

Firmware Upgrade

for IP DSLAM Modules, Micro DSLAMs and Mini DSLAMs

1.0 Required Tool: TFTP Client

A Trivial File Transfer Protocol (TFTP) client must be installed on your PC in order to execute the flash upload procedure for Net to Net Technologies' firmware upgrades.

1.1 TFTP for Windows

Windows NT, 2000 and XP all come with a command line TFTP client program pre-installed. Though Windows 95, 98 and ME do not come with a TFTP client, the file can be copied from a PC operating Windows NT or 2000 (not XP):

- On a PC operating Windows NT or Windows 2000, locate the TFTP file at C:\WINNT\SYSTEM32\tftp.exe.
- Copy the file to C:\WINDOWS on your Windows 95, 98 or ME PC.
- If you are unsure of the steps necessary to copy the file, contact your System Administrator or Information Technology Manager for help.

1.2 Downloading TFTP from the Internet

If your operating system does not include a TFTP client program and you are unable to copy Window's command line TFTP client, TFTP client programs can also be downloaded from the internet. Although any standard TFTP tool may be used, Net to Net recommends Walusoft's TFTP Suite Pro or Klever's PumKIN. Download as follows:

- Open a web browser
- Enter <http://www.walusoft.co.uk/download.htm> or <http://www.klever.net/kin/pumpkin.html> in the Address field
- Press the Enter key
- Follow the website directions

NOTE If you have selected to download a TFTP tool from Walusoft, you should select *Download TFTP Suite Pro for WIN95, 98, ME* even if you have Windows2000 or WindowsXP; TFTP Service is not needed for this particular application.

- Save the program in a temporary file (e.g., tftppro)
- Go to the temporary file (as saved above) and double click to open it
- The TFTPSuitePro2000 Installation window will pop up; follow prompts to install

NOTE Leave the installation configurations at default settings and continue clicking NEXT through the Installation Wizard until you get to the Select Components screen, then click to uncheck the TFTP Server box before continuing on (TFTP Client is the only requirement for uploading Net to Net firmware upgrades to your DSLAM).

2.0 IP DSLAM Backup

Net to Net strongly recommends backing up all IP DSLAM configurations prior to downloading any new firmware versions.

2.1 Backup

An IP DSLAM backup file contains all IP DSLAM management and port configurations. A DSLAM backup can be flash uploaded to a file on your PC or local network via a TFTP *get* command and the following information:

ITEM	DATA NEEDED FOR BACKUP	EXAMPLE
Host Name	DSLAM IP Address (syntax: xxx.xxx.xxx.xxx)	193.166.254.98
Remote Filename	nvr_backup.bin.[Superuser password]*	nvr_backup.bin.Password
Local Filename	user preference	dslam4921_backup.bin

*Net to Net's DEFAULT Superuser password is "Password".

CAUTION When saving IP DSLAM configurations to a local backup file, it is VERY IMPORTANT THAT YOUR LOCAL FILENAME IDENTIFY THE SPECIFIC DSLAM FROM WHICH THE CONFIGURATIONS WERE SAVED. A backup file records All DSLAM data INCLUDING IP ADDRESS. If the file is accidentally downloaded to a different DSLAM than that from which the file was originally created, the DSLAM's IP Address will be replaced with the IP Address in the file. Unless you know the IP Address that was in the backup file, you will be locked out of the DSLAM and will only be able to access it via a direct CLI connection. Otherwise, you may be forced to clear NVRAM, which would then require a complete reconfiguration of the chassis. If you are uncomfortable with the potential for inadvertently copying over a chassis' IP Address, you may wish to create a template file rather than a backup file; see Section 2.2 below.

2.2 Template

An IP DSLAM template contains all IP DSLAM management and port configurations, EXCEPT IP address. A template can be flash uploaded to a file on your PC or local network via a TFTP *get* command and the following information:

ITEM	DATA NEEDED FOR BACKUP	EXAMPLE
Host Name	DSLAM IP Address (syntax: xxx.xxx.xxx.xxx)	193.166.254.98
Remote Filename	nvr_cfg.bin.[Superuser password]*	nvr_cfg.bin.Password
Local Filename	user preference	dslam4921_template.bin

*Net to Net's DEFAULT Superuser password is "Password".

