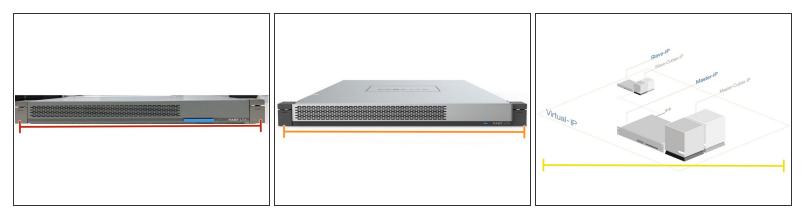


SVHT - Install a Silent Cube System H1000 Pro

Written By: Thomas Kunath

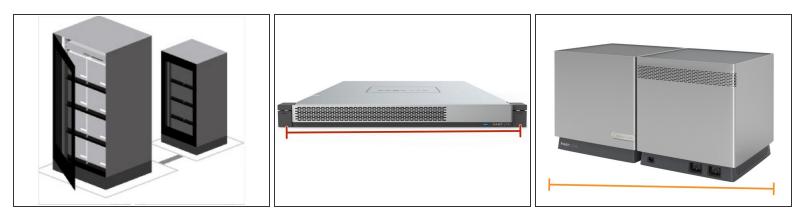


Step 1 — General Information



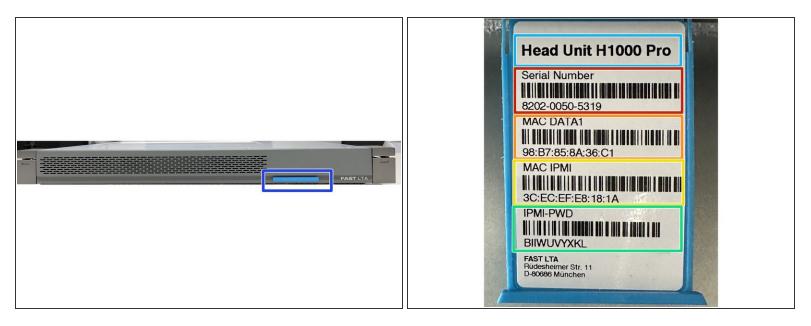
- ③ A Silent Cube System always consists of a Head Unit and a Silent Cube.
- The Head Unit is the bridge between the Silent Cube storage units and your network.
 - The FAST LTA operating system runs on the head unit and is used to administer and manage the system. The head units are always delivered pre-installed.
 - The Head Unit caches the data that is written to or read from the Silent Cube.
- The Silent Cube is the revision-proof storage unit. The administration of the connected Silent Cubes is done via the Head Unit.
 - Up to 128 Silent Cubes, of different sizes can be connected to a Head Unit.
- The systems can be operated in a replication network to improve reliability. A head unit and the same number of cubes are required on both sides.

Step 2 — Hardware Preparation Rackspace



- **1 HE** rackspace for the H1000 Pro Head Unit
- 1 HE rackspace for each Silent Cube DS or DS Pro. Silent Cube DS systems are installed directly with Rack rails and do not require a rack base.
- 6 HE rackpace for a Silent Cube Classic. Silent Cube Classic require a floor on which they can be placed. Up to 4 Silent Cube Classic fit on one rack floor.

Step 3 — Head Unit Information



- All H1000 Head Units have a pull-out card on the front panel that contains the following information.
- Head Unit Type
- Serial number of the system e.g. for support cases
- MAC address of the data bond
- MAC address of the installed IPMI / ILO board
- Default password for the configuration of the IPMI board via the system BIOS of the machine

Step 4 — Mounting the devices



- Please assemble the units as described in the Quick Start guides provided.
- If you require further documentation for the installation, we will be happy to send it to you.
- Attached you will find the mounting instructions for the rail set Mount Rail Set.pdf

Step 5 — H1000 Pro - What is in the box



- H1000 Pro preinstalled
- 3 different GIBIC sets for connecting the cubes and the network
- Rail set
- RJ45 LAN cable
- 2 power cords

Step 6 — What is in the box - GIBIC Sets



- 4x 10 Gbit SFP+ Gibics
- 4x 10 Gbit RJ45 Gibics for Copper Ethernet
- 2x 1 Gbit RJ45 Gibics for Copper Ethernet

