aTCA-6100/6150
Wind River Linux
Board Support Package

User's Manual

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ADLINK TECHNOLOGY INC.

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Revision History

Release	Date	Supported BSP	Change
1.00	6/2/2011	Wind River Linux 3.0.2 BSP	Initial release

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1. Introduction

This manual gives developers of the ADLINK aTCA-6100/6150 blade a simple tutorial on how to configure the Wind River Linux development environment, install the BSP, boot the system, and rebuild the kernel.

2. Development Environment

This development environment described in this tutorial consists of the host system and the target aTCA-6100/6150 blade.

Host Software Requirements

The required software is as follows:

- **Fedora 9 x86 64-bit**
- **Wind River Linux 3.0.2 with Workbench 3.2**
- **Project settings tar file downloaded from the ADLINK website**
- **A serial console program such as minicom (Linux) or HyperTerminal (Windows)**

Hardware Requirements

The following hardware setup is required for the development environment:

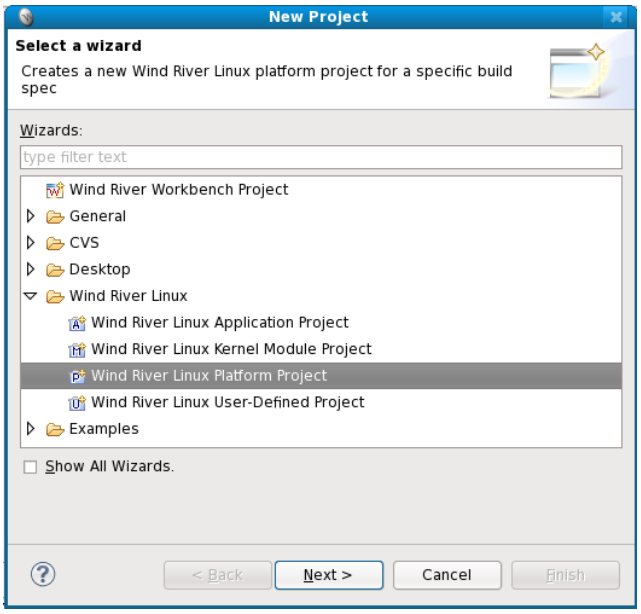
- **An empty USB drive inserted into the host to store the BSP image**
- **A target aTCA-6100/6150 blade inserted into the system slot of the ATCA shelf**
- **COM1 of the aTCA-6100/6150 connected to the host at a baud rate of 115200 bps**

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3. Building the BSP

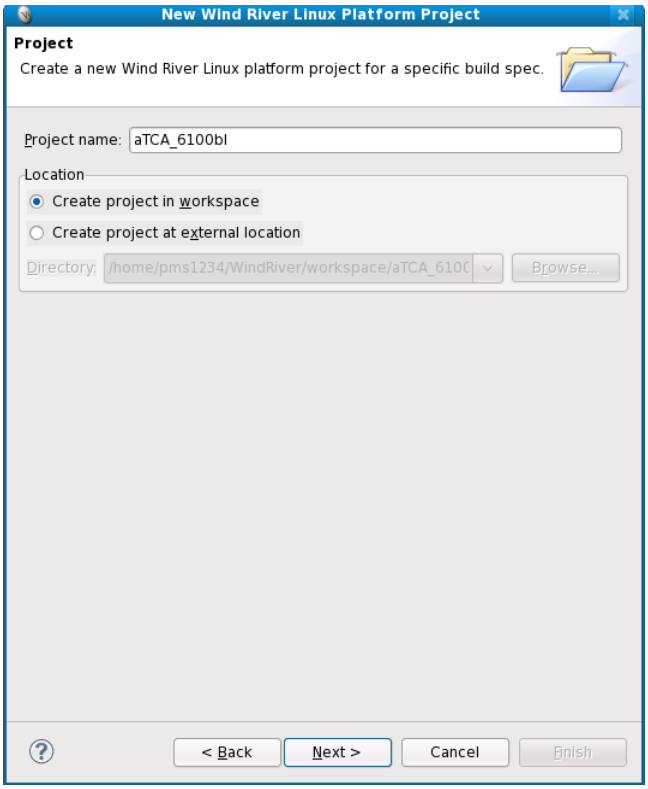
To build the BSP, perform the following steps:

1) Open Workbench on the host system.
2) Select the "File" tab.
3) Select the "New" button.
4) Select the "Project" button.
5) under "Wind River Linux", select "Wind River Linux Platform Project" and click "Next".



