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IP Terminal Flash ROM Upgrade Procedure

SCOPE: This document provides the required information to upgrade/convert the firmware on an NEC Unified IP Terminal by use of a TFTP (Trivial File Transfer Protocol) program called PumpKIN.

PRODUCT: SV7000, NEAX 2400 IPX and NEAX 2000 IPS.

TERMINALS:

NEC IP Protims Environment						
TERMINAL	MODEL	ADAPTER	IP TYPE	Upgradeable (Manual/ PBX server)	FILE NAME	Version (min)
Series-E	DTP-XXX-1	IPW-2U	IP ELC	Manual /PBX server	ramhprt.hex	1.13
Series-E	DTP-XXX-1	IPW-2U	PtoP	Manual /PBX server	ramhptop.hex	2.10
Series-i	DTR-XXX-1	IP-R	PtoP	Manual /PBX server	ramhp2pr.hex	2.81
Series –i	DTR-xx-1	IP-R	IP ELC	Manual/PBX server	ramhprtr.hex	1.01
Dterm IP	ITR-XXX-2	N/A	PtoP	Manual /PBX server	ramhp2pw.out	1.24
Dterm IP	ITR-xx-3 (excluding the ITR-4D-3)	N/A	PtoP	Manual /PBX server	ramhp2pw.out	2.14
Dterm IP	ITR-4D-3	N/A	PtoP	Manual /PBX server	ramhp2pw.out	2.14
Classic Inset	ITR-LC-1	N/A	PtoP	Manual /PBX server	40 - 48 misc. files	1.07
INASET 240G	ITR-240G-1	N/A	PtoP	Manual /PBX server	INA240G-E0106	2.80
INASET 320G	ITR-320G-1	N/A	PtoP	Manual /PBX server	INA320C-20040510-E100-NECAmapl	2.80
INASET 320C	ITR-320C-1	N/A	PtoP	Manual /PBX server	INA320C-20040510-E100-NECAmapl	2.80

NEC Unified SIP terminal Environment						
TERMINAL	MODEL	ADAPTER	IP TYPE	Upgradeable (Manual/ PBX server)	FILE NAME	Version (min)
Dterm IP	ITN-xx-3 (excluding ITN-4D-3)	N/A	NEC extended SIP	Manual	(still in review)	(still in review)

Note: The 'XXX' represents the different versions for the model of phone. Example: 8, 16 or 32 button, Display.

CAUTION: Certain versions of Flash ROM, for the IP Terminals, may not support downgrading. Before proceeding with any update verify you have a copy of currently installed firmware.

NOTE: This procedure uses TFTP to transfer files from a PC to an IP Terminal. Any TFTP program may be used to accomplish IP Terminal Flash ROM upgrades. Should

you need a TFTP program, a link to PumpKIN.exe is provided. Although NEC Unified, Inc. has tested and used this program extensively; NEC Unified, Inc. does not endorse or provide any warranty or guaranty regarding PumpKIN.exe software. NEC Unified, Inc. shall not be responsible for any errors, omissions or inaccuracies of any kind in conjunction with PumpKIN.exe software and shall be held harmless from its performance.

TFTP SOFTWARE: The TFTP PumpKIN program can be located at:
http://klever.net/kin/canned/PumpKIN.exe

WARNING: Do not disconnect power to the IP Terminal(s) during the upgrade (or downgrade) procedure. This also includes power to any network component, such as hubs, routers, etc. Doing so can cause permanent damage to the terminal(s).

Firmware conversion for IP Terminal:

		Dterm IP Protocols		
		Protims ITR-xx- 2	Protims ITR-xx-3 *(Excludes ITR-4D-3)*	SIP ITN-xx-3
Terminals	**Protims ITR-xx-2**	OK	OK	N.A
	Protims ITR-xx- 3 *(Excludes ITR-4D-3)*	N.A	OK	OK
	SIP ITN-xx-3)	N.A	N.A	OK

Note:
- Any terminal not listed in the table above should be noted as not supporting a SIP load.
- Hardware feature difference will still exists when a ITR-xx-2 firmware is updated to a ITR-xx-3 firmware load.

