An N-Series system is comprised of Encoders, Decoders, and other available accessories including Network Video Recording (NVR) solutions, Window Processing (WP) units, and Audio Transceivers (ATRs). The system allows you to distribute HD video and audio across a Gigabit Ethernet network.

Refer to this document to find the commands needed for your application. This document applies to N-Command Controllers (SC-N8001, SC-N8002, and SC-N8012).

NOTE: This information is considered current as of the date of publication. AMX reserves the right to add/modify/remove commands and change the standard response packet as needed.

NOTE: In the Example sections of this document, <CR> indicates a carriage return as defined by your control method (e.g., \x0d, $0d, 00x0d, 0x0d, 0dH). <CRLF> is also supported, but not required.

Accessing N-Command

N-Command has a web-based interface. To access the interface, open a web browser and navigate to the unit's IP address. Google Chrome or Mozilla Firefox are the recommended browsers.

Default Username: **admin**

Default Password: **password**

NOTE: The N8000 Software is based in part on the work of the Independent JPEG Group.

NOTE: This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/).

Enabling Third-Party Control

The control system will need to establish a single persistent socket connection between the control system and the N-Command unit. The socket needs to connect to port 50020.

For Multiple Processors/Brands

There is virtually no limit to the number of connections that can be established between third-party control systems and the N-Command units. However, it is recommended if an application will require greater than 80 connections that a second unit be purchased for load balancing applications or master/client setups. Please contact technical support about your application if you have questions about this process.

System Setup Using Push Notifications

N-Command supports push notification systems for third-party control systems. The advantages of this include:

- **No polling needed.** When N-Command detects a change in one of the monitored fields, the unit sends a notice to the third-party control system with the update for the unit.
- **Simplified status packets for all monitored devices.** Status packets contain all relevant information for system operation and monitoring. Details are provided in the tables found later in this document.

To Enable Push Notifications for Devices

1. Every time a connection is initiated, a monitor command must be sent out from the third-party control system with the IP address of the device to be monitored. The command is:
   `monitor <IPAddress> CRLF`
2. After a device is monitored, the status of that device will be reported when a change occurs. To get the status of a monitored device at any time (when no changes have occurred) send the following command:
   `monitornotify <ipAddress> CRLF`
3. The simplified status responses are detailed later in this document.
4. If a connection is dropped, the monitor command must be present when the connection is re-established.
5. Simplified status packets are encapsulated in an XML block of <status>...</status>. Additional messages may be sent from N-Command to the control system (verbose messages including switch confirmations and command acknowledgments).
6. Monitor commands (e.g., `monitor 169.254.34.55`) need to be delayed between commands for approximately 20 milliseconds. For example:
   - `monitor 169.254.34.55<CR>`
   - <wait 20 ms>
   - `monitor 169.254.34.56<CR>`
7. All other commands do not need a delay, and they can be executed in as little as a single logic wave by separating commands with a carriage return. For example: `switch 169.254.34.55 120<CR>live 169.254.34.55<CR>`
8. Commands can also be sent with no delay in separate logic waves. For example:
   - `switch 169.254.34.55<CR>`
   - `live 169.254.34.55<CR>`

Command Structure

All commands detailed in this document follow the same general format. They can be generated from within N-Command software by going to **Build > Script Builder** and using the drop-down menus to automatically generate control codes. For those pre-programming hardware, use the tables provided in this document to determine your commands following this structure:

```
<action> <destination> <requiredInformation>
```

OR

```
switch 169.254.10.104 221
```

NOTE: All fields are separated by a space.

Panel Builder

N-Command units offer a GUI application called Panel Builder. Access this function from N-Command by selecting **Build > Panel Builder**. You can use panels as a standalone control option or as an extension to a third-party control system. Generate panels for display on any mobile device or computer. The look and feel is completely customizable. Programming, design, and implementation are incredibly fast using the built in-controls.

Getting More Information

To find direct control commands for other devices and for more information on controlling an N-Series device using N-Able or N-Command, please refer to additional documentation found on our website (www.amx.com/svsi/resources.asp).