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6) Enter a project name (e.g. "aTCA-6100_bl") and click "Next".



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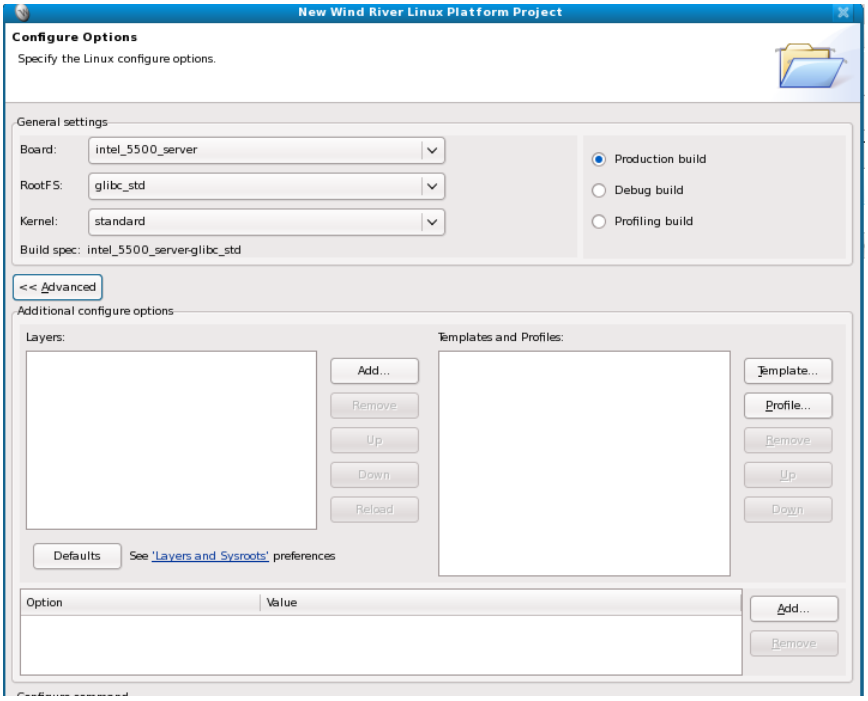
7) Specify the Linux configuration options.

