

IPSP Working Group  
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IPsec Policy Configuration MIB  
draft-ietf-ipsec-conf-mib-05.txt

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### 1. Introduction

This document defines a configuration MIB for IPsec [[IPSEC](#)]/IKE [[IKE](#)] policy. It does not define MIBs for monitoring the state of an IPsec device. It does not define MIBs for configuring other policy related actions. The purpose of this MIB is to allow administrators to be able to configure policy with respect to the IPsec/IKE protocols. However, some of the packet filtering and matching of conditions to actions is of a more general nature than IPsec only.

It is possible to add other packet transforming actions to this MIB if those actions needed to be performed conditionally on filtered traffic.

## 2. The SNMP Management Framework

The SNMP Management Framework presently consists of five major components:

- o An overall architecture, described in [RFC 2571](#) [[SNMPARCH](#)].
- o Mechanisms for describing and naming objects and events for the purpose of management. The first version of this Structure of Management Information (SMI) is called SMIV1 and described in STD 16, [RFC 1155](#) [[SMIV1](#)], STD 16, [RFC 1212](#) [[MIB](#)] and [RFC 1215](#) [[TRAPS](#)]. The second version, called SMIV2, is described in STD 58, [RFC 2578](#) [[SMIV2](#)], [RFC 2579](#) [[SNMPTC](#)] and [RFC 2580](#) [[SNMPCONF](#)].
- o Message protocols for transferring management information. The first version of the SNMP message protocol is called SNMPv1 and described in STD 15, [RFC 1157](#) [[SNMPv1](#)]. A second version of the SNMP message protocol, which is not an Internet standards track protocol, is called SNMPv2c and described in [RFC 1901](#) [[SNMPv2c](#)] and [RFC 1906](#) [[SNMPv2TM](#)]. The third version of the message protocol is called SNMPv3 and described in [RFC 1906](#) [[snmpv2TM](#)], [RFC 2572](#) [[SNMPv3](#)] and [RFC 2574](#) [[SNMPUSM](#)].
- o Protocol operations for accessing management information. The first set of protocol operations and associated PDU formats is described in STD 15, [RFC 1157](#) [[SNMPv1](#)]. A second set of protocol operations and associated PDU formats is described in [RFC 1905](#) [[SNMPv2](#)].
- o A set of fundamental applications described in [RFC 2573](#) [[SNMPAPP](#)] and the view-based access control mechanism described in [RFC 2575](#) [[SNMPVACM](#)].

A more detailed introduction to the current SNMP Management Framework can be found in [RFC 2570](#) [[SNMPINT](#)].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. Objects in the MIB are

defined using the mechanisms defined in the SMI.

This memo specifies a MIB module that is compliant to the SMIV2. A MIB conforming to the SMIV1 can be produced through the appropriate translations. The resulting translated MIB must be semantically

equivalent, except where objects or events are omitted because no translation is possible (use of Counter64). Some machine readable information in SMIV2 will be converted into textual descriptions in SMIV1 during the translation process. However, this loss of machine readable information is not considered to change the semantics of the MIB.

### 3. Relationship to the DMTF Policy Model

The Distributed Management Task Force has created an object oriented model of IPsec policy information known as the IPsec Policy Model White Paper [[IPSECPM](#)]. The contents of this document are also reflected in the internet draft "IPsec Configuration Policy Model" (IPCP) [[IPCP](#)]. This MIB is a task specific derivation of the IPCP for use with SNMPv3.

A detailed comparison between this MIB and the IPSP model can be found in [Appendix A](#). However, the high-level areas where this MIB diverges from the IPCP model are:

- o Policies, Groups, Conditions, and some levels of Action are generically named. That is we dropped prefixes like "SA", or "ipsec". This is because we feel that packet classification and matching of conditions to actions is more general than IPsec and could possibly be reused by other packet transforming actions which need to conditionally act on packets matching filters.
- o Filters are implemented in a more generic and scalable manner, rather than enforcing the condition/filtering pairing and their restrictions upon the user. The MIB offers a compound filter object to provide for greater flexibility when creating complex filters.

#### [4.](#) MIB Overview

The MIB is modularized into several different parts: rules, filters, and actions. The rules section connects endpoints and groups of rules together. This is partially made up of the `policyEndpointToGroupTable`, `policyGroupContentsTable`, and the `policyRuleDefinitionTable`. Each row of the `policyRuleDefinitionTable` connects a filter(s) with an action(s). It is structured to allow for it to be able to refer to extension tables for possible future additional filters or actions.

The filter section of the MIB is composed of all the different types of filters in the Policy Model. It is partially made up of the `compoundFilterTable`, `ipHeaderFilterTable`, `ipOffsetFilterTable`, `timeFilterTable`, `ipsoHeaderFilterTable`, `credentialFilterTable`, and the `peerIdentityFilterTable`.

The action section of the MIB contains different action types from the Policy Model. It is also separated into IKE and IPsec actions. It is partially made up of the `compoundActionsTable`, `saStaticActions`, `ikeActionTable`, `ikeActionProposalsTable`, `ikeIdentityTable`, `peerIdentityTable`, `ipsecActionTable`, `ipsecProposalsTable`, `ipsecTransformsTable`, `ahTransformTable`, and the `espTransformTable`.

#### [5.](#) Definitions

IPSEC-POLICY-MIB DEFINITIONS ::= BEGIN

IMPORTS

MODULE-IDENTITY, OBJECT-TYPE, NOTIFICATION-TYPE, Integer32,  
Unsigned32, experimental FROM SNMPv2-SMI

TEXTUAL-CONVENTION, RowStatus, TruthValue,  
TimeStamp, StorageType, VariablePointer, DateAndTime  
FROM SNMPv2-TC

MODULE-COMPLIANCE, OBJECT-GROUP, NOTIFICATION-GROUP  
FROM SNMPv2-CONF

SnmAdminString FROM SNMP-FRAMEWORK-MIB

IkeHashAlgorithm, IsecDoiEncapsulationMode,  
IsecDoiIpcompTransform,  
IsecDoiAuthAlgorithm, IsecDoiEspTransform,

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IsecDoiSecProtocolId,  
IkeGroupDescription, IsecDoiIdentType,  
IkeEncryptionAlgorithm, IkeAuthMethod FROM IPSEC-ISAKMP-IKE-DOI-TC;

--

-- module identity

--

ipsecPolicyMIB MODULE-IDENTITY

LAST-UPDATED "200212100000Z" -- 12 December 2002

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DESCRIPTION

"The MIB module for defining IPsec Policy filters and actions.

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This version of this MIB module is part of RFC XXXX, see the RFC  
itself for full legal notices."

-- Revision History

REVISION	"200212100000Z"	-- 10 December 2002
DESCRIPTION	"Many textual updates and minor additions. Some notification additions."	
REVISION	"200111210000Z"	-- 21 November 2001
DESCRIPTION	"Many updates and restructuring to match changes in the ipsp policy model."	
REVISION	"200107200000Z"	-- 20 July 2001
DESCRIPTION	"Many updates and restructuring to match changes in the ipsp policy model."	
REVISION	"200102230000Z"	-- 23 February 2001

```

DESCRIPTION "This is the initial version of this MIB."

 ::= { mib-2 XXX }

--
-- groups of related objects
--

ipsecPolicyConfigObjects      OBJECT IDENTIFIER ::= { ipsecPolicyMIB 1 }
ipsecPolicyNotificationObjects OBJECT IDENTIFIER ::= { ipsecPolicyMIB 2 }
ipsecPolicyConformanceObjects OBJECT IDENTIFIER ::= { ipsecPolicyMIB 3 }

--
-- Textual Conventions
--

IpssecBooleanOperator ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "The IpssecBooleanOperator operator is used to specify whether
         sub-components in a decision making process are ANDed or ORed
         together to decide if the resulting expression is true or false."
    SYNTAX      INTEGER { or(0), and(1) }

IpssecIsNegated ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "The IpssecIsNegated operator is used to specify whether
         or not the results of a sub-component's return clause is taken
         as is, or if the logical negation of the result is used instead."
    SYNTAX      INTEGER { no(0), yes(1) }

IpssecSADirection ::= TEXTUAL-CONVENTION

```

```

STATUS      current
DESCRIPTION
    "The IpssecSADirection operator is used to specify whether
     or not a row should apply to outgoing or incoming SAs."
SYNTAX      INTEGER { outgoing(0), incoming(1) }

IpssecIPVersion ::= TEXTUAL-CONVENTION
    STATUS      current

```

DESCRIPTION  
"Valid values for Internet Protocol versions handled by the  
IPsec policy system."  
SYNTAX INTEGER { unknown(0), ipv4(4), ipv6(6) }

IpssecIPAddress ::= TEXTUAL-CONVENTION  
STATUS current  
DESCRIPTION  
"An IpssecIPAddress is an IPv4 or IPv6 IP address, in network  
byte order."  
SYNTAX OCTET STRING (SIZE(4|16|20))

IpssecIPPacketLogging ::= TEXTUAL-CONVENTION  
STATUS current  
DESCRIPTION  
"IpssecIPPacketLogging specifies whether or not an audit  
message should be logged when a packet is passed through an  
SA. A value of '-1' indicates no logging. A value of '0' or  
greater indicates that logging should be done and how many  
bytes of the beginning of the packet to place in the  
notification (log). Values greater than the size of the  
packet just indicate sending the entire packet.  
  
Examples:  
'-1' no logging  
'0' log but do not include any of the packet in the  
notification (log)  
'20' log and include the first 20 bytes of the packet in the  
notification (log)."  
SYNTAX Integer32

--  
-- Policy group definitions  
--

ipsecLocalConfigObjects OBJECT IDENTIFIER ::= { ipsecPolicyConfigObjects 1 }

systemPolicyGroupName OBJECT-TYPE  
SYNTAX SnmpAdminString (SIZE(0..32))  
MAX-ACCESS read-write



#### DESCRIPTION

"This object indicates the policy group containing the global system policy that is to be applied when a given endpoint does not contain a policy definition. Its value can be used as an index into the policyGroupContentsTable to retrieve a list of policies. A zero length string indicates no system wide policy exists and the default policy of 'accept' should be executed until one is imposed by either this object or by the endpoint processing a given packet."

::= { ipsecLocalConfigObjects 1 }

#### policyEndpointToGroupTable OBJECT-TYPE

SYNTAX SEQUENCE OF PolicyEndpointToGroupEntry

MAX-ACCESS not-accessible

STATUS current

#### DESCRIPTION

"This table is used to map policy (groupings) onto an endpoint where traffic is to pass by. Any policy group assigned to an endpoint is then used to control access to the traffic passing by it.

If an endpoint has been configured with a policy group and no contained rule matches the incoming packet, the default action in this case shall be to drop the packet.

If no policy group has been assigned to an endpoint, then the policy group specified by systemPolicyGroupName should be used for the endpoint."

::= { ipsecPolicyConfigObjects 2 }

#### policyEndpointToGroupEntry OBJECT-TYPE

SYNTAX PolicyEndpointToGroupEntry

MAX-ACCESS not-accessible

STATUS current

#### DESCRIPTION

"A mapping assigning a policy group to an endpoint."

INDEX { peEndpointIdentType, peEndpointAddress }

::= { policyEndpointToGroupTable 1 }

PolicyEndpointToGroupEntry ::= SEQUENCE {

peEndpointIdentType

IpsecIPVersion,

peEndpointAddress

IpsecIPAddress,

peGroupName

SnmpAdminString,

peLastChanged

TimeStamp,

peStorageType

StorageType,

peRowStatus

RowStatus

}

---

  
peEndpointIdentType OBJECT-TYPE

SYNTAX IpsecIPVersion

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"The Internet Protocol version of the address associated with a given endpoint. All addresses are represented as an array of octets in network byte order. When combined with the peEndpointAddress these objects can be used to uniquely identify an endpoint that a set of policy groups should be applied to. Devices supporting IPv4 MUST support the ipv4 value, and devices supporting IPv6 MUST support the ipv6 value."

::= { policyEndpointToGroupEntry 1 }

## peEndpointAddress OBJECT-TYPE

SYNTAX IpsecIPAddress

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"The address of a given endpoint, the format of which is specified by the peEndpointIdentType object."

::= { policyEndpointToGroupEntry 2 }

## peGroupName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE(1..32))

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"The policy group name to apply to this endpoint. The value of the peGroupName object should then be used as an index into the policyGroupContentsTable to come up with a list of rules that MUST be applied to this endpoint."

::= { policyEndpointToGroupEntry 3 }

## peLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { policyEndpointToGroupEntry 4 }

## peStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create  
STATUS current

DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."

DEFVAL { nonVolatile }

::= { policyEndpointToGroupEntry 5 }

peRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object indicates the conceptual status of this row.

The value of this object has no effect on whether other objects in this conceptual row can be modified.

This object may not be set to active until one or more active rows exist within the policyGroupContentsTable for the group referenced by the peGroupName object."

::= { policyEndpointToGroupEntry 6 }

--

-- policy group definition table

--

policyGroupContentsTable OBJECT-TYPE

SYNTAX SEQUENCE OF PolicyGroupContentsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table contains a list of rules and/or subgroups contained within a given policy group. The entries are sorted by the pgcPriority object and MUST be executed in order according to this value, starting with the lowest value. Once a group item has been processed, the processor MUST stop processing this packet if an action was executed as

a result of the processing of a given group. Iterating into the next policy group item by finding the next largest pgcPriority object shall only be done if no actions were run when processing the last item for a given packet."  
 ::= { ipsecPolicyConfigObjects 3 }

policyGroupContentsEntry OBJECT-TYPE  
SYNTAX PolicyGroupContentsEntry  
MAX-ACCESS not-accessible

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STATUS current  
DESCRIPTION  
 "Defines a given sub-item within a policy group."  
INDEX { pgcName, pgcPriority }  
 ::= { policyGroupContentsTable 1 }

PolicyGroupContentsEntry ::= SEQUENCE {  
pgcName SnmpAdminString,  
pgcPriority Integer32,  
pgcFilter VariablePointer,  
pgcGroupComponentType INTEGER,  
pgcGroupComponentName SnmpAdminString,  
pgcLastChanged TimeStamp,  
pgcStorageType StorageType,  
pgcRowStatus RowStatus  
}

pgcName OBJECT-TYPE  
SYNTAX SnmpAdminString (SIZE(1..32))  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION  
 "The administrative name of this group."  
 ::= { policyGroupContentsEntry 1 }

pgcPriority OBJECT-TYPE  
SYNTAX Integer32 (0..65536)  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION  
 "The priority (sequence number) of the sub-component in this group."  
 ::= { policyGroupContentsEntry 2 }

pgcFilter OBJECT-TYPE

SYNTAX VariablePointer

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"pgcFilter points to a filter which is evaluated to determine whether the sub-component within this group should be exercised. Managers can use this object to classify groups of rules or subgroups together in order to achieve a greater degree of control and optimization over the execution order of the items within the group. If the filter evaluates to false, the rule or subgroup will be skipped and the next rule or subgroup will be evaluated instead.

An example usage of this object would be to limit a group of

rules to executing only when the IP packet being process is designated to be processed by IKE. This effecitevly creates a group of IKE specific rules.

This MIB defines the following tables which may be pointed to by this column. Implementations may choose to provide other filter tables as well:

- ipHeaderFilterTable
- ipOffsetFilterTable
- timeFilterTable
- compoundFilterTable
- trueFilter

If this column is set to a VariablePointer value which references a non-existent row in an otherwise supported table, the inconsistentName exception should be returned. If the table pointed to by the VariablePointer is not supported at all, then an inconsistentValue exception should be returned."

DEFVAL { trueFilterInstance }

::= { policyGroupContentsEntry 3 }

pgcGroupComponentType OBJECT-TYPE

SYNTAX INTEGER { reserved(0), group(1), rule(2) }

MAX-ACCESS read-create

STATUS current  
DESCRIPTION  
"Indicates whether the pgcGroupComponentName object is the name of another group defined within the policyGroupContentsTable or is the name of a rule defined within the policyRuleDefinitionTable."  
DEFVAL { rule }  
::= { policyGroupContentsEntry 4 }

pgcGroupComponentName OBJECT-TYPE  
SYNTAX SnmpAdminString (SIZE(1..32))  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The name of the policy rule or subgroup contained within this group, as indicated by the pgcGroupComponentType object."  
::= { policyGroupContentsEntry 5 }

pgcLastChanged OBJECT-TYPE  
SYNTAX TimeStamp  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."  
::= { policyGroupContentsEntry 6 }

pgcStorageType OBJECT-TYPE  
SYNTAX StorageType  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."  
DEFVAL { nonVolatile }  
::= { policyGroupContentsEntry 7 }

pgcRowStatus OBJECT-TYPE

SYNTAX RowStatus  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"This object indicates the conceptual status of this row.

The value of this object has no effect on whether other objects in this conceptual row can be modified.

This object may not be set to active until the row to which the pgcGroupComponentName points to exists."

::= { policyGroupContentsEntry 8 }

--

-- policy definition table

--

policyRuleDefinitionTable OBJECT-TYPE

SYNTAX SEQUENCE OF PolicyRuleDefinitionEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table defines a policy rule by associating a filter or a set of filters to an action to be executed."

::= { ipsecPolicyConfigObjects 4 }

policyRuleDefinitionEntry OBJECT-TYPE

SYNTAX PolicyRuleDefinitionEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A row defining a particular policy definition. A rule definition binds a filter pointer to an action pointer."

INDEX { pRuleName }

::= { policyRuleDefinitionTable 1 }

PolicyRuleDefinitionEntry ::= SEQUENCE {

pRuleName SnmpAdminString,

pRuleDescription OCTET STRING,

pRuleFilter VariablePointer,

```

pRuleFilterNegated      IpsecIsNegated,
pRuleAction            VariablePointer,
pRuleAdminStatus       INTEGER,
pRuleLastChanged       TimeStamp,
pRuleStorageType       StorageType,
pRuleRowStatus         RowStatus
}

pRuleName OBJECT-TYPE
SYNTAX      SnmAdminString (SIZE(1..32))
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "pRuleName is the administratively assigned name of the rule
    referred to by the pgcGroupComponentName object."
 ::= { policyRuleDefinitionEntry 1 }

pRuleDescription OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(0..255))
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "A user definable string. This field may be used for your
    administrative tracking purposes."
DEFVAL { "" }
 ::= { policyRuleDefinitionEntry 2 }

pRuleFilter OBJECT-TYPE
SYNTAX      VariablePointer
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "pRuleFilter points to a filter which is used to evaluate
    whether the action associated with this row should be fired
    or not. The action will only fire if the filter referenced
    by this object evaluates to TRUE after first applying any
    negation required by the pRuleFilterNegated object."

```

This MIB defines the following tables which may be pointed to by this column. Implementations may choose to provide other filter tables as well:



ipHeaderFilterTable  
ipOffsetFilterTable  
timeFilterTable  
compoundFilterTable  
trueFilter

If this column is set to a VariablePointer value which references a non-existent row in an otherwise supported table, the inconsistentName exception should be returned. If the table pointed to by the VariablePointer is not supported at all, then an inconsistentValue exception should be returned."

::= { policyRuleDefinitionEntry 3 }

pRuleFilterNegated OBJECT-TYPE

SYNTAX IpsecIsNegated

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"pRuleFilterNegated specifies whether the filter referenced by the pRuleFilter object should be negated or not."

DEFVAL { no }

::= { policyRuleDefinitionEntry 4 }

pRuleAction OBJECT-TYPE

SYNTAX VariablePointer

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This column points to the action to be taken. It may, but is not limited to, point to a row in one of the following tables:

compoundActionsTable  
saPreconfiguredActionTable  
ikeActionTable  
ipsecActionTable

It may also point to one of the scalar objects beneath saStaticActions.

If this object is set to a pointer to a row in an unsupported (or unknown) table, an inconsistentValue error should be returned.

If this object is set to point to a non-existent row in an otherwise supported table, an inconsistentName error should be returned."

::= { policyRuleDefinitionEntry 5 }

pRuleAdminStatus OBJECT-TYPE

SYNTAX INTEGER { enabled(1), disabled(2) }

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Indicates whether the current rule definition should be considered active. If enabled, it should be evaluated when processing packets. If disabled, packets should continue to be processed by the rest of the rules defined in the policyGroupContentsTable as if this rule's filters had effectively failed."

DEFVAL { enabled }

::= { policyRuleDefinitionEntry 6 }

pRuleLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { policyRuleDefinitionEntry 7 }

pRuleStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."

DEFVAL { nonVolatile }

::= { policyRuleDefinitionEntry 8 }

pRuleRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object indicates the conceptual status of this row."

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The value of this object has no effect on whether other objects in this conceptual row can be modified.

This object may not be set to active until the containing conditions, filters and actions have been defined. Once active, it must remain active until no policyGroupContents entries are referencing it."

```
::= { policyRuleDefinitionEntry 9 }
```

```
--
```

```
-- Policy compound filter definition table
```

```
--
```

```
compoundFilterTable OBJECT-TYPE
```

```
SYNTAX SEQUENCE OF CompoundFilterEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"A table defining a compound set of filters and their associated parameters. A row in this table can either be pointed to by a pRuleFilter object or by a ficSubFilter object."
```

```
::= { ipsecPolicyConfigObjects 5 }
```

```
compoundFilterEntry OBJECT-TYPE
```

```
SYNTAX CompoundFilterEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"An entry in the compoundFilterTable. A filter defined by this table is considered to have a TRUE return value if and only if:
```

```
cfLogicType is AND and all of the sub-filters associated with it, as defined in the filtersInCompoundFilterTable, are all true themselves (after applying any required negation as defined by the ficFilterIsNegated object).
```

```
cfLogicType is OR and at least one of the sub-filters associated with it, as defined in the filtersInCompoundFilterTable, is true itself
```

(after applying any required negation as defined by the ficFilterIsNegated object)."

INDEX { cfName }  
 ::= { compoundFilterTable 1 }

CompoundFilterEntry ::= SEQUENCE {  
 cfName SnmpAdminString,  
 cfDescription OCTET STRING,

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cfLogicType IpsecBooleanOperator,  
 cfLastChanged TimeStamp,  
 cfStorageType StorageType,  
 cfRowStatus RowStatus  
 }

cfName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE(1..32))

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A user definable string. You may use this field for your administrative tracking purposes."

::= { compoundFilterEntry 1 }

cfDescription OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(0..255))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"A user definable string. You may use this field for your administrative tracking purposes."

DEFVAL { 'H' }

::= { compoundFilterEntry 2 }

cfLogicType OBJECT-TYPE

SYNTAX IpsecBooleanOperator

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Indicates whether the filters contained within this filter are functionally ANDed or ORed together."

```
DEFVAL { and }
 ::= { compoundFilterEntry 3 }
```

cfLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

```
 ::= { compoundFilterEntry 4 }
```

cfStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

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STATUS current

DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are, in fact, modifiable is implementation specific."

DEFVAL { nonVolatile }

```
 ::= { compoundFilterEntry 5 }
```

cfRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object indicates the conceptual status of this row.

The value of this object has no effect on whether other objects in this conceptual row can be modified.

