

Support User Guide

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Table of Content

TABLE OF CONTENT	2
1 ABOUT THIS GUIDE	4
2 SUPPORT SERVICES	4
2.1 BASIC SUPPORT	4
2.2 ONSITE SUPPORT	4
2.3 HARDWARE REPLACEMENT	5
2.4 REMOTE ACCESS	5
3 THE BNC SUPPORT	6
3.1 THE TEAM	6
3.2 CONTACTING SUPPORT	6
3.2.1 Phone	6
3.2.2 E-Mail	6
4 DIONYSOS – THE NAME OF THE ISSUE TRACKING TOOL AT BNC	7
5 GENERAL DEBUGGING INFORMATION	8
5.1 TOOLS	8
5.1.1 Serial Port	8
5.1.2 TFTP / FTP Server	8
5.1.3 BNC Xchange	8
5.2 ENTERASYS	9
5.2.1 Serial Port	9
5.2.2 SecureStack (A2 / B2 / B3 / C2 / C3)	9
5.2.3 DFE-Platinum and Diamond	10
5.2.4 DFE-Gold	11
5.2.5 D-Series	11
5.2.6 G-Series	12
5.2.7 Matrix C1	13
5.3 BROCADE (FORMERLY KNOWN AS FOUNDRY NETWORKS)	14
5.3.1 Serial port	14
5.3.2 BigIron	14
5.3.3 Edgelron	15
5.3.4 FastIron (FES)	15
5.3.5 FastIron GS / LS Series (FGS / FLS)	16
5.3.6 FastIron Workgroup X-Series (FWSX)	16
5.3.7 FastIron Super X Family (FI-SX / SX-FI)	17
5.3.8 ServerIron (SI)	17
5.3.9 NetIron MLX/XMR (NI-MLX/NI-XMR)	18
5.4 CHECK POINT	18
5.4.1 Serial Port	18
5.4.2 Debug information to send	19
5.4.3 Some very useful commands	19
5.4.4 Some useful resources	19
5.5 NOKIA SECURITY APPLIANCE (IPSO) (AQUIRED BY CHECK POINT)	19
5.5.1 Serial port	19
5.5.2 Debug information to send	19
5.5.3 Some very useful commands (clish)	19
5.5.4 Some very useful commands (shell)	20
5.5.5 Some useful resources	20
5.6 JUNIPER SSG FIREWALLS	20
5.6.1 Serial Port	20
5.6.2 Debug information to send	20
5.6.3 Some very useful commands	20
5.6.4 Some useful resources	20
5.7 NETAPP	20

5.7.1	Debug information to send	20
5.7.2	Some very useful commands	21
5.7.3	Some very useful commands (Network Attached Storage)	21
5.7.4	Some very useful commands (Storage Area Network)	21
5.7.5	Some very useful commands (SnapShot)	21
5.7.6	Best practices	22
5.7.7	Some useful resources	22

1 About this guide

This guide will give customers an overview of the support services of BNC Business Network Communications AG. This guide provides commands which can be run on different systems in order to get the right support information and Customers will be aware what information the support needs when opening a support case. The goal of this document is to speed up the support process remarkably.

2 Support services

In case of a network problem or a hardware defect, BNC will make an effort to help its customers to solve the problems as fast as possible. In order to achieve the best possible service, a good cooperation between BNC and its customers is essential.

BNC support team offers the following services:

- E-mail and phone support
- Onsite support / remote assistance
- Hardware delivery and replacement
- Software subscription
- Minor changes

Support is ensured for all systems with a valid support contract. They are listed in the appendix of the support and maintenance contract each customer receives from BNC. The support and maintenance contract defines the service level BNC is committed to.

2.1 Basic support

Customers may contact our support team by e-mail or phone. Customers should be aware that support outside of business hours, Mo-Fr, 8-18h, may be charged additionally. The best way to contact the support is by sending an e-mail to support@bnc.ch. In this e-mail customer should include the following information in order to speed up the process:

- Description of the Problem (What does not work anymore? What is still working? What is the possible trigger of the problem? When did the problem occur?)
- Systems affected
 - Type
 - Serial number
- Technical information

Chapter 5 describes all the required commands the customer has to run in order to get the right information.

