NetGen Communications, Inc.

# **Smart ATA<sup>®</sup> Binary Upgrade Procedure**

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# **1** Introduction

# **1.1 Overview**

In most cases, upgrading a Smart ATA can be done with any of the following 2 ways:

- 1) Using Auto Configuration
- 2) Using the web GUI

However, in the situation where the kernel software of the Smart ATA has changed, and not just the firmware, a special procedure needs to be done in order to perform the upgrade.

## **1.2** Purpose

The purpose of this document is to describe the procedure used to upgrade the Smart ATA when a kernel update has been provided.

## **1.3** Determining the Firmware and Kernel Versions

#### 1.3.1 In the new release file provided by NetGen

The version in the new software can be determined by looking at the file name. The name of the file will be in the format NetGenJ1.<kernel\_version><firmware\_version><firmware\_subversion>.<file\_format>. An example is NetGen.J1.1.1.9.334.E0.03.bin. In this example, the kernel version is 1.1.9, the firmware version is 334 and it is a binary file. The other file format would be a standard Smart ATA upgrade file and would end in tar.gz.

#### 1.3.2 On the Smart ATA

The version of the Smart ATA can be found by selecting Version info in the upper right hand corner of the web GUI.

Figure 1-1 shows the Version info screen for a Smart ATA. In this example the kernel version in 1.1.9 and the firmware version is 334.

Figure 1-1 Smart ATA Version info Screen

C M       192.168.16.66/index1.htm       Suggested Sites       Web Slice Gallery       Imported From IE       M Gmail       Workspace Login       www.ietf.org/rfc/rfc       www.broadband-for         Welcome admin       Login time: 2014-07-23 13:04:33       Click here to get the version information       Version info         Basic       Network       Routing       Phone/Line       Advanced       Status       Logs       Tools         Logout       Software version       Rev 1.9.8 (334       This is the firmware version       Hardware version       Logout	→ C ↑ □ 192.168.16.66/index1.htm         Apps       □ Suggested Sites       □ Web Slice Gallery       □ Imported From IE       M Gmail       ⊙ Workspace Login        www.bicadband-for         Welcome admin       Login time: 2014-07-23 13:04:33       Click here to get the version information       Version info         Basic       Network       Routing       Phone/Line       Advanced       Status       Logs       Tools         Logout       Software version       Rev 1.9.8(334)       This is the firmWare version       Hardware version       Logout         Software version       Rev 1.9.8(334)       This is the firmWare version       Kernel version       Kernel version         Hardware version       Kernel 1.9 (r)       This is the kernel version       Software version       Kernel version	Smart ATA		
Province Software version Rev 1.9.8.634 This is the firmware version Rev 1.9.1.14X402	Apps Suggested Sites Web Sites Galley Imported From IE M Gmail Workspace Login Imported row. Werkspace Login Imported row. Werkspace Login Imported row. Version.information Version.information	⇒ C fi	192.168.16.66/index1.htm	2
Click here to get the version information       Version info         Basic       Network       Routing       Phone/Line       Advanced       Status       Logs       Tools         Logout	Software version       Rev 1.9.8 (34)       This is the firmware version       Logout         Software version       Rev 1.9.8 (34)       This is the firmware version       Hardware version         Hardware version       Rev 1.0.1 HX402       Kernel version       Kernel version	opps 🚺 Sugges	ted Sites 🕒 Web Slice Gallery 🗀 Imported From IE M Gmail   🏷 Workspace Login 🕋 www.ietf.org/rfc/rfc 🌹 www.broadband-for	
Basic         Network         Routing         Phone/Line         Advanced         Status         Logs         Tools           Logout	Basic         Network         Routing         Phone/Line         Advanced         Status         Logs         Tools	Welcome ad	Imin Login time: 2014-07-23 13:04:33 Click here to get the version information	Version info
Software version         Rev 1.9.8 (334)         This is the firmware version           Hardware version         Rev 1.0.1 HX402	Software version       Rev 1.9.8 (33)       This is the firmware version         Hardware version       Rev 1.0.1 HX402         Kernel version       Kerne 1.1.9 r)	Basic	Network Routing Phone/Line Advanced Status Logs	Tools
Software version Rev 1.9.8 (334) This is the firmware version Hardware version Rev 1.0.1 HX402	Software version       Rev 1.9.8 (34)       This is the firmware version         Hardware version       Rev 1.0.1 HX402         Kernel version       Kerne (1.9 F)         This is the kernel version			Logout
Hardware version Rev 1.9.8.334 THIS IS the Hirthware version Rev 1.0.1 HX402	Software version     Rev 1930 334     This is the furniture version       Hardware version     Rev 1.0.1 HX402       Kernel version     Kernel 1.1.9 F)		This is the firmware version	
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Kernel version Kernel (1.1.9) F) I his is the Kernel version			Kernel version Kerne (1.1.9)F) This is the kernel version	