Once active, it may not have its value changed if any active rows in the policyRuleDefinitionTable are currently pointing at this row."

```
 ::= { compoundFilterEntry 6 }
```

--

```
-- Policy filters in a cf table
--
```

```
filtersInCompoundFilterTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF FiltersInCompoundFilterEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table defines a list of filters contained within a given
        compound filter set defined in the compoundFilterTable."
    ::= { ipsecPolicyConfigObjects 6 }
```

```
filtersInCompoundFilterEntry OBJECT-TYPE
    SYNTAX      FiltersInCompoundFilterEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "An entry into the list of filters for a given compound filter."
    INDEX      { cfName, ficPriority }
    ::= { filtersInCompoundFilterTable 1 }
```

```
FiltersInCompoundFilterEntry ::= SEQUENCE {
```

```
    ficPriority          Integer32,
    ficSubfilter         VariablePointer,
    ficSubfilterIsNegated IpsecIsNegated,
    ficLastChanged      TimeStamp,
    ficStorageType      StorageType,
    ficRowStatus        RowStatus
}
```

```
ficPriority OBJECT-TYPE
    SYNTAX      Integer32 (0..65536)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The priority of a given filter within a condition.
        Implementations MAY choose to follow the ordering indicated by
        the manager that created the rows in order to allow the
        manager to intelligently construct filter lists such that
        faster filters are evaluated first."
    ::= { filtersInCompoundFilterEntry 1 }
```

ficSubfilter OBJECT-TYPE

SYNTAX VariablePointer

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The location of the contained filter. The value of this column should be a VariablePointer which references the properties for the filter to be included in this compound filter. This MIB defines the following tables which may be pointed to by this column. Implementations may choose to provide other filter tables as well:

ipHeaderFilterTable  
ipOffsetFilterTable  
timeFilterTable  
compoundFilterTable  
trueFilter

If this column is set to a VariablePointer value which references a non-existent row in an otherwise supported table, the inconsistentName exception should be returned. If the table pointed to by the VariablePointer is not supported at all, then an inconsistentValue exception should be returned."

::= { filtersInCompoundFilterEntry 2 }

ficSubfilterIsNegated OBJECT-TYPE

SYNTAX IsecIsNegated

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Indicates whether the result of applying this subfilter should be negated or not."

DEFVAL { no }

::= { filtersInCompoundFilterEntry 3 }

ficLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

```
    "The value of sysUpTime when this row was last modified or created
      either through SNMP SETs or by some other external means."
 ::= { filtersInCompoundFilterEntry 4 }
```

```
ficStorageType OBJECT-TYPE
```

```
SYNTAX      StorageType
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The storage type for this row.  Rows in this table which were
      created through an external process may have a storage type of
      readOnly or permanent.  Entries which are permanent are
      expected to have at least one configurable column in the row, but
      which columns are in fact modifiable is implementation specific."
```

```
DEFVAL { nonVolatile }
```

```
::= { filtersInCompoundFilterEntry 5 }
```

```
ficRowStatus OBJECT-TYPE
```

```
SYNTAX      RowStatus
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "This object indicates the conceptual status of this row.
```

```

    The value of this object has no effect on whether other
    objects in this conceptual row can be modified.
```

```

    This object can not be made active until the filter
    referenced by the ficSubFilter object is both defined and is
    active.  An attempt to do so will result in an
    inconsistentValue error."
```

```
::= { filtersInCompoundFilterEntry 6 }
```

```
--
```

```
-- Static Filters
```

```
--
```

```
staticFilters OBJECT IDENTIFIER ::= { ipsecPolicyConfigObjects 7 }
```

```
trueFilter OBJECT-TYPE
```

```
SYNTAX      Integer32
```

```
MAX-ACCESS  read-only
```



```

STATUS      current
DESCRIPTION
    "This scalar indicates a (automatic) true result for a
    filter. I.e. this is a filter that is always true, useful
    for adding as a default filter for a default action or a
    set of actions."
 ::= { staticFilters 1 }

trueFilterInstance OBJECT IDENTIFIER ::= { trueFilter 0 }

ikePhase1Filter OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This static filter can be used to test if a packet is
        part of an ike phase-1 negotiation."
    ::= { staticFilters 2 }

ikePhase2Filter OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This static filter can be used to test if a packet is
        part of an ike phase-2 negotiation."
    ::= { staticFilters 3 }

--
-- Policy IPHeader filter definition table
--

ipHeaderFilterTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF IpHeaderFilterEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains a list of filter definitions to be used
        within the policyRuleDefinitionTable or the
        filtersInCompoundFilter table."
    ::= { ipsecPolicyConfigObjects 8 }

ipHeaderFilterEntry OBJECT-TYPE

```

```

SYNTAX      IpHeaderFilterEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "A definition of a particular filter."
INDEX       { ihfName }
 ::= { ipHeaderFilterTable 1 }

```

```

IpHeaderFilterEntry ::= SEQUENCE {
    ihfName                SnmpAdminString,
    ihfType                 BITS,
    ihfIPVersion           Ipv4Version,
    ihfSrcAddressBegin     Ipv4Address,
    ihfSrcAddressEnd       Ipv4Address,
    ihfDstAddressBegin     Ipv4Address,
    ihfDstAddressEnd       Ipv4Address,
    ihfSrcLowPort          Integer32,
    ihfSrcHighPort         Integer32,
    ihfDstLowPort          Integer32,
    ihfDstHighPort         Integer32,
    ihfProtocol            Integer32,
    ihfIPv6FlowLabel       OCTET STRING,
    ihfLastChanged         TimeStamp,
    ihfStorageType         StorageType,
    ihfRowStatus           RowStatus
}

```

```

ihfName OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE(1..32))
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The administrative name for this filter."
    ::= { ipHeaderFilterEntry 1 }

```

```

ihfType OBJECT-TYPE
    SYNTAX      BITS { sourceAddress(0), destinationAddress(1),
                        sourcePort(2), destinationPort(3),
                        protocol(4), ipv6FlowLabel(5) }
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This defines the various tests that are used when evaluating
        a given filter. The results of each test are ANDed together
        to produce the result of the entire filter. When processing
        this filter, it is recommended for efficiency reasons that
        the filter halt processing the instant any of the specified
        tests fail."

```

Once a row is 'active', this object's value may not be changed unless all the appropriate columns needed by the new value to be imposed on this object have been appropriately configured.

The various tests definable in this table are as follows:

sourceAddress:

- Tests if the source address in the packet lies between the ihfSrcAddressBegin and ihfSrcAddressEnd objects. Note that setting these two objects to the same address will limit the search to the exact match of a single address. The format and length of the address objects are defined by the ihfIPVersion column.

A row in this table containing a ihfType object with the sourceAddress object bit but without the ihfIPVersion, ihfSrcAddressBegin and ihfSrcAddressEnd objects set will cause the ihfRowStatus object to return the notReady state.

destinationAddress:

- Tests if the destination address in the packet lies between the ihfDstAddressBegin and ihfDstAddressEnd objects. Note that setting these two objects to the same address will limit the search to the exact match of a single address. The format and length of the address objects are defined by the ihfIPVersion column.

A row in this table containing a ihfType object with the destinationAddress object bit but without the ihfIPVersion, ihfDstAddressBegin and ihfDstAddressEnd objects set will cause the ihfRowStatus object to return the notReady state.

sourcePort:

- Tests if the source port of IP packets using a protocol that uses port numbers (at this time, UDP or TCP) lies between the ihfSrcLowPort and ihfSrcHighPort objects. Note that setting these two objects to the same address will limit the search to the exact match of a single port.

A row in this table containing a ihfType object with the

sourcePort object bit but without the ihfSrcLowPort, and ihfSrcHighPort objects set will cause the ihfRowStatus object to return the notReady state.

destinationPort:

- Tests if the source port of IP packets using a protocol

that uses port numbers (at this time, UDP or TCP) lies between the ihfDstLowPort and ihfDstHighPort objects. Note that setting these two objects to the same address will limit the search to the exact match of a single port.

A row in this table containing a ihfType object with the sourcePort object bit but without the ihfDstLowPort, and ihfDstHighPort objects set will cause the ihfRowStatus object to return the notReady state.

protocol:

- Tests to see if the packet being processed is for the given protocol type.

A row in this table containing a ihfType object with the protocol object bit but without the ihfProtocol object set will cause the ihfRowStatus object to return the notReady state.

ipv6FlowLabel:

- Tests to see if the packet being processed contains an ipv6 Flow Label which matches the value in the ipfIPv6FlowLabel object. Setting this bit mandates that for the packet to match the filter, it must be an IPv6 packet.

A row in this table containing a ihfType object with the ipv6FlowLabel object bit but without the ipfIPv6FlowLabel object set will cause the ihfRowStatus object to return the notReady state."

::= { ipHeaderFilterEntry 2 }

ihfIPVersion OBJECT-TYPE

SYNTAX IpsecIPVersion

MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The Internet Protocol version the addresses are to match  
    against. The value of this property determines the size and  
    format of the ihfSrcAddressBegin, ihfSrcAddressEnd,  
    ihfDstAddressBegin, and ihfDstAddressEnd objects."  
DEFVAL { ipv6 }  
::= { ipHeaderFilterEntry 3 }

ihfSrcAddressBegin OBJECT-TYPE  
SYNTAX IpsecIPAddress  
MAX-ACCESS read-create

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---

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STATUS current  
DESCRIPTION  
    "The starting address of a source address range that the packet must  
    match against for this filter to be considered TRUE.  
    This object is only used if sourceAddress is set in ihfType."  
::= { ipHeaderFilterEntry 4 }

ihfSrcAddressEnd OBJECT-TYPE  
SYNTAX IpsecIPAddress  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The ending address of a source address range to check a  
    packet against, where the starting is specified by the  
    ihfSrcAddressBegin object. Set this column to the same value as  
    the ihfSrcAddressBegin column to get an exact single address match.  
    This object is only used if sourceAddress is set in ihfType."  
::= { ipHeaderFilterEntry 5 }

ihfDstAddressBegin OBJECT-TYPE  
SYNTAX IpsecIPAddress  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The starting address of a destination address range that the  
    packet must match against for this filter to be considered TRUE.  
    This object is only used if destinationAddress is set in ihfType."  
::= { ipHeaderFilterEntry 6 }

ihfDstAddressEnd OBJECT-TYPE  
SYNTAX IpsecIPAddress  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The ending address of a destination address range to check a packet against, where the first is specified by the ihfDstAddressBegin object. Set this column to the same value as the ihfDstAddressBegin column to get an exact single address match. This object is only used if destinationAddress is set in ihfType."  
 ::= { ipHeaderFilterEntry 7 }

ihfSrcLowPort OBJECT-TYPE  
SYNTAX Integer32 (0..65536)  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The low port of the port range a packet's source must match against. To match, the port number must be greater than or

equal to this value.  
This object is only used if sourcePort is set in ihfType."  
 ::= { ipHeaderFilterEntry 8 }

ihfSrcHighPort OBJECT-TYPE  
SYNTAX Integer32 (0..65536)  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The high port of the port range a packet's source must match against. To match, the port number must be less than or equal to this value.  
This object is only used if sourcePort is set in ihfType."  
 ::= { ipHeaderFilterEntry 9 }

ihfDstLowPort OBJECT-TYPE  
SYNTAX Integer32 (0..65536)  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The low port of the port range a packet's destination must

match against. To match, the port number must be greater than or equal to this value.  
This object is only used if destinationPort is set in ihfType."  
 ::= { ipHeaderFilterEntry 10 }

ihfDstHighPort OBJECT-TYPE

SYNTAX Integer32 (0..65536)

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The high port of the port range a packet's destination must match against. To match, the port number must be less than or equal to this value.

This object is only used if destinationPort is set in ihfType."

::= { ipHeaderFilterEntry 11 }

ihfProtocol OBJECT-TYPE

SYNTAX Integer32 (0..255)

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The protocol number the incoming packet must match against for this filter to be evaluated as true.

This object is only used if protocol is set in ihfType."

::= { ipHeaderFilterEntry 12 }

ihfIPv6FlowLabel OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(3))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The IPv6 Flow Label that the packet must match against.

This object is only used if ipv6FlowLabel is set in ihfType."

::= { ipHeaderFilterEntry 13 }

ihfLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created

either through SNMP SETs or by some other external means."  
 ::= { ipHeaderFilterEntry 14 }

ihfStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."

DEFVAL { nonVolatile }

::= { ipHeaderFilterEntry 15 }

ihfRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object indicates the conceptual status of this row.

This object may not be set to active if the requirements of the ihfType object are not met. In other words, if the associated value columns needed by a particular test have not been set, then attempting to change this row to an active state will result in an inconsistentValue error. See the ihfType object description for further details."

::= { ipHeaderFilterEntry 16 }

--

-- Policy IP Offset filter definition table

--

ipOffsetFilterTable OBJECT-TYPE

SYNTAX SEQUENCE OF IpOffsetFilterEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION



"This table contains a list of filter definitions to be used within the policyRuleDefinitionTable or the filtersInCompoundFilter table."  
 ::= { ipsecPolicyConfigObjects 9 }

ipOffsetFilterEntry OBJECT-TYPE  
SYNTAX IpOffsetFilterEntry  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION  
 "A definition of a particular filter."  
INDEX { iofName }  
 ::= { ipOffsetFilterTable 1 }

IpOffsetFilterEntry ::= SEQUENCE {  
 iofName SnmpAdminString,  
 iofOffset Integer32,  
 iofType INTEGER,  
 iofNumber Integer32,  
 iofValue OCTET STRING,  
 iofLastChanged TimeStamp,  
 iofStorageType StorageType,  
 iofRowStatus RowStatus  
}

iofName OBJECT-TYPE  
SYNTAX SnmpAdminString (SIZE(1..32))  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION  
 "The administrative name for this filter."  
 ::= { ipOffsetFilterEntry 1 }

iofOffset OBJECT-TYPE  
SYNTAX Integer32 (0..65536)  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
 "This is the byte offset from the front of the IP packet where the value or arithmetic comparison is done. A value of '0' indicates the first byte in the packet."

```
::= { ipOffsetFilterEntry 2 }
```

iofType OBJECT-TYPE

```
SYNTAX INTEGER { valueMatch(0),          valueNotMatch(1),  
                arithmeticEqual(2),      arithmeticNotEqual(3),  
                arithmeticLess(4),       arithmeticGreaterOrEqual(5),  
                arithmeticGreater(6),    arithmeticLessOrEqual(7) }
```

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This defines the various tests that are used when evaluating a given filter.

Once a row is 'active', this object's value may not be changed unless the appropriate columns, iofNumber or iofValue, needed by the new value to be imposed on this object have been appropriately configured.

The various tests definable in this table are as follows:

valueMatch(0):

- Tests if the OCTET STRING, 'iofValue', matches a value in the packet starting at the given offset in the packet and comparing the entire OCTET STRING of 'iofValue'.

valueNotMatch(1):

- Tests if the OCTET STRING, 'iofValue', does not match a value in the packet starting at the given offset in the packet and comparing to the entire OCTET STRING of 'iofValue'.

arithmeticEqual(2):

- Tests if the Integer32, 'iofNumber', is arithmetically equal ('=') to the 4 byte value starting at the given offset within the packet. The value in the packet is assumed to be in network byte order.

arithmeticNotEqual(3):

- Tests if the Integer32, 'iofNumber', is arithmetically not equal ('!=') to the 4 byte value starting at the given offset within the packet. The value in the packet is assumed to be in network byte order.

arithmeticLess(4):

- Tests if the Integer32, 'iofNumber', is arithmetically less than ('<') the 4 byte value starting at the given offset within the packet. The value in the packet is assumed to be in network byte order.

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arithmeticGreaterOrEqual(5):

- Tests if the Integer32, 'iofNumber', is arithmetically greater than or equal to ('>=') the 4 byte value starting at the given offset within the packet. The value in the packet is assumed to be in network byte order.

arithmeticGreater(6):

- Tests if the Integer32, 'iofNumber', is arithmetically greater than ('>') the 4 byte value starting at the given offset within the packet. The value in the packet is assumed to be in network byte order.

arithmeticLessOrEqual(7):

- Tests if the Integer32, 'iofNumber', is arithmetically less than or equal to ('<=') the 4 byte value starting at the given offset within the packet. The value in the packet is assumed to be in network byte order."

::= { ipOffsetFilterEntry 3 }

iofNumber OBJECT-TYPE

SYNTAX Integer32 (0..65536)

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"iofNumber is used for arithmetic matching of a packets at iofOffset. This object is only used if one of the arithmetic types is chosen in iofType."

::= { ipOffsetFilterEntry 4 }

iofValue OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(0..4096))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"iofValue is used for match comparisons of a packet at iofOffset. This object is only used if one of the match types is chosen in iofType."

::= { ipOffsetFilterEntry 5 }

iofLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

```
STATUS      current
DESCRIPTION
    "The value of sysUpTime when this row was last modified or created
    either through SNMP SETs or by some other external means."
 ::= { ipOffsetFilterEntry 6 }
```

```
iofStorageType OBJECT-TYPE
    SYNTAX      StorageType
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The storage type for this row.  Rows in this table which were
        created through an external process may have a storage type of
        readOnly or permanent.  Entries which are permanent are
        expected to have at least one configurable column in the row, but
        which columns are in fact modifiable is implementation specific."
    DEFVAL { nonVolatile }
    ::= { ipOffsetFilterEntry 7 }
```

```
iofRowStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This object indicates the conceptual status of this row.

        This object may not be set to active if the requirements of
        the iofType object are not met.  In other words, if the
        associated value columns needed by a particular test have not
        been set, then attempting to change this row to an active
        state will result in an inconsistentValue error.  See the
        iofType object description for further details."
    ::= { ipOffsetFilterEntry 8 }
```

```
--
-- Time/scheduling filter table
--
```

```
timeFilterTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF TimeFilterEntry
    MAX-ACCESS  not-accessible
```

STATUS current  
DESCRIPTION  
"Defines a table of filters which can be used to effectively enable or disable policies based on a valid time range."  
 ::= { ipsecPolicyConfigObjects 10 }

timeFilterEntry OBJECT-TYPE  
SYNTAX TimeFilterEntry  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION  
"A row describing a given time frame for which a policy may be

filtered on to place the rule active or inactive."  
INDEX { tfName }  
 ::= { timeFilterTable 1 }

TimeFilterEntry ::= SEQUENCE {  
tfName SnmpAdminString,  
tfPeriodStart DateAndTime,  
tfPeriodEnd DateAndTime,  
tfMonthOfYearMask BITS,  
tfDayOfMonthMask OCTET STRING,  
tfDayOfWeekMask BITS,  
tfTimeOfDayMaskStart DateAndTime,  
tfTimeOfDayMaskEnd DateAndTime,  
tfLastChanged TimeStamp,  
tfStorageType StorageType,  
tfRowStatus RowStatus  
}

tfName OBJECT-TYPE  
SYNTAX SnmpAdminString (SIZE(1..32))  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION  
"An administratively assigned name for this filter."  
 ::= { timeFilterEntry 1 }

tfPeriodStart OBJECT-TYPE  
SYNTAX DateAndTime

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The starting time period for this filter. In addition to a normal DateAndTime string, this object may be set to the OCTET STRING value THISANDPRIOR which indicates that the filter is valid from any time before now up until (at least) now."

DEFVAL { '00000101000000002b0000'H }

::= { timeFilterEntry 2 }

tfPeriodEnd OBJECT-TYPE

SYNTAX DateAndTime

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The ending time period for this filter. In addition to a normal DateAndTime string, this object may be set to the OCTET STRING value THISANDFUTURE which indicates that the

filter is valid without an ending date and/or time."

DEFVAL { '99991231235959092b0000'H }

::= { timeFilterEntry 3 }

tfMonthOfYearMask OBJECT-TYPE

SYNTAX BITS { january(0), february(1), march(2), april(3), may(4),  
june(5), july(6), august(7), september(8),  
october(9), november(10), december(11) }

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"A bit mask which overlays the tfPeriodStart to tfPeriodEnd date range to further restrict the time period to a restricted set of months of the year."

DEFVAL { { january, february, march, april, may, june, july, august,  
september, october, november, december } }

::= { timeFilterEntry 4 }

tfDayOfMonthMask OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(4))

MAX-ACCESS read-create

STATUS current  
DESCRIPTION  
"Defines which days of the month this time period is valid for. It is a sequence of 32 BITS, where each BIT represents a corresponding day of the month starting from the left most bit being equal to the first day of the month. The last bit in the string MUST be zero."  
DEFVAL { 'ffffffffe'H }  
::= { timeFilterEntry 5 }

tfDayOfWeekMask OBJECT-TYPE  
SYNTAX BITS { monday(0), tuesday(1), wednesday(2), thursday(3),  
friday(4), saturday(5), sunday(6) }  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"A bit mask which overlays the tfPeriodStart to tfPeriodEnd date range to further restrict the time period to a restricted set of days within a given week."  
DEFVAL { { monday, tuesday, wednesday, thursday, friday,  
saturday, sunday } }  
::= { timeFilterEntry 6 }

tfTimeOfDayMaskStart OBJECT-TYPE  
SYNTAX DateAndTime

MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"Indicates the starting time of day for which this filter evaluates to true. The date portions of the DateAndTime TC are ignored for purposes of evaluating this mask and only the time specific portions are used."  
DEFVAL { '00000000000000000002b0000'H }  
::= { timeFilterEntry 7 }

tfTimeOfDayMaskEnd OBJECT-TYPE  
SYNTAX DateAndTime  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"Indicates the ending time of day for which this filter evaluates to true. The date portions of the DateAndTime TC are ignored for purposes of evaluating this mask and only the time specific portions are used. If this starting and ending time values indicated by the tfTimeOfDayMaskStart and tfTimeOfDayMaskEnd objects are equal, the filter is expected to be evaluated over the entire 24 hour period."

DEFVAL { '0000000000000000002b0000'H }  
 ::= { timeFilterEntry 8 }

tfLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { timeFilterEntry 9 }

tfStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."

DEFVAL { nonVolatile }

::= { timeFilterEntry 10 }

tfRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object indicates the conceptual status of this row."