Board: Intel_5500_server

RootFS: glibc_std

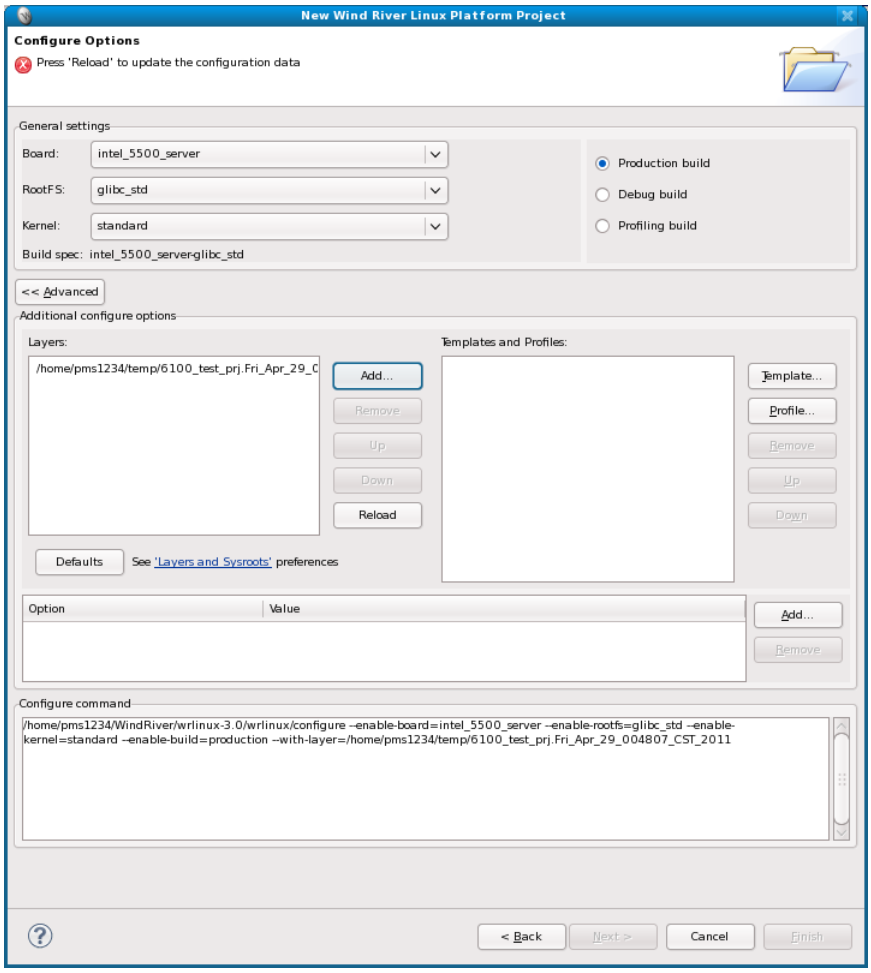
Kernel: standard

Click the "Advanced" button to reveal the Additional configure options.



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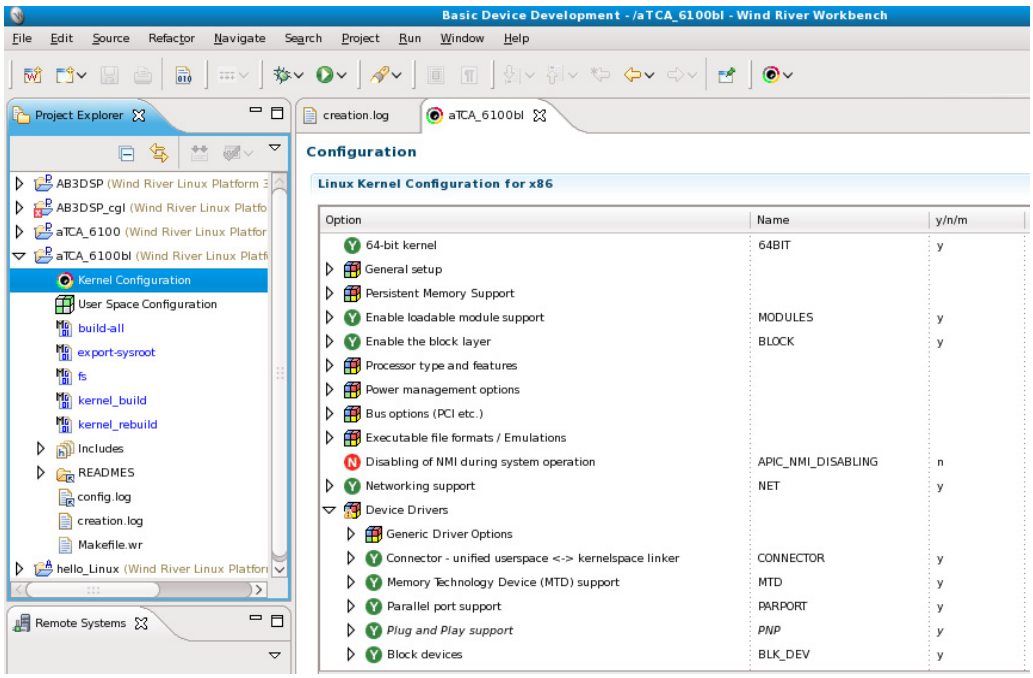
8) Download the project settings file from the ADLINK website (6100_test_prj.Fri_Apr_29_004807_CST_2011.tar) and untar it to a temporary directory (e.g. "/home/user/temp").
Under Additional configure options, click the "Add" button and navigate to the directory "/home/user/temp/6100_test_prj.Fri_Apr_29_004807_CST_2011".
Click "Reload" to import the required settings into the project.