In urgent cases, BNC recommends to send an e-mail first and then to contact to support by phone (+41 31 858 58 59) to make sure the support understands the urgency of the case. This will help to avoid spelling mistakes of serial numbers and other misunderstandings and appropriate actions can be undertaken.

2.2 Onsite support

If the problem persists and cannot be solved by phone or remote assistance, onsite support may be organized for further investigation. Depending on the support and maintenance contract this service is free or will be charged on a per hour basis.

2.3 Hardware replacement

Broken devices shall be replaced and delivered to the customer within the committed time.

Replacement of defective hardware needs to be approved by the manufacturer (e.g. Foundry, Enterasys, Nokia, Check Point, NetApp etc.). The committed delivery time counts from the time the replacement has been approved by the manufacturer.

It is essential that the customer sends the serial number of the defective device to BNC when asking for a replacement. It is very important that the customer sends as much information as possible of the defective device (console output, old configuration) to BNC in order to speed up the replacement decision. It further makes the configuration process of the replacement device easier.

2.4 Remote access

If the issue cannot be solved by phone or e-mail, the support engineer of BNC will ask the customer to set up a debugging session using remote access. In many cases the customer has agreed in advance to set up remote access over SSH (Secure Shell) or over VPN (Virtual Private Network), in this case the support engineer of BNC is usually able to set up remote access without further customer intervention. In cases where this was not possible BNC provides a desktop sharing feature. This enables the customer to share its desktop with the support engineer of BNC. This feature uses HTTPS and should be compatible with most customers with access to the Internet using a web browser.

In order to start a desktop sharing session, the customer is required to enter the following URL: <https://secure.bnc.ch/meeting/>. The required information to log into the Secure Meeting application will be provided by the support engineer.

3 The BNC Support

3.1 The team

The following five people build the support team at BNC.

- Laurent Bourqui, Dipl. Ing. FH Informatik, Head of Support
- Christoph Eggler, Telematik Techniker TS, Support Engineer
- Armin Thommen, Dipl. Ing. FH Informatik, Support Engineer
- Kalbermatter Simon, Dipl. Ing. FH Informatik, Support Engineer
- Berger Stephan, Supporter

Note that the support team is backed up by other people from the integration team.

3.2 Contacting support

Within business hours (Mo-Fr, 8–12 and 13–18, except holidays) the support team is reachable by the following phone number and email address:

Phone: +41 31 858 58 59

E-mail: support@bnc.ch

Outside of business hours, BNC support is reachable by the main phone number +41 31 858 58 58. If nobody is available, there is an interactive voice response system. The caller may choose to be forwarded to a support hotline. The support hotline is also directly available at 0800 858 859. After calling the support hotline the issue will be transferred to one of the support engineer who is on duty.

3.2.1 Phone

Customers shall report critical issues (e.g. network down or network degraded) by phone. BNC will support the caller immediately in this situation. At the same time, customers are advised to send the required information described in chapter 5.2 to support@bnc.ch.

3.2.2 E-Mail

If the issue is not critical and has manageable impact to the network functionality (e.g. minor impacts, questions, debugging and replacement of nonproductive devices, etc.) it is recommended to contact the BNC Support by e-mail. Attach any helpful information related to the problem and the required information described in chapter 5.2. All e-mails are stored in a database and managed by an issue tracking system.

4 Dionysos – The name of the Issue Tracking tool at BNC

When a customer reports an incident, one of the support engineers will create an issue in the Dionysos issue tracking tool. Every issue has a unique issue ID (called [dionysos ID]). When customers receive e-mails from our support team this issue ID is part of the subject. This is an example:

[dionysos 3116] Switch crashes when configuring VLANs using SNMP, vendor case 00179538

Please make sure that the [dionysos ID] is part of the subject line when sending an e-mail to support@bnc.ch that belongs to an open case.

