StoneGate™

Ips

StoneGate™
IPS-3200 Series

Appliance Installation Guide

STONESOFT

Secure Information Flow

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Revision: SGAIG_IPS-3200_Series_20111010

Introduction

Thank you for choosing Stonesoft's StoneGate™ appliance. This guide provides instructions for the initial hardware installation and the maintenance of the IPS-3200 Series appliances. See *Product Documentation* (page 5) for information on other available documentation.

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Contents

⚠ **Caution –** Read the *Safety Precautions* (page 5) before you conduct any installation or maintenance operations on the appliance.

Installation Procedure

> **Note –** You must have a working Management Center on a separate server to bring the appliance(s) operational. See the *StoneGate Management Center Installation Guide*.

The appliance installation involves the following mandatory steps:

1. Configure the IPS element in the Management Client, and save the initial configuration on a USB memory stick. See the *IPS Installation Guide*.

Management Client → Management Server → Initial Configuration File → USB Memory Stick
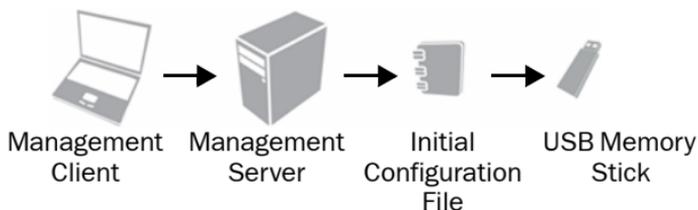
2. If the Solid State Disk (SSD) is not pre-installed in the appliance, install the SSD. See *Installing the Solid State Disk* (page 13).
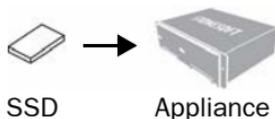
SSD → Appliance

3. Install an express module in each slot on the appliance. See *Installing Express Modules* (page 14).

Express Modules → Appliance
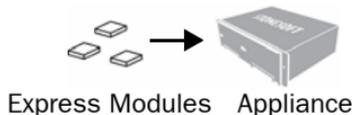
4. Install the appliance into a rack and connect the cables. See *Rack-Mounting* (page 15) and *Connecting the Cables* (page 21).

5. Insert the USB memory stick in a USB port on the appliance, and turn on the appliance to import the initial configuration. See *Initial Configuration* (page 25).

USB Memory Stick → Appliance
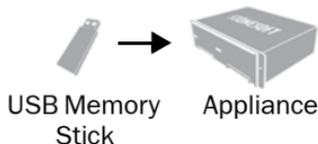
Product Documentation

Press `F1` in any Management Client window to view the *Online Help*.

All PDF guides are available:

- On the Management Center CD-ROM (in the `Documentation` folder)
- At the Stonesoft website at http://www.stonesoft.com/en/support/technical_support_and_documents/manuals/

Install the free Adobe Reader program to view the PDF documents (available at www.adobe.com/reader/).

Safety Precautions

Follow these safety precautions whenever working with electronic equipment.

Electrical Safety Precautions

Basic electrical safety precautions should be followed to protect yourself from harm and the appliance from damage:

- Be aware of the location of the power on/off switch as well as the room's emergency power-off switch, disconnection switch, or electrical outlet. If an electrical accident occurs, you can then quickly cut power to the system.
- Do not work alone when working with high-voltage components.
- Before removing or installing main system components, be sure to disconnect the power first. Turn off the system before you disconnect the power cord.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply cord must include a grounding plug and must be plugged into a grounded electrical outlet. Use only the cord supplied with the appliance.
- The power cord plug cap that plugs into the AC receptacle on the power supply must be an IEC 320, sheet C13, type female connector.

- If you have to replace the motherboard battery, install it the same way as the original battery. Make sure that the positive side faces up on the motherboard. This battery must be replaced only with the same or an equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.
- Do not open the enclosures of power supplies or SSD Drive to avoid injury.

General Safety Precautions

Follow these rules to ensure general safety:

- Keep the area around the appliance clean and free of clutter.
- The appliance weighs approximately 13 kg (29 lbs.) when fully loaded. When lifting the appliance, two people at either end should lift slowly with their feet spread out to distribute the weight. Always keep your back straight and lift with your legs.
- We recommend using a regulating uninterruptible power supply (UPS) to protect the appliance from power surges, voltage spikes and to keep your system operating in case of a power failure.

Power Supplies

Appliances with DC Power Supply

- The appliance must be used in a Restricted Access Location and the users must be well-trained to operate it.
- The socket-outlet for pluggable equipment must be installed near the equipment and must be easily accessible.
- Appliance inlet must have SPS approval or have min. 15 AWG wire provided for the power supply.
- The Mains Supply plug on the power supply cord is the disconnect device of the appliance. To disconnect the appliance, you must first disconnect the mains and then disconnect the ground.

Appliances with AC Power Supply

- The appliance inlet is the disconnect device.

ESD Precautions

Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. Use a grounded wrist strap designed to prevent static discharge.

Note – Use a UPS (Uninterruptible Power Supply) in critical environments with your StoneGate appliance. If after a brief power outage your appliance only partially starts up (for example, the power light is on, but the NIC LEDs are off and the appliance does not connect) turn the appliance off for five seconds and then back on.

Laser Precautions

Class 1 Laser Product

Caution – Invisible laser radiation is emitted from the end of fiber cable and from aperture of the port when no fiber cable is connected. Do not stare into the beam and avoid direct exposure to the beam.

Operating Precautions

Care must be taken to assure that the appliance cover is in place when the appliance is operating to ensure proper cooling. If this rule is not strictly followed, the warranty may become void. Do not open the power supply casing. Power supplies can only be accessed and serviced by a qualified technician of the manufacturer.

Operating and Storage Temperatures

The allowed operating temperature of the appliance is +5...+35°C. The allowed storage temperature is -20...+65°C. Do not operate or store the appliance in temperatures outside these limits. If the appliance or the express modules have been stored in temperatures below 0°C or above +40°C, allow for 2 hours to bring the appliance and the modules to normal operating temperature before turning on the appliance. Otherwise, the appliance or the modules may be damaged.

