same way as they are to a Lock.

3.4 Connecting Central Lock to LAN

The Central Lock can be connected to an existing LAN network in two ways. It can be used as a router or it can be connected alongside an existing router. ** If the Central Lock is used as a router, a DHCP server must be assigned to the specific LAN. In this situation the remote sites can be accessed from the LAN network of the Central Client. In the other situation, when the Central Lock is not acting as a router, the DHCP server is usually disabled. In this case, accessing remote sites requires opening a Key connection to the Central Lock or static routes must be configured to the user's computer.

3.5 Administration of Keys

It is possible to create a backup from a Key serialized to the Central Lock (see Lock and Key manual). Serializing new Sub keys also works in the same way as other Tosibox products. The Backup and Sub Keys of the Central Lock can be administrated from the Key user interface through the Manage Keys menu.

The Master Key has full privileges and it can be used to serialize additional Keys to Locks for deployment. An empty Key that is first serialized with a Lock becomes the Master Key for that Lock, and additional Master Keys can be created with the Key backup function.

A sub Key has restricted rights and it cannot be used to serialize additional Keys nor take new Locks into use. Key grouping can be used to help manage a large number of Keys. The groups are visible only in the Key user interface. A single Key can belong to only one group and it is currently not possible to create nested groups. **/

4. Web User Interface

You can login to the Central Lock Web user interface with an Internet browser using any LAN port address that your computer belongs to or by using address <http://172.17.17.17> when directly plugged in to the service port. There is a single access level, admin, and the default password has been delivered along with the installation of the Central Lock.

4.1 Status view

The Status view presents basic information about the network configuration and all serialized Locks, Keys and network devices.

Clicking Show/hide IP ranges either shows or hides information about static and dynamic IP address ranges of the LAN network. New devices are added either manually by clicking the New network device button or automatically by clicking the Scan for LAN devices button, which searches for all the devices inside the LAN networks of the Central Lock. The network device list can be cleared by clicking Remove all devices.

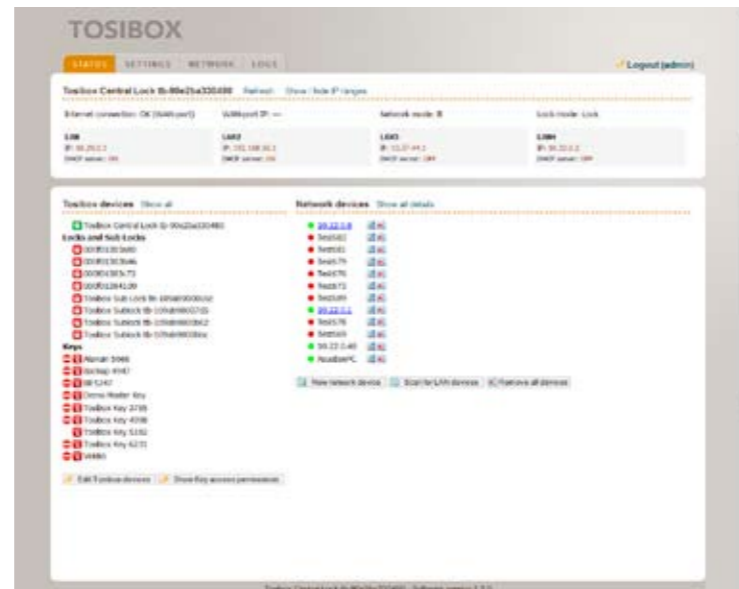
The Edit Tosibox devices button (located near the bottom) opens a view where you can rename items, prevents access to key connected devices that are connected to a Lock's network, select an L2 or L3 connection type, define a static IP address for the Key and select LAN(s) accessible by the Key. **

4.2 Settings view

The Settings tab makes it possible to change the password of the admin account, restart the Central Lock, remove all the serializations of the Central Lock, change the industrial settings, set email alarms and update the software.