Each issue has a priority assigned.

Priority 1 (Most critical)

Priority 1 issues are the most critical one. They are used if the system for which the issue is opened is down and business on customer side is stopped. If such an issue is opened, an engineer is assigned and works on this issue until a solution or a workaround can be found and installed.

If the issue is not solved in an acceptable time, it will be automatically escalated to BNC management.

Priority 2

These are high priority issues and are assigned if the system having trouble has major degradation and business is impacted on customer side. Such issues are tracked on a daily base.

If the issue is not solved in an acceptable time, it will be automatically escalated to BNC management.

Priority 3

These are the standard issue for which a system is currently not working correctly but has no major business impact. They are the most usual issue and are tracked on a weekly base.

These issues are not automatically escalated to BNC management.

Priority 4 (Least critical)

Non critical issues or questions about systems and configuration are assigned priority 4. Priority 4 issues have no impact on business.

These issues are not escalated to BNC management.

Change Request

If minor changes are required on customer system they are set to status "Change Request". These changes are not part of the maintenance contract and will be charged separately. If the change is a major change or need a project organisation they will not be done by support but by the integration team.

Feature Request

If new feature for a system are requested, the issue will be set to the status "Feature Request". Most of the time, these issues stay open for a very long time. They need approval from constructor and new implementation.

RMA

When a broken part has been swapped there is an administrative work to do (getting the faulty device, returning it back to the constructor, etc...). During this time the issue is set to priority RMA until the device is sent back to constructor.

5 General Debugging Information

5.1 Tools

In this chapter, BNC presents some handy tools customers can use to gather debugging information, uploading images and sending files to the support team.

5.1.1 Serial Port

To connect to the serial port, a terminal emulation software is needed.

Available software for Microsoft Windows:

- Putty (free) - <http://www.putty.org/>
- SecureCRT (non-free) - <http://www.vandyke.com/products/securecrt/index.html>
- HyperTerminal (comes with Microsoft Windows)

Available for Linux:

- minicom - <http://alioth.debian.org/projects/minicom/>

As the setting may change from manufacturer to manufacturer, please refer to the corresponding manufacturer chapter.

5.1.2 TFTP / FTP Server

To upgrade software or copying a configuration of a network device, a TFTP or a FTP server is often required.

Available software for Microsoft Windows:

- TFTP32 (free, TFTP only) - <http://tftpd32.jounin.net/>
- 3com Server (free, TFTP and FTP) - http://support.3com.com/software/utilities_for_windows_32_bit.htm

Available for Linux:

- every FTP Server that comes with the distribution will work

5.1.3 BNC Xchange

To send larger files (> 5MB) or zip compressed files, BNC provides the BNC Xchange on its website. Customers can upload such files easily by selecting a file and pressing the Button 'upload'. Inform BNC about uploaded files by e-mail or phone.

It is also possible for BNC to provide files to its customers using BNC Xchange. In this case the customer will get a PIN for additional security to get the file. The PIN has to be entered into the form and the 'download' Button must be launched.

Xchange URL: www.bnc.ch/xchange.html

5.2 Enterasys

5.2.1 Serial Port

Set the value within the program as follow:

- baud: 9600 bps
- data bits: 8
- parity: none
- stop bits: 1
- flow control: none

5.2.2 SecureStack (A2 / B2 / B3 / C2 / C3)

Debug information to send

In case you are running one of the following firmware's upwards

B2 – 4.02.xx.xxxx

B3 – 1.02.xx.xxxx

C2 – 5.02.xx.xxxx

C3 – 1.02.xx.xxxx

please use this command:

```
> show support
```

Otherwise, please send us the output of the following commands:

```
> show version
```

```
> dir
```

```
> show logging buffer
```

```
> show config
```

```
> show spantree stats
```

```
> show port status
```

```
> show port advertise
```

