



## Introduction

All product development cycles are different. Whether you have to meet tight deadlines, create cost-effective solutions or design for harsh environments, successful product designs are critical to the success of your organization!

At AimValley we understand your need to respond to the demanding requirements of your customers. Based on our years of close co-operation with Broadcom® during the development of various 'Broadcom-based' products, AimValley has created the AimOS Family.

## AimOS Family

The AimOS software family is a collection of software assets and tools to develop carrier grade systems. It is a field proven solution with a first deployment in 2003 and has been used in more than 100 000 shipped systems. To meet your specific customer demands, we have created several versions of AimOS ([AimOS Family](#)).

## Introducing AimoS Robo

AimOS Robo is a hardened version based on Broadcom's® RoboOS and it supports the Robo Ethernet switch family. The RoboOS is a modern network stack, targeted for web managed switches developed by Broadcom®. RoboOS is built using a combination of Broadcom® proprietary, open source (Non-GPL) and third-party codes. It utilizes the internal embedded processor and memory within the Robo series. This results in a portable network stack within the Robo switch family, only dependent on the supported flash types. The Broadcom® RoboOS software is intended as a demonstration or evaluation package for customers to use and build their own switch management solution with.

The AimOS Robo is targeted for the embedded CPU in the Robo switch family.

## Applied hardening enhancements

AimValley has hardened and integrated RoboOS into AimOS resulting in a new version called AimOS Robo. Hardening was done by adding features like file system robustness and persistent logging. As a result AimOS Robo can now be used as a field grade switch management application for the Broadcom® Robo series switches without the need for an external CPU.

The AimOS Robo includes the following hardening enhancements:

### File System Robustness

Makes the system fully resilient against power failures with very little run-time overhead.

### Persistent Logging

Adds functionality that stores all debug information of the system to a circular log on the system's flash chip as well, for retrieving the contents of the log through the systems web interface.

- The file system robustness has been rigorously tested and proven to work; **more than 20 000 cycles** of power loss during file system writes were **tested**.
- In 12% of the recoveries the additional hardening feature of AimValley prevented file system corruption, resulting in **100% error free recoveries**.

## Further enhancements

Compared to the standard RoboOS several other enhancements have been applied to AimOS Robo;

- automatic detection and resolution of inconsistent system states causing a continuous recovery
- improvement of web GUI performance up to 3 times faster,
- visibility of the auto-negotiation status of each port in the GUI,
- ability to configure auto-negotiation for ports that allow this,
- addition of configuration parameters to the LED behavior.

These enhancements create faster problem solving as well as easy-to-use GUI-features, enabling you to manage and configure your software quick and easy.

## Required licenses

With the AimOS Robo, there is no need for complex or expensive license fees.

For binary distribution of the AimOS Robo, including the Broadcom® driver, the Mongoose web server and the FreeRTOS, it is sufficient to sign a license agreement with AimValley.

Contact AimValley sales ([sales@aimvalley.com](mailto:sales@aimvalley.com)) for details about source distributions.

**Required hardware**

The AimOS Robo runs from the internal Robo2 CPU and memory. The only external resource it depends on, is the flash memory. RoboOS software supports only SPI flash devices and not QSPI. Most QSPI devices are backwards compatible with SPI. The RoboOS flash driver can use flash devices from Cypress/Spansion, ST, Micron, Macronix and Winbond. The flash must support sub-sector erases for 4 KB on all areas of the flash. The software driver currently only supports 3 byte addressing (up to 16MB Flash).

**Why AimValley?**

AimValley helps you with product development based on the AimOS family. This collection of software assets and tools can also be used for other Broadcom® switches, enabling us to help you with any 'Broadcom-based' design.

Services range from consultancy during your architecture phase, porting the AimOS to your own hardware, designing your hardware up to full system development including production, up until maintenance & support. We take care of every step in your development process.

- Reliable partnership
- Design flexibility
- Extensive experience in developing telecom and datacom systems.
- Strong track record in delivering as planned and within budget
- Evaluation of jump-start product development
- AimOS supports various hardware platforms
- Key software and hardware expertise available for the StrataConnect and StrataXGS.

**Re-use of IP and proven developed switch experience  
improves your development cycle and reduces costs considerably.**

**Ask for a demo!**

Some of the Broadcom® Ethernet switch evaluation boards can be used with a license free binary evaluation version of the AimOS, to quickly evaluate the AimOS and Broadcom® devices.

Our experienced engineering team with expertise in systems engineering, software, electronic and FPGA design can support you with all steps in your product development. The Broadcom® experience of our teams is well known in the industry.

For further information contact [sales@aimvalley.com](mailto:sales@aimvalley.com).