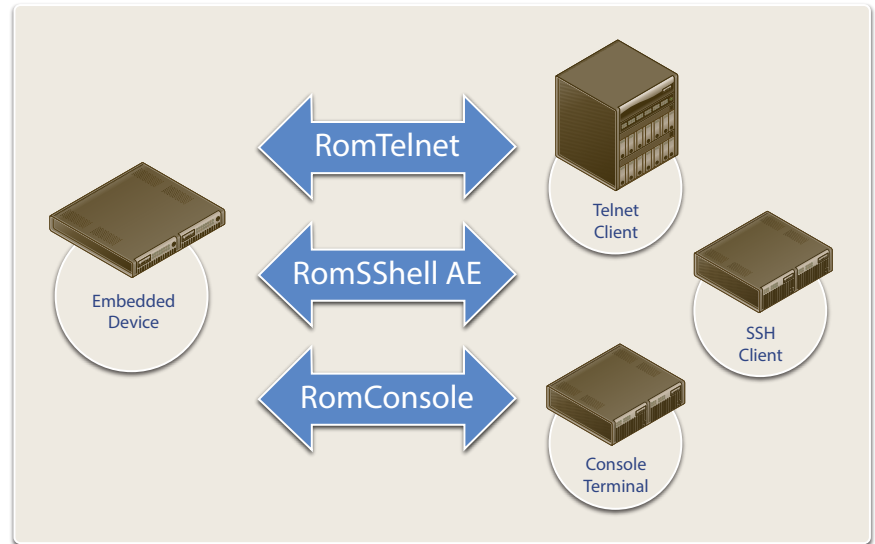# RomCLI AE™

RomCLI AE Benefits

- Cisco IOS-style interface
- CliBuilder and VarBuilder offline tools speed development of CLI interface
- Optional SSH security
- Support for Telnet and serial interfaces
- Common variable access structures
- Fully integrated with RomPager AE suite of products or standalone operation
- Small RAM/ROM footprint
- Highly portable via field-proven abstraction layer (hardware, RTOS, and TCP/IP stack)
- Delivered as standard ANSI-C source code
- Interface files for leading RTOS vendors provided
- External command trees specified in XML
- Supports Suite B Profile for Transport Layer Security (RFC 6460)

RomCLI AE

The RomCLI AE Command Line Interface toolkit is designed to aid your development team in creating Cisco IOS-style text-based interfaces for your embedded device. RomCLI AE can work standalone or pre-integrated with the RomPager AE toolkit to provide unified access to variables via common routines. The RomCLI AE toolkit includes two access toolkits, RomTelnet and RomConsole. An optional secure shell toolkit, RomSShell AE, is also available.

RomTelnet

The RomTelnet toolkit provides an embedded Telnet server for standard protocol negotiation with any Internet Telnet client. Multiple simultaneous sessions are supported based on configuration.

RomConsole

For use with a serial line interface, the RomConsole toolkit provides component interfaces to user-supplied serial interfaces. RomCLI AE can use RomConsole to provide command-line services via serial interface in addition to the TCP/IP-based sessions provided by RomTelnet.

RomSShell AE

RomSShell AE is an optional toolkit that provides a secure shell for users accessing their embedded device. SSH version 2 is supported. RomSShell AE also supports multiple simultaneous sessions based on configuration.

Variable Access

Retrieval and storage of variables are achieved using the RomPager AE Variable Access architecture. An API is provided with built-in routines to convert internal data types to and from external string formats.

Allegro

Command Line Handler

The Command Line Handler provides basic line-handling functions common to all parsing trees. Command lines are assembled by gathering characters from the Telnet, SSH, or serial interface and passing them to the Parser System for processing.

Parser System

The Parser System uses a set of predefined tables to provide command interaction. All commands are stateless, follow the "Cisco-like" request-response format, and resolve to an action. An Action can fully interface with variable storage or invoke user exit routines to display special format information or load different parse trees.

Multiple parse trees allow separate authorization, configuration, and operation command sets to be specified. Command prompts are specified as part of the parse trees, allowing different prompts in different modes. Full <TAB> and ? command completion are supported to access command help support.

CLI Builder

Included with the RomCLI AE toolkit, this offline tool saves development teams hours of work when creating a CLI interface. The CliBuilder takes an XML format description of the command tree syntax, including command help, action routines, and security realms, and produces the internal parse tree tables and help string tables used by the CLI Parser System.

VarBuilder

The RomCLI AE toolkit also includes VarBuilder, an offline compiler that takes an XML format description of variables, data types, and access routines and produces a set of interface data structures. The data structures provide the basis for common and consistent exchange of data between RomCLI AE and device variable storage.

Variable Database

| User Exit Functions | User Get/Set Functions |
| | Variable Access Structures |

Parser System

Command Line Handler

| RomTelnet | RomSShell AE | RomConsole |

RomPager AE Scheduler and Core Services

Software Abstraction Layer

| TCP • UDP • IPv4 • IPv6 | File System (optional) | RTOS (optional) |