Some very useful commands

Commands	Remarks
<code>> devshell logWritePersistentLogsToConsole</code>	Make sure that the buffer size of your terminal program is big enough; otherwise you will not be able to copy the whole current.log. In case your network connection is working, see the next topic.
<code>> copy logs/current.log tftp://0.0.0.0/current.log</code>	Save log file on a tftp server
<code>> show logging buffer</code>	Display the last 256 messages logged
<code>> show config outfile configs/myconfig.cfg</code>	Save configuration on the local flash
<code>> copy configs/myconfig.cfg tftp://0.0.0.0/myconfig.cfg</code>	Download the configuration via tftp
<code>> show version</code>	Display the current firmware version
<code>> copy tftp://0.0.0.0/fw_name system:image</code>	Upload a new Firmware on the device

> set boot system <i>fw_name</i>	Make <i>fw_name</i> the active Firmware at next reboot
> dir	Displays flash content
> show port status	Displays status of each port
> show port advertise	Displays the negotiation advertisement abilities of each port
> show file <i>filename</i>	Displays the content of a file
> show port cablestatus <i>portstring</i>	Allows diagnosing cable problems in realtime. B2: Since FW version 4.02.03.0012 B3: Since FW version 1.02.03.0012 C2: Since FW version 5.02.03.0012 C3: Since FW version 1.02.03.0012

Some useful resources

Resource	Description
http://www.enterasys.com/support/index.aspx	General Enterasys support site
http://secure.enterasys.com/support/manuals/	Enterasys manuals
http://secure.enterasys.com/services/support/downloads/software	Firmware download

5.2.3 DFE-Platinum and Diamond

Debug information to send

Output of the following command:

> show support

Some very useful commands

Commands	Remarks
> show logging buffer	Display the last 256 messages logged
> show config outfile <i>slotN/myconfig.cfg</i>	Save configuration on the local flash
> copy <i>slotN/myconfig.cfg</i> tftp://0.0.0.0/ <i>myconfig.cfg</i>	Download the configuration via tftp
> show version	Display the current firmware version
> copy tftp://0.0.0.0/ <i>fw_name fw_name</i>	Upload a new Firmware on the device
> set boot system <i>fw_name</i>	Make <i>fw_name</i> the active Firmware at next reboot
> dir	Displays flash content
> show port status	Displays status of each port
> show port advertise	Displays the negotiation advertisement abilities of each port
> show file <i>filename</i>	Displays the content of a file

Some useful resources

Resource	Description
http://www.enterasys.com/support/index.aspx	General Enterasys support site

http://secure.enterasys.com/support/manuals/	Enterasys manuals
http://secure.enterasys.com/services/support/downloads/software	Firmware download

5.2.4 DFE-Gold

Debug information to send

Output of the following command:

```
> show support
```

Some very useful commands

Commands	Remarks
> show logging buffer	Display the last 256 messages logged
> show config outfile slotN/myconfig.cfg	Save configuration on the local flash
> copy configs/myconfig.cfg tftp://0.0.0.0/myconfig.cfg	Download the configuration via tftp
> show version	Display the current firmware version
> copy tftp://0.0.0.0/fw_name fw_name	Upload a new Firmware on the device
> set boot system fw_name	Make fw_name the active Firmware at next reboot
> dir	Displays flash content
> show port status	Displays status of each port
> show port advertise	Displays the negotiation advertisement abilities of each port
> show file filename	Displays the content of a file

Some useful resources

Resource	Description
http://www.enterasys.com/support/index.aspx	General Enterasys support site
http://secure.enterasys.com/support/manuals/	Enterasys manuals
http://secure.enterasys.com/services/support/downloads/software	Firmware download

5.2.5 D-Series

Debug information to send

Output of the following commands:

```
> show version
```

```
> dir
```

```
> show logging buffer
```

```
> show config
```

```
> show spantree stats
```

```
> show port status
```

```
> show port advertise
```