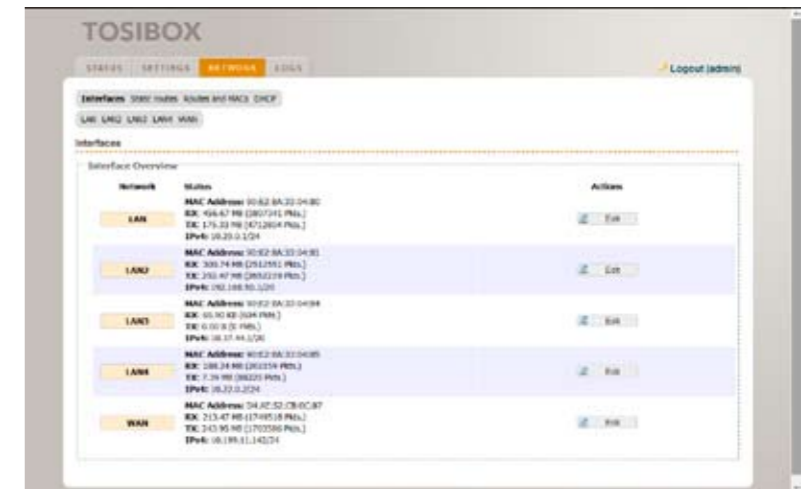
The industrial setting makes it possible to:

- » Change automatic discovery of the LAN devices
- » Allow remote support from Tosibox Ltd.
- » Enable logging
- » Prevent network device access to the Internet
- » Prevent VPN access from Tosibox to the Mobile Client
- » Prevent traffic between the Sub Locks serialized to the Central Lock
- » Limit LAN device traffic to certain MAC or IP addresses
- » Force computers using the Key to route all Internet traffic through the Central Lock



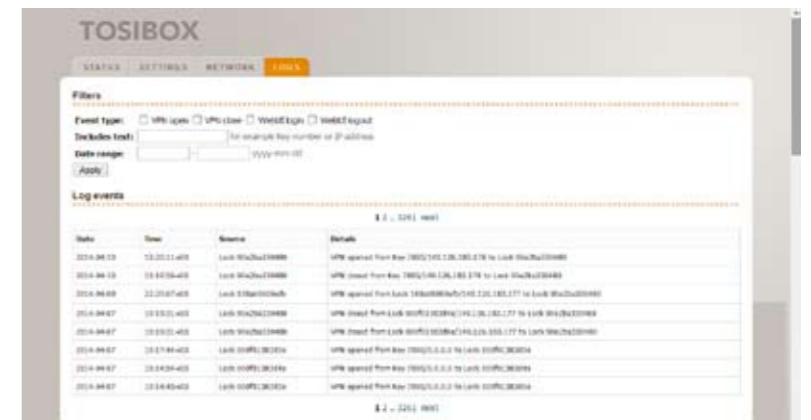
4.3 Network view

The Central Lock network settings can be edited in the Network tab. The Interfaces view shows the settings for LAN and Internet connections. A section inside the LAN interface allows for DHCP server configuration. The Static routes view displays all configured static routes. In the Routes and MACs view there are all the routes and MAC addresses known by the Central Lock. The DHCP view lists active DHCP leases of the Central Lock and IP addresses bound to the MAC address.



4.4 Logs view

The Logs tab contains the log events from the Central Lock and its serialized locks. Log events can be filtered by event type, text match and date. Logging is configured via Central Lock's Settings -> Industry settings view and from the same view of the serialized Locks.



5. Maintenance Instructions

5.1 Checklist for different situations

The Key's connection window does not show the connections:

- » The computer is not connected to the Internet.
- » The Key is not serialized to the Lock.
- » The Lock does not have an Internet connection or is not connected to the Tosibox AC adapter

The Lock connection in the window remains yellow:

- » The Key has found a Lock, but a VPN connection has not yet been established.