API Commands

Encoder Commands

Command	Description	Required Variables	Example	N-Series Support	V-Series Support
live	Sets Encoder or Decoder to live play mode.	Encoder IP	live 169.254.104.1<CR>	Y	Y
modeoff	Disables the Encoder from broadcasting any traffic to the network. If any Encoders are viewing this stream, they will transition to local play (loss of stream).	Encoder IP	modeoff 169.254.105.25<CR>	Y	Y
local	Activates a Host playlist. Valid options are 1-8.	Encoder IP and playlist number	local 169.254.30.238 1<CR>	Y	Y
serial	Sends stored serial command (referenced by CommandID #) to device at IP address. Command not valid for V-Series Encoders.	Encoder IP and serial command ID	serial 169.254.17.88 29<CR>	Y	N
serialhex	Sends raw serial command (HEX) to device through N-Command. Wait time determines time for N-Command to automatically ask for the response from the attached device.	wait time (in seconds), Encoder IP, serial command HEX	serialhex 1 169.254.17.88 43 4f 4d 4d 41 4e 44<CR>	Y	N
serialhex	Sends raw serial command (ASCII) to device through N-Command. Wait time determines time for N-Command to automatically ask for the response from the attached device.	wait time (in seconds), Encoder IP, serial command ASCII	serialhex 1 169.254.17.88 "COMMAND"<CR>	Y	N
readresponse	Reads the response from a serial command sent from N-Command where "Read Response" check-box was enabled when command is saved, or serialhex command is used.	Encoder IP	readresponse 169.254.17.88<CR>	Y	N
sendir	N-Series devices only: Executes IR command saved on Encoder/Decoder. Reference is by name, and is case sensitive.	Encoder IP, command name	sendir 169.254.212.1 Play<CR>	Y	N
sendirraw	N-Series devices only: Executes IR command without saving command on device. Uses long form Pronto HEX Codes provided by equipment manufacturer.	Encoder IP, IR pronto code	sendirraw 169.254.38.121 0000 006C 0022 0000 015B 00AD 016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0622<CR>	Y	N
audioon	Enables audio output for Encoder or Decoder.	Encoder IP	audioon 169.254.30.238<CR>	Y	Y
audiooff	Disables audio output for Encoder or Decoder.	Encoder IP	audiooff 169.254.30.238<CR>	Y	Y
enablecc	Enables Color Space Correction (use if screen is pink or green).	Encoder IP	enablecc 169.254.105.1<CR>	Y	Y
disablecc	Disables Color Space Correction (use if screen is pink or green).	Encoder IP	disablecc 169.254.105.1<CR>	Y	Y
autocc	Sets Color Space Correction to Auto (N-Series Encoders ONLY).	Encoder IP	autocc 169.254.105.1<CR>	Y	N
enablehdmiaudio	Enables HDMI audio on Encoder (if video source is analog, this is disabled by default).	Encoder IP	enablehdmiaudio 169.254.105.1<CR>	Y	Y
disablehdmiaudio	Disables HDMI audio, and will only use Analog Audio connection.	Encoder IP	disablehdmiaudio 169.254.105.1<CR>	Y	Y
autohdmiaudio	N-Series devices only: Encoder detects HDMI audio support via Source EDID information and enables/disables as appropriate.	Encoder IP	autohdmiaudio 169.254.105.1<CR>	Y	N
uncompressedoff	Turns compression on for V-Series Encoder.	Encoder IP	uncompressedoff 169.254.229.208<CR>	N	Y