Some very useful commands

Commands	Remarks
> copy logs/current.log tftp://0.0.0.0/current.log	Save log file on a tftp server
> show logging buffer	Display the last 256 messages logged
> show config outfile configs/myconfig.cfg	Save configuration on the local flash
> copy configs/myconfig.cfg tftp://0.0.0.0/myconfig.cfg	Download the configuration via tftp
> show version	Display the current firmware version
> copy tftp://0.0.0.0/fw_name system:image	Upload a new Firmware on the device
> set boot system fw_name	Make fw_name the active Firmware at next reboot
> dir	Displays flash content
> show port status	Displays status of each port
> show port advertise	Displays the negotiation advertisement abilities of each port
> show file filename	Displays the content of a file

Some useful resources

Resource	Description
http://www.enterasys.com/support/index.aspx	General Enterasys support site
http://secure.enterasys.com/support/manuals/	Enterasys manuals
http://secure.enterasys.com/services/support/downloads/software	Firmware download

5.2.6 G-Series

Debug information to send

Output of the following commands:

- > show version
- > dir
- > show logging buffer
- > show config
- > show spantree stats
- > show port status
- > show port advertise

Some very useful commands

Commands	Remarks
> copy logs/current.log tftp://0.0.0.0/current.log	Save log file on a tftp server
> show logging buffer	Display the last 256 messages logged
> show config outfile configs/myconfig.cfg	Save configuration on the local flash
> copy configs/myconfig.cfg	Download the configuration via tftp

<code>tftp://0.0.0.0/myconfig.cfg</code>	
<code>> show version</code>	Display the current firmware version
<code>> copy tftp://0.0.0.0/fw_name system:image</code>	Upload a new Firmware on the device
<code>> set boot system fw_name</code>	Make fw_name the active Firmware at next reboot
<code>> dir</code>	Displays flash content
<code>> show port status</code>	Displays status of each port
<code>> show port advertise</code>	Displays the negotiation advertisement abilities of each port
<code>> show file filename</code>	Displays the content of a file

Some useful resources

Resource	Description
http://www.enterasys.com/support/index.aspx	General Enterasys support site
http://secure.enterasys.com/support/manuals/	Enterasys manuals
http://secure.enterasys.com/services/support/downloads/software	Firmware download

5.2.7 Matrix C1

Debug information to send

Output of the following commands:

- `> show version`
- `> dir`
- `> show config`
- `> show spantree stats`
- `> show port status`
- `> show port advertise`

Some very useful commands

Commands	Remarks
<code>> show config outfile slot1/myconfig.cfg</code>	Save configuration on the local flash
<code>> copy slot1/myconfig.cfg</code> <code>Tftp://0.0.0.0/myconfig.cfg</code>	Download the configuration via tftp
<code>> show version</code>	Display the current firmware version
<code>> copy tftp://0.0.0.0/fw_name</code> <code>file://host/fw_name</code>	Upload a new Firmware on the device
<code>> set boot system fw_name</code>	Make fw_name the active Firmware at next reboot
<code>> dir</code>	Displays flash content
<code>> show port status</code>	Displays status of each port
<code>> show port advertise</code>	Displays the negotiation advertisement abilities of each port
<code>> show file filename</code>	Displays the content of a file

Some useful resources

Resource	Description
http://www.enterasys.com/support/index.aspx	General Enterasys support site
http://secure.enterasys.com/support/manuals/	Enterasys manuals
http://secure.enterasys.com/services/support/downloads/software	Firmware download

5.3 Brocade (formerly known as Foundry Networks)

5.3.1 Serial port

Set the value within the program as follow:

- baud: 9600 bps
- data bits: 8
- parity: none
- stop bits: 1
- flow control: none