Lithium Battery Precautions

⚠️ **Caution –** The battery must be replaced by authorized service personnel only. Danger of explosion if battery is incorrectly replaced. Replacement battery must be same or equivalent type recommended by the manufacturer. Used batteries must be discarded according to the manufacturer's instructions. Short-circuiting the battery may heat the battery and cause severe injuries.

For California:

Perchlorate Material - special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

This notice is required by California Code of Regulations, Title 22, Division 4.5, Chapter 33: Best Management Practices for Perchlorate Materials. This product/part includes a battery that contains Perchlorate material.

Unpacking the Appliance

Inspect the box the appliance was shipped in and any other boxes included in the delivery. If the Solid State Disk (SSD) is not pre-installed in the appliance, the SSD is delivered in a separate box. The express modules are always delivered in separate boxes. Note if any of the boxes are damaged in any way. If the appliance itself or any components delivered with the appliance show any damage, file a damage claim with the carrier who delivered the appliance or the components.

Do not remove the anti-tamper tapes on any part of the appliance.

Front Panel
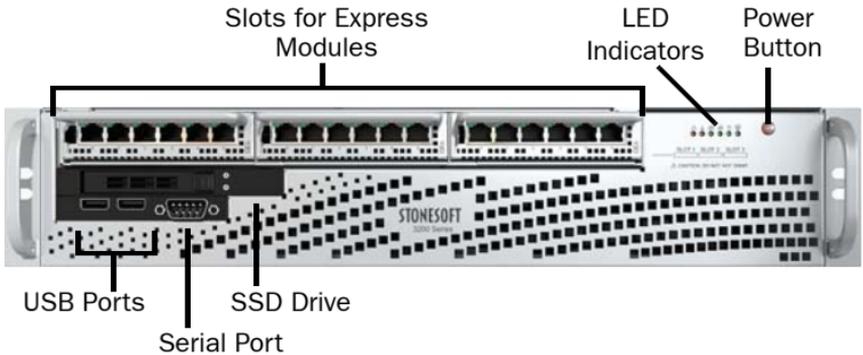
On the front panel, there are slots for the express modules, a Solid State Disk (SSD) Drive, two USB ports, and a serial port. There are two more USB ports on the back panel of the appliance. See *Back Panel* (page 12).

The front panel also has six LED indicators and the Power button. The status of the Power button and all the indicators on the front panel (including the indicators for the SSD Drive) are explained below. See the separate *Express Module Guide* delivered with the appliance for information on the port indicators for the express modules.

Power Button

Table 1 Power Status

Status	Explanation
Green	Indicates power is being supplied to the system's power supply unit. This LED is illuminated when the system is operating normally.

LED Indicators

The front panel has six LED indicators in the upper right corner. The LEDs provide you with critical information related to different parts of the system.

Table 2 Front Panel LEDs

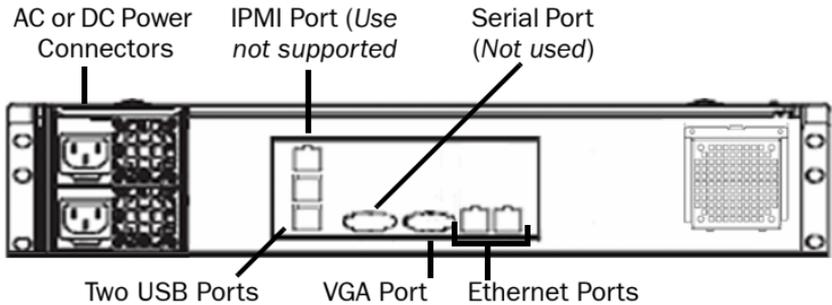|	
⚠	Indicates that a power supply cable is detached.
~Ȯ~	When flashing, indicates a fan failure. When continuously on, indicates an overheat condition, which may be caused by cables obstructing the airflow in the system or the ambient room temperature being too warm.
品1	Indicates network activity on the onboard Ethernet interface 1 when flashing (the interface is on the back panel of the appliance).
品0	Indicates network activity on the onboard Ethernet interface 0 when flashing (the interface is on the back panel of the appliance).
🛢	Indicates hard drive activity when flashing.
💡	Indicates power is being supplied to the system's power supply units. This LED is illuminated when the system is operating normally.

SSD Drive Indicators

The indicators for the Solid State Disk (SSD) Drive are explained below.

Table 3 SSD Drive Indicators

Indicator	Status	Explanation
Power	Blue	A Solid State Disk is in the drive.
Disk	Unlit	This indicator is not currently used.

Back Panel

AC or DC Power Connectors   IPMI Port (*Use not supported*   Serial Port (*Not used*)

Two USB Ports   VGA Port   Ethernet Ports

The connectors and ports on the back panel are explained in *Connecting the Cables* (page 21).

The LED indicators for the two fixed Ethernet ports are explained below.

Fixed Ports

Activity ———— Link

Table 4   Indicators for Fixed Ports

Indicator	Color	Explanation
Activity	Yellow	Link ok, blinks on activity.
Link	Unlit	No link or the speed is 10 Mbps.
	Green	Speed is 100 Mbps.
	Amber	Speed is 1 Gbps.

Installing the Solid State Disk

If the Solid State Disk (SSD) is not pre-installed in the appliance, you must first install the SSD.

> ⚠ **Caution –** We recommend using a grounding strap when handling an SSD. Uninstalled SSDs are sensitive to ESD damage.

▼ To install the Solid State Disk

1. Locate the Solid State Disk included in the delivery package.
2. Locate the Solid State Disk Drive on the appliance's back panel (see the illustration in *Back Panel* (page 12)).
3. Press the release button on the Solid State Disk to release the lever on the disk.

Lever   Release button

4. Insert the disk into the drive.
5. Press the lever down to lock the disk into position.

Proceed to *Installing Express Modules* (page 14).

Installing Express Modules

This section provides information on installing StoneGate express modules into the appliance. You must install an express module in each slot before you can make the appliance operational. The process of installing an express module is the same for all module types.

