



Reduce booting time

Introduction

Booting time is defined as the time period from the system power on (or reset) to the start of the application (applicationstart() in root.c is called). Although the booting process is a little different for different hardware platforms, the booting sequences are almost the same, which is documented in NET+WORKS with xxx¹⁾ BSP Porting Guide. The user can customize BSP to reduce the booting time apparently from currently about 20-40²⁾ seconds to a few seconds. This application note shows how to modify the BSP to reduce booting time.

Procedures

1. Turn off the RAM memory test done in ncc_init() by commenting out the call to NAFastMemoryTest(). This memory test is probably the thing that delays the startup the most.
2. Make sure the 6.X version of the bootloader and compress.exe are used if you upgraded from 5.X version. These utilities use different algorithms to compress and decompress the application image, and the new decompress operation is much faster. You must make sure you use both the 6.X bootloader and the 6.X compress.exe utility program. Using one without the other either won't work at all, or will run no faster.
3. Turn off the POST. In root.c

```
/** Set this to 1 to run the system POST tests during startup. */  
const int APP_POST = 0;
```

4. Set BSP_STARTUP_DELAY in bsp.h to 0 if you are using a NET+50.

5. Disable the startup dialog by commenting out

```
#define APP_DIALOG_PORT    "/com/0"    in appconf.h file.
```

6. If you use 6.1 version, you can set `BSP_WAIT_FOR_IP_CONFIG` to `FALSE` to cause `NET+OS` to go directly to `applicationStart()` without waiting for the IP stack to initialize. Please note that socket services will not necessarily be available at `applicationStart()`. Please use the `customizeAceGetInterfaceAddrInfo()` function to determine when the stack has been configured.

7. Edit the `naflash.c` file and modify the `flash_id_table` definition. Put your flash part entry to the start of the table to allow faster software identification of the flash part.

8. If you do not compress the application image and write it into flash uncompressed, that will eliminate the need to decompress it and allow the bootloader to just copy it from flash to RAM.

9. Please check your hardware early on and modify the `customizeReadPowerOnButtons()` function. This function is called very early in the initialization process.

Note:

- 1) XXX means Green Hills or GNU.
- 2) 20-40 seconds means the default booting time is version dependent.