```
SNMP-FRAMEWORK-MIB DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY,
        OBJECT-TYPE,
        OBJECT-IDENTITY,
        snmpModules
                FROM SNMPv2-SMI
        TEXTUAL-CONVENTION
                FROM SNMPv2-TC
        MODULE-COMPLIANCE,
        OBJECT-GROUP
                FROM SNMPv2-CONF;

snmpFrameworkMIB MODULE-IDENTITY
        LAST-UPDATED "9901190000Z"        -- Jan 19, 1999 12:00:00 AM
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                "
        DESCRIPTION
                "The SNMP Management Architecture MIB"

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        DESCRIPTION
                "Updated editors' addresses, fixed typos.
                Published as RFC2571.

                "

        REVISION "9711200000Z"        -- Nov 20, 1997 12:00:00 AM
        DESCRIPTION
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                "The initial version, published in RFC 2271.

                "
 -- 1.3.6.1.6.3.10 --  ::= { snmpModules 10 }
-- Textual Conventions used in the SNMP Management Architecture ***

SnmpEngineID ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "An SNMP engine's administratively-unique identifier.
                Objects of this type are for identification, not for
                addressing, even though it is possible that an
                address may have been used in the generation of
                a specific value.

                The value for this object may not be all zeros or
                all 'ff'H or the empty (zero length) string.

                The initial value for this object may be configured
                via an operator console entry or via an algorithmic
                function.  In the latter case, the following
                example algorithm is recommended.

                In cases where there are multiple engines on the
                same system, the use of this algorithm is NOT
                appropriate, as it would result in all of those
                engines ending up with the same ID value.

                1) The very first bit is used to indicate how the
                   rest of the data is composed.

                   0 - as defined by enterprise using former methods
                       that existed before SNMPv3. See item 2 below.

                   1 - as defined by this architecture, see item 3
                       below.
                   Note that this allows existing uses of the
                   engineID (also known as AgentID [RFC1910]) to
                   co-exist with any new uses.

                2) The snmpEngineID has a length of 12 octets.

                   The first four octets are set to the binary
                   equivalent of the agent's SNMP management
                   private enterprise number as assigned by the
                   Internet Assigned Numbers Authority (IANA).
                   For example, if Acme Networks has been assigned
                   { enterprises 696 }, the first four octets would
                   be assigned '000002b8'H.

                   The remaining eight octets are determined via
                   one or more enterprise-specific methods. Such
                   methods must be designed so as to maximize the
                   possibility that the value of this object will
                   be unique in the agent's administrative domain.
                   For example, it may be the IP address of the SNMP
                   entity, or the MAC address of one of the
                   interfaces, with each address suitably padded
                   with random octets.  If multiple methods are
                   defined, then it is recommended that the first
                   octet indicate the method being used and the
                   remaining octets be a function of the method.

                3) The length of the octet strings varies.

                   The first four octets are set to the binary
                   equivalent of the agent's SNMP management
                   private enterprise number as assigned by the
                   Internet Assigned Numbers Authority (IANA).
                   For example, if Acme Networks has been assigned
                   { enterprises 696 }, the first four octets would
                   be assigned '000002b8'H.

                   The very first bit is set to 1. For example, the
                   above value for Acme Networks now changes to be
                   '800002b8'H.

                   The fifth octet indicates how the rest (6th and
                   following octets) are formatted. The values for
                   the fifth octet are:

                     0     - reserved, unused.

                     1     - IPv4 address (4 octets)
                             lowest non-special IP address

                     2     - IPv6 address (16 octets)
                             lowest non-special IP address

                     3     - MAC address (6 octets)
                             lowest IEEE MAC address, canonical
                             order

                     4     - Text, administratively assigned
                             Maximum remaining length 27

                     5     - Octets, administratively assigned
                             Maximum remaining length 27

                     6-127 - reserved, unused

                   127-255 - as defined by the enterprise
                             Maximum remaining length 27

                "
        SYNTAX      OCTET STRING (SIZE (5..32))

SnmpSecurityModel ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "An identifier that uniquely identifies a
                securityModel of the Security Subsystem within the
                SNMP Management Architecture.

                The values for securityModel are allocated as
                follows:

                - The zero value is reserved.
                - Values between 1 and 255, inclusive, are reserved
                  for standards-track Security Models and are
                  managed by the Internet Assigned Numbers Authority
                  (IANA).
                - Values greater than 255 are allocated to
                  enterprise-specific Security Models.  An
                  enterprise-specific securityModel value is defined
                  to be:

                  enterpriseID * 256 + security model within
                  enterprise

                  For example, the fourth Security Model defined by
                  the enterprise whose enterpriseID is 1 would be
                  260.
                This scheme for allocation of securityModel
                values allows for a maximum of 255 standards-
                based Security Models, and for a maximum of
                255 Security Models per enterprise.
                It is believed that the assignment of new
                securityModel values will be rare in practice
                because the larger the number of simultaneously
                utilized Security Models, the larger the
                chance that interoperability will suffer.