Read the *Safety Precautions* (page 5) before proceeding.

⚠️ **Caution –** Do not install or remove express modules if the appliance is powered on to avoid damaging modules and modular appliances.

▼ To install an express module

1. Make sure that the appliance is turned off and that no cables are connected to the appliance or to wall outlets.

2. (*Recommended*) Fasten a grounding strap to your wrist so that it contacts your bare skin and attach the other end of the strap to the appliance.

3. Select the slot where you want to install the express module.

4. Push the module into the slot the sticker side up until the front panel of the module is even with the front panel of the appliance.

⚠️ **Caution –** Do not insert the express module upside down. Inserting the modules incorrectly may damage the appliance and the modules and will void the warranty.

5. Repeat steps 3 and 4 until you have installed an express module in each slot.

• You must install an express module in each slot before you can configure the appliance.

Proceed to *Rack-Mounting* (page 15).

Rack-Mounting

This section provides information on installing the StoneGate appliance into a rack unit. You can install the appliance into a two-post or a four-post rack unit.

⚠️ **Caution –** Read the *Safety Precautions* (page 5) before proceeding.

Preparing for Rack-Mounting

The appliance delivery includes the rail assemblies and the mounting screws you need to install the system into the rack.

Read the sections below before you begin the installation.

Choosing a Setup Location

Decide on a suitable location for the rack unit that will hold the appliance:

- The appliance must be situated in a clean, dust-free area that is well ventilated.
- Avoid areas where heat, electrical noise and electromagnetic fields are generated.
- Leave enough clearance in front of the rack to enable you to open the front door completely (~63 cm/25 inches).
- Leave enough clearance in the back of the rack to allow for sufficient airflow and ease in servicing (~76 cm/30 inches).

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.
- In single rack installation, attach stabilizers to the rack.
- In multiple rack installations, couple the racks together.
- Always make sure the rack is stable before extending a component from the rack.
- Extend only one component at a time—extending two or more simultaneously may cause the rack to become unstable.

Appliance Precautions

- Determine the placement of each component in the rack before you install the rails.
- Install the heaviest components on the bottom of the rack first, and then work up.

- The appliance must be connected to a grounded power outlet.
- Use a regulating uninterruptible power supply (UPS) to protect the appliance from power surges, voltage spikes and to keep your system operating in case of a power failure.
- Always keep the rack's front door and all panels and components on the appliances closed when not servicing to maintain proper cooling.

Before Installing the Appliance Into a Rack

- Make sure that the rack is securely anchored onto an unmovable surface or structure before installing the appliance into the rack.
- Unplug the power cord(s) of the rack before installing the appliance into the rack.
- Make sure that the system is adequately supported. Make sure that all the components are securely fastened to the appliance to prevent components falling off from the appliance.
- Be sure to install an AC power disconnect for the entire rack assembly. This power disconnect must be clearly marked.
- The rack assembly shall be properly grounded to avoid electric shock.
- The rack assembly must provide sufficient airflow to the appliance for proper cooling.

Installing the Appliance into a Rack

> **Note –** Do not install the appliance upside down.

This section provides information on installing the appliance into a rack unit. There are a variety of rack units on the market, so the assembly procedure may differ slightly from what is instructed. If necessary, refer to the instructions that came with the rack unit you are using.

If you are installing the appliance into a Telco-type rack, follow the general directions below. The main difference in the installation procedure is whether you are installing the appliance into a two-post rack or a four-post rack. Proceed to one of the following:

- *Installing the Appliance Into a Two-Post Rack* (page 17)
- *Installing the Appliance Into a Four-Post Rack* (page 18)

Installing the Appliance Into a Two-Post Rack

▼ To install the appliance into a two-post rack

1. Locate the two rack-mounting brackets that are meant for the two-post rack installation.

2. Locate the three pairs of supports on the side of the appliance and the corresponding holes on the brackets.

3. Align the holes against the two supports towards the rear of the appliance and push the bracket under the supports.

   • The brackets are marked with L for "left" and "R" for right.

4. Secure the bracket to the appliance by inserting a screw through the hole at the end of the bracket (see the illustration above).

5. Repeat steps 3 and 4 on the other side of the appliance.

6. Attach each bracket to the rack with two screws through the holes in the front of the bracket.

Proceed to *Connecting the Cables* (page 21).

Installing the Appliance Into a Four-Post Rack

There are two sets of rails that you can use for installing the appliance into a four-post rack. The only difference is the length of the rails. This section explains the installation for both types of rails.

▼ To install the appliance into a four-post rack

1. Locate the two pairs of brackets in the delivery package: two inner rails that attach to the appliance and two outer rails that attach to the rack.
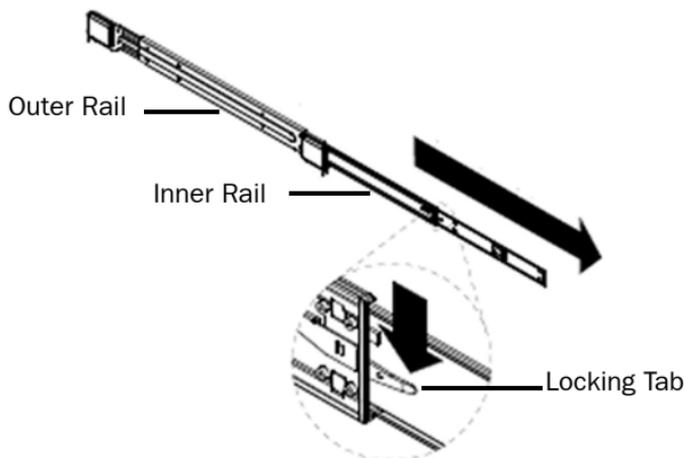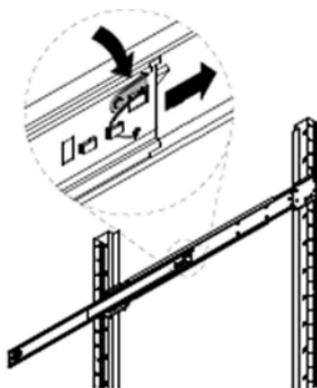

2. Detach the inner rails from the outer rails (press the locking tab to release the inner rails as shown in the illustration above).
   • The rails are marked with L for "left" and "R" for right.
3. Locate the rail buttons on the side of the appliance and the corresponding holes on an inner rail.