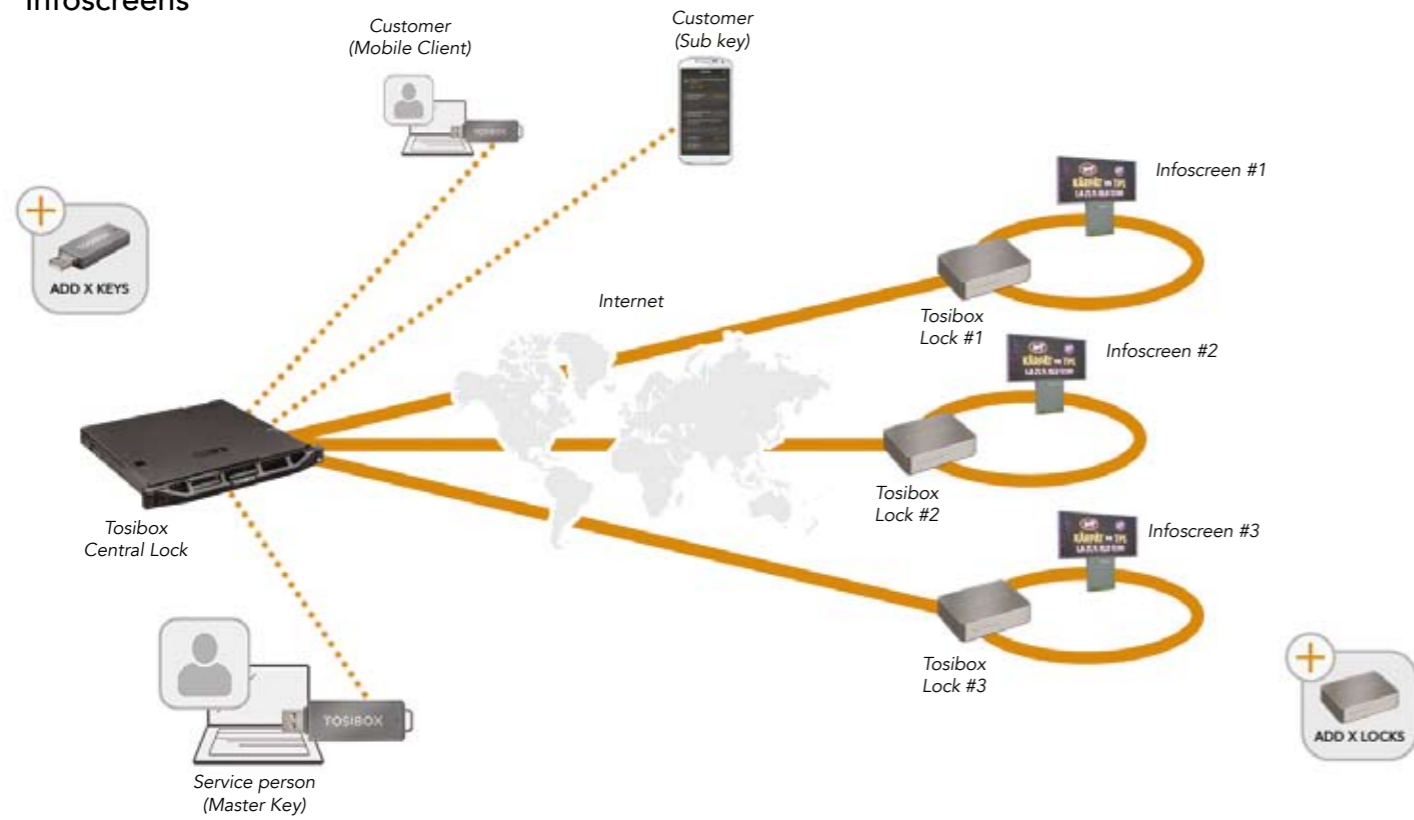
The Internet browser opened by the Key does not show the device connections or the Lock connection in the window remains red:

- » Make sure the controlled devices are connected to the Lock.
- » In case the controlled device is connected to the Lock wirelessly, use the Ethernet Service Port to
- » Log in to the Lock. Check that the wireless connection is enabled and that the Lock and the Controlled device has the same password and encryption settings.
- » Make sure the controlled device has a DHCP-service. If not, add the device in the device list of the Lock and specify the IP-address of the device.

