

PCGET and PCPUT

These programs make it easy to load a file from the PC into a CP/M system (PCGET) or write a file from a CP/M system to a PC (PCPUT). The XMODEM protocol is used for file transfer. The program defaults to using Bitstreamer II port A if present. If port A is not detected, or if the command line is followed by a B, then file transfer takes place over Bitstreamer port B (or the ZCB serial port). In a typical Vector 3 configuration with only a ZCB serial port, transfer automatically takes place over the ZCB port because Bitstreamer II port A isn't detected.

Once PCGET is on the CP/M system, subsequent file transfer – including retrieval of the PCPUT program – is simple. However, getting PCGET onto the CP/M machine to begin with is the classic chicken and egg quandary. Following are two ways to get PCGET onto a CP/M system for the first time using PIP and LOAD on the CP/M system. In both cases, PIP is used to copy the Intel Hex version of PCGET to the CP/M system, then LOAD is used to create the executable PCGET.COM.

Step 1 – Load PCGET.HEX (Console is on a Serial Port)

If your Vector machine's console is a serial port, you can use a terminal emulator as the console and transfer PCGET.HEX through the console port. This requires using a terminal emulator that can set a delay per character, like TeraTerm or HyperTerm.

A>PIP PCGET.HEX=CON: *(press RETURN and wait for CP/M to load PIP at which time you'll see a line-feed.)*

Assuming Tera-Term, use the "Setup->Serial Port..." menu option to set the transmit delay for "msec/char" to 10. Then send the file "PCGET.HEX" using simple ASCII transfer. You will see the hex file displayed as it is transfers. It is OK if some lines don't display at the left edge of the screen. File transfer will continue for a while after the file transfer dialog box closes. This is normal.

When file transfer is complete, type Ctrl-Z to signal end-of-file. PIP will exit to the A> prompt after a short delay for CP/M to warm start.

After file transfer is complete, turn off the character delay in the terminal emulator.

Step 1 – Load PCGET.HEX (Console is Flashwriter with Keyboard)

If your Vector machine's console is a Flashwriter with keyboard, you can use the RDR: device to transfer the PCGET.HEX file. The default RDR: port is Port B on the Bitstreamer II or the ZCB serial port (e.g., as on a Vector 3). On older versions of VG CP/M 2.2, PIP may say "ABORTED" as soon as you start the transfer. In this case, use device "UR1:" instead of "RDR:" Don't use UR1: unless RDR: fails with the "ABORTED" message.

A>PIP PCGET.HEX=RDR: *(press RETURN and wait for CP/M to load PIP at which time you'll see a line-feed.)*

Using a terminal emulator connected to the Vector's serial port, send the file "PCGET.HEX" using simple ASCII transfer. No inter-character delay is required. The file is NOT echoed as it is received. When file transfer is complete, type Ctrl-Z on the terminal emulator keyboard to signal end-of-file. PIP will exit to the A> prompt after a short delay for CP/M to warm start.

Step 2 Create PCGET.COM from PCGET.HEX

```
A>LOAD PCGET
```

```
FIRST ADDRESS 0100
```

```
LAST ADDRESS 04B4
```

```
BYTES READ 03B5
```

```
RECORDS WRITTEN 08
```

(you may see different values than shown here)

```
A>PCGET PCPUT.COM
```

(now try it – use PCGET to retrieve PCPUT)

```
Send the file now using XMODEM...
```

Initial Load of PCGET Using a Simple “.bin” Loader

A third option to bypass PIP altogether is to use the monitor's P (program) command to type in the hex bytes of the program listed in LOADER.PRN at address zero. Execute the loader by running from zero (G 0000). Send the program PCGET.COM through port B on the Bitstreamer II (port A on the ZCB). After transmission is complete, reset the computer, boot CP/M, and immediately type "SAVE 4 PCGET.COM".