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PROCEDURE for configuration of Pumpkin TFTP server:

1. Download the TFTP PumpKIN program, from the above listed Internet site, to a **new** folder on the C drive of the PC that will be used for the Flash ROM upgrade(s). Once you have downloaded the program, double click on the PumpKIN.exe file that is now located in the new folder that was created for this software. The program will begin to load and when it has completed, can be located in the following directory:
    C:\Program Files\Klever\Nothings

2. Create another new folder on the C drive, of the same PC containing the PumpKIN program. This folder will be for the Flash ROM file(s).
    Note: If the folder will contain more than one *type* of Flash ROM file, create a sub-directory, in the folder, for each different type of Flash ROM file.

3. Copy the Flash ROM file into the folder that was created in Step-2.
    Note: If the folder contains more than one *version* of the same type of Flash ROM file, be sure that a sub-directory is created for each version.
    Example: To save two different versions of Flash ROM files for a Dterm Series-i terminal with an IP-R adapter, the following folders would be created.
    a) First, the main folder on the C drive would be created and labeled Flash ROM.
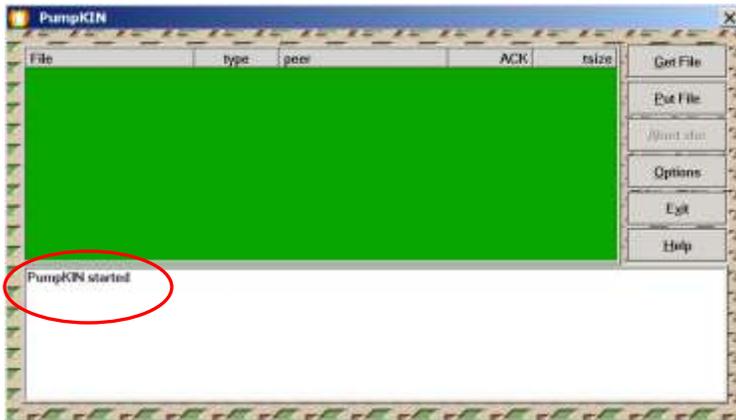   b) Inside the main folder would be a sub-folder (sub-directory) labeled Series-i IP-R.
    c) Inside the sub-folder would be two additional folders (sub-directories). One would be labeled 1.30 and the other labeled 1.40. The file structure could look like this:

Both the 1.30 and the 1.40 file, in the example above, contain a 'ramhp2pr.hex' file and both are the same size. Both files appear to be identical and you cannot tell the version of the Flash ROM, in the file, simply by looking at it. This is why it is very important to place each Flash ROM file in its' own folder and <u>label it correctly</u>. Remember the above is only an example, and your file names do not have to be labeled the same as the example.
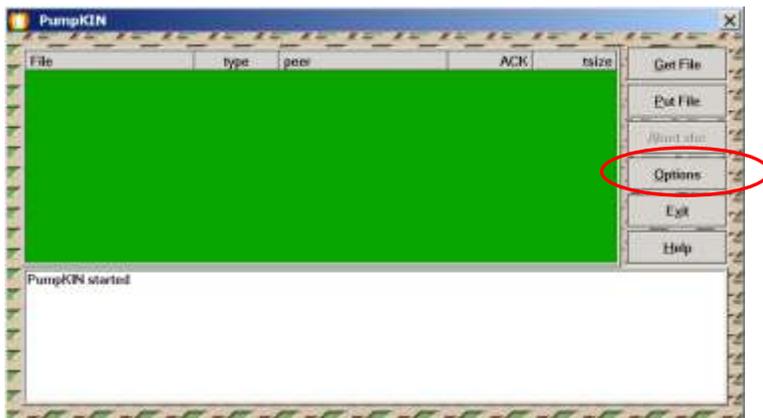
PROCEDURE (*cont*.):