                Consequently, it is believed that such a range
                will be sufficient.  In the unlikely event that
                the standards committee finds this number to be
                insufficient over time, an enterprise number
                can be allocated to obtain an additional 255
                possible values.

                Note that the most significant bit must be zero;
                hence, there are 23 bits allocated for various
                organizations to design and define non-standard
                securityModels.  This limits the ability to
                define new proprietary implementations of Security
                Models to the first 8,388,608 enterprises.

                It is worthwhile to note that, in its encoded
                form, the securityModel value will normally
                require only a single byte since, in practice,
                the leftmost bits will be zero for most messages
                and sign extension is suppressed by the encoding
                rules.

                As of this writing, there are several values
                of securityModel defined for use with SNMP or
                reserved for use with supporting MIB objects.
                They are as follows:

                    0  reserved for 'any'
                    1  reserved for SNMPv1
                    2  reserved for SNMPv2c
                    3  User-Based Security Model (USM)

                "
        SYNTAX      INTEGER (0..2147483647)

SnmpMessageProcessingModel ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "An identifier that uniquely identifies a Message
                Processing Model of the Message Processing
                Subsystem within a SNMP Management Architecture.
                The values for messageProcessingModel are
                allocated as follows:

                - Values between 0 and 255, inclusive, are
                  reserved for standards-track Message Processing
                  Models and are managed by the Internet Assigned
                  Numbers Authority (IANA).

                - Values greater than 255 are allocated to
                  enterprise-specific Message Processing Models.
                  An enterprise messageProcessingModel value is
                  defined to be:

                  enterpriseID * 256 +
                       messageProcessingModel within enterprise

                  For example, the fourth Message Processing Model
                  defined by the enterprise whose enterpriseID
                  is 1 would be 260.

                This scheme for allocating messageProcessingModel
                values allows for a maximum of 255 standards-
                based Message Processing Models, and for a
                maximum of 255 Message Processing Models per
                enterprise.

                It is believed that the assignment of new
                messageProcessingModel values will be rare
                in practice because the larger the number of
                simultaneously utilized Message Processing Models,
                the larger the chance that interoperability
                will suffer. It is believed that such a range
                will be sufficient.  In the unlikely event that
                the standards committee finds this number to be
                insufficient over time, an enterprise number
                can be allocated to obtain an additional 256
                possible values.

                Note that the most significant bit must be zero;
                hence, there are 23 bits allocated for various
                organizations to design and define non-standard
                messageProcessingModels.  This limits the ability
                to define new proprietary implementations of
                Message Processing Models to the first 8,388,608
                enterprises.

                It is worthwhile to note that, in its encoded
                form, the messageProcessingModel value will
                normally require only a single byte since, in
                practice, the leftmost bits will be zero for
                most messages and sign extension is suppressed
                by the encoding rules.

                As of this writing, there are several values of
                messageProcessingModel defined for use with SNMP.
                They are as follows:

                    0  reserved for SNMPv1
                    1  reserved for SNMPv2c
                    2  reserved for SNMPv2u and SNMPv2*
                    3  reserved for SNMPv3

                "
        SYNTAX      INTEGER (0..2147483647)

SnmpSecurityLevel ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "A Level of Security at which SNMP messages can be
                sent or with which operations are being processed;
                in particular, one of:

                  noAuthNoPriv - without authentication and
                                 without privacy,
                  authNoPriv   - with authentication but
                                 without privacy,
                  authPriv     - with authentication and
                                 with privacy.

                These three values are ordered such that
                noAuthNoPriv is less than authNoPriv and
                authNoPriv is less than authPriv.

                "
        SYNTAX      INTEGER {
                        noAuthNoPriv(1),
                        authNoPriv(2),
                        authPriv(3) }

SnmpAdminString ::= TEXTUAL-CONVENTION
        DISPLAY-HINT "255a"
        STATUS      current
        DESCRIPTION
```

```
                "An octet string containing administrative
                information, preferably in human-readable form.

                To facilitate internationalization, this
                information is represented using the ISO/IEC
                IS 10646-1 character set, encoded as an octet
                string using the UTF-8 transformation format
                described in [RFC2279].

                Since additional code points are added by
                amendments to the 10646 standard from time
                to time, implementations must be prepared to
                encounter any code point from 0x00000000 to
                0x7fffffff.  Byte sequences that do not
                correspond to the valid UTF-8 encoding of a
                code point or are outside this range are
                prohibited.

                The use of control codes should be avoided.

                When it is necessary to represent a newline,
                the control code sequence CR LF should be used.

                The use of leading or trailing white space should
                be avoided.

                For code points not directly supported by user
                interface hardware or software, an alternative
                means of entry and display, such as hexadecimal,
                may be provided.

                For information encoded in 7-bit US-ASCII,
                the UTF-8 encoding is identical to the
                US-ASCII encoding.