Decoder Commands

Command	Description	Required Variables	Example	N-Series Support	V-Series Support
switch	Switches Decoder video stream by IP address. If Decoder audio follows is enabled, this will switch the audio stream as well.	Decoder IP and Encoder IP	switch 169.254.104.1 169.254.105.1<CR>	Y	Y
switch	Switches Decoder video stream by Encoder stream number. If Decoder audio follows is enabled, this will switch the audio stream as well.	Decoder IP and Encoder stream number	switch 169.254.104.1 212<CR>	Y	Y
switchaudio	Switches Decoder audio stream by IP address. This will only switch the audio stream. *Note: Decoder will have an * next to its name in the matrix when the device is not set to audio follow video.*	Decoder IP and Encoder IP	switchaudio 169.254.104.1 169.254.105.1 <CR>	Y	Y
switchaudio	Switches Decoder audio stream by Encoder stream number. This will only switch the audio stream. *Note: Decoder will have an * next to its name in the matrix when the device is not set to audio follow video.*	Decoder IP and Encoder stream number	switchaudio 169.254.104.1 212<CR>	Y	Y
switchkvm	Switches KVM video and USB (affecting video, mouse, and keyboard) from Decoder to Encoder.	Decoder IP and Encoder IP	switchkvm 169.254.104.1 169.254.105.1 <CR>	Y	N
switchusb	Switches KVM USB (affecting mouse and keyboard only) from Decoder to Encoder.	Decoder IP and Encoder IP	switchusb169.254.104.1 169.254.105.1 <CR>	Y	N
audiofollow	Sets the Decoder back to audio follow mode. If currently listening to a different audio stream, box will immediately switch to current video stream's audio. Can also be accomplished by sending a switchaudio command to set to stream 0.	Decoder IP	audiofollow 169.254.104.1<CR>	Y	Y
live	Sets Decoder to live play mode.	Decoder IP	live 169.254.104.1<CR>	Y	Y
local	Activates a local playlist. Valid Options are 1-8. Check device limitations (some devices only support playlist 1).	Decoder IP AND playlist number	local 169.254.30.238 1<CR>	Y	Y
serial	Sends stored serial command (referenced by CommandID #) to device at IP address.	Decoder IP and serial command	ID serial 169.254.17.88 29<CR>	Y	Y
serialhex	Sends raw serial command (HEX) to device through N-Command. Wait time determines time for N-Command to automatically ask for the response from the attached device.	wait time (in seconds) Decoder IP, serial command HEX	serialhex 1 169.254.17.88 43 4f 4d 4d 41 4e 44<CR>	Y	Y
serialhex	Sends raw serial command (ASCII) to device through N-Command. Wait time determines time for N-Command to automatically ask for the response from the attached device.	wait time (in seconds), Decoder IP, serial command ASCII	serialhex 1 169.254.17.88 "COMMAND"<CR>	Y	Y
readresponse	Reads the response from a serial command sent from N-Command where the "Read Response" check-box was enabled when command is saved, or where serialhex command is used.	Decoder IP	readresponse 169.254.17.88<CR>	Y	Y
volume	Sets the Decoder's volume level (0-100).	Decoder IP	volume 169.254.225.39 50<CR>	Y	Y
sendir	Executes IR command saved on Decoder. Reference is by name and is case sensitive.	Decoder IP, command name	sendir 169.254.212.1 Play<CR>	Y	N

Decoder Commands (Cont.)

Command	Description	Required Variables	Example	N-Series Support	V-Series Support
sendirraw	Executes IR command without saving command on device. Uses long form Pronto HEX Codes provided by equipment manufacturer.	Decoder IP, IR pronto code	sendirraw 169.254.38.121 0000 006C 0022 0000 015B 00AD 016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0622<CR>	Y	N
audioon	Enables audio output for Decoder.	Decoder IP	audioon 169.254.104.1<CR>	Y	Y
audiooff	Disables audio output for Decoder.	Decoder IP	audiooff 169.254.104.1<CR>	Y	Y
dvion	Enables the DVI output of Decoder.	Decoder IP	dvion 169.254.104.1<CR>	Y	Y
dvioff	Disables the DVI output of the Decoder.	Decoder IP	dvioff 169.254.104.1<CR>	Y	Y
enablehdmiaudio	Enables digital audio output of Decoder.	Decoder IP	enablehdmiaudio 169.254.104.1<CR>	Y	Y
disablehdmiaudio	Disables digital audio output of Decoder.	Decoder IP	disablehdmiaudio 169.254.104.1<CR>	Y	Y
autohdmiaudio	Detects display support for digital audio and outputs digital audio if appropriate.	Decoder IP	autohdmiaudio 169.254.104.1<CR>	Y	N
cropref	Enables cropping functionality (scaler must be enabled) to the coordinates given in the command. X1Y1 are top-left corner. X2Y2 are bottom-right corner.	Decoder IP, X1Y1, X2Y2 coordinates	cropref 169.254.104.1 10 10 20 20<CR>	Y	N