4. The IP Terminals must be logged in and working, prior to beginning the download process. If they are not, do so now.

5. Connect the PumpKIN Server to the same network as the IP Terminals.

6. Launch the PumpKIN program by double clicking the PumpKIN.exe file. The executable can be located in C:\Program Files\Klever\Nothings directory. Once launched, PumpKIN will show that it has started and the screen should look like this:
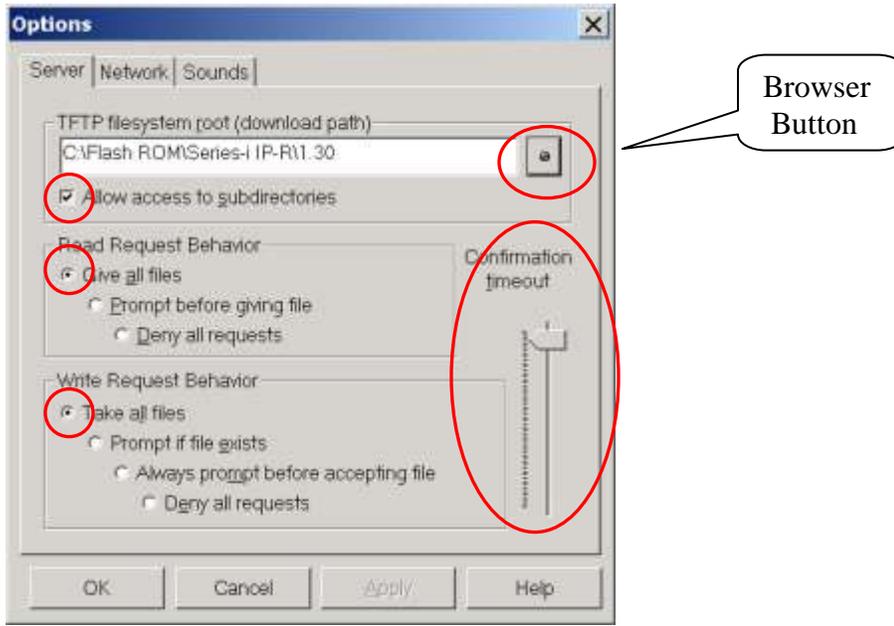

Note: If MATWorX is running on the same PC that the PumpKIN program is on, be sure that DeviceServerWorX is not running. This might prevent PumpKIN from launching. If DSW is running (DS icon is green), right click on the DS icon in the system tray, and select 'Stop Server'. The DS icon will turn from green to red.

7. The next step is to locate the Flash ROM file that will be downloaded to the terminal(s) by the PumpKIN program. To do this, click on the 'Options' button.

PROCEDURE (*cont*.):

8. On the 'Server' tab, of the 'Options' screen, click on the browse button that is located to the right of the "TFTP filesystem root (download path)" field. Browse the PC to locate the folder containing the Flash ROM file, created in Step-2 and click 'OK'.

Be sure the following boxes on the 'Server' tab are enabled (checked):
- o Allow access to subdirectories
- o Give all files
- o Take all files

It is recommended to set the 'Confirmation timeout' to the maximum level.

9. You will need to know the IP Address of the PC containing the PumpKIN program. It does not have to be a static IP Address. If using DHCP, it may be helpful to be sure that the IP Lease will not expire (for the PC) during the downloading process (to avoid possibly interfering with the download). To determine both, do the following:

Windows 98, Windows 2000, and Windows NT
- o Click the 'Start' button.
- o Go to 'Run'.
- o Type: Command (in the 'Open' field).
- o At the DOS prompt, type: ipconfig /all
- o The IP Address of the PC and the IP Lease Time will be displayed.
- o Type: exit (at the DOS prompt), when done.

Windows 95
- o Click the 'Start' button.
- o Go to 'Run'.
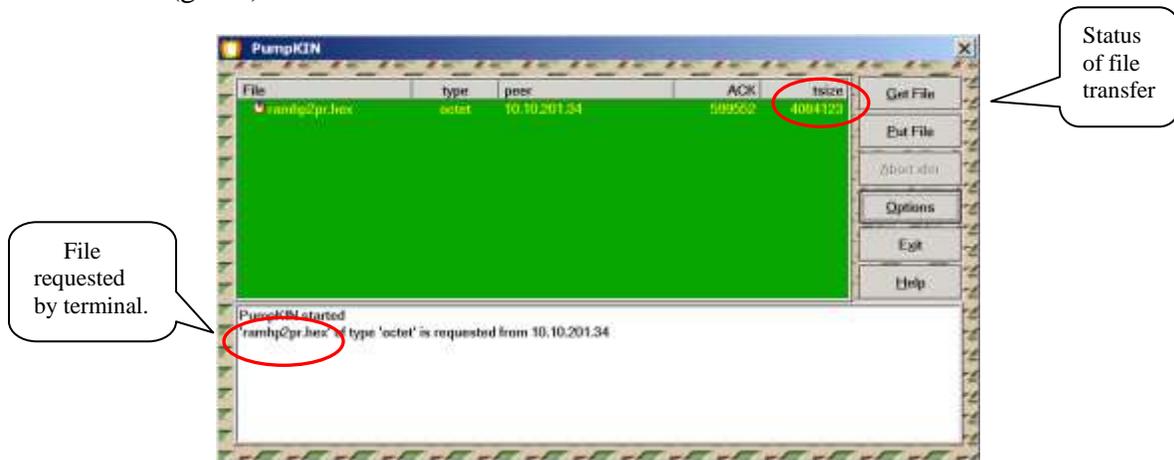
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PROCEDURE (*cont*.):
- o Type: Command (in the 'Open' field).
- o At the DOS prompt, type: winipcfg /all
- o The IP Address of the PC and the IP Lease Time will be displayed.
- o Click 'OK' when done and type: exit (at the DOS prompt).