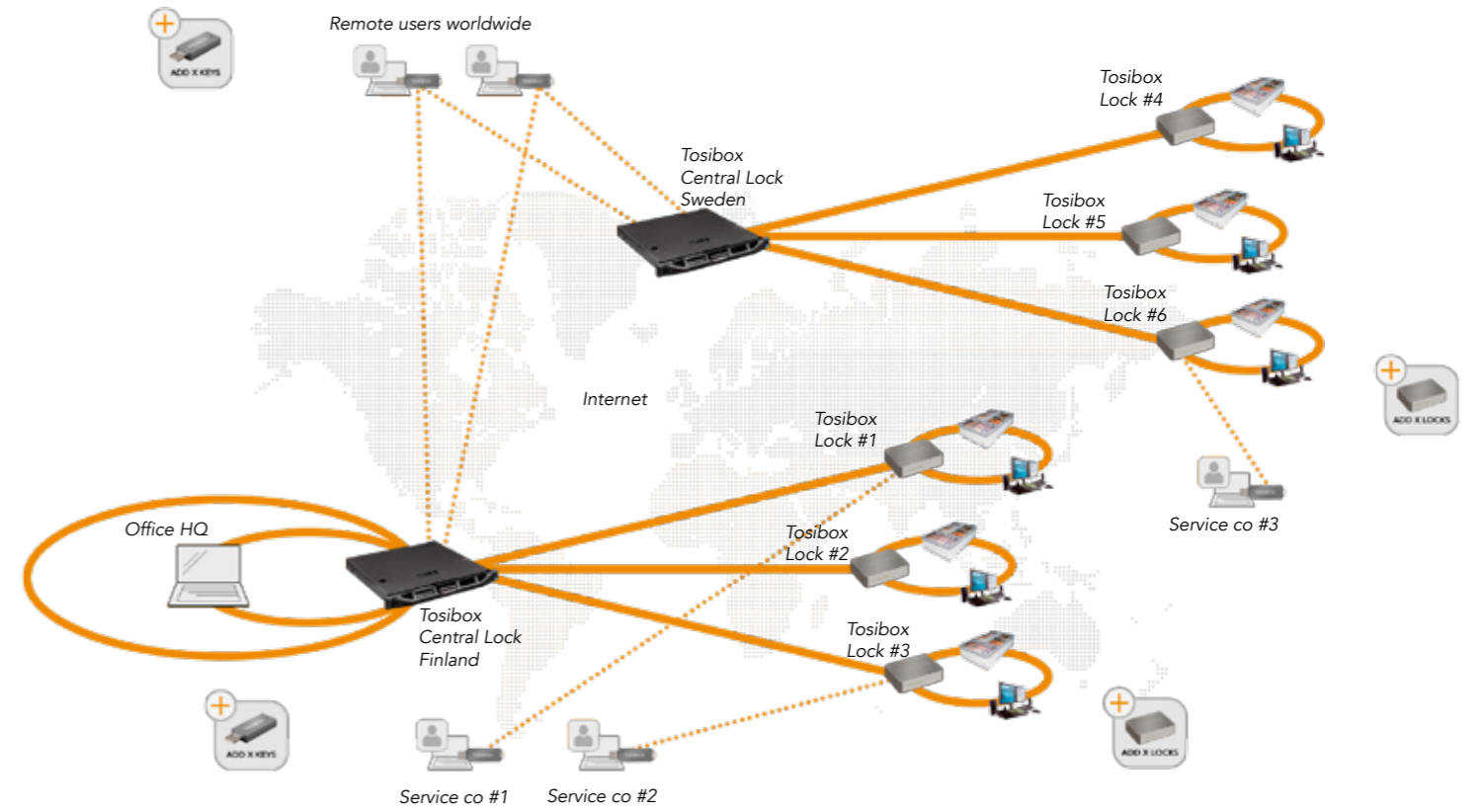
Visit <http://help.tosibox.com> for more information