4. Align the holes against its corresponding button. Once all are aligned, push the holes toward their corresponding buttons.
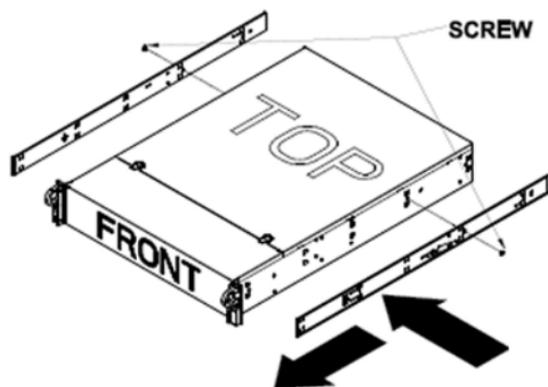

5. Secure the rail to the appliance with a screw.
6. Repeat steps 3-5 on the other side of the appliance.
7. Insert the outer rails to the rack. If necessary, push the locking tab on the rail to retreat the outer rails.

8. Attach the outer rails to the rack with two screws through the holes at the ends of the rails.

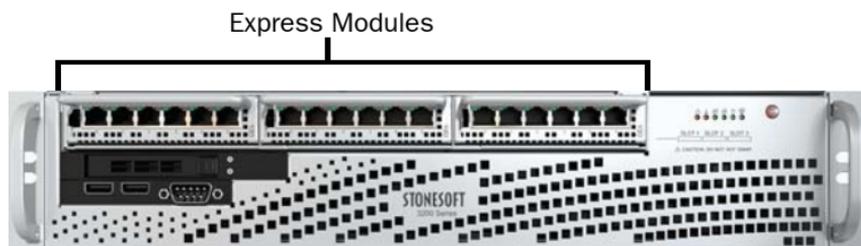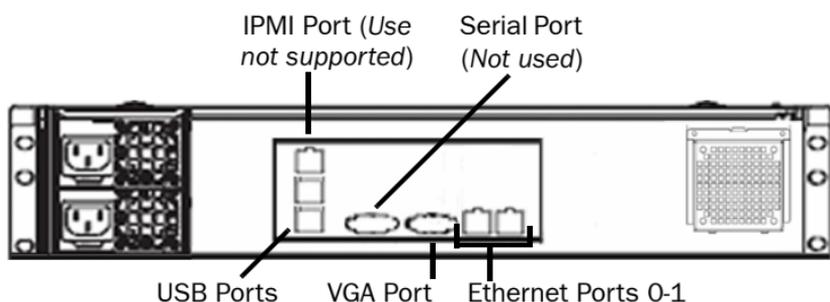**9.** Line up the rear of the inner rails with the front of the extended outer rails.
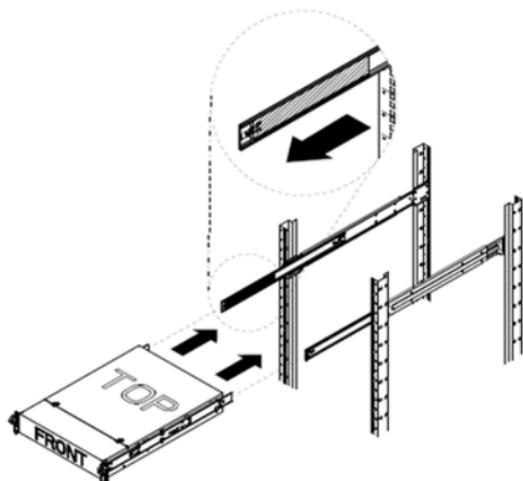
10. Slide the inner rails into the outer rails, keeping the pressure even on both sides (you may have to press the locking tabs when inserting). When the appliance has been pushed completely into the rack, you should hear the locking tabs "click" as the rails lock.

Proceed to *Connecting the Cables* (page 21).

Connecting the Cables

Front Panel

Express Modules

Back Panel

IPMI Port (*Use not supported*)   Serial Port (*Not used*)

USB Ports   VGA Port   Ethernet Ports 0-1

The use of the IPMI (Intelligent Platform Management Interface) port on the back panel is not supported. The IPMI port is configured to acquire an IP address through DHCP. Any users from the connected network can manage the appliance remotely if they learn the port's IP address and gain access to the credentials needed for remote management.

> **Caution –** Do not connect the appliance to an untrusted network through the IPMI port. Using the IPMI port can enable unwanted access to the appliance and compromise the security of the system.

Connecting Network Cables

▼ To connect network cables

➡ Connect network cables to the Ethernet ports.
- The two Ethernet ports 0-1 on the back panel belong to slot 0. The slot numbers for the express modules on the front panel start from 1. The port numbers on the modules start from 0. Both slot and port numbers increase from left to right.

- You are free to choose which Ethernet ports you connect to which network. The Ethernet ports are mapped to Interface IDs during the initial configuration. If you use a bypass express module and you have configured inline interfaces, ports 0-1 and 2-3 are bypass pairs (fail-open ports). For example, when traffic enters through interface 0, it exits through interface 1. Plug in the network cables accordingly.
- See the next section for information on connecting network cables to the SFP ports on SFP express modules.

Note – When the appliance is powered and you need to unplug it, always wait at least five (5) seconds before plugging in the appliance again. Otherwise, the appliance may not have time to clear properly and fails to start.

Connecting Cables to SFP Ports

If you have installed an SFP express module on the appliance, you can use the ports on the module as either copper or fiber ports by inserting a small form-factor pluggable (SFP) transceiver for copper or fiber-optic cable into the ports.

▼ To connect cables to SFP ports

1. Insert the SFP transceiver in the port slot until you feel the connector on the transceiver snap into place. The illustration below shows the correct position of inserting the SFP transceiver.