10. Prepare the IP Terminals for download.

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Configuration and Download Procedure for: Dterm

Series-E PtoP Terminal with IPW-2U Adapter (DTP-XXX-1)Dterm Series-i PtoP, IP ELC Terminal with IP-R Adapter (DTR-XXX-1) Bundle Terminal (ITR-XXX-1) Dterm IP Terminal (ITR-XXX-2, ITR-xx-3 and ITN-xx-3)
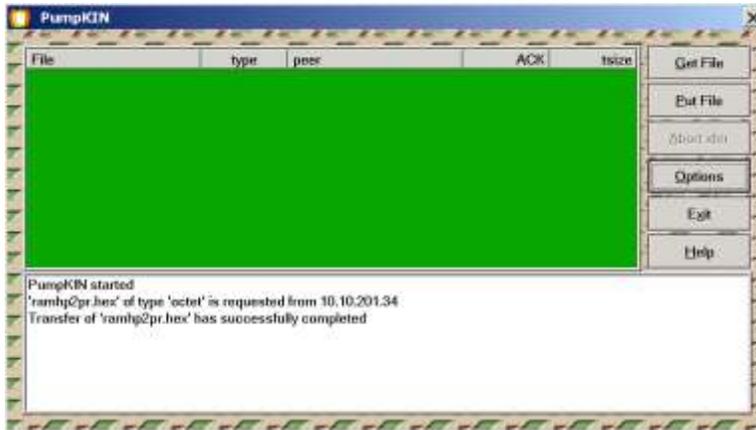
Caution: **Do not download more than 8 terminals at any one time and one model at a time.**

1. Open the User Menu of the terminal by dialing: Hold + Transfer + * + #.
2. Open the Administrator Menu of the terminal by dialing: Hold + # + 0.
3. On the Administrator Menu, select Option-2: Download Address.
4. Enter the IP Address of the PumpKIN server. Press OK.
5. Also on the Administrator Menu, select Option-5: Download.
6. Select Item-1: Program. The file name shown on the display should match the file name located in the Flash ROM file that was selected for the PumpKIN server to download.
7. *Warning: This next step will begin the downloading process.*
8. Press the Soft Key under 'TFTP'.
9. The terminal display will show "Downloading…"
10. On the bottom half of PumpKIN's screen (white) will be the file name requested by the terminal. This should match the file name above. The top half of PumpKIN's screen (green) shows the status of the file transfer.

11. PumpKIN will show when the file transfer is completed.

PROCEDURE (*cont*.):

12. The terminal will continue to show 'Downloading…' for a few more minutes after PumpKIN has completed the file transfer. Do not interrupt the phone during this process. When the terminal has completed the download, the display will show "Downloading Complete". You may press the Soft Key under 'Exit" at this time.

13. The terminal will reset and the phone will come back on-line if Automatic Login Mode is used, or will show the Login screen if Manual Login Mode is used.

14. Login to the phone, if necessary, and make the appropriate test calls. To verify that the new version of Flash ROM is now running on the terminal, open the User Menu and select Option-9: System Information. Press the Soft Key under 'Up' three times until you reach the Firmware Version. The new revision should be displayed.

Dterm Series-E Protims Terminal with IPW-2U Adapter (DTP-XXX-1)