::= { timeFilterEntry 11 }



```

-- IPSO protection authority filtering
--

ipsoHeaderFilterTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF IpsoHeaderFilterEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains a list of IPSO header filter definitions
        to be used within the policyRuleDefinitionTable or the
        filtersInCompoundFilter table.  IPSO headers and their values
        are described in RFC1108."
    ::= { ipsecPolicyConfigObjects 11 }

ipsoHeaderFilterEntry OBJECT-TYPE
    SYNTAX      IpsoHeaderFilterEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A definition of a particular filter."
    INDEX       { ipsohfName }
    ::= { ipsoHeaderFilterTable 1 }

IpsoHeaderFilterEntry ::= SEQUENCE {
    ipsohfName                SnmpAdminString,
    ipsohfType                 BITS,
    ipsohfClassification       INTEGER,
    ipsohfProtectionAuth       INTEGER,
    ipsohfLastChanged          TimeStamp,
    ipsohfStorageType          StorageType,
    ipsohfRowStatus            RowStatus
}

ipsohfName OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE(1..32))
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The administrative name for this filter."
    ::= { ipsoHeaderFilterEntry 1 }

```

ipsohfType OBJECT-TYPE

```
SYNTAX      BITS { classificationLevel(0), protectionAuthority(1) }
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The IPSO header fields to match the value against."
 ::= { ipsoHeaderFilterEntry 2 }
```

ipsohfClassification OBJECT-TYPE

```
SYNTAX      INTEGER { topSecret(61), secret(90),
                    confidential(150), unclassified(171) }
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The IPSO classification header field value must match the
     value in this column if the classificationLevel bit is set in
     the ipsohfType field."
 ::= { ipsoHeaderFilterEntry 3 }
```

ipsohfProtectionAuth OBJECT-TYPE

```
SYNTAX      INTEGER { genser(0), siopesi(1), sci(2), nsa(3), doe(4) }
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The IPSO protection authority header field value must match
     the value in this column if the protection authority bit is
     set in the ipsohfType field."
 ::= { ipsoHeaderFilterEntry 4 }
```

ipsohfLastChanged OBJECT-TYPE

```
SYNTAX      TimeStamp
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The value of sysUpTime when this row was last modified or created
     either through SNMP SETs or by some other external means."
 ::= { ipsoHeaderFilterEntry 5 }
```

ipsohfStorageType OBJECT-TYPE

```
SYNTAX      StorageType
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The storage type for this row. Rows in this table which were
     created through an external process may have a storage type of
     readOnly or permanent. Entries which are permanent are
     expected to have at least one configurable column in the row, but
     which columns are in fact modifiable is implementation specific."
```

---

```
DEFVAL { nonVolatile }
 ::= { ipsoHeaderFilterEntry 6 }

ipsohfRowStatus OBJECT-TYPE
SYNTAX      RowStatus
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "This object indicates the conceptual status of this row.

    This object may not be set to active if the requirements of
    the ipsohfType object are not met.  In other words, if the
    associated value columns needed by a particular test have not
    been set, then attempting to change this row to an active
    state will result in an inconsistentValue error.  See the
    ipsohfType object description for further details."
 ::= { ipsoHeaderFilterEntry 7 }

--
-- credential filter table
--

credentialFilterTable OBJECT-TYPE
SYNTAX      SEQUENCE OF CredentialFilterEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This table defines filters which can be used to match
    credentials of IKE peers, where the credentials in question
    have been obtained from an IKE phase 1 exchange.  They may be
    X.509 certificates, Kerberos tickets, etc..."
 ::= { ipsecPolicyConfigObjects 12 }

credentialFilterEntry OBJECT-TYPE
SYNTAX      CredentialFilterEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "A row defining a particular credential filter"
INDEX      { crfName }
 ::= { credentialFilterTable 1 }

CredentialFilterEntry ::= SEQUENCE {
    crfName                SnmpAdminString,
    crfCredentialType      INTEGER,
    crfMatchFieldName      OCTET STRING,
```

crfMatchFieldValue  
crfAcceptCredFrom

OCTET STRING,  
OCTET STRING,

```
    crfLastChanged      TimeStamp,  
    crfStorageType     StorageType,  
    crfRowStatus       RowStatus  
}
```

crfName OBJECT-TYPE

```
SYNTAX      SnmpAdminString (SIZE(1..32))  
MAX-ACCESS  not-accessible  
STATUS      current  
DESCRIPTION  
    "The administrative name of this filter."  
 ::= { credentialFilterEntry 1 }
```

crfCredentialType OBJECT-TYPE

```
SYNTAX      INTEGER { x509(1), kerberos(2) }  
MAX-ACCESS  read-create  
STATUS      current  
DESCRIPTION  
    "The credential type that is expected for this filter to succeed."  
DEFVAL { x509 }  
 ::= { credentialFilterEntry 2 }
```

crfMatchFieldName OBJECT-TYPE

```
SYNTAX      OCTET STRING (SIZE(1..4096))  
MAX-ACCESS  read-create  
STATUS      current  
DESCRIPTION  
    "The piece of the credential to match against.  Examples:  
    serialNumber, signatureAlgorithm, issuerName, subjectName, ..."  
 ::= { credentialFilterEntry 3 }
```

crfMatchFieldValue OBJECT-TYPE

```
SYNTAX      OCTET STRING (SIZE(1..4096))  
MAX-ACCESS  read-create  
STATUS      current  
DESCRIPTION  
    "The value that the field indicated by the crfMatchFieldName  
    must match against for the filter to be considered TRUE."  
 ::= { credentialFilterEntry 4 }
```

crfAcceptCredFrom OBJECT-TYPE

SYNTAX OCTET STRING(SIZE(1..117))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This value is used to look up a row in the ipsecCredMngServiceTable for the Certificate Authority Information. This value is empty if there is no CA used for

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    this filter."

::= { credentialFilterEntry 5 }

crfLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { credentialFilterEntry 6 }

crfStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."

DEFVAL { nonVolatile }

::= { credentialFilterEntry 7 }

crfRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object indicates the conceptual status of this row."

::= { credentialFilterEntry 8 }

```
--  
-- Peer Identity Filter Table  
--
```

```
peerIdentityFilterTable OBJECT-TYPE
```

```
SYNTAX SEQUENCE OF PeerIdentityFilterEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"This table defines filters which can be used to match  
credentials of IKE peers, where the credentials in question  
have been obtained from an IKE phase 1 exchange. They may be  
X.509 certificates, Kerberos tickets, etc..."
```

```
::= { ipsecPolicyConfigObjects 13 }
```

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```
peerIdentityFilterEntry OBJECT-TYPE
```

```
SYNTAX PeerIdentityFilterEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"A row defining a particular credential filter"
```

```
INDEX { pifName }
```

```
::= { peerIdentityFilterTable 1 }
```

```
PeerIdentityFilterEntry ::= SEQUENCE {
```

```
    pifName SnmpAdminString,
```

```
    pifIdentityType IpsecDoiIdentType,
```

```
    pifIdentityValue OCTET STRING,
```

```
    pifLastChanged TimeStamp,
```

```
    pifStorageType StorageType,
```

```
    pifRowStatus RowStatus
```

```
}
```

```
pifName OBJECT-TYPE
```

```
SYNTAX SnmpAdminString (SIZE(1..32))
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"The administrative name of this filter."
```

```
::= { peerIdentityFilterEntry 1 }
```

pifIdentityType OBJECT-TYPE  
SYNTAX IpsecDoiIdentType  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The type of identity field in the peer ID payload to match against."  
 ::= { peerIdentityFilterEntry 2 }

pifIdentityValue OBJECT-TYPE  
SYNTAX OCTET STRING (SIZE(1..4096))  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The value that the peer ID payload value must match against. Wildcard mechanisms MUST be supported such that:  
  
- a pifIdentityValue of '\*@company.com' will match a userFqdn ID payload of 'JDOE@COMPANY.COM'  
  
- a pifIdentityValue of '\*.company.com' will match a fqdn ID payload of 'WWW.COMPANY.COM'

- a pifIdentityValue of 'cn=\*,ou=engineering,o=company,c=us' will match a DER DN ID payload of 'cn=John Doe,ou=engineering,o=company,c=us'
- a pifIdentityValue of '193.190.125.0/24' will match an IPv4 address ID payload of 193.190.125.10
- a pifIdentityValue of '193.190.125.\*' will also match an IPv4 address ID payload of 193.190.125.10.

The character '\*' replaces 0 or multiple instances of any character."

::= { peerIdentityFilterEntry 3 }

pifLastChanged OBJECT-TYPE  
SYNTAX TimeStamp  
MAX-ACCESS read-only  
STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { peerIdentityFilterEntry 4 }

pifStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."

DEFVAL { nonVolatile }

::= { peerIdentityFilterEntry 5 }

pifRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object indicates the conceptual status of this row. This object can not be considered active unless the pifIdentityType and pifIdentityValue column values are defined."

::= { peerIdentityFilterEntry 6 }

--

-- compound actions table

--

compoundActionsTable OBJECT-TYPE

SYNTAX SEQUENCE OF CompoundActionsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Table used to allow multiple actions to be associated with a rule. It uses the actionsInCompoundActionsTable to do this."

::= { ipsecPolicyConfigObjects 14 }



```

compoundActionsEntry OBJECT-TYPE
    SYNTAX          CompoundActionsEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "A row in the compoundActionsTable."
    INDEX          { caName }
    ::= { compoundActionsTable 1 }

```

```

CompoundActionsEntry ::= SEQUENCE {
    caName                SnmpAdminString,
    caExecutionStrategy   INTEGER,
    caLastChanged         TimeStamp,
    caStorageType         StorageType,
    caRowStatus           RowStatus
}

```

```

caName OBJECT-TYPE
    SYNTAX          SnmpAdminString (SIZE(1..32))
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This is an administratively assigned name of this compound action."
    ::= { compoundActionsEntry 1 }

```

```

caExecutionStrategy OBJECT-TYPE
    SYNTAX          INTEGER { reserved(0),
                             doAll(1),
                             doUntilSuccess(2),
                             doUntilFailure(3) }
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "This object indicates how the sub-actions are executed based
         on the success of the actions as they finish executing."

```

```

doAll                - run each sub-action regardless of the exit
                      status of the previous action. This parent
                      action is always considered to have acted
                      successfully.

```

doUntilSuccess - run each sub-action until one succeeds, at which point stop processing the sub-actions within this parent compound action. If one of the sub-actions did execute successfully, this parent action is also considered to have executed successfully.

doUntilFailure - run each sub-action until one fails, at which point stop processing the sub-actions within this compound action. If any sub-action fails, the result of this parent action is considered to have failed."

DEFVAL { doUntilSuccess }  
::= { compoundActionsEntry 2 }

caLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { compoundActionsEntry 3 }

caStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."

DEFVAL { nonVolatile }

::= { compoundActionsEntry 4 }

caRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object indicates the conceptual status of this row."

The value of this object has no effect on whether other objects in this conceptual row can be modified.

Once a row in the compoundActionsTable has been made active, this object may not be set to destroy without first destroying all the contained rows listed in the actionsInCompoundActionsTable."

```
::= { compoundActionsEntry 5 }
```

```
--
```

```
-- actions contained within a compound action
```

```
--
```

```
actionsInCompoundActionsTable OBJECT-TYPE
```

```
SYNTAX SEQUENCE OF ActionsInCompoundActionsEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

"This table contains a list of the sub-actions within a given compound action. Compound actions executing these actions MUST execute them in series based on the aicaPriority value, with the lowest value executing first."

```
::= { ipsecPolicyConfigObjects 15 }
```

```
actionsInCompoundActionsEntry OBJECT-TYPE
```

```
SYNTAX ActionsInCompoundActionsEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

"A row containing a reference to a given compound-action sub-action."

```
INDEX { caName, aicaPriority }
```

```
::= { actionsInCompoundActionsTable 1 }
```

```
ActionsInCompoundActionsEntry ::= SEQUENCE {
```

```
  aicaPriority Integer32,
```

```
  aicaSubActionName VariablePointer,
```

```
  aicaLastChanged TimeStamp,
```

```
  aicaStorageType StorageType,
```

```
  aicaRowStatus RowStatus
```

```
}
```

```
aicaPriority OBJECT-TYPE
```

```
SYNTAX Integer32 (0..65536)
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

## DESCRIPTION

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"The priority of a given sub-action within a compound action. The order in which sub-actions should be executed are based on the value from this column, with the lowest numeric value executing first."

::= { actionsInCompoundActionsEntry 1 }

aicaSubActionName OBJECT-TYPE

SYNTAX VariablePointer

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This column points to the action to be taken. It may, but is not limited to, point to a row in one of the following tables:

compoundActionsTable	- Allowing recursion
saPreconfiguredActionTable	
ikeActionTable	
ipsecActionTable	

It may also point to one of the scalar objects beneath saStaticActions.

If this object is set to a pointer to a row in an unsupported (or unknown) table, an inconsistentValue error should be returned.

If this object is set to point to a non-existent row in an otherwise supported table, an inconsistentName error should be returned."

::= { actionsInCompoundActionsEntry 2 }

aicaLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { actionsInCompoundActionsEntry 3 }

aicaStorageType OBJECT-TYPE  
SYNTAX StorageType  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The storage type for this row. Rows in this table which were created through an external process may have a storage type of

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readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."  
DEFVAL { nonVolatile }  
::= { actionsInCompoundActionsEntry 4 }

aicaRowStatus OBJECT-TYPE  
SYNTAX RowStatus  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"This object indicates the conceptual status of this row.  
  
The value of this object has no effect on whether other objects in this conceptual row can be modified."  
::= { actionsInCompoundActionsEntry 5 }

--

-- Static Actions

--

-- these are static actions which can be pointed to by the pRuleAction  
-- or the aicaSubActionName objects to drop, accept or reject packets.

saStaticActions OBJECT IDENTIFIER ::= { ipsecPolicyConfigObjects 16 }

saDropAction OBJECT-TYPE  
SYNTAX Integer32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"This scalar indicates that a packet should be dropped WITHOUT action/packet logging. This object returns a value

of 1 for IPsec policy implementations that support the drop static action."  
 ::= { saStaticActions 1 }

saDropActionLog OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This scalar indicates that a packet should be dropped WITH action/packet logging. This object returns a value of 1 for IPsec policy implementations that support the drop static action with logging."

::= { saStaticActions 2 }

saAcceptAction OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This Scalar indicates that a packet should be accepted (pass-through) WITHOUT action/packet logging. This object returns a value of 1 for IPsec policy implementations that support the accept static action."

::= { saStaticActions 3 }

saAcceptActionLog OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This scalar indicates that a packet should be accepted (pass-through) WITH action/packet logging. This object returns a value of 1 for IPsec policy implementations that support the accept static action with logging."

::= { saStaticActions 4 }

saRejectIKEAction OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This scalar indicates that a packet should be rejected WITHOUT action/packet logging. This object returns a value of 1 for IPsec policy implementations that support the reject static action."

::= { saStaticActions 5 }

saRejectIKEActionLog OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This scalar indicates that a packet should be rejected WITH action/packet logging. This object returns a value of 1 for IPsec policy implementations that support the reject static action with logging."

::= { saStaticActions 6 }

--

-- Preconfigured Action Table

--

saPreconfiguredActionTable OBJECT-TYPE

SYNTAX SEQUENCE OF SaPreconfiguredActionEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table is a list of non-negotiated IPsec actions (SAs) that can be performed and contains or indicates the data necessary to create such an SA."

::= { ipsecPolicyConfigObjects 17 }

saPreconfiguredActionEntry OBJECT-TYPE

SYNTAX SaPreconfiguredActionEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"One entry in the saPreconfiguredActionTable."

INDEX { sapActionName, sapSADirection }

::= { saPreconfiguredActionTable 1 }

```

SaPreconfiguredActionEntry ::= SEQUENCE {
    sapActionName                SnmpAdminString,
    sapSADirection                IsecSADirection,
    sapActionDescription          OCTET STRING,
    sapActionLifetimeSec         Unsigned32,
    sapActionLifetimeKB          Unsigned32,
    sapDoActionLogging           TruthValue,
    sapDoPacketLogging           IsecIPPacketLogging,
    sapDFHandling                INTEGER,
    sapActionType                IsecDoiEncapsulationMode,
    sapAHSPI                      Integer32,
    sapAHTransformName           SnmpAdminString,
    sapAHSharedSecretName       SnmpAdminString,
    sapESPSPi                     Integer32,
    sapESPTransformName         SnmpAdminString,
    sapESPencSharedSecretName   SnmpAdminString,
    sapESPAuthSharedSecretName SnmpAdminString,
    sapIPCompSPi                 Integer32,
    sapIPCompTransformName     SnmpAdminString,
    sapPeerGatewayIdName        OCTET STRING,
    sapLastChanged              TimeStamp,
    sapStorageType              StorageType,
    sapRowStatus                 RowStatus
}

```

```

sapActionName OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE(1..32))
    MAX-ACCESS  not-accessible
    STATUS      current

```

DESCRIPTION

"This object contains the name of this SaPreconfiguredActionEntry."  
 ::= { saPreconfiguredActionEntry 1 }

sapSADirection OBJECT-TYPE

```

SYNTAX      IsecSADirection
MAX-ACCESS  not-accessible
STATUS      current

```

DESCRIPTION

"This object indicates whether a row should apply to outgoing  
 or incoming SAs"  
 ::= { saPreconfiguredActionEntry 2 }



sapActionDescription OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(0..255))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An administratively assigned string which may be used to describe what the action does."

DEFVAL { "" }

::= { saPreconfiguredActionEntry 3 }

sapActionLifetimeSec OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"sapActionLifetimeKB specifies how long in seconds the security association derived from this action should be used. The default lifetime is 8 hours. A value of 0 indicates no limit on the lifetime of the SA."

DEFVAL { 28800 }

::= { saPreconfiguredActionEntry 4 }

sapActionLifetimeKB OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"sapActionLifetimeKB specifies how long in kilobytes the security association derived from this action should be used. The default value, '0', indicates no kilobyte limit."

DEFVAL { 0 }

::= { saPreconfiguredActionEntry 5 }

sapDoActionLogging OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"sapDoActionLogging specifies whether or not an audit message

```
        should be logged when a preconfigured SA is created."
DEFVAL { false }
 ::= { saPreconfiguredActionEntry 6 }
```

sapDoPacketLogging OBJECT-TYPE

```
SYNTAX      IsecIPPacketLogging
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "sapDoPacketLogging specifies whether or not an audit message
    should be logged and if there is logging, how many bytes of
    the packet to place in the notification."
DEFVAL { -1 }
 ::= { saPreconfiguredActionEntry 7 }
```

sapDFHandling OBJECT-TYPE

```
SYNTAX      INTEGER {
                reserved(0),  -- reserved
                copy(1),      -- indicates copy the DF bit from the
                               -- internal to external IP header.
                set(2),        -- set the DF bit in the external IP
                               -- header to 1.
                clear(3)      -- clear the DF bit in the external IP
                               -- header to 0.
            }
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "This object specifies how to process the DF bit in packets
    sent through the preconfigured SA. This object is not used
    for transport SAs."
DEFVAL { copy }
 ::= { saPreconfiguredActionEntry 8 }
```

sapActionType OBJECT-TYPE

```
SYNTAX      IsecDoiEncapsulationMode
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "This object specifies the encapsulation mode to use for the
    preconfigured SA: tunnel or transport mode."
DEFVAL { tunnel }
 ::= { saPreconfiguredActionEntry 9 }
```

sapAHSPI OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object represents the SPI value for the AH SA."

::= { saPreconfiguredActionEntry 10 }

sapAHTransformName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE(0..32))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object is the name of the AH transform to use as an index into the AHTransformTable. A zero length value indicates no transform of this type is used."

::= { saPreconfiguredActionEntry 11 }

sapAHSharedSecretName OBJECT-TYPE

SYNTAX SnmpAdminString(SIZE(0..32))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object contains a name value to be used as an index into the keyTable which holds the pertinent keying information for the AH SA."

::= { saPreconfiguredActionEntry 12 }

sapESPSPi OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object represents the SPI value for the ESP SA."

::= { saPreconfiguredActionEntry 13 }

sapESPTransformName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE(0..32))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object is the name of the ESP transform to use as an index into the ESPTransformTable. A zero length value indicates no transform of this type is used."

::= { saPreconfiguredActionEntry 14 }

sapESPEncSharedSecretName OBJECT-TYPE

SYNTAX SnmpAdminString(SIZE(0..32))

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```
MAX-ACCESS read-create
```

```
STATUS current
```

```
DESCRIPTION
```

```
"This object contains a name value to be used as an index into
the keyTable which holds the pertinent keying
information for the encryption algorithm of the ESP SA."
```

```
::= { saPreconfiguredActionEntry 15 }
```

```
sapESPAuthSharedSecretName OBJECT-TYPE
```

```
SYNTAX SnmpAdminString(SIZE(0..32))
```

```
MAX-ACCESS read-create
```

```
STATUS current
```

```
DESCRIPTION
```

```
"This object contains a name value to be used as an index into
the keyTable which holds the pertinent keying
information for the authentication algorithm of the ESP SA."
```

```
::= { saPreconfiguredActionEntry 16 }
```

```
sapIPCompSPI OBJECT-TYPE
```

```
SYNTAX Integer32
```

```
MAX-ACCESS read-create
```

```
STATUS current
```

```
DESCRIPTION
```

```
"This object represents the SPI value for the IPComp SA."
```

```
::= { saPreconfiguredActionEntry 17 }
```

```
sapIPCompTransformName OBJECT-TYPE
```

```
SYNTAX SnmpAdminString (SIZE(0..32))
```

```
MAX-ACCESS read-create
```

```
STATUS current
```

```
DESCRIPTION
```

```
"This object is the name of the IPComp transform to use as an
index into the IPCompTransformTable. A zero length value
indicates no transform of this type is used."
```

```
::= { saPreconfiguredActionEntry 18 }
```

```
sapPeerGatewayIdName OBJECT-TYPE
```

```
SYNTAX OCTET STRING (SIZE(0..116))
```

```
MAX-ACCESS read-create
```

```
STATUS current
```

```
DESCRIPTION
```

```
"This object indicates the peer id name of the peer gateway. This
```

object can be used to look up the peer id value, address and other values in the peerIdentityTable. This object is used when initiating a tunnel SA. This object is not used for transport SAs. If sapActionType specifies tunnel mode and this object is empty, the peer gateway should be determined from the source or destination of the packet."

```
DEFVAL { "" }  
 ::= { saPreconfiguredActionEntry 19 }
```

```
sapLastChanged OBJECT-TYPE  
SYNTAX TimeStamp  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "The value of sysUpTime when this row was last modified or created  
    either through SNMP SETs or by some other external means."  
 ::= { saPreconfiguredActionEntry 20 }
```

```
sapStorageType OBJECT-TYPE  
SYNTAX StorageType  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The storage type for this row. Rows in this table which were  
    created through an external process may have a storage type of  
    readOnly or permanent. Entries which are permanent are  
    expected to have at least one configurable column in the row, but  
    which columns are in fact modifiable is implementation specific."  
DEFVAL { nonVolatile }  
 ::= { saPreconfiguredActionEntry 21 }
```

```
sapRowStatus OBJECT-TYPE  
SYNTAX RowStatus  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "This object indicates the conceptual status of this row.  
  
    The value of this object has no effect on whether other  
    objects in this conceptual row can be modified.
```

If active, this object must remain active if it is referenced by a row in another table."  
 ::= { saPreconfiguredActionEntry 22 }

```
--  
-- saNegotiationParametersTable  
--  
-- PROPERTIES      MinLifetimeSeconds  
--                 MinLifetimeKilobytes  
--                 RefreshThresholdSeconds  
--                 RefreshThresholdKilobytes
```

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---

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```
--                      IdleDurationSeconds  
  
saNegotiationParametersTable OBJECT-TYPE  
SYNTAX                SEQUENCE OF SaNegotiationParametersEntry  
MAX-ACCESS            not-accessible  
STATUS                current  
DESCRIPTION  
    "This table contains reusable parameters that can be pointed  
    to by the ikeActionTable and ipsecActionTable. These  
    parameters are reusable since it is likely an administrator  
    will want to make global policy changes to lifetime  
    parameters that apply to multiple actions. This table allows  
    multiple rows in the other actions tables to reuse global  
    lifetime parameters in this table by repeatedly pointing to a  
    row contained within this table."  
 ::= { ipsecPolicyConfigObjects 18 }
```

```
saNegotiationParametersEntry OBJECT-TYPE  
SYNTAX                SaNegotiationParametersEntry  
MAX-ACCESS            not-accessible  
STATUS                current  
DESCRIPTION  
    "Contains the attributes of one row in the  
    saNegotiationParametersTable."  
INDEX                 { sanActionParametersName }  
 ::= { saNegotiationParametersTable 1 }
```

```
SaNegotiationParametersEntry ::= SEQUENCE {
```

```

sanActionParametersName      SnmpAdminString,
sanMinimumLifetimeSeconds    Integer32,
sanMinimumLifetimeKB         Integer32,
sanRefreshThresholdSeconds   Integer32,
sanRefreshThresholdKB        Integer32,
sanIdleDurationSeconds       Integer32,
sanLastChanged                TimeStamp,
sanStorageType                StorageType,
sanRowStatus                  RowStatus
}

```

```

sanActionParametersName OBJECT-TYPE
SYNTAX      SnmpAdminString (SIZE(1..32))
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object contains the administrative name of this
    SaNegotiationParametersEntry. This row can be referred
    to by this name in other policy action tables."
 ::= { saNegotiationParametersEntry 1 }

```

```

sanMinimumLifetimeSeconds OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "sanMinimumLifetimeSeconds specifies the minimum seconds
    lifetime that will be accepted from the peer."
 ::= { saNegotiationParametersEntry 2 }

```

```

sanMinimumLifetimeKB OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "sanMinimumLifetimeKB specifies the minimum kilobyte
    lifetime that will be accepted from the peer."
 ::= { saNegotiationParametersEntry 3 }

```

```

sanRefreshThresholdSeconds OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS  read-create

```

STATUS current

DESCRIPTION

"sanRefreshThresholdSeconds specifies what percentage of the seconds lifetime can expire before IKE should attempt to renegotiate the IPsec security association.

