               Framework Policy Information Base for Usage Feedback

Status of this Memo

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Abstract

   This document describes a portion of the Policy Information Base
   (PIB) to control policy usage collection and reporting in a device.

   The provisioning classes specified here allow a Policy Decision Point
   (PDP) to select which policy objects should collect usage
   information, what information should be collected and when it should
   be reported.

   This PIB requires the presence of other PIBs (defined elsewhere) that
   provide the policy objects from which usage information is collected.

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1. Introduction

   The Framework of Common Open Policy Service with Policy Provisioning
   (COPS-PR) Usage Feedback describes the overall approach to policy
   usage monitoring and reporting. This document defines the specific
   Policy Information Base (PIB) framework for policy usage feedback.
   The policy classes for monitoring and reporting policy usage
   feedback, as well as policy classes for controlling reporting
   intervals, suspension, resumption and solicitation are defined.

Conventions Used in this Document

   The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",
   "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY" and "OPTIONAL" in this
   document are to be interpreted as described in [RFC2119].

2. General Concepts

2.1. Selection, Usage and Linkage Policies

   There are three basic types of policies used to define what the PEP
   is to monitor, record and report. These are the selection criteria
   policy, the usage policy and the feedback report linkage policy.

   The selection criteria policy is installed by the PDP. It defines
   the conditions used by the PEP to monitor and record a usage policy.
   The selection criteria policy may only be used for defining usage
   feedback selection criteria. However, a more general case is a
   policy that already exists for policy enforcement that may also be
   used for specifying feedback usage selection criteria. An example of
   this is the frwkRoleCombo instance, which may be used in defining QoS
   enforcement policies, but may also be used to specify conditions on
   which to base usage - i.e. count the number of packets meeting the
   criterion of an interface capability set name and role combination.

   The usage policy defines what attributes are recorded by the PEP.
   These policies have an ACCESS clause of 'report-only'. Generally,
   the usage policies specify counts related to a specific action such
   as a packet being dropped. The feedback framework PIB defines two
   usage policy classes, frwkFeedbackTraffic and frwkFeedbackIfTraffic.
   Usage PRCs may be generic, collecting basic statistics, or they may
   be specific to a particular usage. The PDP decides which PRC(s) best
   suit(s) its requirements. The PEP may support only one usage
   feedback PRC, in which case all statistics are gathered using
   instances of that PRC. Alternatively, the PEP may support multiple
   usage feedback PRCs. The PDP then decides which PRC to associate
   with a particular selection criterion.

   A usage feedback policy and selection policy are tightly associated
   with one another. A third policy, the frwkFeedbackLinkTable, is used
   to associate, or provide a linkage for the selection and usage
   policies. The frwkFeedbackLinkTable also specifies when to report
   the usage feedback. The frwkFeedbackLinkTable entry permits the same
   selection criteria instance to be re-used for various usage feedback
   policies. The frwkFeedbackLinkTable contains the value of the
   selection criteria instance as well as the value of the usage
   feedback PRC.

```
    ----------------    ------------------    ----------------
   |                |  |                  |  |                |
   | Select Criteria|  | Linkage Instance |  | Usage Instance |
   |                |  | -instance ID     |  | - instance ID  |
   | -instance ID   | <--| -PRID of selection|--->| - PRID of Linkage|
   | -conditions... |  | -PRC of usage    |  | - counts...    |
   |                |  |                  |  |                |
    ----------------    ------------------    ----------------
```

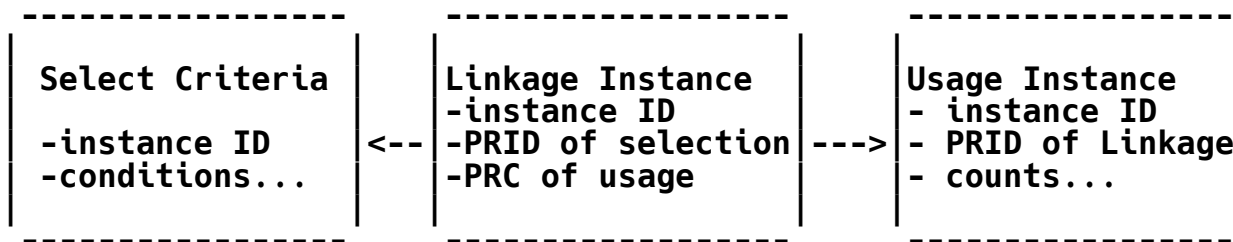   Figure 1

   Figure 1 illustrates the relationship between the selection criteria,
   linkage and usage policies.

   The PDP is not aware of the instance identifier of the usage feedback
   policy when installing the selection criteria and feedback linkage
   policies. The usage feedback policy is instantiated on the PEP by
   the installation of a feedback report linkage and the PEP designates
   the instance identifier. The usage feedback policy class always
   contains an attribute of type ReferenceId that contains the instance
   value of the associated frwkFeedbackLinkTable instance installed by
   the PDP. An example of this is the attribute
   frwkFeedbackTrafficLinkRef.

