



Introduction to Embedded Linux and the Yocto Project

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- What is an Embedded System?
- What is Linux and how is Yocto different?
- What is Architech in relation to Yocto
- What is the Architech SDK?

What is an Embedded System ?



Architech

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- Computer system designed for specific control functions within a larger system
- Some also have real-time performance, others may have low or no performance requirements, allowing the system hardware to be simplified to reduce costs.
- The Processing core can be an either a microcontroller, a microprocessor, an FPGA or a DSP
- Tendency to reduce size and cost whilst increasing reliability and performance
- Complexity varies from using single controller chip to the use of multiple units and peripherals

Source : http://en.wikipedia.org/wiki/Embedded_system

Enter the Embedded OS World



ArchiTech

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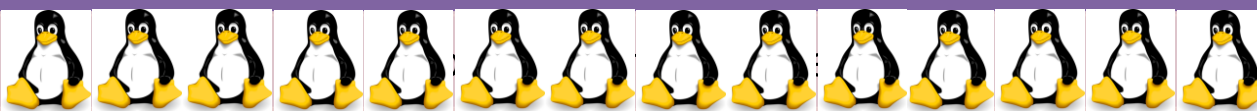
The new challenges



Complexity

What is a 'Linux Distribution' ?

Linux is not ONE solution



of choices

Multiple Development Tools

Complexity

No Support

Difficult to Maintain



Don't re-invent the wheel

- Creating one platform for Linux Development can sound a daunting task...
...but luckily we are not alone



One platform



Architech

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...but we are not alone



HUAWEI



WIND RIVER



RENESAS



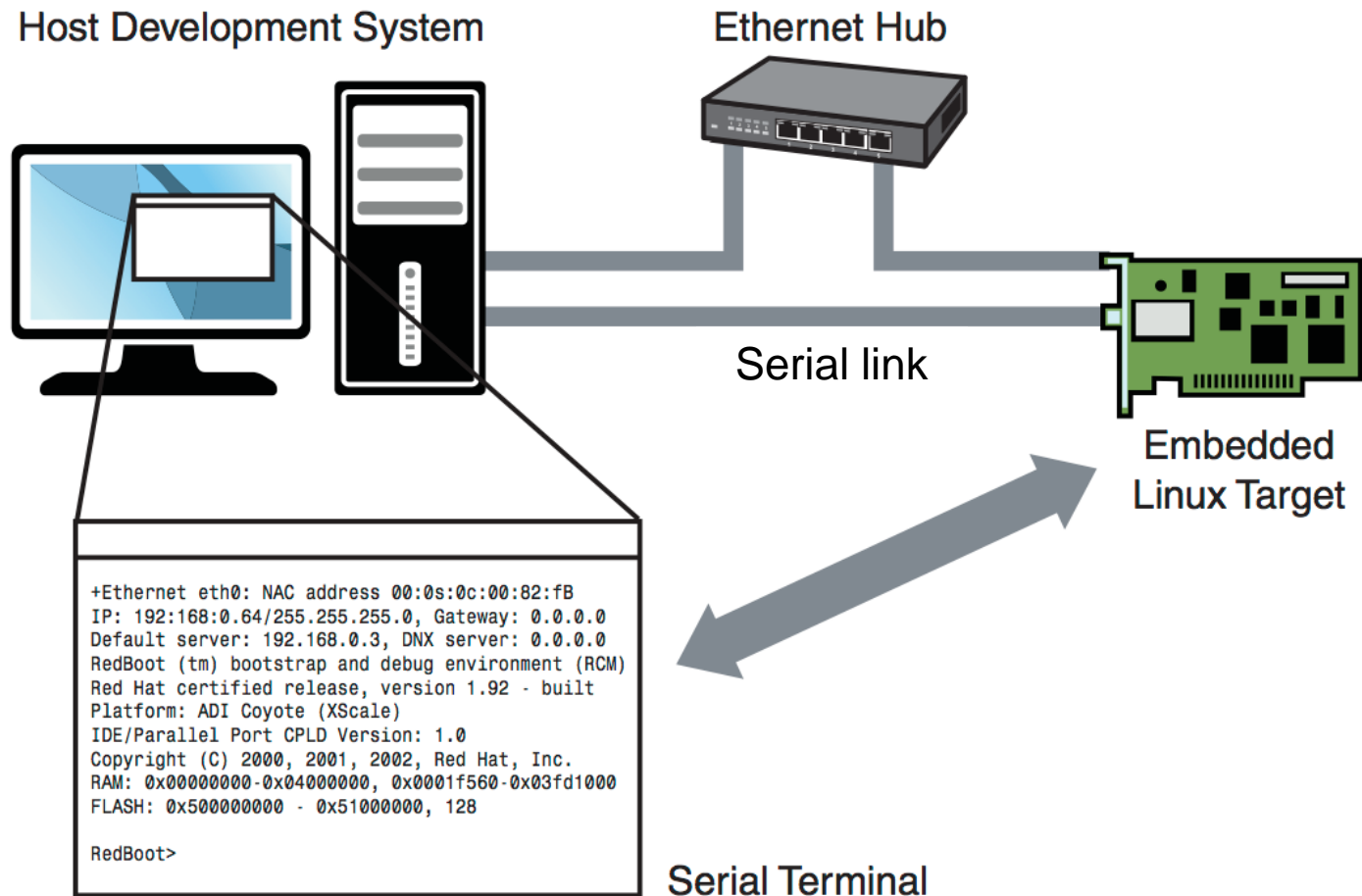
How do I develop with Linux?