A value between 1 and 100 representing a percentage. A value of 100 indicates that the IPsec security association should not be renegotiated until the seconds lifetime has been reached."

::= { saNegotiationParametersEntry 4 }

sanRefreshThresholdKB OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"sanRefreshThresholdKB specifies what percentage of the kilobyte lifetime can expire before IKE should attempt to renegotiate the IPsec security association.

A value between 1 and 100 representing a percentage. A value of 100 indicates that the IPsec security association should not be renegotiated until the kilobyte lifetime has been reached."

::= { saNegotiationParametersEntry 5 }

sanIdleDurationSeconds OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"sanIdleDurationSeconds specifies how many seconds a security association may remain idle (i.e., no traffic protected using the security association) before it is deleted.

A value of zero indicates that idle detection should not be used for the security association. Any non-zero value indicates the number of seconds the security association may remain unused."

::= { saNegotiationParametersEntry 6 }

sanLastChanged OBJECT-TYPE

SYNTAX TimeStamp



MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "The value of sysUpTime when this row was last modified or created  
    either through SNMP SETs or by some other external means."  
 ::= { saNegotiationParametersEntry 7 }

sanStorageType OBJECT-TYPE  
SYNTAX StorageType  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The storage type for this row. Rows in this table which were  
    created through an external process may have a storage type of  
    readOnly or permanent. Entries which are permanent are  
    expected to have at least one configurable column in the row, but  
    which columns are in fact modifiable is implementation specific."  
DEFVAL { nonVolatile }  
 ::= { saNegotiationParametersEntry 8 }

sanRowStatus OBJECT-TYPE  
SYNTAX RowStatus  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "This object indicates the conceptual status of this row.  
  
    The value of this object has no effect on whether other  
    objects in this conceptual row can be modified.  
  
    This object may not be set to destroy if referred to by other  
    rows in other action tables."  
 ::= { saNegotiationParametersEntry 9 }

--  
-- ikeActionTable  
--

ikeActionTable OBJECT-TYPE  
SYNTAX SEQUENCE OF IkeActionEntry  
MAX-ACCESS not-accessible

```

STATUS          current
DESCRIPTION
    "The ikeActionTable contains a list of the parameters used for
    an IKE phase 1 SA DOI negotiation.  See the corresponding
    table ikeActionProposalsTable for a list of proposals
    contained within a given IKE Action."
 ::= { ipsecPolicyConfigObjects 19 }

```

```

ikeActionEntry OBJECT-TYPE
SYNTAX          IkeActionEntry
MAX-ACCESS     not-accessible
STATUS          current
DESCRIPTION
    "The ikeActionEntry lists the IKE negotiation attributes."
INDEX          { ikeActionName }
 ::= { ikeActionTable 1 }

```

```

IkeActionEntry ::= SEQUENCE {
    ikeActionName                SnmpAdminString,
    ikeActionParametersName      SnmpAdminString,
    ikeThresholdDerivedKeys      Integer32,
    ikeExchangeMode              INTEGER,
    ikeAgressiveModeGroupId      IkeGroupDescription,
    ikeIdentityType              IpsecDoiIdentType,
    ikeIdentityContext           SnmpAdminString,
    ikePeerName                  SnmpAdminString,
    ikeActionDoActionLogging     TruthValue,
    ikeActionDoPacketLogging     IpsecIPPacketLogging,
    ikeActionVendorId            OCTET STRING,
    ikeActionLastChanged         TimeStamp,
    ikeActionStorageType         StorageType,
    ikeActionRowStatus           RowStatus
}

```

```

ikeActionName OBJECT-TYPE
SYNTAX          SnmpAdminString (SIZE(1..32))
MAX-ACCESS     not-accessible
STATUS          current
DESCRIPTION
    "This object contains the name of this ikeAction entry."
 ::= { ikeActionEntry 1 }

```

```

ikeActionParametersName OBJECT-TYPE
    SYNTAX          SnmpAdminString (SIZE(1..32))
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "This object is administratively assigned to reference a row
         in the saNegotiationParametersTable where additional
         parameters affecting this action may be found."
    ::= { ikeActionEntry 2 }

ikeThresholdDerivedKeys OBJECT-TYPE
    SYNTAX          Integer32 (0..100)
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "ikeThresholdDerivedKeys specifies what percentage
         of the derived key limit (see the LifetimeDerivedKeys
         property of IKEProposal) can expire before IKE should attempt
         to renegotiate the IKE phase 1 security association."
    DEFVAL          { 100 }
    ::= { ikeActionEntry 3 }

ikeExchangeMode OBJECT-TYPE
    SYNTAX          INTEGER { main(1), aggressive(2) }
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "ikeExchangeMode specifies the IKE Phase 1 negotiation mode."
    DEFVAL { main }
    ::= { ikeActionEntry 4 }

ikeAggressiveModeGroupId OBJECT-TYPE
    SYNTAX          IkeGroupDescription
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "The values to be used for Diffie-Hellman exchange."
    ::= { ikeActionEntry 5 }

ikeIdentityType OBJECT-TYPE
    SYNTAX          IpsecDoiIdentType
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "This column along with ikeIdentityContext and endpoint
         information is used to refer an ikeIdentityEntry in the
         ikeIdentityTable."
    ::= { ikeActionEntry 6 }

```

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```
ikeIdentityContext OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE(1..32))
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This column, along with ikeIdentityType and endpoint
        information, is used to refer to an ikeIdentityEntry in the
        ikeIdentityTable."
    ::= { ikeActionEntry 7 }

ikePeerName OBJECT-TYPE
    SYNTAX      SnmpAdminString(SIZE(1..116))
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This object indicates the peer id name of the IKE peer. This
        object can be used to look up the peer id value, address,
        keys and other values in the peerIdentityTable."
    ::= { ikeActionEntry 8 }

ikeActionDoActionLogging OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "ikeDoActionLogging specifies whether or not an audit
        message should be logged when this ike SA is created."
    DEFVAL { false }
    ::= { ikeActionEntry 9 }

ikeActionDoPacketLogging OBJECT-TYPE
    SYNTAX      IpsecIPPacketLogging
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "ikeDoPacketLogging specifies whether or not an audit message
        should be logged and if there is logging, how many bytes of
        the packet to place in the notification."
    DEFVAL { -1 }
    ::= { ikeActionEntry 10 }

ikeActionVendorId OBJECT-TYPE
```

SYNTAX                   OCTET STRING (SIZE(0..65535))  
MAX-ACCESS               read-create  
STATUS                    current  
DESCRIPTION

"Vendor ID Payload. A value of NULL means that Vendor ID

payload will be neither generated nor accepted. A non-NULL value means that a Vendor ID payload will be generated (when acting as an initiator) or is expected (when acting as a responder)."

DEFVAL { "" }  
::= { ikeActionEntry 11 }

ikeActionLastChanged OBJECT-TYPE

SYNTAX                   TimeStamp  
MAX-ACCESS               read-only  
STATUS                    current  
DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { ikeActionEntry 12 }

ikeActionStorageType OBJECT-TYPE

SYNTAX                   StorageType  
MAX-ACCESS               read-create  
STATUS                    current  
DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."

DEFVAL { nonVolatile }  
::= { ikeActionEntry 13 }

ikeActionRowStatus OBJECT-TYPE

SYNTAX                   RowStatus  
MAX-ACCESS               read-create  
STATUS                    current  
DESCRIPTION

"This object indicates the conceptual status of this row.

The value of this object has no effect on whether other objects in this conceptual row can be modified.

This object may not be set to destroy if referred to by other rows in other action tables."

```
::= { ikeActionEntry 14 }
```

```
--
```

```
-- ikeActionProposalsTable proposals contained within a ikeAction
```

```
--
```

```
ikeActionProposalsTable OBJECT-TYPE
```

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---

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```
SYNTAX      SEQUENCE OF IkeActionProposalsEntry
```

```
MAX-ACCESS  not-accessible
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "This table contains a list of all ike proposal names found  
    within a given IKE Action."
```

```
::= { ipsecPolicyConfigObjects 20 }
```

```
ikeActionProposalsEntry OBJECT-TYPE
```

```
SYNTAX      IkeActionProposalsEntry
```

```
MAX-ACCESS  not-accessible
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "a row containing one ike proposal reference"
```

```
INDEX      { ikeActionName, ikeActionProposalPriority }
```

```
::= { ikeActionProposalsTable 1 }
```

```
IkeActionProposalsEntry ::= SEQUENCE {
```

```
    ikeActionProposalPriority
```

```
    ikeActionProposalName
```

```
    ikeActionProposalLastChanged
```

```
    ikeActionProposalStorageType
```

```
    ikeActionProposalRowStatus
```

```
}
```

```
    Integer32,
```

```
    SnmpAdminString,
```

```
    TimeStamp,
```

```
    StorageType,
```

```
    RowStatus
```

```
ikeActionProposalPriority OBJECT-TYPE
```

```
SYNTAX      Integer32 (0..65535)
```

```
MAX-ACCESS  not-accessible
```

```
STATUS      current
```

DESCRIPTION

"The numeric priority of a given contained proposal inside an ike Action. This index should be used to order the proposals in an IKE Phase I negotiation, lowest value first."

::= { ikeActionProposalsEntry 1 }

ikeActionProposalName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE(1..32))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The administratively assigned name that can be used to reference a set of values contained within the ikeProposalTable."

::= { ikeActionProposalsEntry 2 }

ikeActionProposalLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { ikeActionProposalsEntry 3 }

ikeActionProposalStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."

DEFVAL { nonVolatile }

::= { ikeActionProposalsEntry 4 }

ikeActionProposalRowStatus OBJECT-TYPE

SYNTAX RowStatus

```
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "This object indicates the conceptual status of this row.

    The value of this object has no effect on whether other
    objects in this conceptual row can be modified."
 ::= { ikeActionProposalsEntry 5 }
```

```
--
-- IKE proposal definition table
--
```

```
ikeProposalTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF IkeProposalEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains a list of IKE proposals which are used in an
        IKE negotiation."
    ::= { ipsecPolicyConfigObjects 21 }
```

```
ikeProposalEntry OBJECT-TYPE
    SYNTAX      IkeProposalEntry
    MAX-ACCESS  not-accessible
```

```
STATUS      current
DESCRIPTION
    "One IKE proposal entry."
INDEX       { ikeActionProposalName }
 ::= { ikeProposalTable 1 }
```

```
IkeProposalEntry ::= SEQUENCE {
    ipLifetimeDerivedKeys      Unsigned32,
    ipCipherAlgorithm          IkeEncryptionAlgorithm,
    ipCipherKeyLength          Unsigned32,
    ipCipherKeyRounds          Unsigned32,
    ipHashAlgorithm            IkeHashAlgorithm,
    ipPrfAlgorithm              INTEGER,
    ipVendorId                 OCTET STRING,
    ipDhGroup                   IkeGroupDescription,
```



```

    ipAuthenticationMethod      IkeAuthMethod,
    ipMaxLifetimeSeconds        Unsigned32,
    ipMaxLifetimeKB             Unsigned32,
    ipProposalLastChanged       TimeStamp,
    ipProposalStorageType       StorageType,
    ipProposalRowStatus         RowStatus
}

```

ipLifetimeDerivedKeys OBJECT-TYPE

```

SYNTAX      Unsigned32
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION

```

"ipLifetimeDerivedKeys specifies the number of times that a phase 1 key will be used to derive a phase 2 key before the phase 1 security association needs renegotiated."

```
 ::= { ikeProposalEntry 1 }
```

ipCipherAlgorithm OBJECT-TYPE

```

SYNTAX      IkeEncryptionAlgorithm
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION

```

"ipCipherAlgorithm specifies the proposed phase 1 security association encryption algorithm."

```
 ::= { ikeProposalEntry 2 }
```

ipCipherKeyLength OBJECT-TYPE

```

SYNTAX      Unsigned32
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION

```

"This object specifies, in bits, the key length for

```

    the cipher algorithm used in IKE Phase 1 negotiation."
 ::= { ikeProposalEntry 3 }

```

ipCipherKeyRounds OBJECT-TYPE

```

SYNTAX      Unsigned32
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION

```

"This object specifies the number of key rounds for the cipher algorithm used in IKE Phase 1 negotiation."  
 ::= { ikeProposalEntry 4 }

ipHashAlgorithm OBJECT-TYPE

SYNTAX IkeHashAlgorithm

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"ipHashAlgorithm specifies the proposed phase 1 security association hash algorithm."

::= { ikeProposalEntry 5 }

ipPrfAlgorithm OBJECT-TYPE

SYNTAX INTEGER { reserved(0) }

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"ipPRFAlgorithm specifies the proposed phase 1 security association psuedo-random function."

Note: currently no prf algorithms are defined."

::= { ikeProposalEntry 6 }

ipVendorId OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(0..255))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The VendorID property is used to identify vendor-defined key exchange GroupIDs."

::= { ikeProposalEntry 7 }

ipDhGroup OBJECT-TYPE

SYNTAX IkeGroupDescription

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object specifies the proposed phase 1 security association Diffie-Hellman group"

::= { ikeProposalEntry 8 }

ipAuthenticationMethod OBJECT-TYPE

SYNTAX IkeAuthMethod

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object specifies the proposed authentication method for the phase 1 security association."

::= { ikeProposalEntry 9 }

ipMaxLifetimeSeconds OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"ipMaxLifetimeSeconds specifies the maximum amount of time to propose a security association remain valid."

::= { ikeProposalEntry 10 }

ipMaxLifetimeKB OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"ipMaxLifetimeKB specifies the maximum kilobyte lifetime to propose a security association remain valid."

::= { ikeProposalEntry 11 }

ipProposalLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified either through SNMP SETs or by some other external means."

::= { ikeProposalEntry 12 }

ipProposalStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."

---

```
 ::= { ikeProposalEntry 13 }

ipProposalRowStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This object indicates the conceptual status of this row.

        The value of this object has no effect on whether other
        objects in this conceptual row can be modified."
 ::= { ikeProposalEntry 14 }

--
-- IPsec action definition table
--

ipsecActionTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF IpsecActionEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The ipsecActionTable contains a list of the parameters used for an
        IKE phase 2 IPsec DOI negotiation."
 ::= { ipsecPolicyConfigObjects 22 }

ipsecActionEntry OBJECT-TYPE
    SYNTAX      IpsecActionEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The ipsecActionEntry lists the IPsec negotiation attributes."
    INDEX      { ipsecActionName }
 ::= { ipsecActionTable 1 }

IpsecActionEntry ::= SEQUENCE {
    ipsecActionName                SnmpAdminString,
    ipsecActionParametersName      SnmpAdminString,
    ipsecActionProposalsName       SnmpAdminString,
    ipsecUsePfs                    TruthValue,
    ipsecVendorId                  OCTET STRING,
    ipsecGroupId                   IkeGroupDescription,
    ipsecPeerGatewayIdName         OCTET STRING,
    ipsecUseIkeGroup               TruthValue,
```

ipsecGranularity  
ipsecMode

INTEGER,  
INTEGER,

ipsecDFHandling INTEGER,  
ipsecDoActionLogging TruthValue,  
ipsecDoPacketLogging IpsecIPPacketLogging,  
ipsecActionLastChanged TimeStamp,  
ipsecActionStorageType StorageType,  
ipsecActionRowStatus RowStatus

}

ipsecActionName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE(1..32))

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"ipsecActionName is the name of the ipsecAction entry."

::= { ipsecActionEntry 1 }

ipsecActionParametersName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE(1..32))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object is used to reference a row in the saNegotiationActionParametersTable where additional parameters affecting this action may be found."

::= { ipsecActionEntry 2 }

ipsecActionProposalsName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE(1..32))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object is used to reference one or more rows in the ipsecProposalsTable where an ordered list of proposals affecting this action may be found."

::= { ipsecActionEntry 3 }

ipsecUsePfs OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "This MIB object specifies whether or not perfect forward  
    secrecy should be used when refreshing keys.  
    A value of true indicates that PFS should be used."  
 ::= { ipsecActionEntry 4 }

ipsecVendorId OBJECT-TYPE

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SYNTAX OCTET STRING (SIZE(0..255))  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The VendorID property is used to identify vendor-defined key  
    exchange GroupIDs."  
 ::= { ipsecActionEntry 5 }

ipsecGroupId OBJECT-TYPE

SYNTAX IkeGroupDescription  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "This object specifies the Diffie-Hellman group to use for phase 2  
    when the object ipsecUsePfs is true and the object  
    ipsecUseIkeGroup is false. If the GroupID number is from the  
    vendor-specific range (32768-65535), the VendorID qualifies  
    the group number."  
 ::= { ipsecActionEntry 6 }

ipsecPeerGatewayIdName OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(0..116))  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "This object indicates the peer id name of the peer gateway. This  
    object can be used to look up the peer id value, address and  
    other values in the peerIdentityTable. This object is used  
    when initiating a tunnel SA. This object is not used for  
    transport SAs. If no value is set and ipsecMode is tunnel, the  
    peer gateway should be determined from the source or destination  
    address of the packet."

```
::= { ipsecActionEntry 7 }
```

```
ipsecUseIkeGroup OBJECT-TYPE
```

```
SYNTAX      TruthValue
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"This object specifies whether or not to use the same GroupId for phase 2 as was used in phase 1. If UsePFS is false, this entry should be ignored."
```

```
::= { ipsecActionEntry 8 }
```

```
ipsecGranularity OBJECT-TYPE
```

```
SYNTAX      INTEGER { subnet(1), address(2), protocol(3), port(4) }
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

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```
DESCRIPTION
```

```
"This object specifies how the proposed selector for the security association will be created. The selector is created by using the FilterList information. The selector can be subnet, address, porotocol, or port."
```

```
::= { ipsecActionEntry 9 }
```

```
ipsecMode OBJECT-TYPE
```

```
SYNTAX      INTEGER { tunnel(1), transport(2) }
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"This object specifies the encapsulation of the IPsec SA to be negotiated."
```

```
DEFVAL { tunnel }
```

```
::= { ipsecActionEntry 10 }
```

```
ipsecDFHandling OBJECT-TYPE
```

```
SYNTAX      INTEGER { copy(1), set(2), clear(3) }
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"This object specifies the processing of DF bit by the negotiated IPsec tunnel.
```

```
1 - DF bit is copied.
```

```
    2 - DF bit is set.
    3 - DF bit is cleared."
 ::= { ipsecActionEntry 11 }
```

ipsecDoActionLogging OBJECT-TYPE

```
SYNTAX      TruthValue
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "ipsecDoActionLogging specifies whether or not an audit
    message should be logged when this ipsec SA is created."
DEFVAL { false }
 ::= { ipsecActionEntry 12 }
```

ipsecDoPacketLogging OBJECT-TYPE

```
SYNTAX      IpvsecIPPacketLogging
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "ipsecDoPacketLogging specifies whether or not an audit message
    should be logged and if there is logging, how many bytes of
    the packet to place in the notification."
DEFVAL { -1 }
```

```
 ::= { ipsecActionEntry 13 }
```

ipsecActionLastChanged OBJECT-TYPE

```
SYNTAX      TimeStamp
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The value of sysUpTime when this row was last modified or created
    either through SNMP SETs or by some other external means."
 ::= { ipsecActionEntry 14 }
```

ipsecActionStorageType OBJECT-TYPE

```
SYNTAX      StorageType
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The storage type for this row. Rows in this table which were
    created through an external process may have a storage type of
```



readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."  
 ::= { ipsecActionEntry 15 }

ipsecActionRowStatus OBJECT-TYPE

SYNTAX RowStatus  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"This object indicates the conceptual status of this row.

The value of this object has no effect on whether other objects in this conceptual row can be modified.

If active, this object must remain active if it is referenced by a row in another table."

::= { ipsecActionEntry 16 }

--

-- ipsecProposalsTable

--

ipsecProposalsTable OBJECT-TYPE

SYNTAX SEQUENCE OF IpsecProposalsEntry  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION

"This table lists one or more IPsec proposals for

IPsec actions."

::= { ipsecPolicyConfigObjects 23 }

ipsecProposalsEntry OBJECT-TYPE

SYNTAX IpsecProposalsEntry  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION

"An entry containing (possibly a portion of) a proposal."

INDEX { ipsecProposalsName, ipsecProposalsPriority,  
 ipsecProposalsProtocolId }

```

 ::= { ipsecProposalsTable 1 }

IpssecProposalsEntry ::= SEQUENCE {
    ipsecProposalsName          SnmpAdminString,
    ipsecProposalsPriority      Integer32,
    ipsecProposalsProtocolId   IpsecDoiSecProtocolId,
    ipsecProposalsTransformsName SnmpAdminString,
    ipsecProposalsLastChanged  TimeStamp,
    ipsecProposalsStorageType  StorageType,
    ipsecProposalsRowStatus    RowStatus
}

ipsecProposalsName OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE(1..32))
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The name of this proposal."
    ::= { ipsecProposalsEntry 1 }

ipsecProposalsPriority OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The priority level (AKA sequence level) of this proposal.
         A lower number indicates a higher precedence."
    ::= { ipsecProposalsEntry 2 }

ipsecProposalsProtocolId OBJECT-TYPE
    SYNTAX      IpsecDoiSecProtocolId
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The protocol Id for the transforms for this proposal. The
         protoIsakmp(1) value is not valid for this object.
         This object, along with the ipsecProposalsTransformsName,

```

```

        is the index into the ipsecTransformsTable."
    ::= { ipsecProposalsEntry 3 }

```

```

ipsecProposalsTransformsName OBJECT-TYPE

```

SYNTAX SnmpAdminString  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The name of the transform or group of transforms for this protocol. This object, along with the ipsecProposalsProtocolId, is the index into the ipsecTransformsTable."  
 ::= { ipsecProposalsEntry 4 }

ipsecProposalsLastChanged OBJECT-TYPE

SYNTAX TimeStamp  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."  
 ::= { ipsecProposalsEntry 5 }

ipsecProposalsStorageType OBJECT-TYPE

SYNTAX StorageType  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."  
 ::= { ipsecProposalsEntry 6 }

ipsecProposalsRowStatus OBJECT-TYPE

SYNTAX RowStatus  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"This object indicates the conceptual status of this row.  
  