N6123 Network Video Recorder Commands

Command	Description	Required Variables	Example
record	Starts a single channel recording. Record description cannot exceed 250 characters (no special characters are supported).	DVR IP, source IP, record duration (in minutes), record description	record 169.254.178.49 169.254.30.238 5 MY RECORDING<CR>
dsrecord	Starts a dual sync recording. Record description cannot exceed 250 characters (no special characters are supported).	DVR IP, source 1 IP, source 2 IP, record duration, record description	dsrecord 169.254.178.49 169.254.30.238 169.254.23.72 5 MY RECORDING 1 and MY RECORDING 2<CR>
dvrswitch1	Switches first stream on the DVR to a new selection during a recording.	DVR IP, new source IP OR stream number	dvrswitch1 169.254.178.49 169.254.30.238<CR>
dvrswitch2	Switches second stream on the DVR to a new selection during a recording.	DVR IP, new source IP OR stream number	dvrswitch2 169.254.178.49 169.254.30.238<CR>
mpeg	Converts the latest specified stream on the DVR to mpeg. 1 for first stream (in dual sync recording) 2 for second stream. Bitrate default is 7500000.	DVR IP, file, bitrate	mpeg 169.254.178.49 latest 1 bitrate:7500000<CR>
mpegall	Converts all files on the DVR from a specified timeframe to mpeg. "24 0" indicates convert all files recorded from time of command execution back 24 hours.	DVR IP, beginning timeframe, ending timeframe, bitrate	mpegall 169.254.178.49 24 0 bitrate:7500000<CR>
deletempegfile	Deletes the most recent mpeg file recording on the DVR.	DVR IP, file index to delete (OR "latest" to delete the last recorded file)	deletempegfile 169.254.178.49 latest<CR>
play	Plays a specific file from a DVR. Start/stop offset in seconds. Offsets start/stop recording by a specific time from the beginning or end of the file. Default is 0 0. Note: In N3000 mode, this command is repeated for each channel (1-10). For example play1, play2, play3, etc.	DVR IP, file index to play (OR "latest" to play the last recorded file), looping, start offset, stop offset	play 169.254.178.49 latest noloop 0 0<CR> play 169.254.178.49 f.528E37F2.index loop 0 0<CR>
stop	Stops playback on DVR. Note: In N3000 mode, this command is repeated for each channel (1-10). For example stop1, stop2, stop3, etc.	DVR IP	stop 169.254.178.49<CR>
pause	Pauses playback on DVR.	DVR IP	pause 169.254.178.49<CR>
unpause	Resumes playback on DVR.	DVR IP	unpause 169.254.178.49<CR>
fastforward	Fast forwards playback on DVR.	DVR IP	fastforward 169.254.178.49<CR>

N6123 Network Video Recorder Commands (Cont.)

Command	Description	Required Variables	Example
rewind	Rewinds playback on DVR.	DVR IP	rewind 169.254.178.49<CR>
deletefile	Deletes specified file on DVR.	DVR IP, file index to delete (OR "latest" to delete the last recorded file)	deletefile 169.254.178.49 latest<CR>
stepforward	Jumps playback forward.	DVR IP	stepforward 169.254.178.49<CR>
stepreverse	Jumps playback in reverse.	DVR IP	stepreverse 169.254.178.49<CR>
stoprecord	Stops recording on DVR.	DVR IP	stoprecord 169.254.178.49<CR>
recordhold	Holds recording on DVR.	DVR IP	recordhold 169.254.178.49 <CR>
recordrelease	Releases recording on DVR.	DVR IP	recordrelease 169.254.178.49<CR>
playhold	Holds play on DVR.	DVR IP	playhold 169.254.178.49<CR>
playrelease	Releases play on DVR.	DVR IP	playrelease 169.254.178.49<CR>
deleteallplaylist	Deletes all recorded files on DVR.	DVR IP	deleteallplaylist 169.254.178.49<CR>
deleteallmpegs	Deletes all MPEG files on DVR.	DVR IP	deleteallmpegs 169.254.178.49<CR>
remotecopy	Copies all MPEG files to Designated Network Storage Array.	DVR IP	remotecopy 169.254.178.49 all<CR>