9) Click "Next" and then click "Finish".

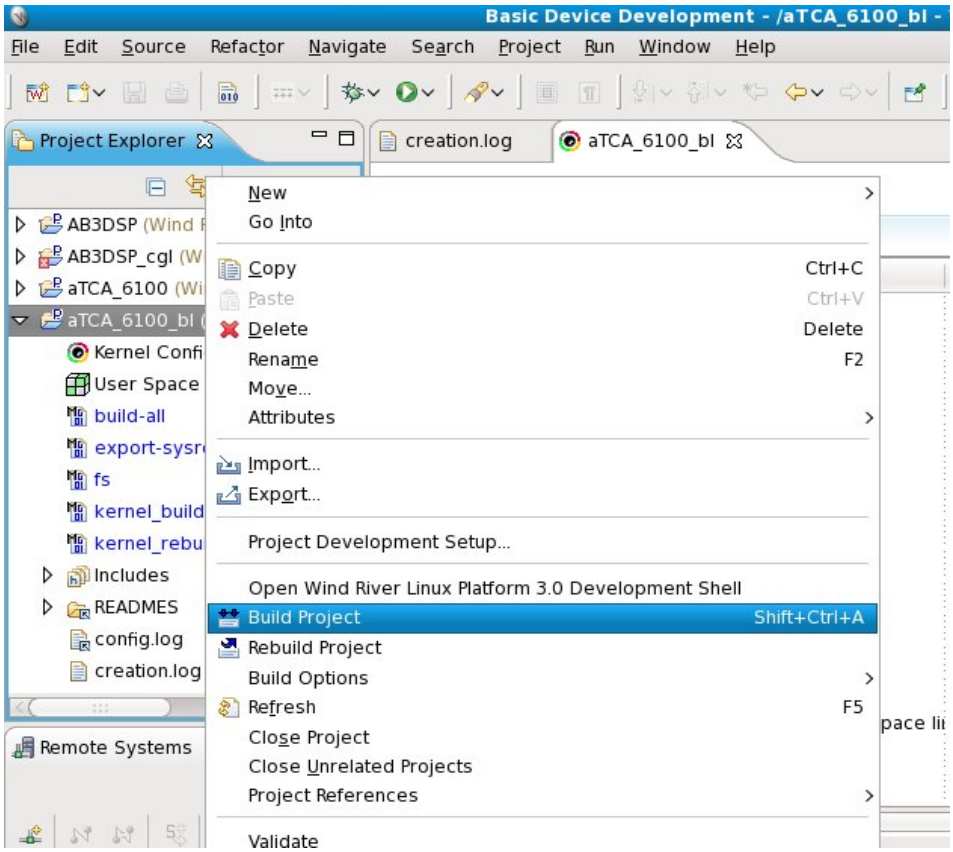
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10) In Project Explorer, select the project you just created and double-click "Kernel Configuration". Press "Yes" to extract the kernel source (this may take a few minutes). Click "OK" when prompted with "Can not find kernel source! Would you like to extract the kernel source now?" When the kernel source has been extracted, the screen will appear as below.



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11) R-click on the project in Project Explorer and click on "Build Project". This step will build the corresponding kernel, root file system and cross-compiler and only needs to be performed once. Building the project may over an hour, depending on your hardware.