SFP transceiver for copper cable

SFP transceiver for fiber-optic cable
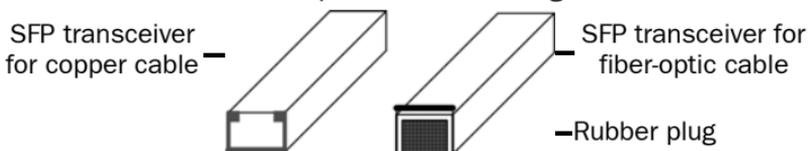
Rubber plug

Note – Make sure that the latch on the SFP transceiver is up (see the illustration above) when you insert the SFP transceiver in the port slot.

2. If the SFP transceiver has a rubber plug, remove the plug after inserting the transceiver into the slot.
3. Connect the copper or fiber-optic cable to the SFP transceiver.

Note – Each SFP port must match the wavelength specifications at the other end of the cable. The cable must not exceed the stipulated cable length for reliable communications.

Cable Types

Always use standard cabling methods with inline IPS: use crossover cables to connect the appliance to hosts and straight cables to connect the appliance to switches/hubs. Make sure that the copper cables are correctly rated (CAT 5e or CAT 6 in gigabit networks). See the *IPS Reference Guide* for more information on cabling.

Speed/Duplex Settings

Network cards at both ends of each cable must have identical speed/duplex settings. This also applies to the automatic negotiation setting: if one end of the cable is set to autonegotiate, the other end must also be set to autonegotiate. Gigabit standards require interfaces to use autonegotiation—fixed settings are not allowed at gigabit speeds.

The speed/duplex settings of inline interfaces must be matched on both links within each inline interface pair (identical settings on all four interfaces) instead of just matching settings at both ends of each cable (two + two interfaces). If one of the links has a lower maximum speed than the other link, the higher-speed link must be set to use the lower speed.

Connecting Management Cables

▼ To connect management cables

➥ Choose one of the following:
- Connect a monitor to the VGA port on the appliance's back panel and a keyboard to a USB port.
- Or connect the supplied null-modem cable to the serial port on the appliance's front panel and to another computer that you will use for a terminal connection.

Connecting the Appliance to the Power Supply

▼ To connect the appliance to the power supply

1. Connect the power cables to the AC or DC power connectors on the back of the appliance.
   - It is recommended to connect both power connectors to a power source to guarantee that the appliance can function even if one of the power connectors fails.
2. Plug the power cord into a grounded, high-quality power strip that offers protection from electrical noise and power surges.

- We highly recommend using an uninterruptible power supply (UPS) to ensure continuous operation and minimize the risk of damage to the appliance in case of sudden loss of power.
- For a truly redundant power supply, connect each power connector on the appliance to a different UPS, so that the failure of one UPS will not cut off the power to both power supplies.

See *Safety Precautions* (page 5) for more information on the AC and DC power supplies.

Proceed to *Initial Configuration* (page 25).

Initial Configuration

To start using the appliance, you must activate the network interfaces and establish a secure connection to the Management Server as outlined in the sections below.

To successfully complete this configuration, the following prerequisites must be met:

- The Sensor, Analyzer, or Sensor-Analyzer element must be defined in the Management Center.
- You must have the following engine-specific information from the Management Server: a one-time password or a saved initial configuration file on a USB stick.

See the *IPS Installation Guide* for details.

> **Note –** The appliance must contact the Management Server before it can be operational.

Connecting to the Appliance

You do not need to connect to the appliance at this point if you import a configuration from a USB stick as explained in *Configuring the Engine Automatically* (page 26), and you are not interested in the console messages that are displayed during this process.

In other cases, you need a physical connection to the appliance using a monitor and keyboard or a serial cable connection from a computer with a terminal program. By default, the monitor and keyboard connection is enabled and the serial console is inactive. If you want to use a serial connection, follow the instructions directly below. To use a monitor and keyboard, just boot up the appliance.

▼ To connect using a serial cable

1. Connect the serial cable supplied with the appliance to a computer and to the serial port on the appliance's front panel.
2. On the computer, open a terminal with settings 9600bps, 8 databits, 1 stopbit, no parity.
3. Power on the appliance.
4. Press a key on your keyboard when you see "Press any key". The message is shown four times. If you do not press a key within this time, the serial console remains inactive and you must reboot the appliance to try again.

5. A list of the appliance partitions is shown. The currently active partition is highlighted.
6. Press Enter. A list of available commands opens.
7. Select **Switch to Serial Console** and press Enter. The appliance boots up with the serial console activated.
   • The keyboard and display console is now inactive and must be activated in a similar way before you can use it.
   • To define two active consoles, use the command **sg-bootconfig**. For usage, see "Command Line Tools" in the *IPS Reference Guide*, *Administrator's Guide* or *Online Help* of the Management Client.

There are two ways to configure the engine software.

· You can configure the engine automatically with a USB stick. See *Configuring the Engine Automatically* below.
· If the automatic configuration is not possible or desired, you can use the engine configuration wizard. See *Configuring the Engine with Configuration Wizard* (page 27).

Configuring the Engine Automatically

The automatic configuration requires that you have a suitable configuration saved on a USB memory stick. See the *IPS Installation Guide* or the *Online Help* of the Management Client for details.

If you want to check the configuration before it is activated, follow the instructions in *Configuring the Engine with Configuration Wizard* (page 27), and import the configuration manually.

> ⚠ **Caution –** The speed/duplex settings of a pair of inline interfaces must match the speed/duplex settings of both links within each inline interface pair (identical settings on all four interfaces). If the settings are not identical, use the configuration wizard to set the correct speed/duplex settings for the inline interfaces.

▼ To import and activate a configuration from a USB memory stick
1. Insert the USB stick that contains the configuration saved in your Management Client in one of the USB ports on the appliance.
2. Turn on the appliance using the power on/off button. The appliance automatically imports the configuration from the USB stick and then tries to make the initial contact to the Management Server.

- If the connection is successful, the appliance automatically reboots itself and the engine configuration is finished.