The value of this object has no effect on whether other objects in this conceptual row can be modified.  
  
This row may not be set to active until the corresponding row in the ipsecTransformsTable exists and is active."  
 ::= { ipsecProposalsEntry 7 }

```
--
```

```
-- ipsecTransformsTable
```

```
--
```

```
ipsecTransformsTable OBJECT-TYPE
```

```
SYNTAX SEQUENCE OF IpsecTransformsEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"This table lists the IPsec proposals contained within a given
IPsec action and the transforms within each of those
proposals. These proposals and transforms can then be used
to create phase 2 negotiation proposals."
```

```
::= { ipsecPolicyConfigObjects 24 }
```

```
ipsecTransformsEntry OBJECT-TYPE
```

```
SYNTAX IpsecTransformsEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"An entry containing the information on an IPsec transform."
```

```
INDEX { ipsecTransformsType, ipsecTransformsName,
        ipsecTransformsPriority }
```

```
::= { ipsecTransformsTable 1 }
```

```
IpsecTransformsEntry ::= SEQUENCE {
```

```
    ipsecTransformsType                IpsecDoiSecProtocolId,
    ipsecTransformsName                 SnmpAdminString,
    ipsecTransformsPriority              Integer32,
    ipsecTransformsTransformName        SnmpAdminString,
    ipsecTransformsLastChanged          TimeStamp,
    ipsecTransformsStorageType          StorageType,
    ipsecTransformsRowStatus            RowStatus
```

```
}
```

```
ipsecTransformsType OBJECT-TYPE
```

```
SYNTAX IpsecDoiSecProtocolId
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"The protocol type for this transform. The protoIsakmp(1) value
is not valid for this object."
```

```
::= { ipsecTransformsEntry 1 }
```

```
ipsecTransformsName OBJECT-TYPE
```

```
SYNTAX SnmpAdminString (SIZE(1..32))
```

STATUS current

DESCRIPTION

"The name for this transform or group of transforms."

::= { ipsecTransformsEntry 2 }

ipsecTransformsPriority OBJECT-TYPE

SYNTAX Integer32 (0..65535)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The priority level (AKA sequence level) of the this transform within the group of transforms. This indicates the preference for which algorithms are requested when the list of transforms are sent to the remote host. A lower number indicates a higher precedence."

::= { ipsecTransformsEntry 3 }

ipsecTransformsTransformName OBJECT-TYPE

SYNTAX SnmpAdminString

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The name for the given transform. Depending on the value of ipsecTransformsType, this value should be used to lookup the transform's specific parameters in the ahTransformTable, the espTransformTable or the ipcompTransformTable."

::= { ipsecTransformsEntry 4 }

ipsecTransformsLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { ipsecTransformsEntry 5 }

ipsecTransformsStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

STATUS current  
DESCRIPTION  
"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."  
 ::= { ipsecTransformsEntry 6 }

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ipsecTransformsRowStatus OBJECT-TYPE

SYNTAX RowStatus  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"This object indicates the conceptual status of this row.

The value of this object has no effect on whether other objects in this conceptual row can be modified.

This row may not be set to active until the corresponding row in the ahTransformTable, espTransformTable or the ipcompTransformTable exists."

::= { ipsecTransformsEntry 7 }

--  
-- AH transform definition table  
--

ahTransformTable OBJECT-TYPE

SYNTAX SEQUENCE OF AhTransformEntry  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION

"This table lists all the AH transforms which can be used to build IPsec proposals."

::= { ipsecPolicyConfigObjects 25 }

ahTransformEntry OBJECT-TYPE

SYNTAX AhTransformEntry  
MAX-ACCESS not-accessible

```
STATUS      current
DESCRIPTION
    "This entry contains the attributes of one AH transform."
INDEX       { ahtName }
 ::= { ahTransformTable 1 }
```

```
AhTransformEntry ::= SEQUENCE {
    ahtName                SnmpAdminString,
    ahtMaxLifetimeSec      Unsigned32,
    ahtMaxLifetimeKB      Unsigned32,
    ahtAlgorithm           IsecDoiAuthAlgorithm,
    ahtReplayProtection    TruthValue,
    ahtReplayWindowSize    Unsigned32,
    ahtLastChanged         TimeStamp,
    ahtStorageType         StorageType,
```

```
    ahtRowStatus          RowStatus
}
```

ahtName OBJECT-TYPE

```
SYNTAX      SnmpAdminString (SIZE(1..32))
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object contains the name of this AH transform. This row
    will be referred to by an ipsecTransformsEntry."
 ::= { ahTransformEntry 1 }
```

ahtMaxLifetimeSec OBJECT-TYPE

```
SYNTAX      Unsigned32
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "ahtMaxLifetimeSec specifies how long in seconds the security
    association derived from this transform should be used."
 ::= { ahTransformEntry 2 }
```

ahtMaxLifetimeKB OBJECT-TYPE

```
SYNTAX      Unsigned32
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
```

"ahtMaxLifetimeKB specifies how long in kilobytes the security association derived from this transform should be used."  
 ::= { ahTransformEntry 3 }

ahtAlgorithm OBJECT-TYPE

SYNTAX IpsecDoiAuthAlgorithm

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object specifies the AH algorithm for this transform."

::= { ahTransformEntry 4 }

ahtReplayProtection OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"ahtReplayProtection indicates whether or not anti replay service is to be provided by this SA."

::= { ahTransformEntry 5 }

ahtReplayWindowSize OBJECT-TYPE

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SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"ahtReplayWindowSize indicates the size, in bits, of the replay window to use if replay protection is true for this transform. The window size is assumed to be a power of two. If Replay Protection is false, this value can be ignored."

::= { ahTransformEntry 6 }

ahtLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { ahTransformEntry 7 }



```
ahtStorageType OBJECT-TYPE
    SYNTAX      StorageType
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The storage type for this row.  Rows in this table which were
        created through an external process may have a storage type of
        readOnly or permanent.  Entries which are permanent are
        expected to have at least one configurable column in the row, but
        which columns are in fact modifiable is implementation specific."
 ::= { ahTransformEntry 8 }
```

```
ahtRowStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This object indicates the conceptual status of this row.

        The value of this object has no effect on whether other
        objects in this conceptual row can be modified.

        If active, this object must remain active if it is referenced
        by a row in another table."
 ::= { ahTransformEntry 9 }
```

```
--
-- ESP transform definition table
```

```
--
```

```
espTransformTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF EspTransformEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table lists all the ESP transforms which can be used to build
        IPsec proposals"
 ::= { ipsecPolicyConfigObjects 26 }
```

```

espTransformEntry OBJECT-TYPE
    SYNTAX      EspTransformEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This entry contains the attributes of one ESP transform."
    INDEX       { esptName }
    ::= { espTransformTable 1 }

```

```

EspTransformEntry ::= SEQUENCE {
    esptName                SnmpAdminString,
    esptMaxLifetimeSec      Unsigned32,
    esptMaxLifetimeKB      Unsigned32,
    esptCipherTransformId  IsecDoiEspTransform,
    esptCipherKeyLength    Unsigned32,
    esptCipherKeyRounds    Unsigned32,
    esptIntegrityAlgorithmId IsecDoiAuthAlgorithm,
    esptReplayPrevention   TruthValue,
    esptReplayWindowSize   Unsigned32,
    esptLastChanged        TimeStamp,
    esptStorageType        StorageType,
    esptRowStatus           RowStatus
}

```

```

esptName OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE(1..32))
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The name of this particular espTransform be referred to by an
         ipsecTransformEntry."
    ::= { espTransformEntry 1 }

```

```

esptMaxLifetimeSec OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create

```

```

STATUS      current
DESCRIPTION
    "esptMaxLifetimeSec specifies how long in seconds the security
     association derived from this transform should be used."
    ::= { espTransformEntry 2 }

```

esptMaxLifetimeKB OBJECT-TYPE  
SYNTAX Unsigned32  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"esptMaxLifetimeKB specifies how long in kilobytes the security  
association derived from this transform should be used."  
 ::= { espTransformEntry 3 }

esptCipherTransformId OBJECT-TYPE  
SYNTAX IpsecDoiEspTransform  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"This object specifies the transform ID of the ESP cipher  
algorithm."  
 ::= { espTransformEntry 4 }

esptCipherKeyLength OBJECT-TYPE  
SYNTAX Unsigned32  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"This object specifies, in bits, the key length for  
the ESP cipher algorithm."  
 ::= { espTransformEntry 5 }

esptCipherKeyRounds OBJECT-TYPE  
SYNTAX Unsigned32  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"This object specifies the number of key rounds for  
the ESP cipher algorithm."  
 ::= { espTransformEntry 6 }

esptIntegrityAlgorithmId OBJECT-TYPE  
SYNTAX IpsecDoiAuthAlgorithm  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"This object specifies the ESP integrity algorithm ID."  
 ::= { espTransformEntry 7 }

esptReplayPrevention OBJECT-TYPE

SYNTAX TruthValue  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"esptReplayPrevention indicates whether or not anti-replay service is to be provided by this SA."

::= { espTransformEntry 8 }

esptReplayWindowSize OBJECT-TYPE

SYNTAX Unsigned32  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"esptReplayWindowSize indicates the size, in bits, of the replay window to use if replay protection is true for this transform. The window size is assumed to be a power of two. If Replay Protection is false, this value can be ignored."

::= { espTransformEntry 9 }

esptLastChanged OBJECT-TYPE

SYNTAX TimeStamp  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { espTransformEntry 10 }

esptStorageType OBJECT-TYPE

SYNTAX StorageType  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."

::= { espTransformEntry 11 }

esptRowStatus OBJECT-TYPE

SYNTAX RowStatus  
MAX-ACCESS read-create  
STATUS current

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## DESCRIPTION

"This object indicates the conceptual status of this row.

The value of this object has no effect on whether other objects in this conceptual row can be modified.

If active, this object must remain active if it is referenced by a row in another table."

::= { espTransformEntry 12 }

--

-- IP compression transform definition table

--

## ipcompTransformTable OBJECT-TYPE

SYNTAX SEQUENCE OF IpcompTransformEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"This table lists all the IP compression transforms which can be used to build IPsec proposals during negotiation of a phase 2 SA."

::= { ipsecPolicyConfigObjects 27 }

## ipcompTransformEntry OBJECT-TYPE

SYNTAX IpcompTransformEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"This entry contains the attributes of one IP compression transform."

INDEX { ipcompTransformName }

::= { ipcompTransformTable 1 }

## IpcompTransformEntry ::= SEQUENCE {

ipcompTransformName	SnmpAdminString,
ipcompTransformMaxLifetimeSec	Unsigned32,
ipcompTransformMaxLifetimeKB	Unsigned32,
ipcompAlgorithm	IpsecDoiIpcompTransform,
ipcompDictionarySize	Unsigned32,

```

    ipcompPrivateAlgorithm          Unsigned32,
    ipcompTransformLastChanged     TimeStamp,
    ipcompTransformStorageType     StorageType,
    ipcompTransformRowStatus       RowStatus
}

```

```

ipcompTransformName OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE(1..32))
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The name of this ipcompTransformEntry."
    ::= { ipcompTransformEntry 1 }

```

```

ipcompTransformMaxLifetimeSec OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "ipcompTransformMaxLifetimeSec specifies how long in seconds
         the security association derived from this transform should be
         used."
    ::= { ipcompTransformEntry 2 }

```

```

ipcompTransformMaxLifetimeKB OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "ipcompTransformMaxLifetimeKB specifies how long in kilobytes
         the security association derived from this transform should be
         used."
    ::= { ipcompTransformEntry 3 }

```

```

ipcompAlgorithm OBJECT-TYPE
    SYNTAX      IsecDoiIpcompTransform
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "ipcompAlgorithm specifies the transform ID of the IP compression
         algorithm."

```

```
::= { ipcompTransformEntry 4 }
```

```
ipcompDictionarySize OBJECT-TYPE
```

```
SYNTAX      Unsigned32
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"If the algorithm in ipcompAlgorithm requires a dictionary
size configuration parameter, then this is the place to put
it. This object specifies the log2 maximum size of the
dictionary for the compression algorithm."
```

```
::= { ipcompTransformEntry 5 }
```

```
ipcompPrivateAlgorithm OBJECT-TYPE
```

```
SYNTAX      Unsigned32
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"If ipcompPrivateAlgorithm has a value other zero, then it is
up to the vendors implementation to determine the meaning of
this field and substitute a data compression algorithm in
place of ipcompAlgorithm."
```

```
::= { ipcompTransformEntry 6 }
```

```
ipcompTransformLastChanged OBJECT-TYPE
```

```
SYNTAX      TimeStamp
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"The value of sysUpTime when this row was last modified or created
either through SNMP SETs or by some other external means."
```

```
::= { ipcompTransformEntry 7 }
```

```
ipcompTransformStorageType OBJECT-TYPE
```

```
SYNTAX      StorageType
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"The storage type for this row. Rows in this table which were
created through an external process may have a storage type of
readOnly or permanent. Entries which are permanent are
```

expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."  
 ::= { ipcompTransformEntry 8 }

ipcompTransformRowStatus OBJECT-TYPE

SYNTAX RowStatus  
MAX-ACCESS read-create  
STATUS current

DESCRIPTION

"This object indicates the conceptual status of this row.

The value of this object has no effect on whether other objects in this conceptual row can be modified.

If active, this object must remain active if it is referenced by a row in another table."

::= { ipcompTransformEntry 9 }

--

-- IKE identity definition table

--

ikeIdentityTable OBJECT-TYPE

SYNTAX SEQUENCE OF IkeIdentityEntry  
MAX-ACCESS not-accessible  
STATUS current

DESCRIPTION

"IKEIdentity is used to represent the identities that may be used for an IPProtocolEndpoint (or collection of IPProtocolEndpoints) to identify itself in IKE phase 1 negotiations. The column ikeIdentityName in an ikeActionEntry together with the peEndpointIdentType and the peEndpointAddress in the PolicyEndpointToGroupTable specifies the unique identity to use in a negotiation exchange."

::= { ipsecPolicyConfigObjects 28 }

ikeIdentityEntry OBJECT-TYPE

SYNTAX IkeIdentityEntry  
MAX-ACCESS not-accessible



```

STATUS      current
DESCRIPTION
    "ikeIdentity lists the attributes of an IKE identity."
INDEX { peEndpointIdentType, peEndpointAddress,
        ikeIdentityType, ikeIdentityContext }
 ::= { ikeIdentityTable 1 }

```

```

IkeIdentityEntry ::= SEQUENCE {
    ikeIdValue          OCTET STRING,
    ikeIdKeyName       SnmpAdminString,
    ikeIdCredMngName   SnmpAdminString,
    ikeIdLastChanged   TimeStamp,
    ikeIdStorageType   StorageType,
    ikeIdRowStatus     RowStatus
}

```

```

ikeIdValue          OBJECT-TYPE
SYNTAX             OCTET STRING (SIZE(0..255))
MAX-ACCESS         read-create
STATUS             current
DESCRIPTION
    "ikeIdValue contains a string encoding of the Identity payload.
    For IKEIdentity instances that are address types, the Identity
    string value may be omitted and the associated
    IPProtocolEndpoint or appropriate member of the Collection of
    endpoints is used."
 ::= { ikeIdentityEntry 1 }

```

```

ikeIdKeyName OBJECT-TYPE
SYNTAX       SnmpAdminString
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION
    "This value is used as an index into the keyTable to look up
    the actual key value and other key information. For ID's
    without associated keying information, this value is left
    blank"
 ::= { ikeIdentityEntry 2 }

```

```

ikeIdCredMngName OBJECT-TYPE
SYNTAX       SnmpAdminString
MAX-ACCESS   read-create

```

STATUS current  
DESCRIPTION  
"This value is used as an index into the  
ipsecCredMngServiceTable. For IDs that have no credential  
management service, this value is left blank."  
::= { ikeIdentityEntry 3 }

ikeIdLastChanged OBJECT-TYPE  
SYNTAX TimeStamp  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"The value of sysUpTime when this row was last modified or created  
either through SNMP SETs or by some other external means."  
::= { ikeIdentityEntry 4 }

ikeIdStorageType OBJECT-TYPE  
SYNTAX StorageType  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The storage type for this row. Rows in this table which were  
created through an external process may have a storage type of  
readOnly or permanent. Entries which are permanent are  
expected to have at least one configurable column in the row, but  
which columns are in fact modifiable is implementation specific."  
DEFVAL { nonVolatile }  
::= { ikeIdentityEntry 5 }

ikeIdRowStatus OBJECT-TYPE  
SYNTAX RowStatus  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"This object indicates the conceptual status of this row.

The value of this object has no effect on whether other  
objects in this conceptual row can be modified.

If active, this object must remain active if it is referenced  
by a row in another table."

```

 ::= { ikeIdentityEntry 6 }

--
-- Peer Identity Table
--

peerIdentityTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF PeerIdentityEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "PeerIdentity is used to represent the identities that may be
         used for peers to identify themselves in IKE phase I/II
         negotiations. PeerIdentityTable aggregates the table entries
         that provide mappings between identities and their
         addresses."
    ::= { ipsecPolicyConfigObjects 29 }

peerIdentityEntry OBJECT-TYPE
    SYNTAX      PeerIdentityEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "peerIdentity matches a peer's identity to its address."
    INDEX { peerIdName, peerIdPriority }
    ::= { peerIdentityTable 1 }

PeerIdentityEntry ::= SEQUENCE {
    peerIdName                SnmpAdminString,
    peerIdPriority             Integer32,
    peerIdValue                OCTET STRING,
    peerIdType                 IsecDoiIdentType,
    peerIdAddress              IsecIPAddress,
    peerIdAddressType          IsecIPVersion,
    peerIdKeyName              SnmpAdminString,
    peerIdCredMngName          SnmpAdminString,
    peerIdLastChanged          TimeStamp,
    peerIdStorageType          StorageType,
    peerIdRowStatus            RowStatus
}

```

}

peerIdName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE(1..116))

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This is an administratively assigned value that, together with peerIdPriority, uniquely identifies an entry in this table."

::= { peerIdentityEntry 1 }

peerIdPriority OBJECT-TYPE

SYNTAX Integer32 (0..2147483647)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object, along with peerIdName, uniquely identifies an entry in this table. The priority also indicates the order of peer gateways to initiate or accept SAs from (i.e. try until success)."

::= { peerIdentityEntry 2 }

peerIdValue OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(0..8192))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"peerIdValue contains a string encoding of the Identity payload for the a peer."

::= { peerIdentityEntry 3 }

peerIdType OBJECT-TYPE

SYNTAX IpsecDoiIdentType

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"peerIdType is an enumeration identifying the type of the Identity value."

::= { peerIdentityEntry 4 }

peerIdAddress OBJECT-TYPE

SYNTAX IpsecIPAddress

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The property PeerAddress specifies the IP address of the peer. The format is specified by the peerIdAddressType."

::= { peerIdentityEntry 5 }

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peerIdAddressType OBJECT-TYPE

SYNTAX IpsecIPVersion

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The property peerIdAddressType specifies the format of the peerIdAddress property value."

::= { peerIdentityEntry 6 }

peerIdKeyName OBJECT-TYPE

SYNTAX SnmpAdminString

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This value is used as an index into the keyTable to look up the actual key value and other key information. For peer IDs that have no associated key information, this value is left blank."

::= { peerIdentityEntry 7 }

peerIdCredMngName OBJECT-TYPE

SYNTAX SnmpAdminString

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This value is used as an index into the ipsecCredMngServiceTable. For peer IDs that have no credential management service, this value is left blank."

::= { peerIdentityEntry 8 }

peerIdLastChanged OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { peerIdentityEntry 9 }

peerIdStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but

which columns are in fact modifiable is implementation specific."

DEFVAL { nonVolatile }

::= { peerIdentityEntry 10 }

peerIdRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object indicates the conceptual status of this row.

The value of this object has no effect on whether other objects in this conceptual row can be modified.

If active, this object must remain active if it is referenced by a row in another table."

::= { peerIdentityEntry 11 }

--

-- autostart IKE Table

--

autostartIkeTable OBJECT-TYPE

SYNTAX SEQUENCE OF AutostartIkeEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The parameters in the autostart IKE Table are used to automatically initiate IKE phases I and II (i.e. IPsec) negotiations on startup. It also will initiate IKE phase I and II negotiations for a row at the time of that row's creation"

::= { ipsecPolicyConfigObjects 30 }

```

autostartIkeEntry OBJECT-TYPE
    SYNTAX      AutostartIkeEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "autostart ike provides the set of parameters to automatically
        start IKE and IPsec SA's."
    INDEX { autoIkePriority }
    ::= { autostartIkeTable 1 }

AutostartIkeEntry ::= SEQUENCE {
    autoIkePriority      Integer32,

```

```

    autoIkeAction          VariablePointer,
    autoIkeAddressType     IpsecIPVersion,
    autoIkeSourceAddress   IpsecIPAddress,
    autoIkeSourcePort      Integer32,
    autoIkeDestAddress     IpsecIPAddress,
    autoIkeDestPort        Integer32,
    autoIkeProtocol        Unsigned32,
    autoIkeLastChanged     TimeStamp,
    autoIkeStorageType     StorageType,
    autoIkeRowStatus       RowStatus
}

autoIkePriority OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "autoIkePriority is an index into the autostartIkeAction table
        and can be used to order the autostart IKE actions."
    ::= { autostartIkeEntry 1 }

autoIkeAction OBJECT-TYPE
    SYNTAX      VariablePointer
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This pointer is used to point to the action or compound action
        that should be initiated by this row."
    ::= { autostartIkeEntry 2 }

```

autoIkeAddressType OBJECT-TYPE  
SYNTAX IpsecIPVersion  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The property autoIkeAddressType specifies the format of the  
autoIke source and destination Address values."  
 ::= { autostartIkeEntry 3 }

autoIkeSourceAddress OBJECT-TYPE  
SYNTAX IpsecIPAddress  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The property autoIkeSourecAddress specifies Source IP address  
for autostarting IKE SA's, formatted according to the appropriate  
convention as defined in the autoIkeAddressType property."  
 ::= { autostartIkeEntry 4 }

autoIkeSourcePort OBJECT-TYPE  
SYNTAX Integer32  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The property autoIkeSourcePort specifies the port number for  
the source port for auotstarting IKE SA's."  
 ::= { autostartIkeEntry 5 }

autoIkeDestAddress OBJECT-TYPE  
SYNTAX IpsecIPAddress  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The property autoIkeDestAddress specifies the Destination IP  
address for autostarting IKE SA's, formatted according to the  
appropriate convention as defined in the autoIkeAddressType  
property."  
 ::= { autostartIkeEntry 6 }

autoIkeDestPort OBJECT-TYPE  
SYNTAX Integer32



MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"The property autoIkeDestPort specifies the port number for the destination port for autostarting IKE SA's."

::= { autostartIkeEntry 7 }

autoIkeProtocol OBJECT-TYPE  
SYNTAX Unsigned32 (0..255)  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"The property Protocol specifies the protocol number used in comparing with policy filter entries and used in any phase 2 negotiations."

::= { autostartIkeEntry 8 }

autoIkeLastChanged OBJECT-TYPE  
SYNTAX TimeStamp  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."

::= { autostartIkeEntry 9 }

autoIkeStorageType OBJECT-TYPE  
SYNTAX StorageType  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."

