

How to write a Linux Shell Script-based CGI Program

The DIL/NetPC DNP/5280 default Linux configuration comes with a pre-installed embedded Web server. The object storage space for HTML pages, pictures, CGI programs and other objects of this Web server is located within the DNP/5280 flash memory. CGI programs for the DNP/5280 can be written in C/C++ or as Linux shell script file. This documents shows how to write a Linux shell script-based CGI program. See [mHT5280-16.pdf](#) for more details about a C-based CGI program.

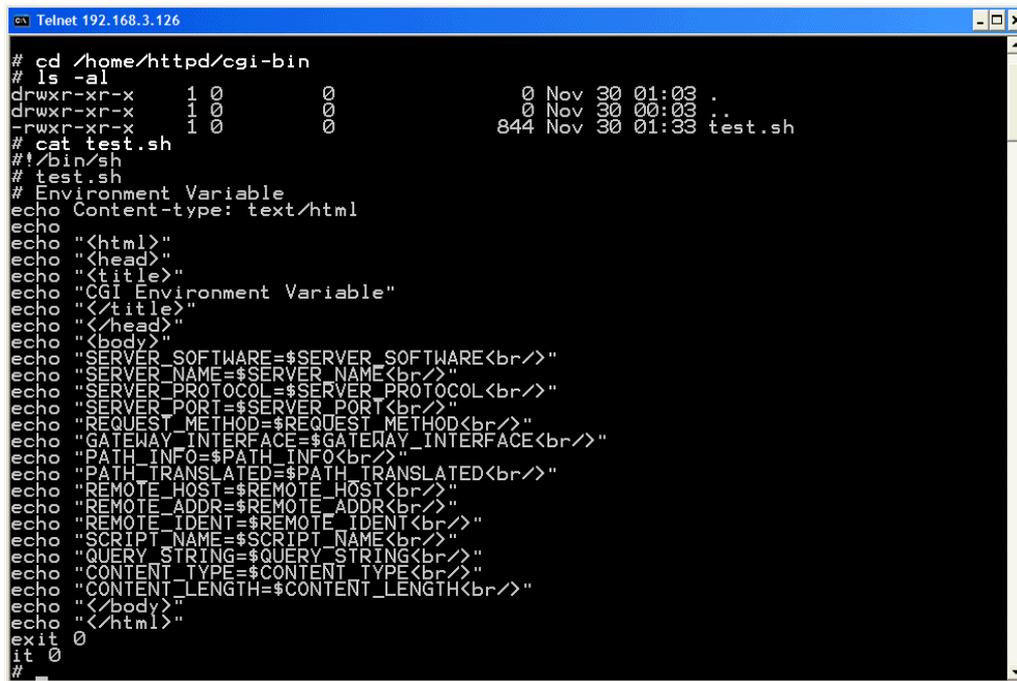
- **1. Step:** Create a Linux shell script file with the name **test.sh** on your development system. Use a simple text editor program for this job. The following code is a sample for CGI shell script.

```
#!/bin/sh
# test.sh
# Environment Variable
echo Content-type: text/html
echo
echo "<html>"
echo "<head>"
echo "<title>"
echo "CGI Environment Variable"
echo "</title>"
echo "</head>"
echo "<body>"
echo "SERVER_SOFTWARE=$SERVER_SOFTWARE<br/>"
echo "SERVER_NAME=$SERVER_NAME<br/>"
echo "SERVER_PROTOCOL=$SERVER_PROTOCOL<br/>"
echo "SERVER_PORT=$SERVER_PORT<br/>"
echo "REQUEST_METHOD=$REQUEST_METHOD<br/>"
echo "GATEWAY_INTERFACE=$GATEWAY_INTERFACE<br/>"
echo "PATH_INFO=$PATH_INFO<br/>"
echo "PATH_TRANSLATED=$PATH_TRANSLATED<br/>"
echo "REMOTE_HOST=$REMOTE_HOST<br/>"
echo "REMOTE_ADDR=$REMOTE_ADDR<br/>"
echo "REMOTE_IDENT=$REMOTE_IDENT<br/>"
echo "SCRIPT_NAME=$SCRIPT_NAME<br/>"
echo "QUERY_STRING=$QUERY_STRING<br/>"
echo "CONTENT_TYPE=$CONTENT_TYPE<br/>"
echo "CONTENT_LENGTH=$CONTENT_LENGTH<br/>"
echo "</body>"
echo "</html>"
exit 0
```

- **2. Step:** Use a Telnet session for the TFTP file transfer command. Make sure, that the file with the CGI shell script owns the necessary attributes. The commands for the DNP/5280 Telnet session and the attribute setup are:

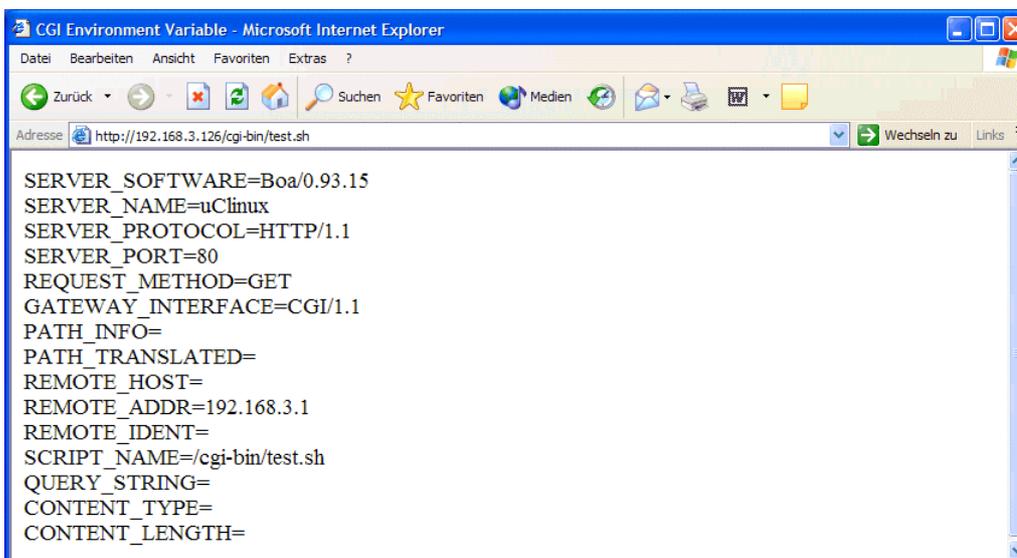
```
cd /home/httpd/cgi-bin
tftp -g -l test.sh 192.168.0.1
chmod +x test.sh
```

With this command lines we assume, that your Windows- or Linux-based PC – which runs the TFTP server – is using the IP address 192.168.0.1.



```
Telnet 192.168.3.126
# cd /home/httpd/cgi-bin
# ls -al
drwxr-xr-x  1 0      0          0 Nov 30 01:03 .
drwxr-xr-x  1 0      0          0 Nov 30 00:03 ..
-rwxr-xr-x  1 0      0      844 Nov 30 01:33 test.sh
# cat test.sh
#!/bin/sh
# test.sh
# Environment Variable
echo Content-type: text/html
echo
echo "<html>"
echo "<head>"
echo "<title>"
echo "CGI Environment Variable"
echo "</title>"
echo "</head>"
echo "<body>"
echo "SERVER_SOFTWARE=$SERVER_SOFTWARE<br/>"
echo "SERVER_NAME=$SERVER_NAME<br/>"
echo "SERVER_PROTOCOL=$SERVER_PROTOCOL<br/>"
echo "SERVER_PORT=$SERVER_PORT<br/>"
echo "REQUEST_METHOD=$REQUEST_METHOD<br/>"
echo "GATEWAY_INTERFACE=$GATEWAY_INTERFACE<br/>"
echo "PATH_INFO=$PATH_INFO<br/>"
echo "PATH_TRANSLATED=$PATH_TRANSLATED<br/>"
echo "REMOTE_HOST=$REMOTE_HOST<br/>"
echo "REMOTE_ADDR=$REMOTE_ADDR<br/>"
echo "REMOTE_IDENT=$REMOTE_IDENT<br/>"
echo "SCRIPT_NAME=$SCRIPT_NAME<br/>"
echo "QUERY_STRING=$QUERY_STRING<br/>"
echo "CONTENT_TYPE=$CONTENT_TYPE<br/>"
echo "CONTENT_LENGTH=$CONTENT_LENGTH<br/>"
echo "</body>"
echo "</html>"
exit 0
it 0
#
```

- **3. Step:** Start your Web browser and use the URL <http://192.168.0.126/cgi-bin/test.sh> to run the DIL/NetPC DNP/5280 CGI program. “192.168.0.126” is the IP address. “test.sh” is the name of the CGI shell script file. Please modify these parameters if necessary.



```
CGI Environment Variable - Microsoft Internet Explorer
Datei Bearbeiten Ansicht Favoriten Extras ?
Zurück Suchen Favoriten Medien
Adresse http://192.168.3.126/cgi-bin/test.sh Wechselt zu Links
SERVER_SOFTWARE=Boa/0.93.15
SERVER_NAME=uClinux
SERVER_PROTOCOL=HTTP/1.1
SERVER_PORT=80
REQUEST_METHOD=GET
GATEWAY_INTERFACE=CGI/1.1
PATH_INFO=
PATH_TRANSLATED=
REMOTE_HOST=
REMOTE_ADDR=192.168.3.1
REMOTE_IDENT=
SCRIPT_NAME=/cgi-bin/test.sh
QUERY_STRING=
CONTENT_TYPE=
CONTENT_LENGTH=
```

Please note: If you edit shell script files for Linux systems on a Windows-based PC, it is necessary to convert the file with a DOS2UNIX tool before the download to the DIL/NetPC DNP/5280. Linux shell script files are simple text files. Windows is using the good old MS-DOS format for text files. MS-DOS and Unix systems use different methods to identify end-of-line information in text files. MS-DOS, including Windows 9x/ME/NT/2000/XP, use a carriage return/linefeed pair (CR/LF), whilst Unix only uses the LF character.

That's all.