

SNMP

SNMP (Simple Network Management Protocol) is by far the most popular system and network management protocol.¹ More devices and systems are managed with SNMP than any other management protocol. This is largely because SNMP is quite small and inexpensive to deploy, meaning that it can be implemented in devices with minimal memory and CPU resources. This is in contrast to the Open Systems Interconnect (OSI) management protocols which are complex and more expensive to deploy.

SNMP was developed to provide a basic, easy-to-implement network management tool for the Transport Control Protocol/Internet Protocol (TCP/IP) suite of protocols. This includes a framework of operation and a representation of management information within the framework. The Structure of Management Information (SMI) specification provides the definition of Management Information Bases (MIBs).² MIBs are analogous to database schemas. MIB definitions are the basis of interaction between a managed entity and a managing entity (see Fig. 1). The managed entity, called an agent, includes one or more MIBs that define the managed information. This includes a standard set of management information which is part of the SNMP framework, and a set of vendor-specific management information which allows a vendor to instrument specific parts of a device or process. The ability to define custom MIBs allows SNMP management to be extended to meet the needs of a vendor's device. The managing entity, or manager, is responsible for making requests to the agent for management information and handling responses from the agent.

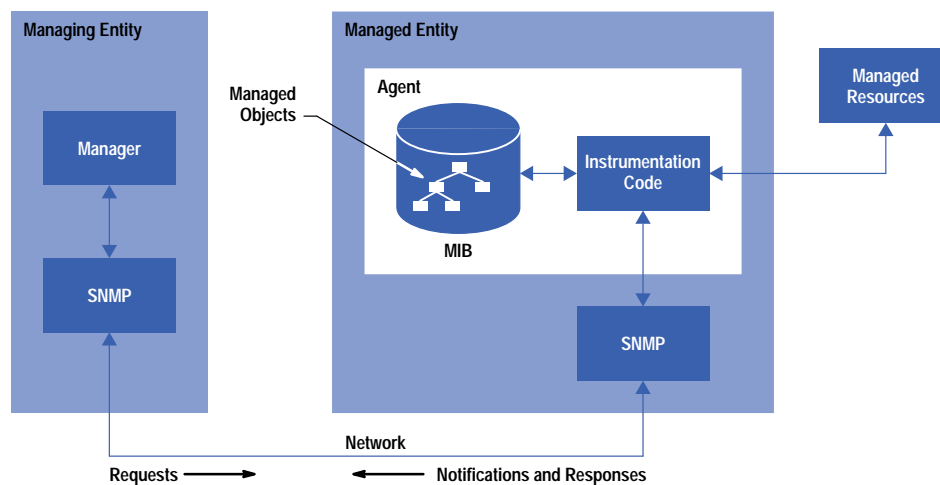


Fig 1. SNMP and the manager/agent configuration.

References

1. *Simple Network Management Protocol*, Internet Engineering Task Force Request for Comment 1157, May 1990.
2. *Information Technology—OpenSystem Interconnection—Structure of Management Information*, ITU-Recommendation X.720 (ISO/IEC 10165-1), 1992.

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