

Instructions to Load firmware via console/u-boot for Apex

1. Download/prepare tftp server on your computer (tftpd32)
 - a. Download firmware from <ftp://dropbox.trangosys.com> giga/giga4773
 - b. Set tftp server to use that folder or put apex files in the tftp server folder.
2. Connect Ethernet and serial cable to laptop and Apex. (Serial settings: 115200, 8, n, 1, xon/xoff.)
3. Reboot or power cycle the Apex system.
4. From the console port connection (eg. hyperterm), intercept the bootup process by pressing any keys multiple times. (I tested just pressing spacebar many times.)
5. The above will take the system to the bootloader u-boot> (which is =>)
6. Check ip settings using printenv command. Either match the setup there or change with setenv.
 - a. Setenv ipaddr 10.14.0.160
 - b. Setenv netmask 255.255.254.0
 - c. Setenv serverip 10.14.1.5
 - d. Check settings with printenv
 - e. Check with ping 10.14.1.5 that you can communicate with the tftp server.
7. Download the OS and FW images from a TFTP Server (eg. Solarwind running on a Windows PC) to the target RAM:
 - a. u-boot> tftp 100000 sys_os_v130.971FE130
 - b. u-boot> tftp 800000 sys_fw_v131.A6527CDB
 - c. You will see the status of the transfer. If you do not, something is not right in the IP settings.
8. Run the system:
 - a. u-boot> bootm 100000 800000
9. After the system comes up normally, login and go to config mode to upgrade the system normally. You must do a full upgrade of all of the images as the steps above were just temporary.
10. Reboot.

CLI output:

>> *This is the old version running on my system before.*

Trango System: TrangoLINK Apex Command Line Interface v1.3.0

```
(.160-view)# ver
Current Image Version
FPGA version:      0015070A
OS version:        2p6r14b3D09071001
FW version:        1p3r0D090710
PIC version:       217
```

Modem version: 40
RFM version: 28

Previous Image Version:
FPGA version: 00151209
OS version: 2p6r14b3D04291001
FW version: 1p2r4D042910
PIC version: 217
RFM version: 28
(.160-view)# config
Password:
(.160-config)# reboot

=====
Apex V1.0.0
FPGA Version (mm/dd/yy): 7/15/2010 build 0
AFW Version : 28
PFW Version : d9

=>
=> printenv
bootargs=console=none,115200 root=/dev/ram rw rootfstype=ext2
bootcmd=bootm 50200000 50400000
bootdelay=6
baudrate=115200
ethaddr=00:01:de:00:00:01
ipaddr=192.168.100.1
serverip=192.168.100.180
netdev=eth0
stdin=serial
stdout=serial
stderr=serial
ethact=
bootcount=4

Environment size: 267/8188 bytes
=> setenv ipaddr 10.14.0.160
=> setenv netmask 255.255.254.0
=> setenv serverip 10.14.1.5
=> printenv
bootargs=console=none,115200 root=/dev/ram rw rootfstype=ext2
bootcmd=bootm 50200000 50400000

bootdelay=6
baudrate=115200
ethaddr=00:01:de:00:00:01
netdev=eth0
stdin=serial
stdout=serial
stderr=serial
ethact=
bootcount=4
ipaddr=10.14.0.160
netmask=255.255.254.0
serverip=10.14.1.5

Environment size: 281/8188 bytes
=> ping 10.14.1.5
ENET Speed is 100 Mbps - FULL duplex connection
Using device
host 10.14.1.5 is alive
=> tftp 100000 sys_os_v130.971FE130
Using device
TFTP from server 10.14.1.5; our IP address is 10.14.0.160
Filename 'sys_os_v130.971FE130'.
Load address: 0x100000

Loading: #####

#####

done
Bytes transferred = 1132152 (114678 hex)
=> tftp 800000 sys_fw_v131.A6527CDB
Using device
TFTP from server 10.14.1.5; our IP address is 10.14.0.160
Filename 'sys_fw_v131.A6527CDB'.
Load address: 0x800000

Loading: #####

#####

```
#####  
#####  
#####  
#####  
#####  
#####  
#####  
#####  
#####
```

done

Bytes transferred = 6071846 (5ca626 hex)

=> bootm 100000 800000

Booting image at 00100000 ...

Image Name: Linux-2.6.14.3

Image Type: ARM Linux Kernel Image (uncompressed)

Data Size: 1132088 Bytes = 1.1 MB

Load Address: 00008000

Entry Point: 00008000

Verifying Checksum ... OK

OK

Loading Ramdisk Image at 00800000 ...

Image Name: 11-19-10:15:17

Image Type: ARM Linux RAMDisk Image (gzip compressed)

Data Size: 6071782 Bytes = 5.8 MB

Load Address: 00800000

Entry Point: 00800000

Verifying Checksum ... OK

Starting kernel ...

