dot11Linux

Embedded Wireless System Solution

The AVS **dot11Linux** Embedded Wireless System Solution is a turn–key product and development kit that includes everything necessary to develop and deploy complete wireless network system products. The **dot11Linux** package includes reference hardware, development tools and all the embedded system source code required to quickly create product software loads for the embedded target.

For engineering teams who need to bring up new product solutions quickly, the **dot11Linux** system provides: comprehensive documentation, a simple yet powerful integrated cross–build system, an easy–to–navigate source base, and easily identifiable mechanisms for maintaining multiple separate product instantiations.

The **dot11Linux** system is a proven solution shown to be portable across all Linux–supported CPU architectures independent of endianness and data alignment sensitivities. All target CPU and board specific elements of the software are maintained separately from the remainder of the codebase. **dot11Linux** is currently being used on all major CPU architectures including x86, PowerPC, ARM, MIPS, and XScale.

The **dot11Linux** build system includes a uniform model for the integration of additional Free and Open Source software (FOSS) and proprietary software. The integration model simplifies issues relating to: source code configuration, build–host versus target execution, incomplete cross–build systems, autoconf, incorrect target binary installation, flash filesystem thinning, and packaging FOSS source code to comply with license requirements.

As a turn–key system, **dot11Linux** has a flexible collection of system modes to support multiple product classes. The products supported by the turn–key modes include: indoor access points for all markets, indoor mobile clients, outdoor clients for wireless customer premise equipment, outdoor clients for mobile applications (including vehicle mounted), outdoor base–stations with wired or wireless backhaul, and indoor or outdoor traffic sensing nodes for systems management and security. In the turn–key system, each of the system modes is configurable using the comprehensive user interface that is accessible via a web browser or a text console.

To accelerate the development of custom system products, **dot11Linux** provides a themeable user interface, sample code for the easy creation of new system modes, a system–wide configuration database, and a consistent system initialization architecture with console output controls to facilitate debugging.

dot11Linux also includes features to reduce the cost and increase the success of product deployment. These features include: separate binary image preparation for development/manufacturing/field–update, hidden system modes to support in–factory manufacturing test, and detailed system health/status reporting to aid customer support personnel.

dot11Linux is a complete kit with the turn–key features, hardware support, and approachable 100% source codebase needed to quickly complete your development and successfully deploy your products.

Features:

- Reference Hardware Included
- x86, PPC, ARM, MIPS, and XScale
- Cross Toolset Included
- 4MB Flash/16MB RAM Footprint
- Cross–Platform Flash Management
- 802.11a/b/g Support
- Multi–Radio System Support
- CPU Portable
- 100% Source Code
- Integrated Consistent Build System
- System Configuration Database
- Uniform System Initialization Architecture
- Comprehensive Encryption Support
- Authenticator and Supplicant Included
- Local and Remote Authentication
- RADIUS Accounting
- Extensible Field Flash Update
- Configuration Backup and Restore
- Common Web and Console User Interface (HTTP, HTTPS, TELNET, SSH, serial)
- DHCP Client and Server
- NTP Client and Server
- DNS Server and Proxy
- SSH Client and Server
- SSL Library
- Multiple Operational Modes:
  - * 802.11 Access Point
  - * 802.11 Client Station
  - * 802.11 IBSS (Adhoc)
  - * AVS AP–peered Repeating WDS
  - * AVS AP–peered Adhoc WDS
  - * AVS WDS Station Bridge
  - * 802.11 Remote Frame Capture
  - * Emergency Fallback
  - * Manufacturing Test
- Commercially Supported and Licensed

Applications:

- Enterprise Access Point
- SOHO Access Point
- Hot Spot Access Point
- Residential Gateway
- Multimedia Client and Server Devices
- Device Server (e.g. Print Server)
- Outdoor Mesh or Repeater Node (P2P or P2MP)
- Outdoor Customer Premise Equipment
- Outdoor Mobile Node
- Voice Client and Server Devices
- Set Top Box