Architech

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Anatomy of Embedded Linux Development System



What is it?

- It's not an embedded Linux distribution - it creates a custom one for you
- The Yocto Project is an open source collaboration project that provides templates, tools and methods to help you create custom Linux-based systems for embedded products regardless of the hardware architecture.
- Based on OpenEmbedded
- Who is behind it?
 - Linux Foundation
 - Sponsored by companies like Intel, Texas Instruments, Freescale and many others
 - **Silica is a Yocto Project Participant**
- Provides a highly flexible, yet complex way to build a custom distribution
- Provides SDK tools (Eclipse plugin)
- Provides GUI tools to hide complexity to end user – HOB
- <http://www.yoctoproject.org>



What is the Yocto Project™?

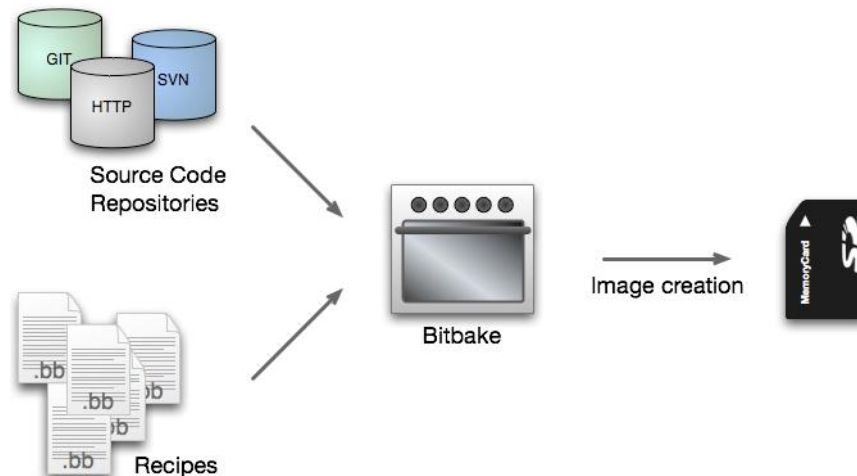


ArchiTech

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www.yoctoproject.org

- Consists of several separate projects :
 - **Bitbake** : Build engine - parses metadata and runs tasks
 - **OpenEmbedded Core** : core metadata and build information to build baseline embedded systems
 - **Poky** : Yocto example distribution which integrates all the required pieces and makes an official release
 - **Hob** : GUI tool to select packages to build and easily create custom image



PROJECTS

Poky

Cross-Prelink

Eclipse IDE Plug-in

Openembedded Core

Pseudo

Swabber

AutoBuilder

Application Development Toolkit (ADT)

Hob

EGLIBC

Build Appliance

Select your basic configuration





...delivering so much more than just a development board

- Yocto HOB tool included
 - GUI tool to configure build and manage package selection
- Eclipse S/W Development IDE included
 - Pre-configured – eliminates complicated setup
 - Start application development immediately
- Architech Linux Distribution and BSPs 'Open Source' and freely available
 - Take our BSP layer and make simple modifications for your own custom board
- ArchiTech SDK – one common development flow across all boards
 - Learn only one tool – not vendor specific



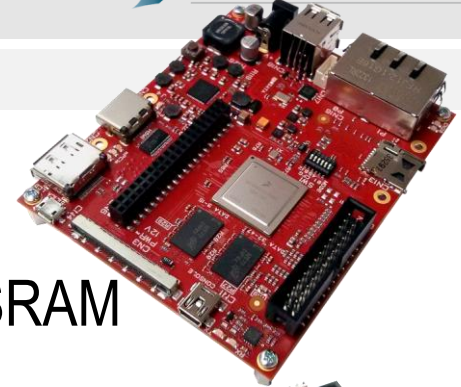


...delivering so much more than just a development board

- Super low cost community boards – can you risk your project deadline?
 - Supported only by user forums
 - Hours wasted waiting for answers that may never arrive
 - Nobody to call when you are really up against it
- ArchiTech boards and Yocto SDK supported by SILICA
 - Extensive team of Field Apps Engineers
 - SILICA Software Enablement Team
- Choosing ArchiTech gives you the re-assurance that if you hit problems there is someone there to help you
- First class support – helping you meet your project deadline

A few ArchiTech Boards

- **Freescale** i.MX 6Quad ARM Cortex A9
- **Renesas** RZ/A1-H A9 featuring 10 MByte internal SRAM
- **Texas Instruments** AM 3354- ARM Cortex A8
- **Xilinx** Zynq-7000 EPP XC7Z020-1CLG484C
- And more.....





...delivering so much more than just a development board

- BSP's developed in house at SILICA
- ArchiTech boards and Yocto SDK supported by SILICA
 - Extensive team of Field Apps Engineers
 - SILICA Software Enablement Team
- Get up to speed even quicker
 - ArchiTech Yocto training classes all across Europe now
- For more information go to www.architechboards.org/yocto
- **See our table for demo's and more information**