Windowing Processor Commands

Command	Description	Required Variables	Example
wpswitch	Switches streams on a specific window to a specified source.	WP IP, window number, source IP	wpswitch 169.254.120.2 1 169.254.30.238<CR>
wpaudioin	Specifies which audio stream to listen to.	WP IP, source IP	wpaudioin 169.254.120.2 169.254.30.238<CR>
wpactive	Activates a specific window.	WP IP, window number	wpactive 169.254.120.2 1<CR>
wpinactive	Deactivates a specific window.	WP IP, window number	wpinactive 169.254.120.2 1<CR>
wpaudioon	Turns on Windowing Processor audio.	WP IP	wpaudioon 169.254.120.2<CR>
wpaudiooff	Turns off Windowing Processor audio.	WP IP	wpaudiooff 169.254.120.2<CR>
wpmodeon	Turns Windowing Processor mode on.	WP IP	wpmodeon 169.254.120.2<CR>
wpmodeoff	Turns Windowing Processor mode off.	WP IP	wpmodeoff 169.254.120.2<CR>
wparrange	Arranges a specific window on the Windowing Processor.	WP IP, window number, window arrangement coordinates (in pixels)	wparrange 169.254.120.2 1 0 0 10 10<CR>
wpbackground	Chooses a background for the Windowing Processor.	WP IP, background number	wpbackground 169.254.120.2 1<CR>
wpcrop	Adjusts the crop settings on a specific window.	WP IP, window number, crop coord.inates (in pixels)	wpcrop 169.254.120.2 1 0 0 0 0<CR>
wppriority	Sets the priority for a specific window.	WP IP, window number, priority number	wppriority 169.254.120.2 1 1<CR>
wpbordon	Turns on the border on a specific window.	WP IP, window number	wpbordon 169.254.120.2 1<CR>
wpbordoff	Turns off the border on a specific window.	WP IP, window number	wpbordoff 169.254.120.2 1<CR>
wppreset	Activates an internal preset.	WP IP, preset number	wppreset 169.254.120.2 0<CR>

N4321 Audio Transceiver Commands

Command	Description	Required Variables	Example
atrswitch	Switches audio on the ATR to a specified source.	ATR IP, source IP	atrswitch 169.254.252.121 169.254.30.238<CR>

N4321 Audio Transceiver Commands (Cont.)

Command	Description	Required Variables	Example
atrswitch	Switches ATR audio stream by Encoder stream number.	ATR IP and Encoder stream number	atrswitch 169.254.104.1 212<CR>
atrmute	Mutes the ATR's output.	ATR IP	atrmute 169.254.252.121<CR>
atrunmute	Turns off mute on the ATR's output.	ATR IP	atrunmute 169.254.252.121<CR>
atrtxmute	Disables the ATR's transmit output.	ATR IP	atrtxmute 169.254.252.121<CR>
atrtxunmute	Enables the ATR's transmit output.	ATR IP	atrtxunmute 169.254.252.121<CR>
atrhpvol	Sets the ATR's headphone volume level (0-100).	ATR IP, volume number	atrhpvol 169.254.252.121 50<CR>
atrlovol	Sets the ATR's lineout volume level (0-100).	ATR IP, volume number	atrlovol 169.254.252.121 75<CR>
atrlovolup	Increments the lineout volume by the given value (e.g., if volume is currently 40 and the command is to increment by 5, this will make the new volume 45).	ATR IP, amount to increase	atrlovolup 169.254.252.121 5<CR>
atrlovoldown	Decrements the lineout volume by the given value.	ATR IP, amount to decrease	atrlovoldown 169.254.252.121 5<CR>
atrhpvolup	Increments the headphone out volume by the give value.	ATR IP, amount to increase	atrhpvolup 169.254.252.121 5<CR>
atrhpvoldown	Decrements the headphone out volume by the given value.	ATR IP, amount to decrease	atrhpvoldown 169.254.252.121 5<CR>
openrelay	Opens a specific relay on the ATR (relay number = 1 or 2).	ATR IP, relay number	openrelay 169.254.43.21 1
closerelay	Closes a specific relay on the ATR (relay number = 1 or 2).	ATR IP, relay number	closerelay 169.254.43.21 1