DEFVAL { nonVolatile }

::= { autostartIkeEntry 10 }

autoIkeRowStatus OBJECT-TYPE  
SYNTAX RowStatus

```
MAX-ACCESS    read-create
STATUS        current
DESCRIPTION
    "This object indicates the conceptual status of this row.

    The value of this object has no effect on whether other
    objects in this conceptual row can be modified."

 ::= { autostartIkeEntry 11 }
```

```
--
-- CA Table
--
```

```
ipsecCredMngServiceTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF IpsecCredMngServiceEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table of Credential Management Service values. This table is
        usually used for credential/certificate values that are used
        with a management service (e.g. Certificate Authorities)."
    ::= { ipsecPolicyConfigObjects 31 }
```

```
ipsecCredMngServiceEntry OBJECT-TYPE
    SYNTAX      IpsecCredMngServiceEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A row in the ipsecCredMngServiceTable."
    INDEX      { icmsName }
    ::= { ipsecCredMngServiceTable 1 }
```

```
IpsecCredMngServiceEntry ::= SEQUENCE {
    icmsName                SnmpAdminString,
    icmsPolicyStatement     OCTET STRING,
    icmsCRL                 OCTET STRING,
    icmsCRLDistPoint        OCTET STRING,
    icmsDistinguishedName   OCTET STRING,
    icmsMaxChainLength      Integer32,
    icmsCRLRefreshFreq      Integer32,
```

```

        icmsValue          OCTET STRING,
        icmsLastChanged   TimeStamp,
        icmsStorageType   StorageType,
        icmsRowStatus     RowStatus
    }

icmsName OBJECT-TYPE
    SYNTAX      SnmpAdminString(SIZE(1..117))
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This is an administratively assigned string used to index
        this table."
    ::= { ipsecCredMngServiceEntry 1 }

icmsPolicyStatement OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(0..8192))
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This Value represents the Credential Management Service
        Policy Statement, or a reference describing how to obtain it
        (e.g., a URL). If one doesn't exist, this value can be left
        blank"
    ::= { ipsecCredMngServiceEntry 2 }

icmsCRL OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(0..8192))
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This value is the CRL for this Credential Management
        Service."
    ::= { ipsecCredMngServiceEntry 3 }

icmsCRLDistPoint OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(0..8192))
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION

```

```

        Credential Management Service."
 ::= { ipsecCredMngServiceEntry 4 }

icmsDistinguishedName OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(0..8192))
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This value represents the Distinguished Name of the
         Credential Management Service."
 ::= { ipsecCredMngServiceEntry 5 }

icmsMaxChainLength OBJECT-TYPE
    SYNTAX      Integer32 (0..255)
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This value is the maximum length of the chain allowble from
         the Credential Management Service to the credential in
         question."
    DEFVAL     { 0 }
 ::= { ipsecCredMngServiceEntry 6}

icmsCRLRefreshFreq OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This value is the refresh frequency in seconds."
 ::= { ipsecCredMngServiceEntry 7 }

icmsValue OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(0..8192))
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This is the actual certificate value (i.e. key) for this
         Credential Management Service."
 ::= { ipsecCredMngServiceEntry 8 }

icmsLastChanged OBJECT-TYPE
    SYNTAX      TimeStamp
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The value of sysUpTime when this row was last modified or created
         either through SNMP SETs or by some other external means."

```

---

```
::= { ipsecCredMngServiceEntry 9 }
```

```
icmsStorageType OBJECT-TYPE
```

```
SYNTAX      StorageType
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"The storage type for this row.  Rows in this table which were
created through an external process may have a storage type of
readOnly or permanent.  Entries which are permanent are
expected to have at least one configurable column in the row, but
which columns are in fact modifiable is implementation specific."
```

```
::= { ipsecCredMngServiceEntry 10 }
```

```
icmsRowStatus OBJECT-TYPE
```

```
SYNTAX      RowStatus
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"This object indicates the conceptual status of this row.
```

```
The value of this object has no effect on whether other
objects in this conceptual row can be modified.
```

```
If active, this object must remain active if it is referenced
by a row in another table."
```

```
::= { ipsecCredMngServiceEntry 11 }
```

```
--
```

```
-- Key Table
```

```
--
```

```
keyTable OBJECT-TYPE
```

```
SYNTAX      SEQUENCE OF KeyEntry
```

```
MAX-ACCESS  not-accessible
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"A table of key values.  Among other uses, this table
can be used for keying information for preconfigured IPsec
actions."
```

```
::= { ipsecPolicyConfigObjects 32 }
```

```
keyEntry OBJECT-TYPE
```

```
SYNTAX      KeyEntry
```

MAX-ACCESS not-accessible  
STATUS current

DESCRIPTION  
"A row in the keyTable."  
INDEX { ktName }  
::= { keyTable 1 }

KeyEntry ::= SEQUENCE {  
    ktName SnmpAdminString,  
    ktRemoteID OCTET STRING,  
    ktKey OCTET STRING,  
    ktPasswordAlgorithm OCTET STRING,  
    ktLastChanged TimeStamp,  
    ktStorageType StorageType,  
    ktRowStatus RowStatus  
}

ktName OBJECT-TYPE  
SYNTAX SnmpAdminString(SIZE(1..32))  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION  
"This object represents the name for an entry in this table."  
::= { keyEntry 1 }

ktRemoteID OBJECT-TYPE  
SYNTAX OCTET STRING(SIZE(0..256))  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"This object represents the Identification (e.g. user name) of  
the user of the key information on the remote site. If there  
is no ID associated with this key, the value of this  
object should be the null string."  
::= { keyEntry 2 }

ktKey OBJECT-TYPE  
SYNTAX OCTET STRING (SIZE(0..4096))  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"This object represents the key value. When accessed for reading, it MUST return a null length (0 length) string and MUST NOT return the configured key."  
 ::= { keyEntry 3 }

ktPasswordAlgorithm OBJECT-TYPE  
SYNTAX OCTET STRING (SIZE(0..4096))  
MAX-ACCESS read-create  
STATUS current

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DESCRIPTION

"This object represents the transformation algorithm used to protect passwords before use in the protocol. For shared keys without a password, this value can be ignored. For shared keys that have passwords but no transform algorithm, this object should be the null string."  
 ::= { keyEntry 4 }

ktLastChanged OBJECT-TYPE  
SYNTAX TimeStamp  
MAX-ACCESS read-only  
STATUS current

DESCRIPTION

"The value of sysUpTime when this row was last modified or created either through SNMP SETs or by some other external means."  
 ::= { keyEntry 5 }

ktStorageType OBJECT-TYPE  
SYNTAX StorageType  
MAX-ACCESS read-create  
STATUS current

DESCRIPTION

"The storage type for this row. Rows in this table which were created through an external process may have a storage type of readOnly or permanent. Entries which are permanent are expected to have at least one configurable column in the row, but which columns are in fact modifiable is implementation specific."  
 ::= { keyEntry 6 }

ktRowStatus OBJECT-TYPE  
SYNTAX RowStatus  
MAX-ACCESS read-create

```
STATUS      current
DESCRIPTION
    "This object indicates the conceptual status of this row.

    The value of this object has no effect on whether other
    objects in this conceptual row can be modified.

    If active, this object must remain active if it is referenced
    by a row in another table."
 ::= { keyEntry 7 }
```

```
--
--
-- Notification objects information
--
--
```

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```
ipsecPolicyNotificationVariables OBJECT IDENTIFIER ::=
    { ipsecPolicyNotificationObjects 1 }
```

```
ipsecPolicyNotifications OBJECT IDENTIFIER ::=
    { ipsecPolicyNotificationObjects 0 }
```

```
ipsecPolicyActionExecuted OBJECT-TYPE
    SYNTAX      VariablePointer
    MAX-ACCESS  accessible-for-notify
    STATUS      current
    DESCRIPTION
        "Points to the action instance that was executed that
        resulted in the notification being sent."
    ::= { ipsecPolicyNotificationVariables 1 }
```

```
ipsecPolicyIPInterfaceType OBJECT-TYPE
    SYNTAX      IpsecIPVersion
    MAX-ACCESS  accessible-for-notify
    STATUS      current
    DESCRIPTION
        "Contains the interface type for the interface that the packet
        which triggered the notification in question is passing
        through ."
    ::= { ipsecPolicyNotificationVariables 2 }
```



ipsecPolicyIPInterfaceAddress OBJECT-TYPE  
SYNTAX IpsecIPAddress  
MAX-ACCESS accessible-for-notify  
STATUS current  
DESCRIPTION  
"Contains the interface address for the interface that the packet which triggered the notification in question is passing through."  
 ::= { ipsecPolicyNotificationVariables 3 }

ipsecPolicyIPSourceType OBJECT-TYPE  
SYNTAX IpsecIPVersion  
MAX-ACCESS accessible-for-notify  
STATUS current  
DESCRIPTION  
"Contains the source address type of the packet which triggered the notification in question."  
 ::= { ipsecPolicyNotificationVariables 4 }

ipsecPolicyIPSourceAddress OBJECT-TYPE  
SYNTAX IpsecIPAddress  
MAX-ACCESS accessible-for-notify  
STATUS current

DESCRIPTION  
"Contains the source address of the packet which triggered the notification in question."  
 ::= { ipsecPolicyNotificationVariables 5 }

ipsecPolicyIPDestinationType OBJECT-TYPE  
SYNTAX IpsecIPVersion  
MAX-ACCESS accessible-for-notify  
STATUS current  
DESCRIPTION  
"Contains the destination address type of the packet which triggered the notification in question."  
 ::= { ipsecPolicyNotificationVariables 6 }

ipsecPolicyIPDestinationAddress OBJECT-TYPE  
SYNTAX IpsecIPAddress  
MAX-ACCESS accessible-for-notify  
STATUS current

DESCRIPTION

"Contains the destination address of the packet which triggered the notification in question."

::= { ipsecPolicyNotificationVariables 7 }

ipsecPolicyPacketDirection OBJECT-TYPE

SYNTAX INTEGER { inbound(1), outbound(2) }

MAX-ACCESS accessible-for-notify

STATUS current

DESCRIPTION

"Indicates if the packet which triggered the action in question was inbound or outbound."

::= { ipsecPolicyNotificationVariables 8 }

ipsecPolicyPacketPart OBJECT-TYPE

SYNTAX OCTET STRING

MAX-ACCESS accessible-for-notify

STATUS current

DESCRIPTION

"Is the front part of the packet that triggered this notification. The size is determined by the value of 'IpsecIPPacketLogging' or the size of the packet, whichever is smaller."

::= { ipsecPolicyNotificationVariables 9 }

ipsecPolicyActionNotification NOTIFICATION-TYPE

OBJECTS { ipsecPolicyActionExecuted, ipsecPolicyIPInterfaceType,  
ipsecPolicyIPInterfaceAddress,  
ipsecPolicyIPSourceType, ipsecPolicyIPSourceAddress,  
ipsecPolicyIPDestinationType,

ipsecPolicyIPDestinationAddress,  
ipsecPolicyPacketDirection }

STATUS current

DESCRIPTION

"Notification that an action was executed by a rule. Only actions with logging enabled will result in this notification getting sent. The objects sent must include the ipsecPolicyActionExecuted object which will indicate which action was executed within the scope of the rule. Additionally the ipsecPolicyIPSourceType, ipsecPolicyIPSourceAddress, ipsecPolicyIPDestinationType, and

ipsecPolicyIPDestinationAddress objects must be included to indicate the packet source and destination of the packet that triggered the action. Finally the ipsecPolicyIPInterfaceType, ipsecPolicyIPInterfaceAddress, and ipsecPolicyPacketDirection objects are included to indicate which interface the action was executed in association with and if the packet was inbound or outbound through the endpoint.

Note that compound actions with multiple executed subactions may result in multiple notifications being sent from a single rule execution."

```
::= { ipsecPolicyNotifications 1 }
```

ipsecPolicyPacketNotification NOTIFICATION-TYPE

```
OBJECTS { ipsecPolicyActionExecuted, ipsecPolicyIPInterfaceType,  
          ipsecPolicyIPInterfaceAddress,  
          ipsecPolicyIPSourceType, ipsecPolicyIPSourceAddress,  
          ipsecPolicyIPDestinationType,  
          ipsecPolicyIPDestinationAddress,  
          ipsecPolicyPacketDirection,  
          ipsecPolicyPacketPart }
```

STATUS current

DESCRIPTION

"Notification that a packet passed through an SA. Only SA's created by actions with packet logging enabled will result in this notification getting sent. The objects sent must include the ipsecPolicyActionExecuted which will indicate which action was executed within the scope of the rule. Additionally, the ipsecPolicyIPSourceType, ipsecPolicyIPSourceAddress, ipsecPolicyIPDestinationType, and ipsecPolicyIPDestinationAddress, objects must be included to indicate the packet source and destination of the packet that triggered the action. The ipsecPolicyIPInterfaceType, ipsecPolicyIPInterfaceAddress, and ipsecPolicyPacketDirection objects are included to indicate which endpoint the packet was associated with. Finally, ipsecPolicyPacketPart is

including for sending a variable sized part of the front of the packet depending on the value of IpsecIPPacketLogging."

```
::= { ipsecPolicyNotifications 2 }
```

```

--
--
-- Conformance information
--
--

ipsecPolicyCompliances OBJECT IDENTIFIER ::=
                                { ipsecPolicyConformanceObjects 1 }
ipsecPolicyGroups OBJECT IDENTIFIER ::=
                                { ipsecPolicyConformanceObjects 2 }

--
-- Compliance statements
--
--

ipsecPolicyRuleFilterCompliance MODULE-COMPLIANCE
    STATUS          current
    DESCRIPTION
        "The compliance statement for SNMP entities that include an
        IPsec MIB implementation with Endpoint, Rules, and filters
        support."
    MODULE -- This Module
        MANDATORY-GROUPS { ipsecPolicyEndpointGroup,
                            ipsecPolicyGroupContentsGroup,
                            ipsecPolicyRuleDefinitionGroup,
                            ipsecPolicyIPHeaderFilterGroup,
                            ipsecPolicyStaticFilterGroup }

    GROUP ipsecSystemPolicyNameGroup
    DESCRIPTION
        "This group is mandatory for IPsec Policy
        implementations which support a system policy group
        name."

    GROUP ipsecPolicyCompoundFilterGroup
    DESCRIPTION
        "This group is mandatory for IPsec Policy
        implementations which support compound filters."

    GROUP ipsecPolicyIPOffsetFilterGroup
    DESCRIPTION
        "This group is mandatory for IPsec Policy

```

implementations which support IP Offset filters. In general, this SHOULD be supported by a compliant IPsec Policy implementation."

GROUP ipsecPolicyTimeFilterGroup

DESCRIPTION

"This group is mandatory for IPsec Policy implementations which support time filters."

GROUP ipsecPolicyIpsHeaderFilterGroup

DESCRIPTION

"This group is mandatory for IPsec Policy implementations which support IPSO Header filters."

GROUP ipsecPolicyCredentialFilterGroup

DESCRIPTION

"This group is mandatory for IPsec Policy implementations which support Credential filters."

GROUP ipsecPolicyPeerIdFilterGroup

DESCRIPTION

"This group is mandatory for IPsec Policy implementations which support Peer Identity filters."

OBJECT peRowStatus

SYNTAX INTEGER {

active(1), createAndGo(4), destroy(6)

}

DESCRIPTION

"Support of the values notInService(2), notReady(3), and createAndWait(5) is not required."

OBJECT peLastChanged

MIN-ACCESS not-accessible

DESCRIPTION

"This object not required for compliance."

OBJECT pgcGroupComponentType

SYNTAX INTEGER {

rule(2)

}

DESCRIPTION

"Support of the value group(1) is only required for implementations which support Policy Groups within Policy Groups."

OBJECT pgcRowStatus

```
        active(1), createAndGo(4), destroy(6)
    }
DESCRIPTION
    "Support of the values notInService(2), notReady(3),
    and createAndWait(5) is not required."

OBJECT      pgcLastChanged
MIN-ACCESS  not-accessible
DESCRIPTION
    "This object not required for compliance."

OBJECT      pRuleRowStatus
SYNTAX      INTEGER {
        active(1), createAndGo(4), destroy(6)
    }
DESCRIPTION
    "Support of the values notInService(2), notReady(3),
    and createAndWait(5) is not required."

OBJECT      pRuleLastChanged
MIN-ACCESS  not-accessible
DESCRIPTION
    "This object not required for compliance."

OBJECT      cfRowStatus
SYNTAX      INTEGER {
        active(1), createAndGo(4), destroy(6)
    }
DESCRIPTION
    "Support of the values notInService(2), notReady(3),
    and createAndWait(5) is not required."

OBJECT      cfLastChanged
MIN-ACCESS  not-accessible
DESCRIPTION
    "This object not required for compliance."

OBJECT      ficRowStatus
SYNTAX      INTEGER {
        active(1), createAndGo(4), destroy(6)
```

```
}  
DESCRIPTION  
    "Support of the values notInService(2), notReady(3),  
    and createAndWait(5) is not required."
```

```
OBJECT      ficLastChanged  
MIN-ACCESS  not-accessible  
DESCRIPTION
```

```
"This object not required for compliance."
```

```
OBJECT      ihfRowStatus  
SYNTAX      INTEGER {  
    active(1), createAndGo(4), destroy(6)  
}
```

```
DESCRIPTION  
    "Support of the values notInService(2), notReady(3),  
    and createAndWait(5) is not required."
```

```
OBJECT      ihfLastChanged  
MIN-ACCESS  not-accessible  
DESCRIPTION  
    "This object not required for compliance."
```

```
OBJECT      iofRowStatus  
SYNTAX      INTEGER {  
    active(1), createAndGo(4), destroy(6)  
}
```

```
DESCRIPTION  
    "Support of the values notInService(2), notReady(3),  
    and createAndWait(5) is not required."
```

```
OBJECT      iofLastChanged  
MIN-ACCESS  not-accessible  
DESCRIPTION  
    "This object not required for compliance."
```

```
OBJECT      tfRowStatus  
SYNTAX      INTEGER {  
    active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION
```

"Support of the values notInService(2), notReady(3), and createAndWait(5) is not required."

OBJECT tfLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object not required for compliance."

OBJECT ipsohfRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3), and createAndWait(5) is not required."

OBJECT ipsohfLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object not required for compliance."

OBJECT crfRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3), and createAndWait(5) is not required."

OBJECT crfLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object not required for compliance."

OBJECT pifRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3), and createAndWait(5) is not required."



OBJECT pifLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object not required for compliance."

OBJECT icmsRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT icmsLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object not required for compliance."

::= { ipsecPolicyCompliances 1 }

ipsecPolicyIPsecCompliance MODULE-COMPLIANCE

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STATUS current  
DESCRIPTION  
"The compliance statement for SNMP entities that include an  
IPsec MIB implementation and supports IPsec actions."

MODULE -- This Module

MANDATORY-GROUPS { ipsecPolicyIpsecGroup,  
ipsecPolicyStaticActionGroup,  
ipsecPolicyPreconfiguredGroup }

GROUP ipsecPolicyCompoundActionGroup

DESCRIPTION  
"This group is mandatory for IPsec Policy  
implementations which support compound actions."

OBJECT caRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION

"Support of the values notInService(2), notReady(3), and createAndWait(5) is not required."

OBJECT caLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object is not required for compliance."

OBJECT aicaRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3), and createAndWait(5) is not required."

OBJECT aicaLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object is not required for compliance."

OBJECT ipsecActionRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3), and createAndWait(5) is not required."

OBJECT ipsecActionLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object is not required for compliance."

OBJECT ipsecProposalsRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3), and createAndWait(5) is not required."

OBJECT ipsecProposalsLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object is not required for compliance."

OBJECT ipsecTransformsRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT ipsecTransformsLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object is not required for compliance."

OBJECT sanRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT sanLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object is not required for compliance."

OBJECT ahtRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}

DESCRIPTION  
"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT ahtLastChanged

```

MIN-ACCESS not-accessible
DESCRIPTION
    "This object is not required for compliance."

OBJECT      esptRowStatus
SYNTAX      INTEGER {
                active(1), createAndGo(4), destroy(6)
            }
DESCRIPTION
    "Support of the values notInService(2), notReady(3),
    and createAndWait(5) is not required."

OBJECT      esptLastChanged
MIN-ACCESS  not-accessible
DESCRIPTION
    "This object is not required for compliance."

OBJECT      ipcompTransformRowStatus
SYNTAX      INTEGER {
                active(1), createAndGo(4), destroy(6)
            }
DESCRIPTION
    "Support of the values notInService(2), notReady(3),
    and createAndWait(5) is not required."

OBJECT      ipcompTransformLastChanged
MIN-ACCESS  not-accessible
DESCRIPTION
    "This object is not required for compliance."

OBJECT      peerIdRowStatus
SYNTAX      INTEGER {
                active(1), createAndGo(4), destroy(6)
            }
DESCRIPTION
    "Support of the values notInService(2), notReady(3),
    and createAndWait(5) is not required."

OBJECT      peerIdLastChanged
MIN-ACCESS  not-accessible
DESCRIPTION
    "This object is not required for compliance."

```

OBJECT icmsRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT icmsLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object not required for compliance."

OBJECT ktRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT ktLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object is not required for compliance."

OBJECT sapRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT sapLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object is not required for compliance."

::= { ipsecPolicyCompliances 2 }

ipsecPolicyIKECompliance MODULE-COMPLIANCE  
STATUS current  
DESCRIPTION  
"The compliance statement for SNMP entities that include an  
IPsec MIB implementation and supports IKE actions."  
MODULE -- This Module  
MANDATORY-GROUPS { ipsecPolicyIkeGroup }

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GROUP ipsecPolicyCompoundActionGroup

DESCRIPTION

"This group is mandatory for IPsec Policy implementations which support compound actions."

OBJECT caRowStatus

SYNTAX INTEGER {

active(1), createAndGo(4), destroy(6)

}

DESCRIPTION

"Support of the values notInService(2), notReady(3), and createAndWait(5) is not required."

OBJECT caLastChanged

MIN-ACCESS not-accessible

DESCRIPTION

"This object is not required for compliance."

OBJECT aicaRowStatus

SYNTAX INTEGER {

active(1), createAndGo(4), destroy(6)

}

DESCRIPTION

"Support of the values notInService(2), notReady(3), and createAndWait(5) is not required."

OBJECT aicaLastChanged

MIN-ACCESS not-accessible

DESCRIPTION

"This object is not required for compliance."

OBJECT ikeActionRowStatus

SYNTAX INTEGER {

active(1), createAndGo(4), destroy(6)

}

DESCRIPTION

"Support of the values notInService(2), notReady(3), and createAndWait(5) is not required."

OBJECT ikeActionLastChanged

MIN-ACCESS not-accessible

DESCRIPTION

"This object is not required for compliance."

OBJECT       ikeActionProposalRowStatus  
SYNTAX       INTEGER {  
              active(1), createAndGo(4), destroy(6)  
              }  
}

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DESCRIPTION

"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT       ikeActionProposalLastChanged

MIN-ACCESS   not-accessible

DESCRIPTION

"This object is not required for compliance."

OBJECT       ipProposalRowStatus

SYNTAX       INTEGER {

              active(1), createAndGo(4), destroy(6)

              }

DESCRIPTION

"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT       ipProposalLastChanged

MIN-ACCESS   not-accessible

DESCRIPTION

"This object is not required for compliance."

OBJECT       sanRowStatus

SYNTAX       INTEGER {

              active(1), createAndGo(4), destroy(6)

              }

DESCRIPTION

"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT       sanLastChanged

MIN-ACCESS   not-accessible

DESCRIPTION

"This object is not required for compliance."

OBJECT ikeIdRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT ikeIdLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object is not required for compliance."

OBJECT peerIdRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT peerIdLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object is not required for compliance."

OBJECT icmsRowStatus  
SYNTAX INTEGER {  
active(1), createAndGo(4), destroy(6)  
}  
DESCRIPTION  
"Support of the values notInService(2), notReady(3),  
and createAndWait(5) is not required."

OBJECT icmsLastChanged  
MIN-ACCESS not-accessible  
DESCRIPTION  
"This object not required for compliance."

OBJECT autoIkeRowStatus  
SYNTAX INTEGER {



```

        active(1), createAndGo(4), destroy(6)
    }
DESCRIPTION
    "Support of the values notInService(2), notReady(3),
    and createAndWait(5) is not required."

