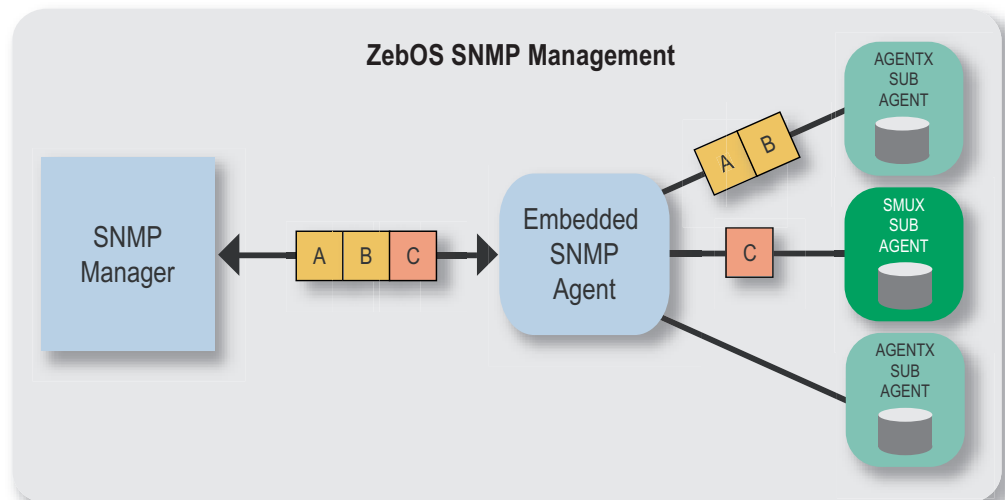


SNMP Agent Modules

SKU ZOS-AGENTX
SKU ZOS-SMUX

The ZebOS® Advanced Routing Suite (ARS) now provides Agent X and SMUX compatible modules. On typical kernel/user systems, an SNMP agent is often implemented as a user-process, that reads kernel variables in order to realize Internet-standard MIBs. This approach works fine as long as all of the information needed by the SNMP agent resides in either the kernel or in stable storage (i.e., files). However, when other user-processes are employed to implement other network services, such as ZebOS routing protocols, communication between the SNMP agent and other processes is problematic. In order to solve this problem, a new protocol, the SNMP multiplexing (SMUX) protocol is introduced. When a user-process, termed a SMUX peer, wishes to export a MIB module, it initiates a SMUX association to the local SNMP agent, registers itself, and (later) fields management operations for objects in the MIB module.

Carrying this approach to its fullest, it is possible to generalize the SNMP agent so that it knows about only the SNMP group of the Internet-standard MIB. All other portions of the Internet-standard MIB can be implemented by another process. This is quite useful, for example, when a computer manufacturer wishes to provide SNMP access for its operating system in binary form. Agent Extensibility protocol (AgentX) performs the same functions of SMUX, however, it communicates between master agents and subagents (we called agents, processing entities), and implements elements of procedure by which the extensible agent processes SNMP protocol messages. AgentX supports a "master" agent that is available on the standard transport address and that accepts SNMP protocol messages and a set of "subagents" that each contains management instrumentation.



Features

- Accepts AgentX session establishment requests from subagents.
- Accepts registration of MIB regions by subagents.
- Sends and accepts SNMP protocol messages on the agent's specified transport addresses.
- Implements the agent role Elements of Procedure specified for the administrative framework applicable to the SNMP protocol message.
- Provides instrumentation for the MIB objects defined in RFC 1907, and for any MIB objects relevant to any administrative framework it supports.
- Sends and receives AgentX/SMUX protocol messages to access management information, based on the current registry of MIB regions.
- Forwards notifications on behalf of subagents.

ZebOS Protocol Modules can now act in a subagent role performs the following functions:

- Initiates AgentX sessions with the master agent.
- Registers MIB regions with the master agent.
- Instantiates managed objects.
- Binds OIDs within its registered MIB regions to actual variables.
- Performs management operations on variables.
- Initiates notifications.

Requirements

SKU	PRODUCT NAME
ZOS-NSM	ZebOS Network Services Module
ZOS-AGENTX	ZebOS SNMP AgentX Protocol Module
ZOS-SMUX	ZebOS SNMP SMUX Protocol module

Standards Support

STANDARD	FUNCTION
RFC 2747	Agent Extensibility (AgentX) Protocol Version 1
RFC 1227	SNMP MUX Protocol and MIB

Supported Operating Systems

- Linux
 - NetBSD*
 - VxWorks@ **
- * Requires third party multicast forwarder patch.
** Requires IP Infusion TCP/IP Module.

Benefits

- Stable, robust implementation of SMUX and AgentX
- Interoperable with major router vendors
- Can be used in embedded equipment and on standard server platforms
- Delivers significant time-to-market advantages for customer
- Enables implementing any embedded SNMP Agent that supports either one of two protocols
- Other system specific process can easily add ZebOS SMUX/AgentX glue code to create additional subagents as required.

Standard Deliverables

- Source Code (written in ANSI compliant C)
- ZOS-AGENTX Command Reference
- ZOS-SMUX Command Reference
- Developer Guides
- Installation and Configuration Guide



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