Video Wall Commands

Command	Description	Required Variables	Example
videowall	Changes a video wall layout (Decoders or with Windowing Processors) to the new layout.	Name of video wall, name of layout	videowall "myVidWall" "fullScreen"<CR>
videowall	Changes one window within the video wall to a new source. Can be referenced by IP or stream number.	Name of video wall, name of layout, layer to switch, stream number (or IP of Encoder)	videowall "myVidWall" "fullScreen" 1 123<CR>

Miscellaneous Commands

Command	Description	Required Variables	Example
script	Executes the stored script. Script must be saved to N-Command prior to executing. This command also supports script variables. The first variable is always the script ID number, so when adding variables to your script make sure they begin with 2 and count up. A variable is entered by using {{X}} around the desired number. More information is available at the end of this table (see the command *{{2}}, {{3}}, etc.* on page 8).	Script ID	script 33<CR>
goto	In a panel builder project, switches to a different panel.	Panel ID	goto 50<CR>
tcpclient	Sends command to destination device (e.g., IP controlled projector). Command and port are provided by the device manufacturer.	IP address of device, port number, command	tcpclient 192.168.10.20 5000 aa bb cc dd<CR>
udpclient	Sends command to destination device (e.g., IP controlled projector). Command and port are provided by the device manufacturer. Command is UDP.	IP address of device, port number, command	udpclient 192.168.10.20 5000 aa bb cc dd<CR>
reboot	Reboots an N-Series device at the IP address specified. Note: The reboot command supports 127.0.0.1, allowing the N-Command to reboot itself.	Device IP	reboot 169.254.25.12<CR>
gc_serial	Sends a serial command through a Global Cache device.	GC IP, serial port number, serial command	gc_serial 192.168.1.166 1:1 6b 61 20 30 20 30 31 0d<CR>
gc_openrelay	Opens a specific relay on a Global Cache device.	GC IP, relay port number	gc_openrelay 192.168.1.166 3:1<CR>

Miscellaneous Commands (Cont.)

Command	Description	Required Variables	Example
gc_closerelay	Closes a specific relay on a Global Cache device.	GC IP, relay port number	gc_closerelay 192.168.1.166 3:1<CR>
gc_ir	Sends an IR command through a Global Cache device.	GC IP, IR Port number, GC IR command	gc_ir 169.254.250.240 4:3 sendir,1,38000,1,1,347,173,22,22,22,22,22,65,22,22,22,22,22,22,22,22,22,65,22,65,22,22,22,22,22,65,22,65,22,65,22,65,22,22,22,22,22,65,22,22,22,22,65,22,22,22,22,22,22,22,22,65,22,22,22,65,22,65,22,22,22,65,22,65,22,65,22,1570<CR>
Tpc	Sends third-party library command. *NOTE: For more information see the section Third-Party Command Library: Adding and Using Commands* on page 9	IP address of Decoder, ID number of third-party command (in the command library number)	Tpc 169.254.250.240 106
{{_TIME_}}	Macro which inserts the current time in the format HH-MM-SS. Useful for NVR commands because it allows you to add a time stamp to a recording description.		08-17-54
{{_DATE_}}	Macro which inserts the current date in the format YYYY-MM-DD. Useful for NVR commands because it allows you to add a date stamp to a recording description.		2016-09-07
{{2}}, {{3}}, etc.	Macro which represent variables that will be replaced when calling a script. Useful for changing stream numbers.		script 100 200 Note: In the example above: - The macro {{0}} is replaced by the text **script**. - the macro {{1}} is replaced with the value **100**. - the macro {{2}} is replaced with the value **200**. This feature is available for every script command.

Third-Party Command Library: Adding and Using Commands

The third-party command library is a feature exclusive to the N-Command control products. Use this library to define commands for third-party devices (IR, RS-232, or IP based commands) in a spreadsheet program. Then import the command information into the centralized controller. The advantage of this approach is that the server stores all of the commands and allows you to bypass the process of loading commands to each individual unit. Loading commands individually is still an available option, but using the command library is significantly faster to implement and easier to control.