1. Open the User Menu of the terminal by dialing: Hold + Transfer + * + #.
2. Open the Administrator Menu of the terminal by dialing: Hold + # + 0.
3. On the Administrator Menu, select Option-2: Download Address.
4. Enter the IP Address of the PumpKIN server. Press Set.
5. Also on the Administrator Menu, select Option-8: Download.
6. Select Item-1: Program (TFTP).
   a.   *Warning: This next step will begin the downloading process.*
7. Press the Soft Key under 'SET'.
8. The terminal display will show "Downloading…"
9. On the bottom half of PumpKIN's screen (white) will be the file name requested by the terminal. The top half of PumpKIN's screen (green) shows the status of the file transfer.
10. PumpKIN will show when the file transfer is completed.
11. The terminal will continue to show 'Downloading…' for a few more minutes after PumpKIN has completed the file transfer. Do not interrupt the phone during this process. When the terminal has completed the download, the display will show "Downloading Complete". You may press the Soft Key under 'Exit' at this time.
12. The terminal will reset and the phone will come back on-line if Automatic Login Mode is used, or will show the Login screen if Manual Login Mode is used.
13. Login to the phone, if necessary, and make the appropriate test calls. To verify that the new version of Flash ROM is now running on the terminal, open the User Menu and select Option-7: System Information. Press the Soft Key under 'Up' until you reach the Firmware Version. The new revision should be displayed.

DtermIP Inaset (ITR-LC-1, ITR-240G-1, ITR-320G-1, ITR-320C-1)

Note: Prior to upgrading the DtermIP Inaset, back up any necessary files, such as the Directories (Personal, Corporate, Group), etc.

1. Go to the Main Menu of the terminal by pressing the Menu button on the base of the phone.
2. Press the Soft Key under the 'Setup' option.
3. Select Option-5: Network, and press the Enter key on the base of the phone.
4. Input the Network password: Hold + Transfer + * + #, and press the Soft Key under 'OK'.
5. Select Item-2: Administrator Settings.
6. Input the Administrator password: Hold + # + 0, and press the Soft Key under 'OK'.
7. On the Administrator Menu, select Option-7: Download.
8. For 'Mode', select 'TFTP'. In the 'Address' field, enter the IP Address of the PumpKIN server. For 'File', select 'Program Code'. Press the Soft Key under 'OK' after all the entries are correct.
   a. *Note:* Certain versions of Inaset Flash ROM require that the Configuration Data must be reset during the download. If this is required, then *also* select 'Config Data' for the file option.
   b. *Warning: This next step will begin the downloading process.*
9. Press the Soft Key under 'Save'.
10. Press the Soft Key under 'OK' when prompted: "Do you really want to save data?"
11. Press the Soft Key under 'OK' when prompted: "Soft Reset Execute?".
12. The terminal will reset. The display will then show "Updating firmware…"
13. During the download process, the terminal display will show the file name that is being transferred. There will be from 40 to 48 files that have to be transferred (depending if Config Data was selected, along with Program Data). This terminal will require more time for the upgrade. There will be a status bar on the top of the terminal display, confirming that the download is in progress.
14. Do not interrupt the terminal during this process.
15. On the bottom half of PumpKIN's screen (white) will be the file name requested by the terminal. This should match the file name showing on the display. The top half of PumpKIN's screen (green) shows the status of the individual file transfer.
16. PumpKIN and the terminal will show when the file transfers have completed.
17. The terminal display will show "Firmware Update Done. Now Rebooting.". The terminal will reset and the phone will come back on-line if Automatic Login Mode is used, or will show the Login screen if Manual Login Mode is used. *Note:* If the Configuration Data was reset during the download, then it may be necessary to input all the parameters that were required when the terminal was originally set up.
18. Login to the phone, if necessary, and make the appropriate test calls. To verify that the new version of Flash ROM is now running on the terminal, open the User Menu and select Option-5: Network. Input the Network Password, as stated above. Select Item-3: System Information, and press the 'Enter' key. Press the 'Next' key four times until you reach the Firmware Version. The new revision should be displayed.

19. Transfer any of the saved Directory menus back to the terminal, if necessary.

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TROUBLESHOOTING:

If a download fails, for any of the terminals, check the following:

o   Verify that the IP Address for the TFTP server has been entered into the terminal correctly.
o   Verify that the correct *type* of file is located in the folder selected for the download. PumpKIN will show the type of file requested (and if the transfer was aborted). Check the file name that was requested by the terminal and verify that it matches the file selected.
o   Check to see if the TFTP server is correctly connected to the network and verify that the TFTP server can 'ping' the IP Terminal.
o   Be sure that the IP Terminal is on-line and working.

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Credits for PumpKIN 2.00 Software (As found in the "About" help file)

This software is free for use and distribution as long as developers' credits are explicitly mentioned.
The credits should read as follows:
Developed by: Klever Group, Inc. (http://www.klever.net/)
Author: Michael Krelin (hacker@klever.net)
Copyright 1997, 1998 Klever Group, Inc.
Fan mail: Send to gefilte@klever.net