Step 7 — LAN Interfaces - Connection to LAN

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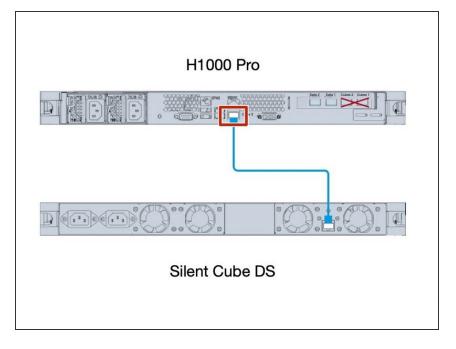
- The head unit has 2 DATA interfaces for connection to your LAN.
- It is not necessary to wire both LAN ports. If no redundancy is required, only 1 port can be wired.
- If you want a redundant connection to your network, then connect both DATA ports
- ③ Both interfaces are configured in active / backup mode. Only one interface is active. The other interface takes over, with the same IP address and MAC address, if the first interface fails.
- If you have a **1GBit network**, the two 1Gbit Ethernet modules must be plugged into the LAN ports.
- (i) For a **10 Gbit connection**, either the two 10 Gbit **Ethernet or the SFP+** modules can be used.
- ⚠ The 10 Gbit modules are not backward compatible to 1Gbit.

Step 8 — LAN Interfaces - Connection to Cubes



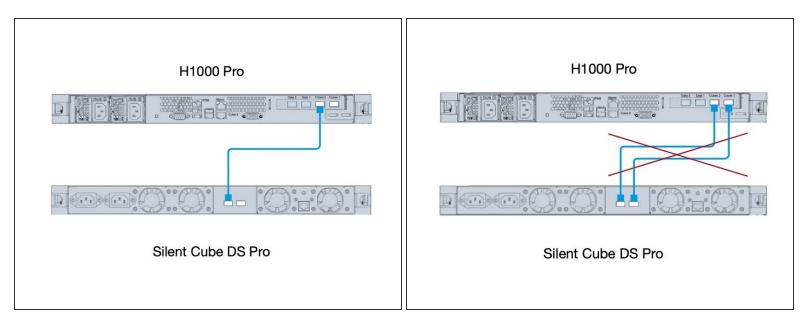
- ③ The H1000 Pro Head Unit has 3 Cube network interfaces with different features.
 - Cube 1 Gbit Interface
 - Cube 10 Gbit Interfaces
- \triangle Only 1 interface is active.
- ▲ If you want to connect Silent Cube Classic and Silent Cube DS Pro in one network, you need a switch that supports both 1 GBit and 10 Gbit.

Step 9 — Direct 1 GBit Connection for Silent Cube DS or Silent Cube Classic



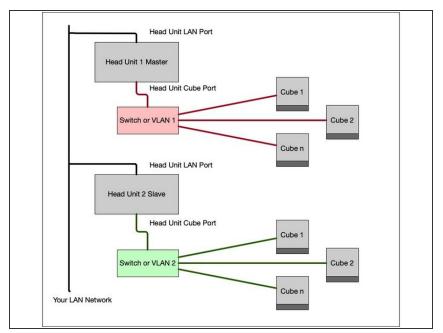
 Use the 1GBit LAN Connector to connect to Silent Cube DS or Silent Cube Classic Systems

Step 10 — Direct 10 Gbit Connection for Silent CubeDS Pro



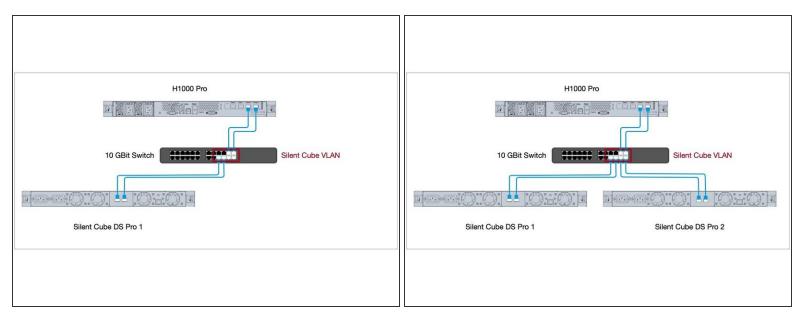
- Use 10 Gbit Cube Interface on both machines
- △ Direct cabling of both 10 GBit ports is not allowed

Step 11 — Connect Multiple Silent Cube Systems



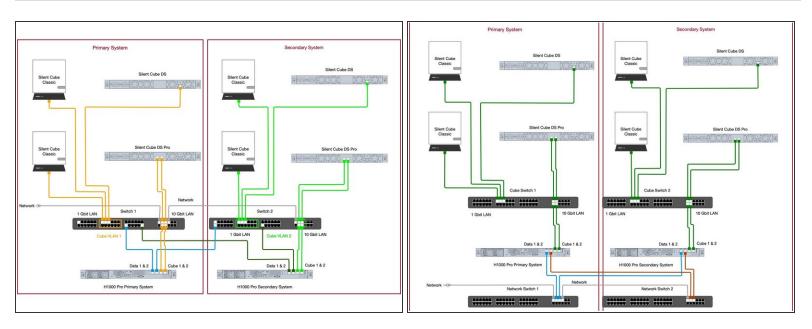
- If you want to connect several Silent Cube or Cube DS to one Head Unit, you need either a dedicated switch between the head unit and the connected cubes, or a dedicated VLAN per head unit.
- In this VLAN, only the cube port of the Head Unit and the Cubes of this system may be connected. The VLAN must not have any connection to the customer network.
- In the case of a replicated system,
 2 VLANS are required, which must also have no connection to each other.