You can import and export library files from N-Command for use at other locations, or for editing and archival purposes. The file is stored as a standard comma separated file (CSV) and is editable in any spreadsheet program.

Creating the File Externally

The first row of the file must contain the appropriate column headers for the import process to work. They are listed below (in order):

Header Value	Data Value
ID	User-defined number: 1 to X
MANUFACTURER	Name of manufacturer (e.g., **LG**)
MODEL	Model name of device
COMMANDTYPE	ir | serial | network
COMMANDNAME	User-friendly name for command (e.g., **Power On**)
COMMANDDATA	Command data IR = Pronto Long Form HEX code RS-232 and network = manufacturer-specific string
NETWORKPORT	Port on destination device (applies if command is a network command)
TCPORUDP	TCP or UDP command

Example Entries

	A	B	C	D	E	F	G	H
1	ID	MANUFACTURER	MODEL	COMMANDTYPE	COMMANDNAME	COMMANDDATA	NETWORKPORT	TCPORUDP
2	10	Apple	AppleTV	ir	RIGHT	0000 006E 0022 0002 0157 00AC 0016	1	
3	20	LG	M2280D	serial	Power On	"ka 0 01\0d"	1	
4	21	LG	M2280D	serial	Power Off	6b 61 20 30 20 30 30 0d	1	

ASCII vs HEX

The library stores all data internally as HEX; however, data can be added to the spreadsheet in ASCII. To do this, add quotes around the ASCII data. HEX bytes, contained within quotes, are delimited with a backslash character (e.g., \0d\0a). During command setup, you can either pre-convert a command to HEX or use the quote method to create the command. If pre-converting to HEX, N-Able has a built-in ASCII to HEX utility. After import, all ASCII strings are converted to HEX. If exported again, the command will be in HEX.

Example of HEX Versus ASCII Entries

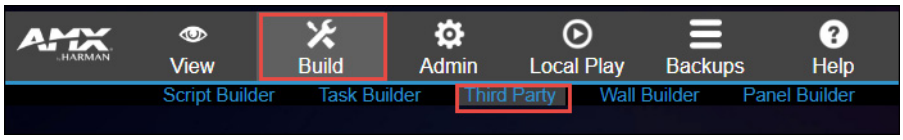
commandname	commanddata
Power On (ASCII)	ka 0 01\0d
Power On (HEX)	6b 61 20 30 20 30 31 0d

The examples above are identical commands. The top option is in ASCII and the bottom in HEX.

If the command contains quotes, you can use single quotes on the outside of the ASCII command (e.g., 'this is my "command"\0d\0a').

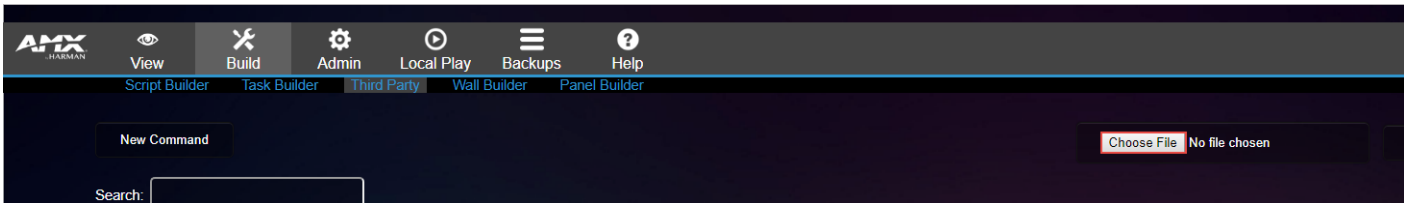
Importing/Exporting the CSV File

From the N-Command 2.0 main page, navigate to **Build > Third Party**.



