Quickstart Guide to Using the 'Flashup' Update Utility on X86 SBCs

Introduction

The DOS utility (FLASHUP) can be used to selectively reprogram the BIOS, DOS kernel, Flash disk, and CMOS memory contents from binary images. FLASHUP is also used to create the image files from a live EPC, enabling you to clone custom EPC installations for product manufacturing and test. Source code for FLASHUP is included to allow easy customization. FLASHUP is compatible with the TS-2x00, TS-3x00 and TS-5x00 series EPC's (Embedded Personal Computers).

The FLASHUP command line syntax is:

`FLASHUP (/CREATE|/BLAST) {BIOS{=F1}} {DOS{=F2}} {DISK{=F3}} {2DISK{=F4}} CMOS{=F5}} {RTC}`

You must choose one of two actions:

/CREATE	Copy from the EPC into image files in the current directory
/BLAST	Copy from image files into the EPC system.

And choose any combination of sections:

BIOS	Create / restore the BIOS
DOS	Create / restore the DOS
DISK	Create / restore the 1st SSD (solid state disk) drive A:
2DISK	Create / restore the 2nd SSD, drive B: (TS-3300 & TS-5300 only)
CMOS	Create / restore the CMOS settings
RTC	Copy the time and date from a TS-9200 or TS-9300 boot board

Any combination of sections can be specified. Filenames (F1, F2, etc.) can be specified for each of the sections, but are optional. If a section is specified without a filename, it defaults to the model number plus the section name.

`<4 digit model number><section name>.BIN`

For example, default filenames for a TS-2200 are `2200BIOS.BIN`, `2200DOS.BIN`, `2200DISK.BIN`, and `2200CMOS.BIN`.

Updating an EPC (BLAST)

To update an EPC from image files, the following syntax is used:

`FLASHUP /BLAST {BIOS{=F1}} {DOS{=F2}} {DISK{=F3}} {DISK{=F4}} {CMOS{=F5}} {RTC}`

Any combination of BIOS, DOS, 2DISK, DISK, CMOS, and RTC can be specified. Filenames can be specified for each of the sections, but are optional.

The procedure for updating an EPC is as follows:

1. If this is a virgin board or one on which the BIOS has been corrupted (the red LED never even blinks at power on) then you must use a TS-9200, TS-9300 or TS-9500 to bootstrap the EPC to a running state. Live boards can be updated directly by downloading images and FLASHUP to the EPC and running them. In either case, FLASHUP and the update images must be accessible from the EPC.

2. Change to the directory where the update images are stored. By default, this is 'C:\IMAGES'.

3. Run FLASHUP, specifying the sections you are updating. Specify filenames if you are not using the defaults. (you may run \util\blast.bat to update all sections)

4. Power off, remove the boot board (if present) and you are done.

Creating Update Images

To create the update images, the following syntax is used:

```
FLASHUP /CREATE {BIOS{=F1}} {DOS{=F2}} {DISK{=F3}} {2DISK{=F4}} {CMOS{=F5}}
```

Any combination of BIOS, DOS, DISK, 2DISK, and CMOS can be specified. When creating the images, FLASHUP will NOT overwrite a file that already exists. You must delete, rename, or move the old copy first.

The procedure for creating update images is as follows:

1. Configure a master EPC from which the clones will be copied. In particular, make sure the Flash disk contains all necessary files, and the CMOS boot options are correct.

2. Install the TS-9x00 boot board and power up the EPC.

3. Change to the directory where the update images will be stored. By default, this is 'C:\IMAGES'.

4. If you are replacing a previous set of images, rename or move the old copies of the files. FLASHUP will not overwrite files.

5. Run FLASHUP, specifying the sections for which you are creating images. Specify filenames if you don't want to use the defaults.

6. Power off, remove the boot board (if present) and you are done.

Examples:

To create binary images of drive A: and CMOS settings from a working EPC.

```
Flashup /create disk=my_disk.bin cmos=my_cmos.bin
```

To update the dos and bios from binary images.

```
Flashup /blast bios dos
```

(This uses the model number to determine the actual filename. On a TS-3200 the files would be: 3200bios.bin and 3200dos.bin)