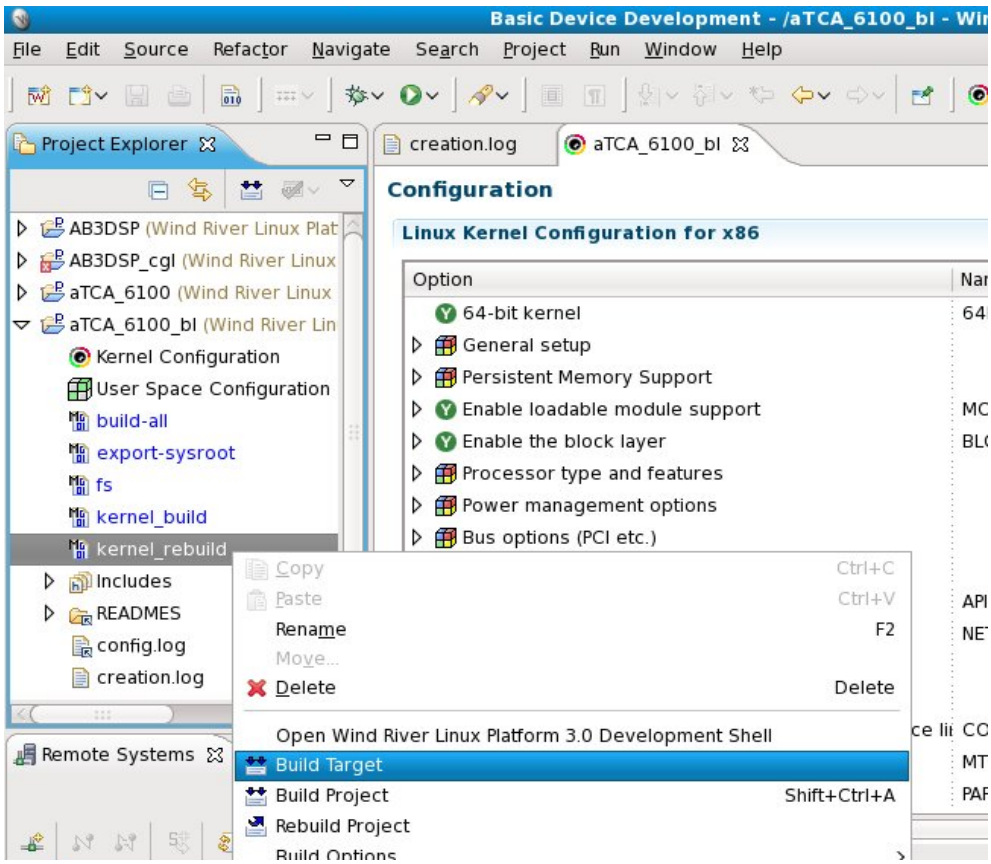
12) After building has completed, the kernel and root file system will be in the directory “/home/user/WindRiver/workspace/aTCA_6100bl_prj/export”

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4. Rebuilding the Kernel and RootFS