To Import:

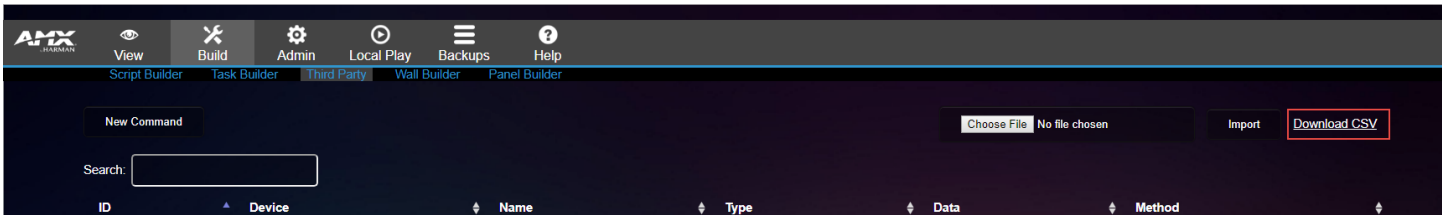
1. Select **Choose File**.



2. Browse to the file and click **Open**. The selected file name displays to the right of the **Choose File** button.
3. Click **Import**. The file uploads to the unit and processes through the commands.

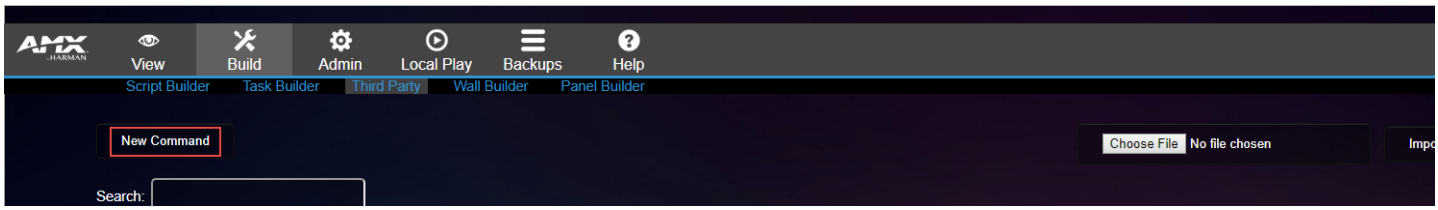
To Export:

Click the **Download CSV** link as shown below.

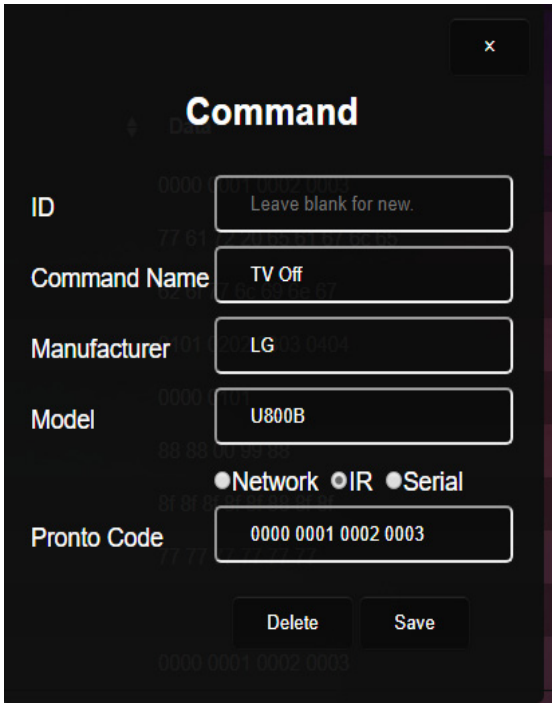


Adding Commands Manually

1. Click the **New Command** link as shown below.



2. The **Command** dialog box is displayed.
3. Leave the **ID** blank.
4. Enter the **Command Name**, **Manufacturer**, and **Model** for the new command.
5. Click the appropriate command type (**Network**, **IR**, or **Serial**) and fill in the other command data as appropriate.



6. Click **Save**. The command is now listed on the **Third Party** page.
7. To modify a command, simply click the command in the list to re-open the **Command** dialog box.

Please contact technical support at svsiupport@harman.com or 256.461.7143 x9900 for any installation issues.

3000 RESEARCH DRIVE, RICHARDSON, TX 75082 AMX.com | 800.222.0193 | 469.624.8000 | +1.469.624.7400 | fax 469.624.7153
AMX (UK) LTD, AMX by HARMAN - Unit C, Auster Road, Clifton Moor, York, YO30 4GD United Kingdom • +44 1904-343-100 • www.amx.com/eu/

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