If you configure the engine with a USB stick, you must set a password for the **root** account in the Management Client to enable command line access to the engine. If you want to allow remote access to the engine using SSH, enable the SSH daemon for the engine in the Management Client. See the *Administrator's Guide* for more information.

Proceed to *After Successful Management Server Contact* (page 33).

If the Automatic Configuration Fails

- If the automatic configuration fails, and you do not have a display connected, you can check for the reason in the log (sg_autoconfig.log) written on the USB stick.
- If you see a "connection refused" error message, ensure that the Management Server IP address is reachable from the engine and check the IP addresses you have defined in the Management Client.
- If the configuration with the USB stick still does not succeed, follow the instructions for the manual configuration, see *Configuring the Engine with Configuration Wizard* below.

Configuring the Engine with Configuration Wizard

▼ To start the configuration wizard
➥ Turn on the appliance using the power on/off button. The engine bootup process is shown in the console and, after some time, the engine configuration wizard starts.

> **Note –** You can (re)start the engine configuration wizard at any time using the sg-reconfigure command on the engine command line.

▼ To select the configuration method
1. Do one of the following:
   - To import a saved configuration, highlight **Import** using the arrow keys and press ENTER.
   - To skip the import, highlight **Next** and press ENTER.
2. If you selected the Import option, select the configuration file.

▼ To set the keyboard layout

1. Highlight the entry field for **Keyboard Layout** using the arrow keys and press ENTER. The Select Keyboard Layout dialog opens.
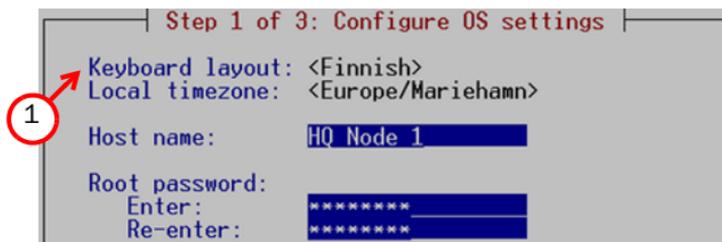
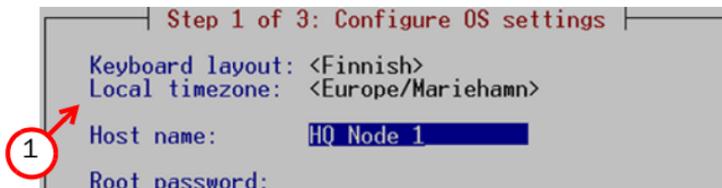
2. Highlight the correct layout and press ENTER.

Tip: Type in the first letter to move forward more quickly in the list of keyboard layouts.

Note – If the desired keyboard layout is not available, use the best-matching available layout, or select US_English.

▼ To set the engine's timezone

1. Highlight the entry field for **Local Timezone** using the arrow keys and press ENTER.

2. Select the correct timezone in the dialog that opens.

> **Note –** The timezone setting affects only the way the time is displayed on the engine command line. The actual operation always uses UTC time.

> **Note –** The appliance's clock is automatically synchronized with the Management Server's clock.

▼ To set the rest of the OS settings

1. Type in the name of the engine.

```
┤ Step 1 of 3: Configure OS settings ├

    Keyboard layout: <Finnish>
    Local timezone:  <Europe/Mariehamn>

    Host name:       HQ Node 1

    Root password:
       Enter:        ********
       Re-enter:     ********

    [*] Enable SSH daemon

    [ ] Restricted FIPS-compatible operating mode

              <<-Back>    <Next->>
```

2. Type in the password for the user `root`. This is the only account for engine command line access.

3. (*Optional*) Highlight **Enable SSH Daemon** and press the spacebar on your keyboard to select the option and allow remote access to engine command line using SSH.

> **Note –** It is not necessary to enable the SSH daemon now for ongoing management, as this option can also be set through the Management Client. We recommend that you enable the SSH access in the Management Client when needed and then disable the access again when you are done.

4. Highlight **Next** and press ENTER. The Configure Network Interfaces window is displayed.

Configuring the Network Interfaces

▼ To map the physical interfaces to Interface IDs

1. Type in the Interface IDs to define how physical interfaces are mapped to the Interface IDs you defined in the engine element.
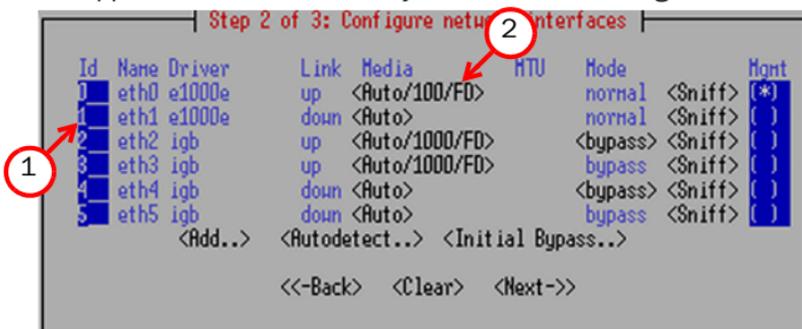
2. Highlight the **Media** column and press ENTER to match the speed/duplex settings to those used in each network.

- Make sure that the speed/duplex settings of network cards are identical at both ends of each cable. Also make sure that the speed/duplex settings of inline interfaces match the speed/duplex settings of both links within each inline interface pair.

3. (*Optional; only sensors and sensor-analyzers*) You can set your sensor or sensor-analyzer temporarily to the initial bypass state that allows traffic to flow through one or more soft-bypass interface pairs. High-light **Initial Bypass** and press ENTER to define

the soft-bypass interface pair(s). In the example below interface 1 is soft-bypassed with interface 2.

```
   Id   Name    Driver      Link Pair Id
   1    eth1    e1000       up   2
   2    eth2    e1000       up   1

<Cancel>                                  <OK>
```

> **Note –** Setting the appliance to the initial bypass state can be useful during IPS appliance deployment when bypass network interface pairs on the appliance are in the Normal mode. Initial bypass allows traffic to flow through the IPS appliance until the initial configuration is ready and an IPS policy is installed on the appliance. It is not necessary to set the initial bypass state when the bypass network interface pairs are in the Bypass mode.