## **1.4 Determining Which Upgrade Procedure to Use**

The binary upgrade procedure described in this document only needs to be followed if the kernel version of the new software is different than the kernel version currently installed on the Smart ATA.



## 2.1 Pre-requisites

#### 2.1.1 FTP Server

The binary upgrade process requires the use of an FTP server. In the case where an FTP server is unavailable, the necessary files can be downloaded using the NetGen FTP server.

#### 2.1.2 IP address of the Smart ATA

If the IP address of the Smart ATA is not known, please connect a phone to one if the FXS ports of the Smart ATA. The FXS ports are the ones labeled Phone 1, Phone 2, etc. on the back of the Smart ATA.

#### 2.1.3 Enable Telnet on the Smart ATA

Connect to the web GUI of the Smart ATA. Go to the Advanced->Security page. In the Telnet service section make sure that the radio button for the Telnet parameter is set to On. If it isn't, set it to On and set a password in the Telnet password and Confirm password fields.



Reboot the Smart ATA and telnet will be enabled.

#### 2.1.4 Backup Configuration

It is strongly recommended that the current configuration of the Smart ATA should be saved before proceeding with the binary upgrade. This will ensure that any configuration parameters will not be lost in the case of an upgrade failure.

## 2.2 Procedures

If the NetGen FTP server will be used, please skip to section 2.2.2 Telnet to the Smart ATA.

#### 2.2.1 Store files on the FTP Server

When there is a kernel change that requires a binary upgrade, a .zip file will be made available for download from the NetGen website (<u>www.netgencommunications.com</u>). This .zip file will contain:

- 1) The upgrade package (i.e. NetGen.J1.1.1.9.334.E0.03.bin).
- 2) The upgrade utility (i.e. kupdate.mx4.v1.13).
- 3) This instruction document.

It is very important that only the upgrade tool that is provided in the .zip file be used to perform the binary upgrade of the upgrade package contained in the .zip. If another version is used, there is a higher risk of the upgrade failing.

Place the upgrade package and the upgrade utility on the FTP server.

Please do not change the name of either file.

Please use binary mode when transferring the files.

After transferring the files, please check the file sizes. The file size of NetGen.J1.1.1.9.334.E0.03.bin is 8060928 bytes and the file size of kupdate.mx4.v.1.13 is 28056.

#### 2.2.2 Telnet to the Smart ATA

For information about telnet, including how to install it on Windows, please see the following article on the Microsoft website.

http://windows.microsoft.com/en-us/windows/telnet-faq

Telnet to the IP address of the Smart ATA. See section 2.1.2 IP address of the Smart ATA if it is unknown.



At the VoIP-AG login: prompt, enter root. At the Password: prompt, enter the telnet password for the Smart ATA that was configured according to section 2.1.3 Enable Telnet on the Smart ATA.



#### 2.2.3 FTP files to the Smart ATA

Change directories to the /tmp directory by entering cd /tmp at the ~ # prompt.