5.3.2 BigIron

Debug information to send

Output of the following command:

```
> show tech-support
```

Some very useful commands

Commands	Remarks
<pre>> show flash</pre>	Display the software in the device's flash areas
<pre>> copy startup-config tftp 0.0.0.0 startup-config</pre>	Download the configuration via tftp
<pre>> copy tftp startup-config 0.0.0.0 startup-config</pre>	Overwrites the startup-config with the saved configuration
<pre>> show version</pre>	Display the current firmware version
<pre>> copy tftp flash 0.0.0.0 fw_name boot</pre>	Upload the new boot code on the device
<pre>> copy tftp flash 0.0.0.0 fw_name {primary secondary}</pre>	Upload a new firmware on the device
<pre>> boot system flash {primary secondary}</pre>	Specify with which firmware the device will boot
<pre>> erase flash {primary secondary}</pre>	Erase the image stored in the flash area
<pre>> erase startup-config</pre>	Erase the startup configuration of the device

Some useful resources

Resource	Description
http://www.foundrynet.com/ss/tech-support/	Official Foundry support site

5.3.3 Edgelron

Debug information to send

Output of the following command:

```
> show tech-support
```

Some very useful commands

Commands	Remarks
> dir	Shows the saved files and images.
> copy startup-config tftp	Download the configuration via tftp
> copy tftp startup-config	Overwrites the startup-config with the saved configuration
> show version	Display the current firmware version
> copy tftp file	Upload a new Firmware on the device
> boot system opcode: <i>fw_name</i>	Specify with which firmware the device will boot
> erase filename	Erase the specified file
> erase startup-config	Erase the startup configuration of the device

Some useful resources

Resource	Description
http://www.foundrynet.com/ss/tech-support/	Official Foundry support site

5.3.4 FastIron (FES)

Debug information to send

Output of the following command:

```
> show tech-support
```

Some very useful commands

Commands	Remarks
> show flash	Display the software in the device's flash areas
> copy startup-config tftp <i>0.0.0.0</i> <i>startup-config</i>	Download the configuration via tftp
> copy tftp startup-config <i>0.0.0.0</i> <i>startup-config</i>	Overwrites the startup-config with the saved configuration
> show version	Display the current firmware version
> copy tftp flash <i>0.0.0.0 fw_name</i> boot	Upload the new boot code on the device
> copy tftp flash <i>0.0.0.0 fw_name</i> {primary secondary}	Upload a new Firmware on the device
> boot system flash {primary secondary}	Specify with which firmware the device will boot
> erase flash {primary secondary}	Erase the image stored in the flash area
> erase startup-config	Erase the startup configuration of the device

Some useful resources

Resource	Description
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http://www.foundrynet.com/ss/tech-support/	Official Foundry support site
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5.3.5 FastIron GS / LS Series (FGS / FLS)

Debug information to send

Output of the following command:

```
> show tech-support
```

Some very useful commands

Commands	Remarks
> show flash	Display the software in the device's flash areas
> copy startup-config tftp 0.0.0.0 startup-config	Download the configuration via tftp
> copy tftp startup-config 0.0.0.0 startup-config	Overwrites the startup-config with the saved configuration
> show version	Display the current firmware version
> copy tftp flash 0.0.0.0 fw_name bootrom	Upload the new boot code on the device
> copy tftp flash 0.0.0.0 fw_name {primary secondary}	Upload a new Firmware on the device
> boot system flash {primary secondary}	Specify with which firmware the device will boot
> erase flash {primary secondary}	Erase the image stored in the flash area
> erase startup-config	Erase the startup configuration of the device

Some useful resources

Resource	Description
http://www.foundrynet.com/ss/tech-support/	Official Foundry support site

5.3.6 FastIron Workgroup X-Series (FWSX)

Debug information to send

Output of the following command:

```
> show tech-support
```

Some very useful commands

Commands	Remarks
> show flash	Display the software in the device's flash areas
> copy startup-config tftp 0.0.0.0 startup-config	Download the configuration via tftp
> copy tftp startup-config 0.0.0.0 startup-config	Overwrites the startup-config with the saved configuration
> show version	Display the current firmware version
> copy tftp flash 0.0.0.0 fw_name bootrom	Upload the new boot code on the device
> copy tftp flash 0.0.0.0 fw_name {primary secondary}	Upload a new Firmware on the device