4. Highlight the **Mgmt** column and press the spacebar on your keyboard to select the correct interface for contact with the Management Server.

> **Note –** The Management interface must be the same that is configured as the Primary Control Interface for the corresponding engine element in the Management Center.
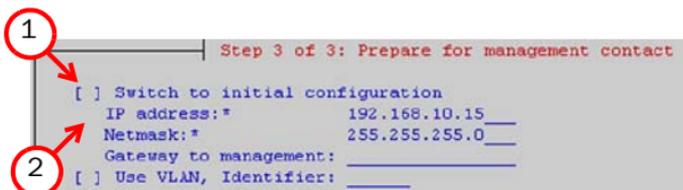
5. Highlight **Next** and press ENTER to continue.

Contacting the Management Server

The Prepare for Management Contact window opens. If the initial configuration was imported, most of this information is filled in. This task has three parts.

First, you activate an initial configuration on the engine. The initial configuration contains the information that the engine needs to connect to the Management Server for the first time. The initial configuration is replaced with a working configuration when you install an IPS Policy on this engine using the Management Client.

▼ To activate the Initial Configuration

1. Highlight **Switch to Initial Configuration** and press spacebar to activate.

2. Fill in the IP Address, Netmask and Gateway to Management information according to your environment.
   - The information must match what you defined for the engine element (Primary Control IP Address). If the engine and the Management Server are on the same network, you can leave the **Gateway to Management** field empty.

Note – The initial configuration does not contain any working IPS policy. You must install an IPS policy on the engine to make it operational.

In the second part of the configuration, you define the information needed for establishing a trust relationship between the engine and the Management Server.

▼ To fill in the Management Server information

1. Highlight **Contact** and press spacebar to select.
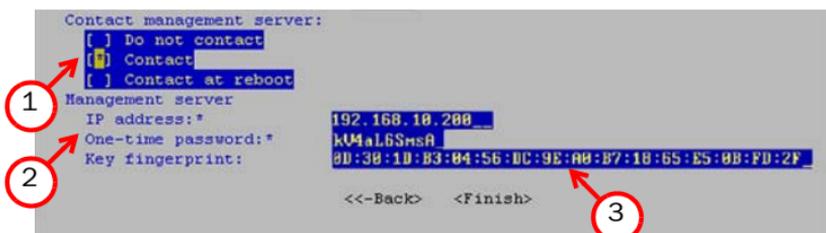
2. Fill in the Management Server IP address and the one-time password for this engine.
   - If you do not have a one-time password for this engine, see the *IPS Installation Guide* for instructions on how to save an initial configuration.

3. (*Optional*) Fill in the Key fingerprint (also shown when you saved the initial configuration). This increases the security of the communications.

In the third part of the configuration, you select whether you want this engine to work as a Sensor, an Analyzer, or a combined Sensor-Analyzer (depending on the appliance you have purchased). The selection you make must correspond to the element you created for this engine in the Management Client.

▼ To select the engine type

1. Select the type of engine using the arrow keys and the spacebar.

2. Highlight **Finish** and press ENTER.

The engine now tries to contact the Management Server.

- If you see a "connection refused" error message, ensure that the one-time password is correct and the Management Server IP address is reachable from the node. Save a new initial configuration if unsure about the password.

- If the engine is unable to contact the Management Server, make sure there are no networking problems and that the IP address defined in the IPS element on the Management Server is also correct.

Note – When initial contact succeeds, the engine receives a certificate from the Management Center for identification. The one-time password is not needed anymore and automatically expires.

After Successful Management Server Contact

After you see a notification that Management Server contact has succeeded or the appliance has rebooted itself after automatic configuration with a USB stick, the IPS engine installation is complete and the engine is ready to receive a policy. In a while, the engine element's status changes in the Management Client from **Unknown** to **No Policy Installed**, and the connection state is **Connected** indicating that the Management Server can connect to the node.

The next step is installing a security policy on the engine to replace the initial configuration you just activated with the working configuration you defined for the corresponding element on the Management Server. See

the *IPS Installation Guide* for basic instructions or the *Online Help* of the Management Client for detailed instructions.

> ⚠️ **Caution –** When using the command prompt, use the `reboot` command to reboot and `halt` command to shut down the node. Do not use the `init` command. You can also reboot the node using the Management Client.

Command-Line Management

▼ To permanently activate the serial console
1. Login to the command line (using SSH, keyboard, and display) as user **root** with the password you have set for the appliance.
2. Run the command sg-bootconfig --secondary-console

Maintenance Operations

Common maintenance operations for this StoneGate appliance are described below.

> **Note –** The only user-serviceable units are the power supply modules, the Solid State Disk, and the express modules. Any other changes can void the hardware warranty.

> ⚠️ **Caution –** Read *Safety Precautions* (page 5) before proceeding.

Connecting to the Engine Command Line
You may need to connect to the engine command line, for example, to undo a software upgrade.

▼ To connect to the engine command line
1. Connect the serial cable supplied with the appliance to a computer and to the serial port on the appliance's front panel.
2. On the computer, open a terminal with settings 9600bps, 8 databits, 1 stopbit, no parity.

Reverting to Previously Installed Software Version

This procedure allows you to undo a software upgrade.

The appliance has two working partitions. One is designated as active and the other as inactive. The inactive partition is used for upgrades and the status is switched between the partitions when the upgrade is ready to be activated. If the appliance does not start up with the new version, it automatically switches to the previous configuration at the next reboot. You can also switch back to the previously installed software version manually as instructed here whenever necessary.

▼ To switch back to the previously active version

1. Connect to the engine command line as described above in *Connecting to the Engine Command Line*.

2. (Re)start the appliance:
   - If the appliance is powered on, press ENTER, log in as the user **root** with the password you have set for the appliance, and issue the command reboot.