Connect to the FTP server. If the NetGen FTP server is used, connect to netgencommications.com by entering ftp netgencommunications.com (or ftp 72.16.220.36) at the /tmp # prompt.



At the Name (netgencommunications.com:root): prompt, enter anonymous. At the next prompt, please enter your e-mail address.

Telnet 192.168.16.66	3
<pre>VoIP-AG login: root Password:</pre>	

Switch to binary mode by entering bin at the ftp> prompt.



Turn on hash mode by entering hash at the ftp> prompt. This will cause a hash mark (#) to be displayed for every 1024 bytes that are transferred. This is useful to ensure that the download is still in progress.

Telnet 192.168.16.66
<pre>VoIP-AG login: root Password:</pre>

Change to the NetGenFTP directory.



Get the upgrade package by entering get NetGen.J1.1.1.9.334.E0.03.bin.

Telnet 192.168.16.66
VoIP-AG login: root Password: ~ # cd /tmp /tmp # ftp netgencommunications.com Connected to netgencommunications.com (72.16.220.36).
220 ProFTPD 1.3.4c Server (NETGEAR ReadyNAS) [72.16.220.36] Name (netgencommunications.com:root): anonymous 331 Anonymous login ok, send your complete email address as your password Password: 230 Anonymous access granted, restrictions apply Remote system type is UNIX. Using binary mode to transfer files.
ftp> bin 200 Type set to I ftp> hash Hash mark printing on (1024 bytes/hash mark). ftp> cd NetGenFTP 250 CWD command successful ftp> get NetGen_J1_1_1_9_334_F0_03_bin

If it was successful, a message will be on the screen that says something like 226 Transfer complete.



Get the upgrade tool by entering get kupdate.mx4.v1.13. Again, make sure that the transfer was successful.



Finally, log out of the FTP server.

Telnet 192.168.16.66
226 Transfer complete 8060928 bytes received in 4.79 secs (1.6e+03 Kbytes/sec)
ftp> get kupdate.mx4.v1.13 local: kupdate.mx4.v1.13 remote: kupdate.mx4.v1.13
227 Entering Passive Mode (72,16,220,36,129,84). 150 Opening BINARY mode data connection for kupdate.mx4.v1.13 (28056 bytes) ####################################
226 Transfer complete 28056 bytes received in 0.0399 secs (6.9e+02 Kbytes/sec)
ftp> bye 221 Goodbye
/tmp #

#### 2.2.4 Verify the Files

At the /tmp prompt, enter Is –I. Make sure that the file size of NetGen.J1.1.1.9.334.E0.03.bin is 8060928 and the file size of kupdate.mx4.v1.13 is 28056.

Do not continue if either file size is incorrect.

Telnet 192.168.16.	66	and set in			100	
227 Entering Pa 150 Opening BIN ################# 226 Transfer co 28056 bytes rec ftp> bye	ssive Mode ARY mode HHHHHHHHH mplete eived in f	e (72,16,220,3 lata connectio ### 0.0399 secs (6	36,129, on for 6.9e+02	84). kupda Kbyt	te.mx4 es/sec	.v1.13 (28056 bytes) )
221 Goodbye						
/tmp # Is -1			0000 1	1 04	44-00	
-rw-r-r-1	root	root 80	P0428	ul 24	14:30	NetGen.J1.1.1.9.334.E0.0
	mont	most	16 1	1 94	14-10	ann - A then tuch tong lich
IFWXFWXFWX I	. root	root	10 U 21 D	ui 24 ac 21	1000	ann -//tmp/web/engiish
	. root	root	21 1	.1 94	14.10	aps
	root	root	20 U 64 D	ui 24 22 24	1910	aucoupu.ini baata
	. FUUL	ruut	04 D	ec 31	1000	Nosts basts sui
	root	root		UL 21	14.07	NUSUS.UP1
	root	root	28626	ul 24	14:31	Kupdate.mx4.VI.I3
-ru-rr 1	root	root		ui 24	14:33	rectile
-rw-rr 1	root	root	104 J	ul 24	14:18	route default
$-\mathbf{r}\omega-\mathbf{r}-\mathbf{r}-\mathbf{r}-\mathbf{r}-\mathbf{r}-\mathbf{r}$	root	root	N N	ec 31	1969	teinet_rule
drwxr-xr-x 2	root	root	ים ש	ul 24	14:18	timezone
-rwx 1	root	root	23 D	ec 31	1969	version
drwxrwxr-x 6	522	522	ឲ្រ	ul 24	14:18	web
-rw-rr 1	. root	root	ØD	ec 31	1969	web_rule
/tmp # _						