CAUTION When saving IP DSLAM configurations to a local template file, it is VERY IMPORTANT THAT YOUR LOCAL FILENAME IDENTIFY THE SPECIFIC DSLAM FROM WHICH THE CONFIGURATIONS WERE SAVED. Downloading a template file to the wrong DSLAM will replace all of the DSLAM's configurations (except IP address) with that of the DSLAM from which the file was originally created.

3.0 Download Firmware to Your PC

The latest firmware versions may be downloaded from <http://www.nettonet.com/support/downloads/> and saved to a file on your PC or local network.

Net to Net firmware files are organized by product type first and then by model name. Each filename reflects the firmware type in addition to the model name of the product for which it is intended (e.g., mum2000m.bin). You may change the filename as desired when saving the file locally.

CAUTION It is important that you download firmware for your EXACT product model. The full model name of a product is printed on a small white label that can be found on the rear or bottom of most units, or on the printed circuit board of interface modules. The full model name can also be determined via Net to Net's Network Management System (NMS).

4.0 Upload Firmware to Your DSLAM

4.1 Using Windows TFTP

4.1.1 Open Command Prompt

Open the Windows Command Prompt program:

- Click the Start button in the lower left-hand corner of your screen
- Click Programs
- Click Accessories
- Double Click Command Prompt

4.1.2 Enter The Upload Command

At the prompt (C:\>), type "tftp -i [DSLAM IP Address] put [image filename]" and then press the Enter key.

4.1.2.1 [DSLAM IP Address]

Address of the MUM, Micro DSLAM or Mini DSLAM to which you are uploading the firmware image

4.1.2.2 [image filename]

Filename under which the firmware file was saved on your PC or local network in Section 2.0.

4.1.2.3 EXAMPLE

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tftp -i 192.168.254.253 put c:\mum200m.bin
```

4.2 Using Walusoft TFTP

4.2.1 Open TFTP Client

Open the Walusoft TFTP Client32 program.

- Click the Start button in the lower left-hand corner of your screen
- Click Programs
- Click TFTPSuitePro2000
- Select TFTPClient32

4.2.2 Enter The Upload Request

Complete the Host (Section 3.2.2.1) and Local (Section 3.2.2.2) File fields, leaving the Remote File field blank and all other fields at default settings, then click the Send (or Put) button.

4.2.2.1 Host (DSLAM IP Address)

The IP Address of the MUM, Micro DSLAM or Mini DSLAM to which you want to flash download firmware. E.g., 192.168.254.253

4.2.2.2 Local File

The same filename under which you saved the firmware file in Section 2.0.

5.0 Firmware Upload Completion

5.1 Micro DSLAM and Mini DSLAM

Once the file upload has been completed, the Micro DSLAM or Mini DSLAM will take approximately two [2] minutes to reboot, during which time DSLAM subscribers will lose their internet connectivity.

5.2 IP DSLAM

Firmware upgrades for Multiplexer Uplink Modules and Interface Modules in an IPD12000 or IPD4000 must be uploaded separately.

5.2.1 Multiplexer Uplink Module (MUM) Upgrade

Once the file upload has been completed, the DSLAM will take approximately two [2] minutes to reboot, during which time DSLAM subscribers will lose their internet connectivity.

5.2.2 Interface Module Upgrade

Firmware upgrades for interface modules are uploaded to the DSLAM via the same commands as listed in Section 3.1.2 and 3.2.2; the MUM will automatically pass the firmware on to the appropriate module(s). The interface module(s) receiving the firmware upgrade will reboot after receiving the new firmware, during which time DSLAM subscribers connected through that interface module will lose their internet connectivity. An interface module reboot takes approximately two [2] minutes.

NOTE Multiple interface modules of the same model, installed in a single DSLAM will ALL automatically get the same firmware upgrade if an upload for that model is directed to the MUM. The MUM cannot differentiate between interface modules of the same model.

E.g., if there are three AAM8000-12s installed in an IPD12000 and you upload an AAM8000-12 firmware file to the MUM, all three of those modules will automatically get the new firmware. The only exception is when one or more of the modules already has that particular firmware version, in which case the upgrade would be ignored.