.....

trango login: admin

Password:

Trango System: TrangoLINK Apex Command Line Interface v1.3.1

(.160-view)# config

Password:

(.160-config)# ver

Current Image Version

FPGA version: 0015070A

OS version: 2p6r14b0D111910

FW version: 1p3r1D111910
PIC version: 217
Modem version: 40
RFM version: 28

Previous Image Version:

FPGA version: 00151209
OS version: 2p6r14b3D04291001
FW version: 1p2r4D042910
PIC version: 217
RFM version: 28

(.160-config)# tftp on
tftpd: on

SUCCESS

MS DOS Commands:

C:\Documents and Settings\Station-5\Desktop\APEX_v_1_3_1>dir
Volume in drive C is ACER
Volume Serial Number is 6486-B451

Directory of C:\Documents and Settings\Station-5\Desktop\APEX_v_1_3_1

```
12/29/2010 06:24 AM <DIR>      .  
12/29/2010 06:24 AM <DIR>      ..  
07/22/2010 07:55 PM          169,216 sys_fpga_v130.7682BDDC  
11/19/2010 05:13 PM      6,071,846 sys_fw_v131.A6527CDB  
07/22/2010 07:56 PM      1,132,152 sys_os_v130.971FE130  
07/22/2010 07:57 PM          17,606 sys_pic_v130.6E2057B1  
07/22/2010 07:57 PM          33,084 sys_rfm_v130.F915283E  
12/03/2010 11:14 PM      2,269,215 TrangoLINKApex_v1.3.1_Release_Notes.pdf  
11/19/2010 11:09 AM           196 version.txt  
       7 File(s)  9,693,315 bytes  
       2 Dir(s) 25,474,740,224 bytes free
```

C:\Documents and Settings\Station-5\Desktop\APEX_v_1_3_1>tftp -i 10.14.0.160 put
sys_fpga_v130.7682BDDC
Transfer successful: 169216 bytes in 1 second, 169216 bytes/s

C:\Documents and Settings\Station-5\Desktop\APEX_v_1_3_1>tftp -i 10.14.0.160 put
sys_fw_v131.A6527CDB

Transfer successful: 6071846 bytes in 12 seconds, 505987 bytes/s

```
C:\Documents and Settings\Station-5\Desktop\APEX_v_1_3_1>tftp -i 10.14.0.160 put
sys_os_v130.971FE130
```

Transfer successful: 1132152 bytes in 3 seconds, 377384 bytes/s

```
C:\Documents and Settings\Station-5\Desktop\APEX_v_1_3_1>tftp -i 10.14.0.160 put
sys_pic_v130.6E2057B1
```

Transfer successful: 17606 bytes in 1 second, 17606 bytes/s

```
C:\Documents and Settings\Station-5\Desktop\APEX_v_1_3_1>tftp -i 10.14.0.160 put
sys_rfm_v130.F915283E
```

Transfer successful: 33084 bytes in 1 second, 33084 bytes/s

```
C:\Documents and Settings\Station-5\Desktop\APEX_v_1_3_1>
```

Apex CLI:

```
(.160-config)# boot
(.160-config)# bootimage up
(.160-config)# bootimage upgrade
<0-4> <0-sys_fpga, 1-sys_os, 2-sys_fw, 3-sys_pic, 4-sys_rfm.bin
(.160-config)# bootimage upgrade 0
....
SUCCESS
(.160-config)# bootimage upgrade 1
.....
SUCCESS
(.160-config)# bootimage upgrade 2
.....
SUCCESS
(.160-config)# bootimage upgrade 3
.
SUCCESS
(.160-config)# bootimage upgrade 4
.....
...
SUCCESS
(.160-config)# reboot
```

=====

Apex V1.0.0
FPGA Version (mm/dd/yy): 7/15/2010 build 0
AFW Version : 28
PFW Version : d9

Booting image at 50200000 ...

Image Name: Linux-2.6.14.3
Image Type: ARM Linux Kernel Image (uncompressed)
Data Size: 1132088 Bytes = 1.1 MB
Load Address: 00008000
Entry Point: 00008000
Verifying Checksum ... OK

OK

Loading Ramdisk Image at 51200000 ...

Image Name: 11-19-10:15:17
Image Type: ARM Linux RAMDisk Image (gzip compressed)
Data Size: 6071782 Bytes = 5.8 MB
Load Address: 00800000
Entry Point: 00800000
Verifying Checksum ... OK

Starting kernel ...

.....

trango login: admin
Password:

Trango System: TrangoLINK Apex Command Line Interface v1.3.1

(.160-view)# ver

Current Image Version
FPGA version: 0015070A
OS version: 2p6r14b0D111910
FW version: 1p3r1D111910
PIC version: 217
Modem version: 40
RFM version: 28

Previous Image Version:

FPGA version: 0015070A
OS version: 2p6r14b0D111910
FW version: 1p3r1D111910

PIC version: 217
RFM version: 01
(.160-view)#