6. Central Lock Use Case examples

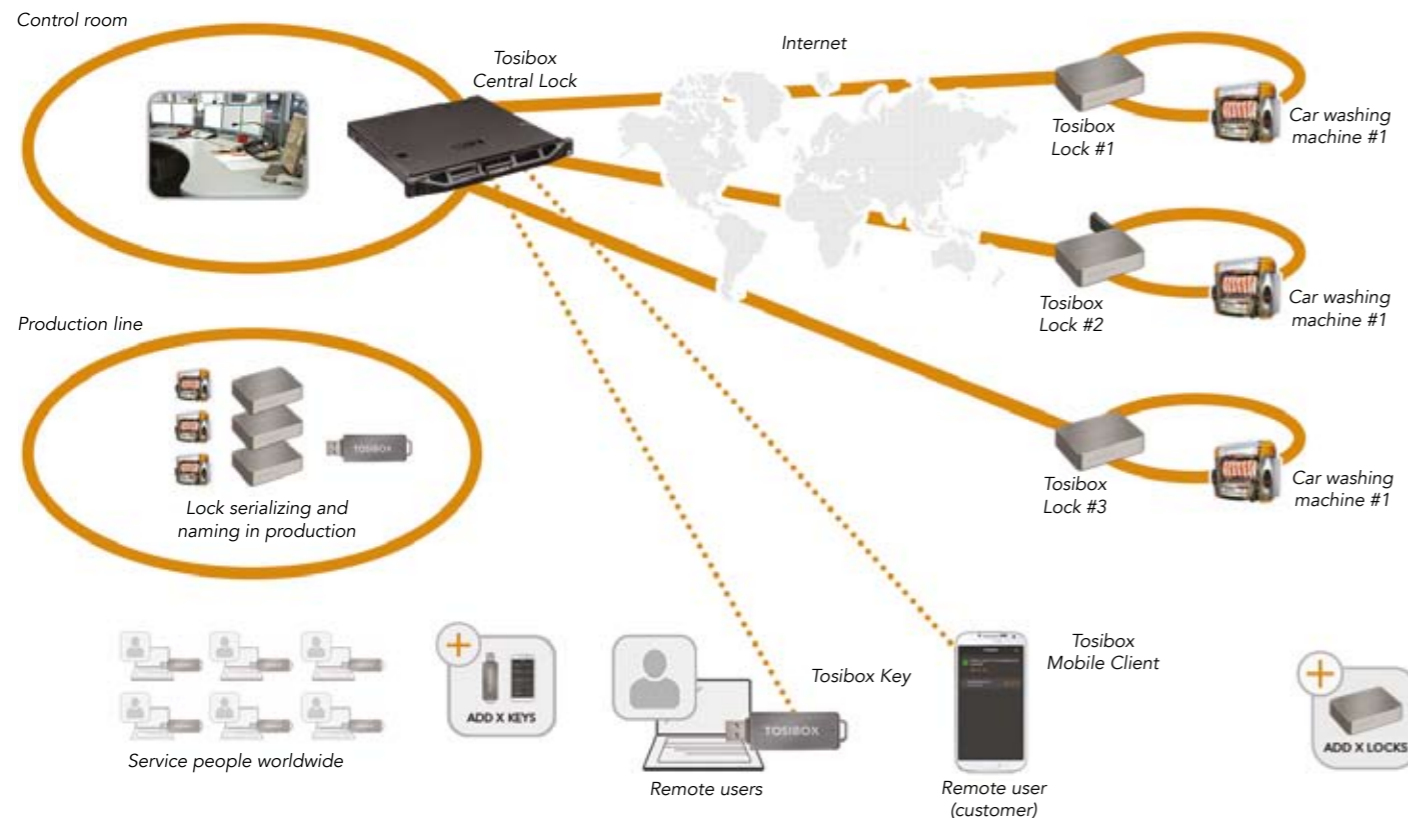
Infoscreens



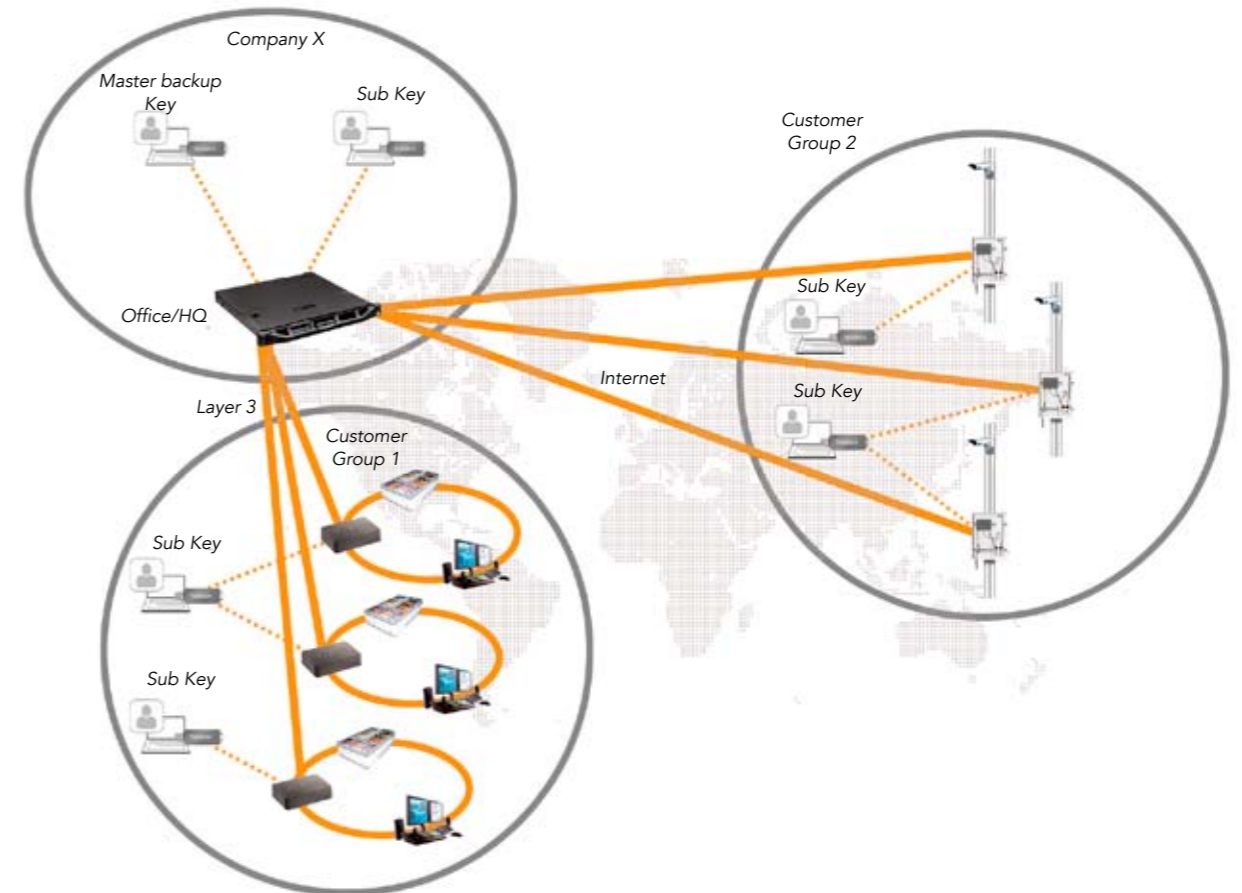
Central Locks on multiple sites



Car washing machine



Multiple customer groups



7. Technical Data

Properties

- » One 1 Gbit/s WAN ports
- » Four 1 Gbit/s LAN ports
- » Over 700 Mbit/s encryption throughput
- » 1000 concurrent remote connections per LAN network
- » Encryption and authentication PKI, 1024/2048 bit RSA
- » Data encryption TLS, Blowfish-128-CBC/AES-256-CBC

Physical properties:

- » 1U (rack unit) for 19" rack cabinet (rack rails included)
- » Length 430 mm / width 483 mm / height 43 mm

Environmental conditions:

- » Operational temperature +10... +30
- » Humidity 20% ... 80% non-condensing
- » Power consumption max 250 W
- » Input voltage 90 ... 264 V AC
- » Input frequency 47 --- 63 Hz

8. Glossary

DHCP	Dynamic Host Configuration Protocol
Gbit/s	Gigabits per second
Hz	Hertz
IP	Internet Protocol
LAN	Local Area Network
LED	Light-Emitting Diode
Mbit/s	Megabits per second
mm	Millimetre
PKI	Public Key Infrastructure
TLS	Transport Layer Security
USB	Universal Serial Bus
V	Voltage
VPN	Virtual Private Network
W	Watt
WAN	Wide Area Network
L2	Layer 2, bridged connection type
L3	Layer 3, routed connection type



9. Links & Contacts

- » www.tosibox.com
- » help.tosibox.fi
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