Step 12 — Redundant 10 Gbit Cabling



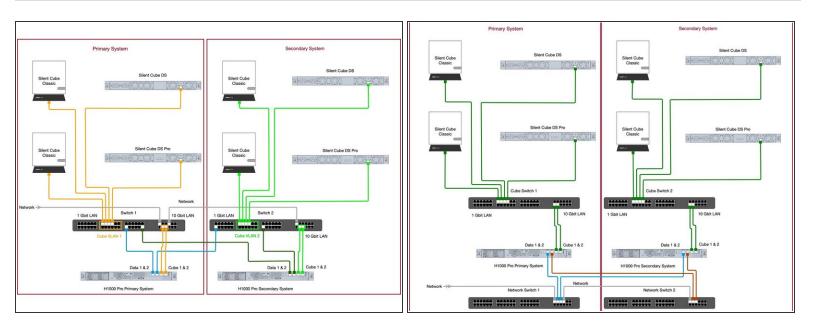
- ▲ A 10 Gbit switch is mandatory here. The ports of the head unit are designed as active / passive. Only one port is active during operation
- Depending on the switch ports, please use the two 10 Gbit Ethernet Gibics or the two 10 Gbit SFP+ Gibics in the two cube ports of the head unit.

Step 13 — Cabling between Head Unit and Cubes mixed 10GBit



- Itere is an example with redundant cabling between multiple Cubes and Head Unit and different cube types and 10 Gbit connection.
- In the first example, the network switches are used with VLANs.
 - A Here, each Silent Cube system has its own VLAN which is separate from the rest of the network.
- In the second picture you can see a classic setup with separate switches for the cube network and LAN. Here you don't need VLANs, because the switches are independent.

Step 14 — Cabling between Head Unit and Cubes mixed 1 GBit



- Itere is an example with redundant cabling between multiple Cubes and Head Unit and different cube types and 1 Gbit connection to all Cubes
- ③ This configuration makes sense if, for example, you want to move old cubes to a Silent Cube DS Pro. In this case, you simply create an additional port in the VLAN and connect the DS Pro to it.
- ③ As in the previous example, once with a VLAN solution and once with two separate switches for the Silent Cube network

Step 15 — Setup And Configuration



△ Connect the Data ports to your network. Do not connect a cube to the system yet.

- Now connect both power supplies to a power otulet. The machine will now boot automatically.
 Depending on the type of head unit, this takes about 2 minutes.
- The network card of your laptop must be configured so that it receives an IP address via DHCP.
 This is the default setting in most cases.
- Connect your laptop to the 1Gbit cube port of the head unit
- You should now receive an IP address from the cube network of the head unit. (10.255.255.x)
- Now use your browser and go to the address <u>https://10.255.255.254</u> and the login page of the system should appear.
- Now log in with the default account. Account: admin, Password: adminadmin

Step 16 — Setup And Configuration

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- As the head unit does not currently have a cube connected, it is looking for a cube. End the cube search with Abort
- ② You should now see the overview page of the system. There you will see an error message that no cube is connected - this can currently be ignored.

Step 17 — Setup Network

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- Go to Network to configure the IP settings for the system
- To do this, uncheck the "Use DHCP" box.
- Now set the required data such as IP address, network mask and gateway.
- Please note that a proper time server (NTP) is set. Since archiving data requires expiration times, a time server is essential.
 - The time server can be an NTP server in your network, or e.g. the DNS server or AD controller.

Step 18 — Setup Network

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- If possible, the network segment for the silent cubes should not be changed. This is only necessary if it overlaps with the network segment in which the cube system is operated.
- Save the settings with "Save"

Step 19 — Checking The System



- Now connect the Cube to the Cube LAN interface of the Head Unit.
- Now plug in the two power connections of the Silent Cube.
- The Silent Cube will now boot. It takes about 2 minutes.
- Now you should be able to reach the system via https://<Your IP address> using the browser.
- Login to the system with admin / adminadmin
- You should now see a grey cube under General Information. (Grey = unused)

Step 20 — Additional Work For A Replicated System

- If you have a second system, you must also complete these steps for the second Head Unit.