OBJECT      autoIkeLastChanged
MIN-ACCESS  not-accessible
DESCRIPTION
    "This object is not required for compliance."

OBJECT      ktRowStatus
SYNTAX      INTEGER {
        active(1), createAndGo(4), destroy(6)
    }
DESCRIPTION
    "Support of the values notInService(2), notReady(3),
    and createAndWait(5) is not required."

OBJECT      ktLastChanged

```

```

MIN-ACCESS  not-accessible
DESCRIPTION
    "This object is not required for compliance."

 ::= { ipsecPolicyCompliances 3 }

policyLoggingCompliance MODULE-COMPLIANCE
STATUS      current
DESCRIPTION
    "The compliance statement for SNMP entities that support
    sending notifications when actions are invoked."
MODULE -- This Module
MANDATORY-GROUPS { policyActionLoggingObjectGroup,
                    policyActionNotificationGroup }

 ::= { ipsecPolicyCompliances 4 }

--
--
-- Compliance Groups Definitions

```

```
--
--
-- Endpoint, Rule, Filter Compliance Groups
--

ipsecPolicyEndpointGroup OBJECT-GROUP
  OBJECTS {
    peGroupName, peLastChanged, peStorageType, peRowStatus
  }
  STATUS current
  DESCRIPTION
    "The IPsec Policy Endpoint Table Group."
  ::= { ipsecPolicyGroups 1 }
```

```
ipsecPolicyGroupContentsGroup OBJECT-GROUP
  OBJECTS {
    pgcGroupComponentType, pgcFilter, pgcGroupComponentName,
    pgcLastChanged, pgcStorageType, pgcRowStatus
  }
  STATUS current
  DESCRIPTION
    "The IPsec Policy Group Contents Table Group."
  ::= { ipsecPolicyGroups 2 }
```

```
ipsecSystemPolicyNameGroup OBJECT-GROUP
  OBJECTS {
```

```
    systemPolicyGroupName
  }
  STATUS current
  DESCRIPTION
    "The System Policy Group Name Group."
  ::= { ipsecPolicyGroups 3 }
```

```
ipsecPolicyRuleDefinitionGroup OBJECT-GROUP
  OBJECTS {
    pRuleDescription, pRuleFilter,
    pRuleFilterNegated, pRuleAction, pRuleAdminStatus,
    pRuleLastChanged, pRuleStorageType,
    pRuleRowStatus
  }
```

```
STATUS current
DESCRIPTION
    "The IPsec Policy Rule Definition Table Group."
 ::= { ipsecPolicyGroups 4 }
```

```
ipsecPolicyCompoundFilterGroup OBJECT-GROUP
OBJECTS {
    cfDescription, cfLogicType, cfLastChanged, cfStorageType,
    cfRowStatus, ficSubfilter, ficSubfilterIsNegated,
    ficLastChanged, ficStorageType, ficRowStatus
}
STATUS current
DESCRIPTION
    "The IPsec Policy Compound Filter Table and Filters in
    Compound Filters Table Group."
 ::= { ipsecPolicyGroups 5 }
```

```
ipsecPolicyStaticFilterGroup OBJECT-GROUP
    OBJECTS { trueFilter, ikePhase1Filter, ikePhase2Filter }
STATUS current
DESCRIPTION
    "The static filter group. Currently this is just a true
    filter."
 ::= { ipsecPolicyGroups 6 }
```

```
ipsecPolicyIPHeaderFilterGroup OBJECT-GROUP
OBJECTS {
    ihfType, ihfIPVersion, ihfSrcAddressBegin, ihfSrcAddressEnd,
    ihfDstAddressBegin, ihfDstAddressEnd, ihfSrcLowPort,
    ihfSrcHighPort, ihfDstLowPort, ihfDstHighPort, ihfProtocol,
    ihfIPv6FlowLabel, ihfLastChanged, ihfStorageType, ihfRowStatus
}
STATUS current
DESCRIPTION
```

```
    "The IPsec Policy IP Header Filter Table Group."
 ::= { ipsecPolicyGroups 7 }
```

```
ipsecPolicyIPOffsetFilterGroup OBJECT-GROUP
OBJECTS {
    iofOffset, iofType, iofNumber, iofValue,
    iofLastChanged, iofStorageType, iofRowStatus
```

```

}

STATUS current
DESCRIPTION
    "The IPsec Policy IP Offset Filter Table Group."
 ::= { ipsecPolicyGroups 8 }

ipsecPolicyTimeFilterGroup OBJECT-GROUP
OBJECTS {
    tfPeriodStart, tfPeriodEnd, tfMonthOfYearMask,
    tfDayOfMonthMask, tfDayOfWeekMask, tfTimeOfDayMaskStart,
    tfTimeOfDayMaskEnd, tfLastChanged, tfStorageType, tfRowStatus
}
STATUS current
DESCRIPTION
    "The IPsec Policy Time Filter Table Group."
 ::= { ipsecPolicyGroups 9 }

ipsecPolicyIpsHeaderFilterGroup OBJECT-GROUP
OBJECTS {
    ipsohfType, ipsohfClassification, ipsohfProtectionAuth,
    ipsohfLastChanged, ipsohfStorageType, ipsohfRowStatus
}
STATUS current
DESCRIPTION
    "The IPsec Policy IPSO Header Filter Table Group."
 ::= { ipsecPolicyGroups 10 }

ipsecPolicyCredentialFilterGroup OBJECT-GROUP
OBJECTS {
    crfCredentialType, crfMatchFieldName, crfMatchFieldValue,
    crfAcceptCredFrom, crfLastChanged, crfStorageType,
    crfRowStatus,

    icmsPolicyStatement, icmsCRL, icmsCRLDistPoint,
    icmsDistinguishedName, icmsMaxChainLength,
    icmsCRLRefreshFreq, icmsValue, icmsLastChanged,
    icmsStorageType, icmsRowStatus
}
STATUS current
DESCRIPTION

```

```

    "The IPsec Policy Credential Filter Table Group."
    ::= { ipsecPolicyGroups 11 }

ipsecPolicyPeerIdFilterGroup OBJECT-GROUP
  OBJECTS {
    pifIdentityType, pifIdentityValue,
    pifLastChanged, pifStorageType, pifRowStatus
  }
  STATUS current
  DESCRIPTION
    "The IPsec Policy Peer Identity Filter Table Group."
    ::= { ipsecPolicyGroups 12 }

--
-- action compliance groups
--

ipsecPolicyCompoundActionGroup OBJECT-GROUP
  OBJECTS {
    caExecutionStrategy, caLastChanged, caStorageType,
    caRowStatus, aicaSubActionName, aicaLastChanged,
    aicaStorageType, aicaRowStatus
  }
  STATUS current
  DESCRIPTION
    "The IPsec Policy Compound Action Table and Actions In
    Compound Action Table Group."
    ::= { ipsecPolicyGroups 13 }

ipsecPolicyPreconfiguredGroup OBJECT-GROUP
  OBJECTS {
    sapActionDescription,
    sapActionLifetimeSec, sapActionLifetimeKB, sapDoActionLogging,
    sapDoPacketLogging, sapDFHandling, sapActionType, sapAHSPI,
    sapAHTransformName, sapAHSharedSecretName, sapESPSPI,
    sapESPTTransformName, sapESPEncSharedSecretName,
    sapESPAuthSharedSecretName, sapIPCompSPI,
    sapIPCompTransformName, sapPeerGatewayIdName,
    sapLastChanged, sapStorageType, sapRowStatus,

    ahtMaxLifetimeSec, ahtMaxLifetimeKB, ahtAlgorithm,
    ahtReplayProtection, ahtReplayWindowSize, ahtLastChanged,
    ahtStorageType,

    esptMaxLifetimeSec, esptMaxLifetimeKB,
    esptCipherTransformId, esptCipherKeyLength,
    esptCipherKeyRounds, esptIntegrityAlgorithmId,
    esptReplayPrevention, esptReplayWindowSize,

```

```
    esptLastChanged, esptStorageType, esptRowStatus,

    ipcompDictionarySize, ipcompTransformMaxLifetimeSec,
    ipcompTransformMaxLifetimeKB, ipcompPrivateAlgorithm,
    ipcompTransformLastChanged, ipcompTransformStorageType,
    ipcompTransformRowStatus,

    peerIdValue, peerIdType, peerIdAddress, peerIdAddressType,
    peerIdKeyName, peerIdCredMngName, peerIdLastChanged,
    peerIdStorageType, peerIdRowStatus,

    icmsPolicyStatement, icmsCRL, icmsCRLDistPoint,
    icmsDistinguishedName, icmsMaxChainLength,
    icmsCRLRefreshFreq, icmsValue, icmsLastChanged,
    icmsStorageType, icmsRowStatus,

    ktRemoteID, ktKey, ktPasswordAlgorithm,
    ktLastChanged, ktStorageType, ktRowStatus
}
STATUS current
DESCRIPTION
    "This group is the set of objects that support preconfigured
    IPsec actions. These objects are from The Preconfigured
    Action Table. This group also includes objects from the
    shared tables: Peer Identity Table, Key Table, Credential
    Management Service Table and the AH, ESP, and IPComp
    Transform Tables."
 ::= { ipsecPolicyGroups 14 }

ipsecPolicyStaticActionGroup OBJECT-GROUP
OBJECTS {
    saDropAction, saAcceptAction, saRejectIKEAction,
    saDropActionLog, saAcceptActionLog, saRejectIKEActionLog
}
STATUS current
DESCRIPTION
    "The IPsec Policy Static Actions Group."
 ::= { ipsecPolicyGroups 15 }

ipsecPolicyIpsecGroup OBJECT-GROUP
OBJECTS {
    ipsecActionParametersName, ipsecActionProposalsName,
    ipsecUsePfs, ipsecVendorId, ipsecGroupId,
```

ipsecPeerGatewayIdName, ipsecUseIkeGroup, ipsecGranularity,  
ipsecMode, ipsecDFHandling, ipsecDoActionLogging,  
ipsecDoPacketLogging, ipsecActionLastChanged,  
ipsecActionStorageType, ipsecActionRowStatus,

ipsecProposalsTransformsName, ipsecProposalsLastChanged,  
ipsecProposalsStorageType, ipsecProposalsRowStatus,

ipsecTransformsTransformName, ipsecTransformsLastChanged,  
ipsecTransformsStorageType, ipsecTransformsRowStatus,

sanMinimumLifetimeSeconds, sanMinimumLifetimeKB,  
sanRefreshThresholdSeconds, sanRefreshThresholdKB,  
sanIdleDurationSeconds, sanLastChanged, sanStorageType,  
sanRowStatus,

ahtMaxLifetimeSec, ahtMaxLifetimeKB, ahtAlgorithm,  
ahtReplayProtection, ahtReplayWindowSize, ahtLastChanged,  
ahtStorageType, ahtRowStatus,

esptMaxLifetimeSec, esptMaxLifetimeKB,  
esptCipherTransformId, esptCipherKeyLength,  
esptCipherKeyRounds, esptIntegrityAlgorithmId,  
esptReplayPrevention, esptReplayWindowSize,  
esptLastChanged, esptStorageType, esptRowStatus,

ipcompDictionarySize, ipcompAlgorithm,  
ipcompTransformMaxLifetimeSec, ipcompTransformMaxLifetimeKB,  
ipcompPrivateAlgorithm, ipcompTransformLastChanged,  
ipcompTransformStorageType, ipcompTransformRowStatus,

peerIdValue, peerIdType, peerIdAddress, peerIdAddressType,  
peerIdKeyName, peerIdCredMngName, peerIdLastChanged,  
peerIdStorageType, peerIdRowStatus,

icmsPolicyStatement, icmsCRL, icmsCRLDistPoint,  
icmsDistinguishedName, icmsMaxChainLength,  
icmsCRLRefreshFreq, icmsValue, icmsLastChanged,  
icmsStorageType, icmsRowStatus,

ktRemoteID, ktKey, ktPasswordAlgorithm,

```

    ktLastChanged, ktStorageType, ktRowStatus
}
STATUS current
DESCRIPTION
    "This group is the set of objects that support IPsec
    actions. These objects are from The IPsec Policy IPsec
    Actions Table, The IPsec Proposal Table, and The IPsec
    Transform Table. This group also includes objects from the
    shared tables: Peer Identity Table, Key Table, Negotiation
    Parameters Table, Credential Management Service Table and the
    AH, ESP, and IPComp Transform Table."
 ::= { ipsecPolicyGroups 16 }

```

ipsecPolicyIkeGroup OBJECT-GROUP

OBJECTS {

```

    ikeActionParametersName, ikeThresholdDerivedKeys,
    ikeExchangeMode, ikeAgressiveModeGroupId, ikeIdentityType,
    ikeIdentityContext, ikePeerName, ikeActionVendorId,
    ikeActionProposalName, ikeActionDoActionLogging,
    ikeActionDoPacketLogging, ikeActionLastChanged,
    ikeActionStorageType, ikeActionRowStatus,

```

```

    ikeActionProposalLastChanged, ikeActionProposalStorageType,
    ikeActionProposalRowStatus,

```

```

    ipLifetimeDerivedKeys, ipCipherAlgorithm, ipCipherKeyLength,
    ipCipherKeyRounds, ipHashAlgorithm, ipPrfAlgorithm,
    ipVendorId, ipDhGroup, ipAuthenticationMethod,
    ipMaxLifetimeSeconds, ipMaxLifetimeKB,
    ipProposalLastChanged, ipProposalStorageType,
    ipProposalRowStatus,

```

```

    sanMinimumLifetimeSeconds, sanMinimumLifetimeKB,
    sanRefreshThresholdSeconds, sanRefreshThresholdKB,
    sanIdleDurationSeconds, sanLastChanged, sanStorageType,
    sanRowStatus,

```

```

    ikeIdValue, ikeIdKeyName, ikeIdCredMngName, ikeIdLastChanged,
    ikeIdStorageType, ikeIdRowStatus,

```

```

    autoIkeAction, autoIkeAddressType, autoIkeSourceAddress,
    autoIkeSourcePort, autoIkeDestAddress, autoIkeDestPort,

```



```

    autoIkeProtocol, autoIkeLastChanged, autoIkeStorageType,
    autoIkeRowStatus,

    peerIdValue, peerIdType, peerIdAddress, peerIdAddressType,
    peerIdKeyName, peerIdCredMngName, peerIdLastChanged,
    peerIdStorageType, peerIdRowStatus,

    icmsPolicyStatement, icmsCRL, icmsCRLDistPoint,
    icmsDistinguishedName, icmsMaxChainLength,
    icmsCRLRefreshFreq, icmsValue, icmsLastChanged,
    icmsStorageType, icmsRowStatus,

    ktRemoteID, ktKey, ktPasswordAlgorithm,
    ktLastChanged, ktStorageType, ktRowStatus
}
STATUS current
DESCRIPTION
    "This group is the set of objects that support IKE
    actions. These objects are from The IPsec Policy IKE Action

```

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```

    Table, The IKE Action Proposals Table, The IKE Proposal
    Table, The autostart IKE Table and The IKE Identity Table
    . This group also includes objects from the shared tables:
    Peer Identity Table, Credential Management Service Table and
    Negotiation Parameters Table."
 ::= { ipsecPolicyGroups 17 }

policyActionLoggingObjectGroup OBJECT-GROUP
OBJECTS {
    ipsecPolicyActionExecuted,
    ipsecPolicyIPInterfaceType,    ipsecPolicyIPInterfaceAddress,
    ipsecPolicyIPSourceType,      ipsecPolicyIPSourceAddress,
    ipsecPolicyIPDestinationType, ipsecPolicyIPDestinationAddress,
    ipsecPolicyPacketDirection,   ipsecPolicyPacketPart
}
STATUS current
DESCRIPTION
    "Notification objects."
 ::= { ipsecPolicyGroups 18 }

policyActionNotificationGroup NOTIFICATION-GROUP
NOTIFICATIONS {

```

```
        ipsecPolicyActionNotification,
        ipsecPolicyPacketNotification
    }
    STATUS current
    DESCRIPTION
        "Notifications."
    ::= { ipsecPolicyGroups 19 }
```

END

## [6.](#) Security Considerations

### [6.1.](#) Introduction

This document defines an SNMP MIB used to configure IPsec services. Since IPsec provides security services it is important that the IPsec configuration data be at least as protected as the IPsec provided security service. There are two threats you need to thwart when configuring IPsec devices.

- 1) To make sure that only the official administrators are allowed to configure a device, only authenticated administrators should be allowed to do device configuration.
- 2) unfriendly parties should not be able to read configuration data

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while the data is in network transit. Any knowledge about a device's configuration could help an unfriendly party compromise that device.

SNMP version 3 provide security services. Therefore, when configuring data in the IPSEC-POLICY-MIB, you SHOULD use SNMP version 3. The rest of this discussion assumes the use of SNMPv3.

SNMPv3 has security services built into the protocol. This is a real strength, because it allows administrators the ability to load new IPsec configuration on a device and keep the conversation private and authenticated under the protection of SNMPv3 before any IPsec protections are available. Once you do establish some IPsec configuration on your device, it would be possible to set up IPsec SAs to then also provide security and integrity services to the

configuration conversation. This may seem redundant at first, but will be shown to have a use for added privacy protection below.

## 6.2. Protecting against in-authentic access

The current SNMPv3 User Security Model provides for key based user authentication. Typically, keys are derived from passwords (but are not required to be), and the keys are then used in HMAC algorithms (currently MD5 and SHA-1 HMACs are defined) to authenticate all SNMP data. Each SNMP device keeps a (configured) list of users and keys. Under SNMPv3 user keys may be updated as often as an administrator cares to have users enter new passwords. But Perfect Forward Secrecy for user keys is not yet provided by standards track documents, although [RFC2786](#) defines an experimental method of doing so.

SNMPv3 also provides a View Based Access Model. Different users may be given different levels of access (read-write, read-only...) to lists of SNMP objects or subtrees. This view based access control provides fine levels of access control granularity, making it possible to allow some administrators to have control over certain sections of this MIB will prohibiting them from accessing and/or modifying other sections of the MIB. This may be useful if local policy administrators should be given rights to add or amend certain policies, but should not be given rights to change, for example, corporate level policies.

## 6.3. Protecting against involuntary disclosure

While sending IPsec configuration data to a PEP, there are a few critical parameters which MUST NOT be observed by third parties. These include IKE Pre-Shared Keys and possibly the private key of a public/private key pair for use in a PKI. Were either of those parameters to be known to a third party, they could then impersonate

your device to other IKE peers. Aside from those critical parameters, policy administrators have an interest in not divulging any of their policy configuration. Any knowledge about a device's configuration could help an unfriendly party compromise that device. SNMPv3 offers privacy security services, but at the time this document was written, it only supported the DES algorithm for privacy services. Support for other (stronger) crypto algorithms was in the works and may be done as you read this. Policy

administrators SHOULD use a privacy security service to configure their IPsec policy which is at least as strong as the desired IPsec policy. It is unwise to configure IPsec parameters implementing 3DES algorithms while protecting that conversation with single DES.

#### 6.4. Bootstrapping your configuration

Hopefully vendors will not ship new products with a default SNMPv3 user/password pair, but it is possible. Most SNMPv3 distributions should hopefully require an out-of-band initialization over a trusted medium, such as a local console connection.

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[Appendix A.](#) MIB's Model Conformance:

The following table shows the IPsec Policy MIB's support of the the IPsec Policy Model's conformance objects. It lists the conformance object name and section number, its requirement level (MAY,MUST,etc.), whether the MIB supports it (yes,no,part=partial), and a short indication of where/how the MIB supports it.

Many of the "partially" supported objects are actually "partial" only because the MIB actually allows greater flexibility and reuse by not enforcing relational constraints. These are noted in the



table below with a "Sup." field of "part" and a note like "1..1 pol.RuleDef.->pol.Grp.Cont. not forced" (for example), which indicates that the mib does not enforce a strict 1 to 1 mapping and allows a greater number of references within it's tables.

Table of the IPsec Policy MIB's support of the IPsec Policy Model's objects

Sect.	Objects	Req.	Sup.
	'a..b' indicates cardinality range		

Sect.	Objects	Req.	Sup.
	object names may be abbreviated		
e.g.	IPsec Model Object		
	IPsec MIB Supports With...		
4	"Policy Classes"		
4.1	"Class IPsecPolicyGroup"	MUST	yes
	policyGroupContentsTbl		
4.2	"Class SARule"	MUST	yes
	policyRuleDefinitionTbl::pRuleAction		
4.2.1	"Property PolicyRuleName"	MAY	yes

	policyRuleDefinitionTbl::pRuleName		
4.2.1	"Property Enabled"	MUST	yes
	policyRuleDefinitionTbl::pRuleEnabled		
4.2.1	"Property ConditionListType"	MUST	yes
	conditionTbl::condtionFilterListType		
4.2.1	"Property RuleUsage"	MAY	yes
	policyRuleDefinitionTbl::pruledescription		
4.2.1	"Property Mandatory"	MAY	yes
	always true implicitly		
4.2.1	"Property SequencedActions"	MUST	yes
	always mandatory implicitly		

Sect.	Objects	Req.	Sup.
4.2.1	"Property PolicyRoles"	MAY	NA
	not used in device level model		
4.2.1	"Property PolicyDecisionStrategy"	MAY	yes
	always First Matching implicitly		
4.2.2	"Property ExecutionStrategy"	MUST	yes
	compoundActionsTbl::caExecutionStrategy		
4.2.3	"Property LimitNegotiation"	MAY	yes
	policyRuleDef.Tbl::pRuleLimitNegot.		