3. Wait until a list of the appliance partitions is shown. The currently active partition is highlighted.

4. Select the inactive partition and press Enter. A list of available commands opens.

5. Select **Boot SG IPS** <name of partition> and press Enter. The appliance switches partitions and boots up.

6. Refresh the policy on the engine to synchronize the policy and other configuration data between components.

> **Note –** If the certificate for system communications on the previously used partition is not valid anymore, see the *Troubleshooting* section in the Management Client's *Online Help* for renewal instructions.

If you want to undo this operation, repeat the steps exactly as above.

Resetting the Appliance to Factory Settings

> **Note –** Perform a factory reset only if you have a specific need to do so. Consult Stonesoft Support before performing this operation if you are unsure of whether this operation is necessary or not.

▼ To reset to factory settings

1. Connect to the engine command line as described in *Connecting to the Engine Command Line* (page 34).
2. (Re)start the appliance:
   - If the appliance is powered on, press ENTER, log in as the user **root** with the password you have set for the appliance, and issue the command reboot.
3. Wait until a list of the appliance partitions is shown. The currently active partition is highlighted.
4. Press Enter. A list of available commands opens.
5. Select **System Restore Options** and press Enter.
6. Type **1** and press ENTER to clear the settings. A confirmation prompt is shown.
7. Type **YES** and press ENTER to perform the reset. If you decide to cancel the operation, type **NO** and press ENTER.

> ⚠ **Caution –** Do not unplug the power from the appliance or interrupt the reset in any way. If the reset is interrupted, the appliance may become unusable until serviced.

To use the appliance after a factory reset, you must configure it as explained in *Initial Configuration* (page 25).

Replacing Power Supply Modules

You can use both AC and DC power supply modules on the appliance. If necessary, you can replace a power supply module with a new one.

▼ To replace a power supply module

1. Unplug the power cord from the AC power supply module or disconnect the wires from the DC power supply module.

2. Locate the release tab on the left side of the power supply.

Release Tab

Handle

3. Push the release tab to the right to release the power supply from its locking position.

4. Pull out the power supply using the handle provided.

5. Replace the power supply with a new one.

6. Push the power supply into the power bay until you hear a click.

⚠ **Caution –** Do not open the casing of a power supply. Power supplies can only be accessed and serviced by a qualified technician from the manufacturer.

Replacing the Solid State Disk

⚠ **Caution –** We recommend using a grounding strap when handling a Solid State Disk (SSD). Uninstalled SSDs are sensitive to ESD damage.

If necessary, you can replace the Solid State Disk in the appliance with another one of the same model.

▼ To replace the Solid State Disk

1. Connect to the engine command line as described in *Connecting to the Engine Command Line* (page 34).

2. Shut down the engine:

• If the appliance is powered on, press Enter, log in as the user **root** with the password you have set for the appliance, and issue the command halt.

3. Unplug all power cords from the system or the wall outlets.

4. Locate the Solid State Disk drive on the appliance's back panel (see *Back Panel* (page 12)).

5. Press the release button to release the lever that locks the disk into position.

Lever   Release button

6. Pull the lever carefully to remove the disk from the drive.
7. Press the release button on the new disk to release the lever.
8. Insert the disk into the drive.
9. Press the lever down to lock the disk into position.

Replacing Express Modules

⚠️ **Caution –** Do not install or remove express modules if the appliance is powered on to avoid damaging the express modules and the appliance.

▼ To replace an express module
1. Connect to the engine command line as described in *Connecting to the Engine Command Line* (page 34).
2. Shut down the engine:
   • If the appliance is powered on, press Enter, log in as the user **root** with the password you have set for the appliance, and issue the command halt.
3. Unplug all power cords from the system or the wall outlets.
4. Disconnect all the cables from the appliance.
5. (*Recommended)* Fasten a grounding strap to your wrist so that it contacts your bare skin and attach the other end of the strap to the appliance.
6. Locate the express module's release lever on the left of the module's front panel.
7. Release the module from its locking position by pressing the lever right, hold the lever down, and pull the module carefully out of the slot using the handle on the module's front panel.
8. Replace the module with a new one. See *Installing Express Modules* (page 14).

⚠️ **Caution –** Do not power on the appliance if you have not installed an express module in each slot.
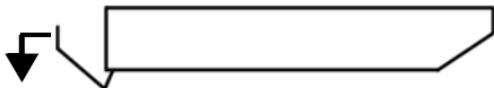
Removing SFP Transceivers

If necessary, you can remove the SFP transceivers from the SFP ports.

⚠ **Caution –** Invisible laser radiation is emitted from the end of fiber-optic cable and from fiber port. Do not stare into the beam and avoid direct exposure to the beam.

▼ To remove an SFP transceiver

1. Connect to the engine command line as described in *Connecting to the Engine Command Line* (page 34).
2. Shut down the engine:
   - If the appliance is powered on, press ENTER, log in as the user **root** with the password you have set for the appliance, and issue the command halt.
3. Unplug all power cords from the system or the wall outlets.
4. Disconnect the cable from the SFP transceiver.
5. Pull down the latch on the module.

6. Pull the SFP transceiver carefully out of the port slot.

If you want to replace the SFP transceiver you have removed, follow the instructions in *Connecting Cables to SFP Ports* (page 22).

Disposal Instructions

Dispose of the appliance separately from household waste at an appropriate waste disposal facility at the end of its useful service life.

StoneGate Appliance Installation Guide

This booklet covers the initial installation and configuration tasks specific to your StoneGate Appliance.

For information on how to prepare the Management Center for a new engine installation, see the other available documentation. See inside for further details.

All documentation and our technical knowledge base is available at: www.stonesoft.com/support.

STONESOFT

Secure Information Flow

Stonesoft Corporation
International Headquarters
Itälahdenkatu 22 A
FI-00210 Helsinki, Finland
tel. +358 9 4767 11
fax. +358 9 4767 1349
www.stonesoft.com

Stonesoft Inc.
Americas Headquarters
1050 Crown Pointe Parkway
Suite 900
Atlanta, GA 30338, USA
tel. +1 866 869 4075
fax. +1 770 668 1131