recognized name, defined a few data types which are no longer supported in the current version of the SMI or SNMPv2 protocol. These data types are *BIT STRING*, *UInteger32*, and *NsapAddress*.

SMIv2 is a backward-compatible update of SMIv1, in all cases except for data type Counter64. That is, it is possible to mechanically create a definition of managed objects in the SMIv1 format from a definition in the SMIv2 format except for objects whose data type is Counter64.

There is no complete mechanical conversion from definitions of managed objects in the SMIv1 format to the SMIv2 format, since the SMIv2 format contains fields for additional information that must be provided by the designer of the definitions. Also, the *ACCESS* clause was changed to *MAX-ACCESS* and its meaning changed, and, thus, the values need to be reviewed when converting from SMIv1 to SMIv2. (You cannot simply use the same values in all cases when you translate object definitions.) Finally, the SMIv2 format contains constructs to define requirement specifications and implementation specifications not found in the SMIv1 format.

By design, the format for the definition of managed objects is independent of the protocol to access them, except for objects with data type of Counter64. That data type does not exist in the SNMPv1 and SNMPsec protocols. A conforming SNMPv1 or SNMPsec entity will generate an ASN.1 parse error when parsing a message containing a Counter64 data type. RFC 2089 defines the behavior of a conforming bilingual (and multilingual) agent that has access to objects with the Counter64 data type.

Version Usage

At this time, only the SNMPv1 protocol has widespread usage. The SNMPv1 protocol is most likely found in every managed device and management platform that supports SNMP. The SNMPsec protocol never saw commercial availability. The SNMPv2p protocol has seen limited commercial availability. Only one of the leading device vendors has made available agents supporting SNMPv2p. All indicators point to no new SNMPv2p offerings and current offerings being replaced by SNMPv2c or SNMPv3. The SNMPv2u and SNMPv2* protocols saw no significant commercial offerings. Support for SNMPv2c in commercial products has been limited, but has been building in 1997. Now that SNMPv3 has been approved to enter the standards-track and for publication, some vendors may not offer SNMPv2c and instead, skip to SNMPv3.

At this time, there is widespread use and support of both versions of the SMI. This is due in part to the policy in the IETF that new versions of RFCs must specify MIB modules in the SMIv2 format. Many commercial products that process MIB modules support both formats.

University Comment

Aiko Pras, University of Twente
Jürgen Schönwälder, TU Braunschweig

At this place readers familiar with *The Simple Times* might have expected to see the Industry Comment. This featured column was written by Marshall Rose, the creator of *The Simple Times* and the driving force behind all 16 issues of the past.

The Simple Times started back in spring 1992. The various issues of *The Simple Times* not only presented interesting articles, but also mixtures of thoughtful summaries, answers to frequently asked questions, excellent inside information and sometimes thought-provoking discussions about future directions. Since its appearance, *The Simple Times* has been very popular within the SNMP community and old issues are still being downloaded from the SimpleTimes Web server by people who want to better understand why things are the way they are. Nowadays, *The Simple Times* has nearly 5000 registered readers.

Marshall Rose left the network management area about a year ago and his farewell seemed to ring the death-knell of the *The Simple Times*. However, given the immense amount of SNMP related work still going on within the IETF, there was a need to re-active *The Simple Times* in order to document some of the evolution and to have a place where people can publish their thoughts on the future of Internet network management.

After some talks with Marshall and other people who had previously contributed to *The Simple Times*, it was decided to move the newsletter and the associated Web server to a new home. The Web server is now maintained by the University of Twente by the same people who maintain the SimpleWeb server, and the editing work is done as a joint project between the Technical University of Braunschweig (Germany) and the University of Twente (the Netherlands). We would like to take this opportunity to thank Marshall for all his help and the time he has spend to make the previous 16 issues of *The Simple Times* a reality.

The issue you are reading right now is the result of this transition and we plan to continue *The Simple Times* as the same newsletter it has been in the past. This means that we continue to rely on help and contributions from the SNMP community. As Marshall wrote in the first issue:

Our job is simply to make the trains run on time. When you like the contents, thank the other volunteers. If an issue comes out late, you know who to blame.

Standards Summary

Please consult the latest version of *Internet Official Protocol Standards*. As of this writing, the latest version is RFC 2200.

SNMPv1 Framework

Full Standards:

- RFC 1155 - Structure of Management Information (SMI);
- RFC 1157 - Simple Network Management Protocol (SNMP); and,
- RFC 1212 - Concise MIB definitions.

Proposed Standards:

- RFC 1418 - SNMP over OSI;
- RFC 1419 - SNMP over AppleTalk; and,
- RFC 1420 - SNMP over IPX.

Informational:

- RFC 1215 - A convention for defining traps for use with the SNMP.

SNMPv2 Framework

Draft Standards:

- RFC 1902 - SMI for SNMPv2;
- RFC 1903 - Textual Conventions for SNMPv2;
- RFC 1904 - Conformance Statements for SNMPv2;
- RFC 1905 - Protocol Operations for SNMPv2;
- RFC 1906 - Transport Mappings for SNMPv2;
- RFC 1907 - MIB for SNMPv2; and,
- RFC 1908 - Coexistence between SNMPv1 and SNMPv2.

Experimental:

- RFC 1901 - Introduction to Community-based SNMPv2;
- RFC 1909 - An Administrative Infrastructure for SNMPv2; and,
- RFC 1910 - User-based Security Model for SNMPv2.

MIB Modules

Full Standards:

- RFC 1213 - Management Information Base (MIB-II); and,
- RFC 1643 - Ether-Like Interface Type (SNMPv1).

Draft Standards:

- RFC 1493 - Bridge MIB;
- RFC 1559 - DECnet phase IV MIB;
- RFC 1657 - BGP version 4 MIB;
- RFC 1658 - Character Device MIB;
- RFC 1659 - RS-232 Interface Type MIB;
- RFC 1660 - Parallel Printer Interface Type MIB;
- RFC 1694 - SMDS Interface Protocol (SIP) Interface Type MIB;
- RFC 1724 - RIP version 2 MIB;
- RFC 1748 - IEEE 802.5 Token Ring Interface Type MIB;
- RFC 1757 - Remote Network Monitoring MIB;
- RFC 1850 - OSPF version 2 MIB; and,
- RFC 2115 - Frame Relay DTE Interface Type MIB.

Proposed Standards:

- RFC 1285 - FDDI Interface Type (SMT 6.2) MIB;
- RFC 1381 - X.25 LAPB MIB;
- RFC 1382 - X.25 PLP MIB;
- RFC 1406 - DS1/E1 Interface Type MIB;
- RFC 1407 - DS3/E3 Interface Type MIB;
- RFC 1414 - Identification MIB;
- RFC 1461 - Multiprotocol Interconnect over X.25 MIB;
- RFC 1471 - PPP Link Control Protocol (LCP) MIB;
- RFC 1472 - PPP Security Protocols MIB;