4.3	"Class IKERule"	MUST	yes
	ikeActionTbl		
4.3.1	"Property IdentityContexts"	MAY	yes
	ikeRuleId.ContextsTbl::iricId.Context		
4.4	"Class IPsecRuffle"	MUST	yes
	ipsecActionTbl		
4.5	"Assoc. Class IPsecPolicyForEndpoint"	MAY	yes
	policyEndpointToGroupTbl::p.GroupName		
4.5.1	"Reference Antecedent"	MUST	yes
	0..n policyGroup->policyEndpoints		
4.5.2	"Reference Dependent"	MUST	yes
	0..1 policyEndpoint->policyGroup		
4.6	"Assoc. Class IPsecPolicyForSystem"	MAY	yes
	systemPolicyGroupName		

Sect.	Objects	Req.	Sup.
4.6.1	"Reference Antecedent"	MUST	yes
	0..1 policyGroup->systemPolicyGroupName		
4.6.2	"Reference Dependent"	MUST	yes
	1..1 systemPolicyGroupName->policyGroup		

4.7	"Aggreg. Class SARuleInPolicyGroup"	MUST	yes	
	policyGrp.Cont.Tbl::pgcGrp.ComponentName			
4.7.1	"Property Priority"	SHOULD	yes	
	policyGroupContentsTbl::pgcPriority			
4.7.2	"Reference GroupComponent"	MUST	part	
	1..1 pol.RuleDef.->pol.Grp.Cont. not forced			
4.7.3	"Reference PartComponent"	MUST	yes	
	0..n pol.Grp.Cont.table->pol.RuleDef.Tbl			
4.8	"Aggregation Class SAConditionInRule"	MUST	yes	
	policyRuleDefinitionTbl::pRuleName			
4.8.1	"Property GroupNumber"	SHOULD	part	
	associated with Octet String, not integer			
4.8.1	"Property ConditionNegated"	SHOULD	yes	
	filtersInConditionTbl::ficFilterIsNegated			
4.8.2	"Reference GroupComponent"	MUST	yes	
	0..n cond.Tbl->policyRuleDefinitionTbl			
4.8.3	"Reference PartComponent"	MUST	part	
	1..n pol.RuleDef.->cond.InRule not forced			

Sect.		Objects	Req.	Sup.	
4.9		"Aggreg. Class PolicyActionInSARule"	MUST	yes	

	policyRuleDef.Tbl::pRuleAction		
4.9.1	"Reference GroupComponent"	MUST	yes
	0..n actions->policyRuleDefinitionTbl		
4.9.2	"Reference PartComponent"	MUST	yes
	1..n policyRuleDef.Tbl->pRuleAction		
4.9.3	"Property ActionOrder"	SHOULD	yes
	actionsInComp.ActionsEntry::aicaPriority		
5	"Condition and Filter Classes"		
5.1	"Class SACondition"	MUST	yes
	conditionTbl		
5.2	"Class IPHeadersFilter"	SHOULD	yes
	filterTbl::ipfType = addressOrNetwork		
5.3	"Class CredentialFilterEntry"	MAY	yes
	credentialFilterTbl		
5.3.1	"Property MatchFieldName"	MUST	yes
	credentialFilterTbl::crfMatchFieldName		
5.3.2	"Property MatchFieldValue"	MUST	yes
	credentialFilterTbl::crfMatchFieldValue		
5.3.3	"Property CredentialType"	MUST	yes
	credentialFilterTbl::crfCredentialType		
5.4	"Class IPSOFilterEntry"	MAY	yes

Sect.	Objects	Req.	Sup.
	filterTbl::ipfType = classification/authority		
5.4.1	"Property MatchConditionType"	MUST	yes
	filterTbl::ipfType		
5.4.2	"Property MatchConditionValue"	MUST	yes
	filterTbl::ipfClass.Level/ipfAuthority		
5.5	"Class PeerIDPayloadFilterEntry"	MAY	yes
	peerIdentityFilterTbl		
5.5.1	"Property MatchIdentityType"	MUST	yes
	peerIdentityFilterTbl::pifIdentityType		
5.5.2	"Property MatchIdentityValue"	MUST	yes
	peerIdentityFilterTbl::pifIdentityValue		
5.6	"Assoc. Class FilterOfSACondition"	SHOULD	yes
	filtersInCompoundFilterTbl::ficSubfilter		
5.6.1	"Reference Antecedent"	MUST	yes
	1..1 compoundFilter->filter list		
5.6.2	"Reference Dependent"	MUST	yes
	0..n filter Tbls->Compound Filter		
5.7	"Assoc. Class AcceptCredentialFrom"	MAY	yes
	credentialFilterTbl::crfAcceptCredFrom		
5.7.1	"Reference Antecedent"	MUST	yes
	0..n condition->Cred.Mng.Service		
5.7.2	"Reference Dependent"	MUST	yes

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Sect.	Objects	Req.	Sup.
	0..n Cred.Mng.Service->condition		
6	"Action Classes"		
6.1	"Class SAAction"	MUST	yes
	policyRuleDefinitionTbl::pRuleAction		
6.1.1	"Property DoActionLogging"	MAY	yes
	actions all have action logging ability		
6.1.2	"Property DoPacketLogging"	MAY	yes
	actions all have packet logging ability		
6.2	"Class SAStaticAction"	MUST	yes
	saStaticActions		
6.2.1	"Property LifetimeSeconds"	MUST	part
	all support, static only with timeFilterTbl.		
6.3	"Class IPsecBypassAction"	SHOULD	yes
	saAcceptAction		
6.4	"Class IPsecDiscardAction"	SHOULD	yes
	saDropAction		
6.5	"Class IKERjectAction"	MAY	yes
	saRejectIKEAction		
6.6	"Class PreconfiguredSAAction"	MUST	yes

	saPreconfiguredActionTbl		
6.6.1	"Property LifetimeKilobytes"	MUST	yes
	saPrecon.ActionTbl::sapActionLifetimeKB		

Sect.	Objects	Req.	Sup.
6.7	"Class PreconfiguredTransportAction"	MUST	yes
	saPrecon.ActionTbl::sapActionType		
6.8	"Class PreconfiguredTunnelAction"	MUST	yes
	saPrecon.ActionTbl::sapActionType		
6.8.1	"Property DFHandling"	MUST	yes
	saPreconfiguredActionTbl::sapDFHandling		
6.9	"Class SANegotiationAction"	MUST	yes
	ikeActionTbl		
6.10	"Class IKENegotiationAction"	MUST	yes
	ikeActionTbl		
6.10.1	"Property MinLifetimeSeconds"	MAY	yes
	saNegot.Param.Tbl::sanMin.LifetimeSeconds		
6.10.2	"Property MinLifetimeKilobytes"	MAY	yes
	saNegot.Param.Tbl::sanMin.LifetimeKB		
6.10.3	"Property IdleDurationSeconds"	MAY	yes



	saNegot.Tbl::sanIdleDurrurationSeconds		
6.11	"Class IPsecAction"	MUST	yes
	ipsecActionTbl		
6.11.1	"Property UsePFS"	MUST	yes
	ipsecActionTbl::ipesecUsePFS		
6.11.2	"Property UseIKEGroup"	MAY	yes
	ipsecActionTbl::ipesecUseIkeGroup		

Sect.	Objects	Req.	Sup.
6.11.3	"Property GroupId"	MUST	yes
	ipsecActionTbl::ipesecGroudId		
6.11.4	"Property Granularity"	SHOULD	yes
	ipsecActionTbl::ipesecGranularity		
6.11.5	"Property VendorID"	MAY	yes
	ipsecActionTbl::vendorID		
6.12	"Class IPsecTransportAction"	MUST	yes
	ipsecActionTbl::ipesecMode		
6.13	"Class IPsecTunnelAction"	MUST	yes
	ipsecActionTbl::ipesecMode		
6.13.1	"Property DFHandling"	MUST	yes
	ipsecActionTbl::ipesecDFHandling		

6.14	"Class IKEAction"	MUST	yes
	ikeActionTbl		
6.14.1	"Property ExchangeMode"	MUST	yes
	ikeActionTbl::ikeExchangeMode		
6.14.2	"Property UseIKEIdentityType"	MUST	yes
	ikeIdentityTbl::ikeIdType		
6.14.3	"Property VendorID"	MAY	yes
	ikeActionTbl::ipVendorID		
6.14.4	"Property AggressiveModeGroupId"	MAY	yes
	ikeProposalTbl::ipDhGroup		

Sect.	Objects	Req.	Sup.
6.15	"Class PeerGateway"	MUST	yes
	peerIdentityTbl		
6.15.1	"Property Name"	SHOULD	yes
	peerIdentityTbl::peerIdName		
6.15.2	"Property PeerIdentityType"	MUST	yes
	peerIdentityTbl::peerIdType		
6.15.3	"Property PeerIdentity"	MUST	yes
	peerIdentityTbl::peerIdValue		

6.16	"Assoc. Class PeerGatewayForTunnel"	MUST	yes
	peerIdentityTbl		
6.16.1	"Reference Antecedent"	MUST	yes
	0..n ipsec(tunnel)Actions->peerGateway		
6.16.2	"Reference Dependent"	MUST	yes
	0..n peerGateway->ipsec(tunnel)Action		
6.16.3	"Property SequenceNumber"	SHOULD	yes
	filtersInCompoundFilterTbl::ficPriority		
6.17	"Aggregation Class ContainedProposal"	MUST	yes
	ipsecProposalTbl & ikeActionProposalTbl		
6.17.1	"Reference GroupComponent"	MUST	yes
	0..n proposal->action		
6.17.2	"Reference PartComponent"	MUST	part
	1..n action->proposal not forced.		

Sect.	Objects	Req.	Sup.
6.17.3	"Property SequenceNumber"	MUST	yes
	ispec/ikeAction proposal(s)Priority		
6.18	"Assoc. Class HostedPeerGatewayInformation"	MAY	part
	implicit connection peer gateway->system		
6.18.1	"Reference Antecedent"	MUST	no

6.18.2	"Reference Dependent"	MUST	no
6.19	"Assoc. Class TransformOfPreconfig.Action"	MUST	yes
	saPreconfiguredActionTbl		
6.19.1	"Reference Antecedent"	MUST	yes
	2,4,6 preconfiguredAction-> in/out 1-3		
6.19.2	"Reference Dependent"	MUST	yes
	0..n transform->preconfiguredAction		
6.19.3	"Property SPI"	MUST	yes
	saPrecon.ActionTbl::AH/ESP/IPComp-SPI		
6.19.4	"Property Direction"	MUST	yes
	saPreconfiguredActionTbl::sapSADirection		
6.20	"Assoc. Class PeerGtwy.ForPrecon.Tunnel"	MUST	yes
	saPrecon.ActionTbl::sapPeerGtwy.IdName		
6.20.1	"Reference Antecedent"	MUST	yes
	0..n preconfiguredActon->peerGateway		
6.20.2	"Reference Dependent"	MUST	yes
	0..n peerGateway->precon.Action implicit		

Sect.	Objects	Req.	Sup.
7	"Proposal and Transform Classes"		

7.1	"Abstract Class SProposal"	MUST	yes	
+-----+-----+-----+-----+-----+				
	ipsec/ike/precon./static action objects			
+-----+-----+-----+-----+-----+				
7.1.1	"Property Name"	SHOULD	yes	
+-----+-----+-----+-----+-----+				
	ipsec/ike/precon.-ActionProposalName			
+-----+-----+-----+-----+-----+				
7.2	"Class IKEProposal"	MUST	yes	
+-----+-----+-----+-----+-----+				
	ikeActionProposalTbl			
+-----+-----+-----+-----+-----+				
7.2.1	"Property CipherAlgo."	MUST	yes	
+-----+-----+-----+-----+-----+				
	ikeActionProp.Tbl::ipCipherAlgo.			
+-----+-----+-----+-----+-----+				
7.2.2	"Property HashAlgo."	MUST	yes	
+-----+-----+-----+-----+-----+				
	ikeActionProp.Tbl::ipHashAlgo.			
+-----+-----+-----+-----+-----+				
7.2.3	"Property PRFAlgo."	MAY	yes	
+-----+-----+-----+-----+-----+				
	ikeActionProp.Tbl::ipPrfAlgo.			
+-----+-----+-----+-----+-----+				
7.2.4	"Property GroupId"	MUST	yes	
+-----+-----+-----+-----+-----+				
	ikeActionProp.Tbl::ipDhGroup			
+-----+-----+-----+-----+-----+				
7.2.5	"Property AuthenticationMethod"	MUST	yes	
+-----+-----+-----+-----+-----+				
	ikeActionProp.Tbl::ipAuthenticationMethod			
+-----+-----+-----+-----+-----+				
7.2.6	"Property MaxLifetimeSeconds"	MUST	yes	
+-----+-----+-----+-----+-----+				
	ikeActionProp.Tbl::ipMaxLifetimeseconds			
+-----+-----+-----+-----+-----+				
7.2.7	"Property MaxLifetimeKilobytes"	MUST	yes	
+-----+-----+-----+-----+-----+				
	ikeActionProp.Tbl::ipMaxLifetimeKB			
+-----+-----+-----+-----+-----+				
7.2.8	"Property VendorID"	MAY	yes	
+-----+-----+-----+-----+-----+				

Sect.	Objects	Req.	Sup.
	ikeActionProp.Tbl::ipVendorId		
7.3	"Class IPsecProposal"	MUST	yes
	ipsecProposalTbl		
7.4	"Abstract Class SATransform"	MUST	yes
	AH/ESP/IPComp-TransformTbl		
7.4.1	"Property TransformName"	SHOULD	yes
	ipsecProp.Tbl::ipsecProp.TransformName		
7.4.2	"Property VendorID"	MAY	yes
	ext. tables can add vendor transforms		
7.4.3	"Property MaxLifetimeSeconds"	MUST	yes
	saNegot.Param.Tbl::sanMin.LifetimeSeconds		
7.4.4	"Property MaxLifetimeKilobytes"	MUST	yes
	saNegot.Param.Tbl::sanMin.LifetimeKB		
7.5	"Class AHTransform"	MUST	yes
	ahTransformTbl		
7.5.1	"Property AHTransformId"	MUST	yes
	ahTransformTbl::ahtName		
7.5.2	"Property UseReplayPrevention"	MAY	yes
	ahTransformTbl::ahtReplayProtection		
7.5.3	"Property ReplayPreventionWindowSize"	MAY	yes
	ahTransformTbl::ahtReplayWindowSize		
7.6	"Class ESPTransform"	MUST	yes

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Sect.	Objects	Req.	Sup.
	espTransformTbl		
7.6.1	"Property IntegrityTransformId"	MUST	yes
	espTransformTbl::esptIntegrityTransformId		
7.6.2	"Property CipherTransformId"	MUST	yes
	espTransformTbl::esptCipherTransformId		
7.6.3	"Property CipherKeyLength"	MAY	yes
	espTransformTbl::esptCipherKeyLength		
7.6.4	"Property CipherKeyRounds"	MAY	yes
	espTransformTbl::esptCipherKeyRounds		
7.6.5	"Property UseReplayPrevention"	MAY	yes
	espTransformTbl::esptReplayPrevention		
7.6.6	"Property ReplayPreventionWindowSize"	MAY	yes
	espTransformTbl::esptReplayWindowSize		
7.7	"Class IPCOMPTransform"	MAY	yes
	ipcompTransformTbl		
7.7.1	"Property Algo."	MUST	yes
	ipcompTransformTbl::ipcompAlgo.		
7.7.2	"Property DictionarySize"	MAY	yes
	ipcompTransformTbl::ipcompDictionarySize		
7.7.3	"Property PrivateAlgo."	MAY	yes

	ipcompTrans.Tbl::ipcompPrivateAlgo.		
7.8	"Assoc. Class SProposalInSystem"	MAY	part

Sect.	Objects	Req.	Sup.
	implicit, MIB proposals=props. in system.		
7.8.1	"Reference Antecedent"	MUST	yes
	1..1 SProposal->System		
7.8.2	"Reference Dependent"	MUST	yes
	0..n System->SProposal		
7.9	"Aggregation Class ContainedTransform"	MUST	yes
	ipsecProp.Tbl::ipsecProp.TransformName		
7.9.1	"Reference GroupComponent"	MUST	yes
	0..n SATransforms->IPsecProposal		
7.9.2	"Reference PartComponent"	MUST	yes
	1..n IPsecProposal->SATransform		
7.9.3	"Property SequenceNumber"	MUST	yes
	ipsecProposalTbl::ipsecProposalsPriority		
7.10	"Assoc. Class SATransformInSystem"	MAY	part
	MIB transforms=transforms in that system		
7.10.1	"Reference Antecedent"	MUST	yes



	1..1 SATransform->SystemInstance			
7.10.2	"Reference Dependent"	MUST	yes	
	0..n SystemInstance->SATransform			
8	"IKE Service and Identity Classes"			
8.1	"Class IKEService"	MAY	yes	
	implicit			

Sect.	Objects	Req.	Sup.
8.2	"Class PeerIdentityTbl"	MAY	yes
	peerIdentityTbl		
8.2.1	"Property Name"	SHOULD	no
8.3	"Class PeerIdentityEntry"	MAY	yes
	peerIdentityTbl::PeerIdentityEntry		
8.3.1	"Property PeerIdentity"	SHOULD	yes
	peerIdentityTbl::peerIdValue		
8.3.2	"Property PeerIdentityType"	SHOULD	yes
	peerIdentityTbl::peerIdType		
8.3.3	"Property PeerAddress"	SHOULD	yes
	peerIdentityTbl::peerIdAddress		
8.3.4	"Property PeerAddressType"	SHOULD	yes
	peerIdentityTbl::peerIdAddressType		

8.4	"Class AutostartIKEConfiguration"	MAY	yes	
	autostartIkeTbl			
8.5	"Class AutostartIKESetting"	MAY	yes	
	AutostartIkeEntry			
8.5.1	"Property Phase1Onle"	MAY	part	
	autostarkIke references both phase I/II			
8.5.2	"Property AddressType"	SHOULD	yes	
	autostartIkeTbl::autoIkeAddressType			
8.5.3	"Property SourceAddress"	MUST	yes	

Sect.	Objects	Req.	Sup.	
	autostartIkeTbl::autoIkeSourceAddress			
8.5.4	"Property SourcePort"	MUST	yes	
	autostartIkeTbl::autoIkeSourcePort			
8.5.5	"Property DestinationAddress"	MUST	yes	
	autostartIkeTbl::autoIkeDestAddress			
8.5.6	"Property DestinationPort"	MUST	yes	
	autostartIkeTbl::autoIkeDestPort			
8.5.7	"Property Protocol"	MUST	yes	
	autostartIkeTbl::autoIkeProtocol			

8.6	"Class IKEIdentity"	MAY	yes	
+-----+	+-----+	+-----+	+-----+	+-----+
	ikeIdentityTbl			
+-----+	+-----+	+-----+	+-----+	+-----+
8.6.1	"Property IdentityType"	MUST	yes	
+-----+	+-----+	+-----+	+-----+	+-----+
	ikeIdentityTbl::ikeIdentityType			
+-----+	+-----+	+-----+	+-----+	+-----+
8.6.2	"Property IdentityValue"	MUST	yes	
+-----+	+-----+	+-----+	+-----+	+-----+
	ikeIdentityTbl::ikeIdentityIdString			
+-----+	+-----+	+-----+	+-----+	+-----+
8.6.3	"Property IdentityContexts"	MAY	yes	
+-----+	+-----+	+-----+	+-----+	+-----+
	ikeIdentityContext			
+-----+	+-----+	+-----+	+-----+	+-----+
8.7	"Assoc. Class HostedPeerIdentityTbl"	MAY	part	
+-----+	+-----+	+-----+	+-----+	+-----+
	MIB peerIdTbl=peerIdTbl on that system			
+-----+	+-----+	+-----+	+-----+	+-----+
8.7.1	"Reference Antecedent"	MUST	yes	
+-----+	+-----+	+-----+	+-----+	+-----+
	1..1 peerIdTbl->System			
+-----+	+-----+	+-----+	+-----+	+-----+
8.7.2	"Reference Dependent"	MUST	yes	
+-----+	+-----+	+-----+	+-----+	+-----+

Sect.	Objects	Req.	Sup.	
+-----+	+-----+	+-----+	+-----+	+-----+
	0..n System->peerIdTbl			
+-----+	+-----+	+-----+	+-----+	+-----+
8.8	"Aggregation Class PeerIdentityMember"	MAY	part	
+-----+	+-----+	+-----+	+-----+	+-----+
	PeerIdentityEntries=peerIdentityTbl rows			
+-----+	+-----+	+-----+	+-----+	+-----+
8.8.1	"Reference Collection"	MUST	yes	
+-----+	+-----+	+-----+	+-----+	+-----+
	1..1 ->PeerIdentityTbl			
+-----+	+-----+	+-----+	+-----+	+-----+
8.8.2	"Reference Member"	MUST	yes	

	0..n ->PeerIdentityEntry			
8.9	"Assoc. Class IKEServicePeerGateway"	MAY	yes	
	ikeActionTbl::ikePeerGatewayName			
8.9.1	"Reference Antecedent"	MUST	yes	
	0..n IKEService->PeerGateway			
8.9.2	"Reference Dependent"	MUST	yes	
	0..n PeerGateway->IKEService			
8.10	"Assoc. Class IKEServicePeerIdentityTbl"	MAY	yes	
	peerIdTbl			
8.10.1	"Reference Antecedent"	MUST	yes	
	0..n IKEService->peerIDTbl			
8.10.2	"Reference Dependent"	MUST	yes	
	0..n peerIDTbl->IKEService			
8.11	"Assoc. Class IKEAutostartSetting"	MAY	part	
	implicit, IKEService uses autostartIkeTbl			
8.11.1	"Reference Element"	MUST	yes	

Sect.	Objects	Req.	Sup.
	0..n autostarkIkeEntry->IKEService		
8.11.2	"Reference Setting"	MUST	no

	0..n IKEService->autostartIkeEntry		
8.12	"Aggreg. Class AutostartIKESettingContext"	MAY	part
	1< entries in autstartIkeTbl,Comp. Actions		
8.12.1	"Reference Context"	MUST	part
	see above		
8.12.2	"Reference Setting"	MUST	part
	see above		
8.12.3	"Property SequenceNumber"	SHOULD	yes
	autostartIkeTbl::autoIkePriority		
8.13	"Assoc. Class IKEServiceForEndpoint"	MAY	no
	associates IKEService to Endpoint		
8.13.1	"Reference Antecedent"	MUST	no
8.13.2	"Reference Dependent"	MUST	no
8.14	"Assoc. Class IKEAutostartConfiguration"	MAY	part
	IKEService->autostartIkeTbl on that system		
8.14.1	"Reference Antecedent"	MUST	no
	0..n IKEService->autostartIKEconifig.		
8.14.2	"Reference Dependent"	MUST	NA
	0..n autostartIKEConfiguration->IKEService		
8.14.3	"Property Active"	SHOULD	no

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8.15	"Assoc. Class IKEUsesCred.Mng.Service"	MAY	yes
	CredentialFilterTbl::crfAcctepCredFrom		
8.15.1	"Reference Antecedent"	MUST	yes
	0..n IKEService->Cred.Mng.Service		
8.15.2	"Reference Dependent"	MUST	yes
	0..n Cred.ManagementService->IKEService		
8.16	"Assoc. Class EndpointHasLocalIKEId."	MAY	yes
	ikeIdentityTbl		
8.16.1	"Reference Antecedent"	MUST	part
	0..1 IkeIdentity->IPProto.Endpoint not forced		
8.16.2	"Reference Dependent"	MUST	yes
	0..n IPProtocolEndpoint->IkeIdentity		
8.17	"Assoc. Class Collect.HasLocalIKEId."	MAY	part
	1< entries in IKEIdentityTbl, not grouped		
8.17.1	"Reference Antecedent"	MUST	part
	0..1 IkeIdentity->endpointCollection not forced		
8.17.2	"Reference Dependent"	MUST	yes
	0..n endpoints->IkeIdentity		
8.18	"Assoc. Class IKEIdentitiesCredential"	MAY	yes
	associates IKEIdentities to credentials		
8.18.1	"Reference Antecedent"	MUST	yes
	0..n IKEIdentity -> Credentials		

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Sect.	Objects	Req.	Sup.
8.18.2	"Reference Dependent"	MUST	yes
	0..n credentials -> IKEIdentity		

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