                UTF-8 may require multiple bytes to represent a
                single character / code point; thus the length
                of this object in octets may be different from
                the number of characters encoded.  Similarly,
                size constraints refer to the number of encoded
                octets, not the number of characters represented
                by an encoding.

                Note that when this TC is used for an object that
                is used or envisioned to be used as an index, then
                a SIZE restriction MUST be specified so that the
                number of sub-identifiers for any object instance
                does not exceed the limit of 128, as defined by
                [RFC1905].

                Note that the size of an SnmpAdminString object is
                measured in octets, not characters.

                "
        SYNTAX      OCTET STRING (SIZE (0..255))
-- Administrative assignments ****************************************

snmpFrameworkAdmin OBJECT IDENTIFIER
 -- 1.3.6.1.6.3.10.1 --  ::= { snmpFrameworkMIB 1 }

snmpFrameworkMIBObjects OBJECT IDENTIFIER
 -- 1.3.6.1.6.3.10.2 --  ::= { snmpFrameworkMIB 2 }

snmpFrameworkMIBConformance OBJECT IDENTIFIER
 -- 1.3.6.1.6.3.10.3 --  ::= { snmpFrameworkMIB 3 }
-- the snmpEngine Group ********************************************

snmpEngine OBJECT IDENTIFIER
 -- 1.3.6.1.6.3.10.2.1 --  ::= { snmpFrameworkMIBObjects 1 }
```

```
snmpEngineID OBJECT-TYPE
        SYNTAX      SnmpEngineID
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "An SNMP engine's administratively-unique identifier.

                "
 -- 1.3.6.1.6.3.10.2.1.1 --  ::= { snmpEngine 1 }

snmpEngineBoots OBJECT-TYPE
        SYNTAX      INTEGER (1..2147483647)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "The number of times that the SNMP engine has
                (re-)initialized itself since snmpEngineID
                was last configured.

                "
 -- 1.3.6.1.6.3.10.2.1.2 --  ::= { snmpEngine 2 }

snmpEngineTime OBJECT-TYPE
        SYNTAX      INTEGER (0..2147483647)
        UNITS       "seconds"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "The number of seconds since the value of
                the snmpEngineBoots object last changed.
                When incrementing this object's value would
                cause it to exceed its maximum,
                snmpEngineBoots is incremented as if a
                re-initialization had occurred, and this
                object's value consequently reverts to zero.

                "
 -- 1.3.6.1.6.3.10.2.1.3 --  ::= { snmpEngine 3 }

snmpEngineMaxMessageSize OBJECT-TYPE
        SYNTAX      INTEGER (484..2147483647)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "The maximum length in octets of an SNMP message
                which this SNMP engine can send or receive and
                process, determined as the minimum of the maximum
                message size values supported among all of the
                transports available to and supported by the engine.

                "
 -- 1.3.6.1.6.3.10.2.1.4 --  ::= { snmpEngine 4 }
-- Registration Points for Authentication and Privacy Protocols **

snmpAuthProtocols OBJECT-IDENTITY
        STATUS      current
        DESCRIPTION
                "Registration point for standards-track
                authentication protocols used in SNMP Management
                Frameworks.

                "

 -- 1.3.6.1.6.3.10.1.1 --  ::= { snmpFrameworkAdmin 1 }

snmpPrivProtocols OBJECT-IDENTITY
        STATUS      current
        DESCRIPTION
```

```
                "Registration point for standards-track privacy
                protocols used in SNMP Management Frameworks.

                "

 -- 1.3.6.1.6.3.10.1.2 --  ::= { snmpFrameworkAdmin 2 }
-- Conformance information ******************************************

snmpFrameworkMIBCompliances OBJECT IDENTIFIER
 -- 1.3.6.1.6.3.10.3.1 --  ::= { snmpFrameworkMIBConformance 1 }

snmpFrameworkMIBGroups OBJECT IDENTIFIER
 -- 1.3.6.1.6.3.10.3.2 --  ::= { snmpFrameworkMIBConformance 2 }
-- compliance statements

snmpFrameworkMIBCompliance MODULE-COMPLIANCE
        STATUS      current
        DESCRIPTION
                "The compliance statement for SNMP engines which
                implement the SNMP Management Framework MIB.

                "
        MODULE
        MANDATORY-GROUPS {
                        snmpEngineGroup
        }
 -- 1.3.6.1.6.3.10.3.1.1 --  ::= { snmpFrameworkMIBCompliances 1 }
-- units of conformance

snmpEngineGroup OBJECT-GROUP
        OBJECTS {
                snmpEngineID,
                snmpEngineBoots,
                snmpEngineTime,
                snmpEngineMaxMessageSize
        }
        STATUS      current
        DESCRIPTION
                "A collection of objects for identifying and
                determining the configuration and current timeliness
                values of an SNMP engine.

                "
 -- 1.3.6.1.6.3.10.3.2.1 --  ::= { snmpFrameworkMIBGroups 1 }

END
```