#### 2.2.5 Run the Upgrade Tool

First, make the upgrade tool executable by entering chmod +x kupdate.mx4.v1.13.

Telnet 192.168.	16.6	56						
150 Opening B ############## 226 Transfer 28056 bytes r ftp> bye 221 Goodbye.	IN HH CO eco	ARY mode ######### mplete eived in	e data connec           n 0.0399 sec:	ction for s (6.9e+	r kuj 02 KJ	pdat byte	ce.mx4 es/sec)	.v1.13 (28056 bytes)
∕tmp # 1s -1				00/0000		~ 4	44-00	
-rw-r-r	1	root	root	8060328	յու	24	14:30	NetGen.J1.1.1.9.334.E0.0
3.D1N	-1	maat	maat	16	T 7	94	14.10	and the test of the second second
IFWXFWXFWX	÷	root	root	10	Daa	24	14-10	ann =///cmp/web/engiish
-ru-rr	÷	root	root	21	pec	31	1303	aps
-rw-rw-rw-	ļ	root	root	20	วัตา	24	14:18	autoupd.ini
-rw-rr	1	root	root	64	Dec	31	1969	hosts
-rw-rr	1	root	root	64	Dec	31	1969	hosts.ori
-rw-rr	1	root	root	28056	Jul	24	14:31	kupdate.mx4.v1.13
-rw-rr	1	root	root	Ø	Jul	24	14:33	recfile
-rw-rr	1	root	root	104	Jul	24	14:18	route.default
-rw-rr	1	root	root	Ø	Dec	31	1969	telnet_rule
drwxr-xr-x	2	root	root	Ø	Jul	24	14:18	timezone
-rwx	1	root	root	23	Dec	31	1969	version
drwxrwxr-x	6	522	522	й	Jul	24	14:18	web
-ru-r-r	1	root	root	й	Dec	31	1969	web rule
/tmn # chmod	+1	kundate	a my4 u1 13	2	200	01	2101	
/tmp #	~	mapaaco	STRATE TO					
womb #		-						

Now run the tool by entering ./kupdate.mx4.v1.13 NetGen.J1.1.1.9.334.E0.03.bin –n. When prompted, enter yes.

Telnet 192.168.16	.66			-		1			
lrwxrwxrwx 1	l root	root	16	Jul	24	14:18	ann -> /tmp/web/english		
-rw-rr 1	l root	root	21	Dec	31	1969	aps		
-rw-rw-rw-	l root	root	20	Jul	24	14:18	autoupd.ini		
-rw-rr 1	l root	root	64	Dec	31	1969	hosts		
-rw-rr 1	l root	root	64	Dec	31	1969	hosts.ori		
-rw-rr 1	l root	root	28056	Jul	24	14:31	kupdate.mx4.v1.13		
-rw-rr 1	l root	root	_0	Jul	24	14:33	recfile		
-rw-rr 1	l root	root	104	Jul	24	14:18	route.default		
-rw-rr 1	l root	root	9	Dec	31	1969	telnet_rule		
drwxr-xr-x 2	2 root	root	0	<b>J</b> u1	24	14:18			
-rwx	l root	root	23	Dec	31	1969	version		
drwxrwxr-x 6	5 522	522	ខ	մոլ	24	14:18	web		
-rw-rr	l root	root	ы	Dec	<b>31</b>	1969	web_rule		
/tmp # chmod +>	k kupdate.	nx4.v1.13		~~ .		~~			
/tmp # /kupdat	te.mx4.v1.1	13 NetGen.J1	.1.1.9.	334.	.ЕИ.	.03.bir	n —n		
Version: 1.13,	CPU:HX4								
Flash: 0 + 4864	4 = 4864 K	10 .							
opening flash o	levice /deu	/mtdØ !	4 1015						
Flash Size: 81	Z RB , Sec	tor Size: 6	4 KB						
roading image :	Loading image into RAM OK!								
buffer length	= 8060728, 	read 8060923	8 bytes						
Image COX00050	ana Teu=ax	, , , , , , , , , , , , , , , , , , ,			<b>41</b>		1		
If continue, t	Abe iu . Aea	to proceed	a, or a	uny c	i c'ne	r to (	cancel.		
yes_									