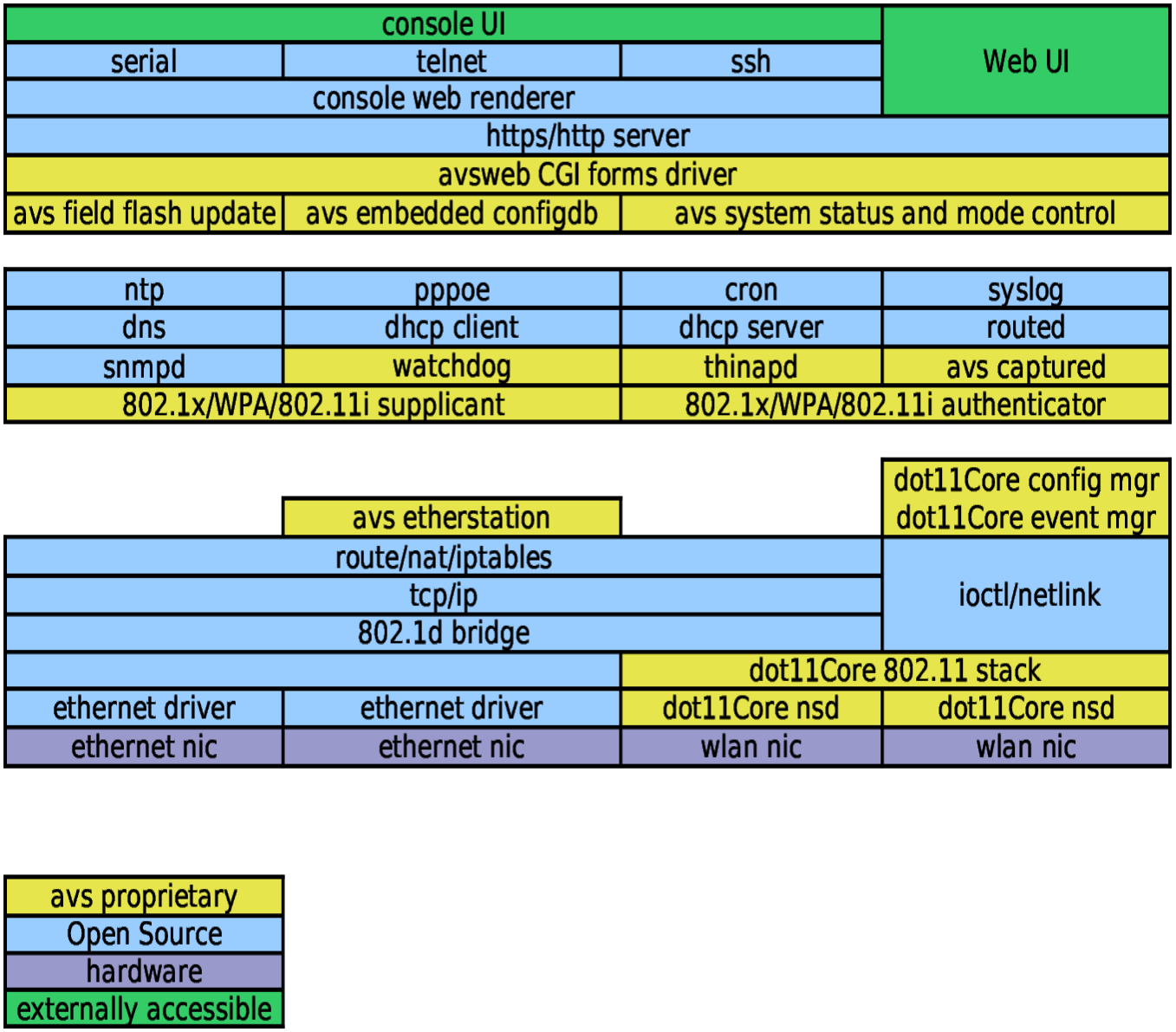

Figure 1: dot11Linux Block Diagram

ABOUT AVS

Since 1996, AbsoluteValue Systems (AVS) has been providing products and services for embedded Linux and wireless network applications. AVS's principle products are the **dot11Linux** complete embedded system solution and the **dot11Core** 802.11 device support software suite. AVS also supplies software development services and consulting services for wireless system design, development, and deployment.

"AVS: where Linux, Wireless, and Embedded Systems meet"

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