

Rapid prototyping and development tool for building SNMP (Java Micro Edition) agents which are compatible with J2ME CDC specifications.

Introduction

AdventNet Agent Toolkit Java Edition is a productive development environment for building Micro Edition (J2ME) SNMP agents compatible with CDC specifications.

The existing platforms and specifications support only devices that have more memory, powerful networking capabilities, intuitive user interfaces, etc. These platforms and specifications do not support the embedded devices such as high-end personal digital assistants (PDAs), set-top boxes, etc. that have less memory. Hence, we need J2ME CDC specifications-based solution that provides standard-based SNMP-compliant remote management for the embedded devices.

AdventNet Micro SNMP agents are newly designed to be ported in the J2ME CDC environment that targets the devices with less-memory and limited-resource requirement. The toolkit renders end-to-end development of the Micro SNMP agent (can be developed in the normal J2SE Platform) that can be easily deployed to manage the connected device. With this feature, AdventNet enables you to port the Micro SNMP agent into such less-memory devices for providing SNMP manageability.

Key Features

- Complete SNMPv1 and SNMPv2c support.
- Support for traps, notifications, and informs.
- Atomicity or rollback support while processing multi-varbind SNMP SET requests.
- TrapForwardingTable to maintain the Manager's information.
- Transport provider framework to accommodate proprietary protocols.

Developer Benefits

Agent Development Environment: Enhanced and integrated tools reduce the time to develop SNMP agent, increase developer productivity, and offer reduced time-to-market. The tools can be used in the normal J2SE environment to develop the agent, which can then be ported in devices having limited resources.

Standards-based Architecture: Built on standard technologies such as SNMP, it offers a viable platform for integration with any standard management console.

Java Micro Edition SNMP Agent Development Experience

Agent Toolkit offers a complete development experience.

To develop the J2ME (Micro Edition) SNMP agents in a normal J2SE environment:

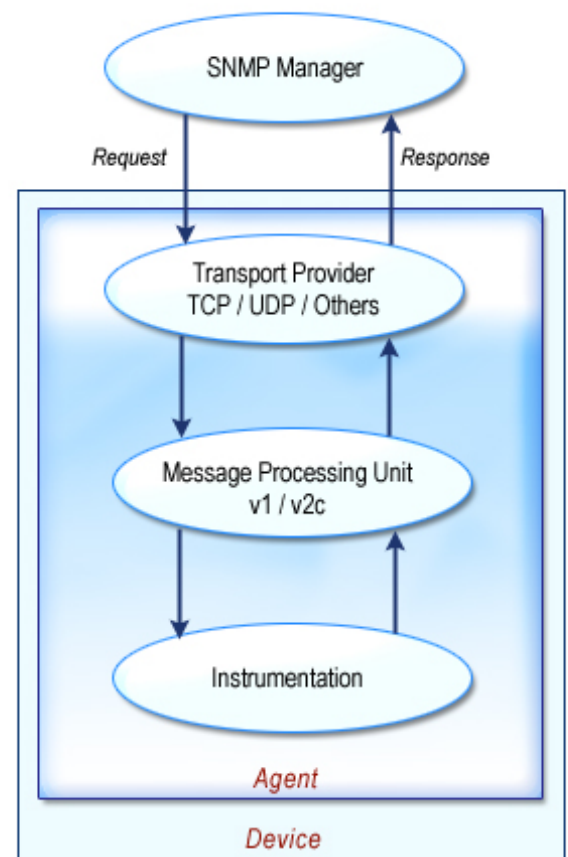
- Create and edit any MIB(s) in the MIB Editor.
- Load any MIB(s) in the MIB Compiler..

- Generate agent using MIB Compiler. A basic SNMP framework is generated based on specifications with provisions for developers to add their custom code.
- Compile the agent using MIB Compiler after completing instrumentation. Now the agent is ready and can interact with any standard SNMP manager.
- Test and verify the developed agent using MIB Browser that is bundled along with the toolkit

The developed J2ME SNMP agent is ready to be deployed on platforms with less memory and embedded platforms, and it can be seamlessly integrated with any Network or Enterprise Management Console.

Java Micro Edition SNMP Agent Runtime Architecture

The Java Micro Edition SNMP agent runtime architecture explains the components and their functions.



Runtime Architecture of AdventNet SNMP Agent Micro Edition

Java Micro Edition SNMP Agent Components

Transport Provider: It facilitates the communication between the SNMP manager and the SNMP agent. SNMP messages require transport protocol for their transmission. AdventNet SNMP agent (Micro Edition) supports UDP/IP and TCP/IP as the transport protocol.

Message Processing Unit: It extracts data from the request and determines the appropriate SNMP agent stub capable of handling the query. Finally the output received from the SNMP agent is packaged as a response message and sent back.

Instrumentation: To get the device or application specific data, some files in the generated source files need to be instrumented to include the desired function. This will depend on how the MIB is defined, how the data associated with the MIB can be accessed, how it needs to be delivered to the Manager, etc.

Supported SNMP Standards

AdventNet Agent Toolkit Java Edition supports the following SNMP standards:

SNMP Version	RFC Number	Description
SNMP Version 1	RFC 1155	Structure and Identification of Management Information for TCP/IP-based Internets.
	RFC 1157	Simple Network Management Protocol
SNMP Version 2	RFC 1901	Introduction to Community-based SNMPv2
	RFC 3418	MIB for SNMPv2

System Requirements

<i>Minimum Hardware Requirements</i>	
Flash Memory	300 KB
RAM	3 MB
<i>Software Requirements</i>	
Java	All versions compatible with J2ME CDC implementation.

Note: The system requirements mentioned above refers to the requirements of embedded devices to run the developed Micro SNMP Agents. The agents can be developed only in a normal J2SE environment using AdventNet Agent Toolkit - Java Edition.