> boot system flash {primary secondary}	Specify with which firmware the device will boot
> erase flash {primary secondary}	Erase the image stored in the flash area
> erase startup-config	Erase the startup configuration of the device

Some useful resources

Resource	Description
http://www.foundrynet.com/ss/tech-support/	Official Foundry support site

5.3.7 FastIron Super X Family (FI-SX / SX-FI)

Debug information to send

Output of the following command:

```
> show tech-support
```

Some very useful commands

Commands	Remarks
> show flash	Display the software in the device's flash areas
> copy startup-config tftp 0.0.0.0 startup-config	Download the configuration via tftp
> copy tftp startup-config 0.0.0.0 startup-config	Overwrites the startup-config with the saved configuration
> show version	Display the current firmware version
> copy tftp flash 0.0.0.0 fw_name bootrom	Upload the new boot code on the device
> copy tftp flash 0.0.0.0 fw_name {primary secondary}	Upload a new Firmware on the device
> boot system flash {primary secondary}	Specify with which firmware the device will boot
> erase flash {primary secondary}	Erase the image stored in the flash area
> erase startup-config	Erase the startup configuration of the device

Some useful resources

Resource	Description
http://www.foundrynet.com/ss/tech-support/	Official Foundry support site

5.3.8 ServerIron (SI)

Debug information to send

Output of the following command:

```
> show tech-support
```

Some very useful commands

Commands	Remarks
> show flash	Display the software in the device's flash areas
> copy startup-config tftp 0.0.0.0 startup-config	Download the configuration via tftp

> copy tftp startup-config 0.0.0.0 startup-config	Overwrites the startup-config with the saved configuration
> show version	Display the current firmware version
> copy tftp flash 0.0.0.0 fw_name boot > wsm copy tftp flash 0.0.0.0 fw_name boot	Uploads the new two needed boot codes on the device
> copy tftp flash 0.0.0.0 fw_name {primary secondary}	Uploads the two new needed firmware's on the device
> wsm copy tftp flash 0.0.0.0 fw_name {primary secondary}	
> boot system flash {primary secondary}	Specify with which firmware the device will boot
> erase flash {primary secondary}	Erase the image stored in the flash area
> erase startup-config	Erase the startup configuration of the device

Some useful resources

Resource	Description
http://www.foundrynet.com/ss/tech-support/	Official Foundry support site

5.3.9 NetIron MLX/XMR (NI-MLX/NI-XMR)

Debug information to send

Output of the following command:

```
> show tech-support
```

Some very useful commands

Commands	Remarks
> show flash	Display the software in the device's flash areas
> copy startup-config tftp 0.0.0.0 startup-config	Download the configuration via tftp
> copy tftp startup-config 0.0.0.0 startup-config	Overwrites the startup-config with the saved configuration
> show version	Display the current firmware version
> erase startup-config	Erase the startup configuration of the device

Some useful resources

Resource	Description
http://www.foundrynet.com/ss/tech-support/	Official Foundry support site

5.4 Check Point

5.4.1 Serial Port

Set the value within the program as follow:

- baud: 57600 bps (VPN-1 Edge)
- baud: 9600 bps (UTM-1)

- data bits: 8
- parity: none
- stop bits: 1
- flow control: none

5.4.2 Debug information to send

Output of the following command:

> cpinfo (On the management module as well on the firewall module)

Arguments:

- o (outputfile)
- l (include logs)
- z zipped

5.4.3 Some very useful commands

Commands	Remarks
> fw ver -k	Shows the version

5.4.4 Some useful resources

Resource	Description
https://supportcenter.checkpoint.com/	Official Check Point support site

5.5 Nokia Security Appliance (IPSO) (aquired by Check Point)

5.5.1 Serial port

Set the value within the program as follow:

- baud: 9600
- data bits: 8
- parity: none
- stop bits: 1
- flow control: none

5.5.2 Debug information to send

Output of the following command, type this at the shell:

> cst

5.5.3 Some very useful commands (clish)

To use the the command shell, type this at the prompt:

nokia[admin]# clish

Commands	Remarks
> show summary	Shows the actual configuration
> show interfaces	Shows informations about the interfaces
> show useful-stats	Shows system statistics
> show image current	Which firmware is actually running

> show images	Which firmwares are installed on the system
> show vrrp	Shows the vrrp configuration
> show package {all inactive active}	Shows information about the installed packages

5.5.4 Some very useful commands (shell)

Commands	Remarks
> uptime	Shows the uptime since the last boot

5.5.5 Some useful resources

Resource	Description
http://support.nokia.com/home	Official Nokia support site

5.6 Juniper SSG Firewalls

5.6.1 Serial Port

Set the value within the program as follow:

- baud: 9600
- data bits: 8
- parity: none
- stop bits: 1

5.6.2 Debug information to send

Output of the following commands:

```
> get tech-support
```

5.6.3 Some very useful commands

Commands	Remarks
> get system	Shows serial number, version, ..
> get policy	Displays the defined rules
> save config to tftp 0.0.0.0 filename	Download the configuration via tftp

5.6.4 Some useful resources

Resource	Description
http://www.juniper.net/techpubs/	Juniper technical manuals
http://www.juniper.net/customers/support/	Official Juniper support site

5.7 NetApp

5.7.1 Debug information to send

Output of the following command:

```
> options autosupport.doit "SUBJECT"
```

If the filer does not have connection to the mail host, you can manually read out the content of the autosupport mail:

```
> rdfile /etc/log/autosupport/$DATE$HOUR.0
```

5.7.2 Some very useful commands

Commands	Remarks
> halt	Shut down the filer (clean, all data will be flushed to disk).
> reboot	Halts the filer and restarts it.
> sysconfig -r	Displays RAID configuration information.
> sysconfig -v	Displays detailed information about each I/O device.
> sysstat -x <i>interval in seconds</i>	Report filer performance statistics. The optional argument '-x' displays the extended output format instead of the default display.
> ifconfig -a	Shows configuration of the network interfaces
> vif status <i>vif_name</i>	Shows the status of the virtual interface.
> vif stat <i>vif_name interval in seconds</i>	Displays the number of packets received and transmitted on each link that makes up the vif.
> rdfile <i>/path/filename</i>	Reads the specified file and writes the content to standard out.
> df	Display free disk space.
> df -g	Shows the disk space in gigabytes.
> df -Ag	Reports every online aggregate, disk space in gigabytes.
> df <i>vol_name -g</i>	Shows the disk space of <i>vol_name</i> in gigabytes.
> aggr show_space -g <i>aggr_name</i>	Shows the space in gigabytes from <i>aggr_name</i> .
> qtree status	Displays the attributes of all volumes and qtrees on the filer.

5.7.3 Some very useful commands (Network Attached Storage)

Commands	Remarks
> cifs shares	Lists all shares and their access control lists.
> exportfs	List the actual NFS exports

5.7.4 Some very useful commands (Storage Area Network)

Commands	Remarks
> lun show -m	Lists all the LUN mappings.
> igroup show	Shows the members of all initiator groups.

5.7.5 Some very useful commands (SnapShot)

Commands	Remarks
> snap list <i>vol_name</i>	Shows the snapshots taken on the volume.
> snap reserve	Prints the percentage of disk space that is reserved for snapshots for all volumes.

> snap reserve vol_name	Prints the information about the reserved disk space only for vol_name
> snapmirror status	Shows the source, the destination and the status.

5.7.6 Best practices

> options autosupport.doit "maint_start"	Before you start your maintenance tasks e.g. removing a shelf, trigger this command
> options autosupport.doit "maint_stop"	After successfully maintained your system, trigger this command
> Ctrl + D	Never close a window with a running session manually. Instead, use Ctrl + D for a proper exit.

5.7.7 Some useful resources

Resource	Description
http://now.netapp.com/	NOW access page
http://www.netapp.com/de/support/	Official Netapp support site