The upgrade should take between two and four minutes.

Please do not close the window or remove power until the upgrade is complete. Doing so could cause an upgrade failure that would result in the Smart ATA having to be sent back for repair.

When the message OK! Rebooting ... appears on the screen, the upgrade is complete and the Smart ATA will automatically reboot.

Telnet 192.168.16.6	6							
-rw-rr 1	root root	0 Jul	24 14:33	recfile				
-rw-rr 1	root root	104 Jul	24 14:18	route.default				
-rw-rr 1	root root	Ø Dec	31 1969	telnet_rule				
drwxr-xr-x 2	root root	0 Jul	24 14:18					
-rwx 1	root root	23 Dec	31 1969	version				
drwxrwxr-x 6	522 522	ջ մոյ	24 14:18	web				
$-\mathbf{r}\mathbf{w}-\mathbf{r}-\mathbf{r}-\mathbf{r}-\mathbf{r}-1$	root root	0 Dec	31 1969	web_rule				
/tmp # chmod +x	kupdate.mx4.v1.	13						
/tmp # ./kupdate	e.mx4.v1.13 NetG	ien.J1.1.1.9.334.	E0.03.bi	<b>ח−</b> ח				
Version: 1.13, C	SPU:HX4							
Flash: 0 + 4864	= 4864  K	•						
Place Circle 9102	VICE / AEV/MTAU	I CA VD						
Flash Size. 6172	A DAM AVI	20- 04 ND						
buffer length =	2060922 waad 9	060928 butes						
Durrer length - $8060726$ , read $8060726$ bytes								
If continue tur	be in 'ues' to y	woceed ov anu o	ther to d	rancel				
hes continue, type in yes to proceed, or any other to cancel.								
Erasing and conu	uing							
erase addr:50000	d. erase len:7b0	1999						
000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000	000000000000000000000000000000000000000	00000000000			
000000000000000000000000000000000000000	0000000##########	***********						
OK! rebooting								

#### 2.2.6 Verify the Upgrade

Log back in to the web GUI and verify that the Smart ATA now has the correct kernel version and firmware version.

#### Smart ATA Binary Upgrade Procedure

🗋 Smart ATA								3
← → C fi	192.168.16.66/	index1.htm					52	=
🔢 Apps 🌄 Sugge	sted Sites 📄 Web Slice	Gallery 📋 Imported From I	E M Gmail 👸 Wo	rkspace Login 🚟 ww	w.ietf.org/rfc/rfc	🛪 www.broadband-for		
Welcome a	dmin Login time: 2014	1-07-23 13:04:33		Click I	here to get the	version information	Version info	
Basi	c Networ	k Routing	Phone/Line	Advanced	Status	Logs	Tools	
							Logout	
			Th	is is the firmwar	o vorsion			
		Software version Re Hardware version Re	v 1.9.81.334		e version			
		Kernel version Ke	rne 1.1.9 F) T	his is the kernel	version			
		· ·	<u> </u>					