

How to Boot to a Shell with Processor SDK Linux for AM3x/AM4x/AM5x Processors

What's in this video

- First, the single shell boot is about bypassing a full user space initialization.
- Booting to a single shell or thread allows a minimal environment application setup from which any impact from user space on performance issues can be isolated.
- This technique is a quick alternative, as it uses the out-of-box components of Texas Instruments' Processor SDK Linux without having to configure and build a utility such as BusyBox.
- This video demonstrates how to change the kernel user initialization to boot to a shell or single thread using Processor SDK Linux.

The user space initialization process

- To initialize user space, the kernel will look in /bin/init and execute it.
- Processor SDK Linux uses SystemD for user space.
- This video is about replacing the launch of SystemD with a single shell script.

Setting the kernel init to use your single shell init

- To use a script you create, you have to tell the kernel to not use default user space initialization. The init process is discussed in the kernel source tree in `documentation/init.txt`
- Setting the init source can be done with a command line parameter to tell the kernel from where to try to launch the init process.
- Place your file in `/bin` directory; Use `ls -la` to make sure the file is executable.

Example script that can be used for a boot shell

Create this file using vi on the target board. In this example, the file is created in the /bin directory of the root filesystem and set as executable.

```
#!/bin/sh

mount -t proc proc /proc
mount -t sysfs sysfs /sys

export PATH=$PATH:/sbin:/usr/sbin
cd /home/root

/bin/sh
```

Stop boot in u-boot: `setenv optargs init=/bin/boot_app.sh`

Now boot to Linux: `bootd`

http://processors.wiki.ti.com/index.php/Booting_to_a_shell_for_AM3x/4x/5x

For more information

- TI Processors Wiki: Booting to a shell for AM3x/4x/5x
[http://processors.wiki.ti.com/index.php/Booting to a shell for AM3x/4x/5x](http://processors.wiki.ti.com/index.php/Booting_to_a_shell_for_AM3x/4x/5x)
- Processor SDK supported platforms & versions
[http://processors.wiki.ti.com/index.php/Processor SDK Supported Platforms and Versions](http://processors.wiki.ti.com/index.php/Processor_SDK_Supported_Platforms_and_Versions)
- Processor SDK Linux Getting Started Guide:
[http://processors.wiki.ti.com/index.php/Processor SDK Linux Getting Started Guide](http://processors.wiki.ti.com/index.php/Processor_SDK_Linux_Getting_Started_Guide)
- Processor SDK Training: <https://training.ti.com/processor-sdk-training-series>
- For questions about this training, refer to the E2E Community Forums for Sitara Processors at http://e2e.ti.com/support/arm/sitara_arm/f/791/t/277411



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