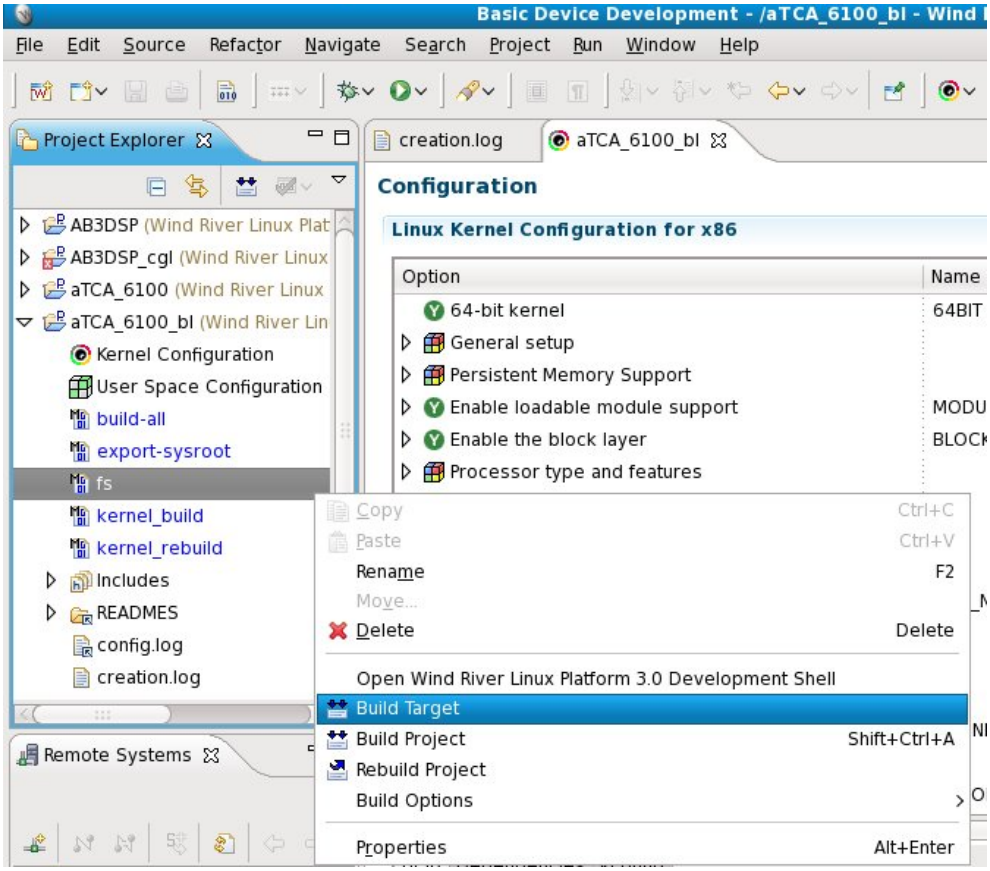
To rebuild the kernel and rootfs, follow the steps below:

1) In Project Explorer, select your project, R-click on "kernel-rebuild", and then click "Build Target".



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2) In Project Explorer, select your project, R-click on "fs", and then click "Build Target".



3) After building has completed, the kernel and root file system will be in the directory "$WIND_BASE\workspace\aTCA_6100bl_prj\export"

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5. Installing the Grub and Image

The BSP package provides a default Wind River Linux setting. After creating and building the kernel and rootfs by the methods described in the previous section, follow the procedure below to create a boot disk and boot the aTCA-6100/6150 blade.

1) Format the USB drive to an ext2 file system.
2) Mount the USB drive to a local directory.
3) Untar the rootfs to the USB drive. (assume that the USB drive is mounted at /v)
   tar –jxvf intel_5500_server-glibc_std-standard-dist.tar.bz2 –C /v
4) Copy the kernel to USB drive.
   cp –H intel_5500_server-bzImage-WR3.0.2ax_standard /v/boot/bzImage
5) Install the grub to the USB drive
   grub-install --root-directory=/v /dev/sdb
6) Modify the grub menu file as follows (/v/boot/grub/menu.lst)
   serial --unit=0 --speed=115200 --word=8 --parity=no --stop=1
   terminal --timeout=10 serial console
   default 0
   timeout 3
   #hiddenmenu
   Title Wind River Linux 3.0 for Intel 5500 Workstation
   root (hd0,0)
   Kernel /boot/bzImage ro root=/dev/sda1 console=ttyS0,115200n8 rootdelay=10 quiet
7) Unmount the USB drive
8) Insert the USB drive into the USB interface on the aTCA-6100/6150 blade. This drive should be configured as a master device in the BIOS of the aTCA-6100/6150 blade.
9) Connect the host serial port to the target aTCA-6100/6150 blade and then initiate a serial connection with a serial console application from the host to COM1 of the aTCA-6100/6150 with a baud rate of 115200 bps.
10) Power on the blade, wait for the boot loader prompt, then continue to load the image.
11) The aTCA-6100/6150 blade will then boot into Wind River Linux.

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