2.2. Normal Operations

2.2.1. Connection Establishment and Initial Configuration Request

   The Accounting Timer object in the COPS Connection Accept message
   contains the minimum number of seconds between reporting intervals as
   described in [COPS] and [FEEDBACKFWK]. This is used as the basic
   unit of measurement in defining intervals for specific usage policies
   with the frwkFeedbackLinkInterval attribute.

   The PEP notifies the PDP of the selection criteria policy classes and
   usage policy classes it supports during the initial request for
   configuration data using frwkPRCSupport instances [FR-PIB]. The PEP
   also indicates whether it supports the frwkFeedbackLinkTable as well.

   The PDP responds to the initial request for configuration with a
   DECISION that installs policies. The PDP may also specify maximum
   reporting intervals associated with each of the usage policies. This
   is done with the frwkFeedbackLinkInterval attribute in the
   frwkFeedbackLink class. It may also specify reporting thresholds by
   including an instance of a threshold class (e.g.
   frwkFeedbackTrafficThreshold) in the decision. The PEP monitors and
   records the usage per the conditions defined by its associated
   selection criteria policy. Periodically the PEP reports the usage

with a REPORT message or provides a REPORT when solicited by the PDP.
The PDP solicits usage feedback with the frwkFeedbackActionIndicator
attribute of the frwkFeedbackAction class.

2.2.2. Unsolicited Reports - Periodic Reporting

Reporting may be periodic in nature and unsolicited. The intervals
at which the unsolicited reports are provided by the PEP are defined
in the specific Linkage policies. The defined intervals are based on
the number of seconds specified by the PDP in the ACCT Timer value.
The PDP may specify that the associated usage instance be included in
a periodic unsolicited report only if the threshold is reached and/or
if the usage value has changed from the previous reporting interval.

There are cases when the PEP must supply unsolicited feedback reports
that may not fall on an interval boundary. The PEP MUST provide an
unsolicited REPORT containing all defined usage instances just prior
to the PEP issuing a Delete Request State and just prior to the PEP
de-activating a PIB instance context.

2.2.3. Unsolicited Reports - Reporting Conditions

Periodic unsolicited reports for individual usage feedback instances
can be suppressed by specifying additional conditions in the
frwkFeedbackLink instances. Supported conditions are:

ChangeOnly
   If this flag is set in the frwkFeedbackLinkFlags attribute, the
   associated usage instance is only included in a periodic
   unsolicited report if its value changed since the last unsolicited
   report.

Threshold
   If this flag is set in the frwkFeedbackLinkFlags attribute, the
   associated usage instance is only included in a periodic
   unsolicited report if the threshold condition referenced in the
   frwkLinkThreshold field evaluates successfully for the associated
   usage instance.

Both conditions can be combined in one frwkFeedbackLinkUsage object.
In this case, both conditions need to succeed for the usage instance
to be reported.

Unsolicited reports triggered by a Delete Request State or the
deactivation of a PIB instance are not subject to these conditions -
all usage objects must be included in these cases.

2.2.4. Solicited Reports

The PDP may solicit policy usage feedback by issuing an unsolicited
Decision containing the frwkFeedbackActionIndicator set to
`solicitReport'. The PEP is to provide a solicited REPORT feedback
containing usage feedback. The PEP shall continue to provide
periodic feedback at the specified intervals established at client
connection acceptance.

The reporting conditions (ChangeOnly and Threshold) do not affect
solicited reports - all requested usage instances must be included.

2.2.5. Resuming and Suspending Periodic Feedback Reporting

The PDP may suspend usage monitoring and tracking at the PEP with the
frwkFeedbackActionIndicator set to 'suspendMonitoringAndReports'.
The PEP must stop tracking usage information and must not issue any
feedback reports. The PDP may only suspend feedback reporting by
setting the ActionIndicator to 'suspendReports'. The PEP must cease
sending unsolicited reports but is to continue monitoring and
tracking usage. The PDP may resume the sending of feedback reports
and may resume usage monitoring by setting the ActionIndicator to
'resume'.

The PDP may suspend or resume all usage instances or the PDP may
specify one or more instances that are to be suspended or resumed.
The frwkFeedbackActionList attribute contains a tag identifier that
references a list of one or more frwkFeedbackActionList instances.

The PDP may halt usage monitoring, tracking and reporting of usage
policies by removing the associated Linkage entry.

2.2.6. Failover

In the event that the connection is lost between the PEP and PDP, the
PEP continues to track usage information as long as it continues to
operate with the installed policy. When the locally installed policy
at the PEP expires, the usage policy data also expires.

Upon successful reconnection where the PEP is still caching policy,
the PDP indicates to the PEP that the PEP may resume sending of the
COPS accounting type report messages. The PDP does this by issuing
an unsolicited decision containing the frwkFeedbackResumeIndicator
set to 'resume'. The PEP should resume reporting at the next
appropriate feedback interval established upon the acceptance of the
re-connection. The PDP is aware of the request state Handle(s) and

the supported PRCs either through the state synchronization mechanism
or because the PDP considers itself synchronized with the PEP upon
reconnection.

2.3. Usage Policy and Under-specified Selection Criteria

Some of the usage policy objects created in the PEP with COPS-PR can
be used by the PEP multiple times - they effectively act as templates
for the objects created by the PEP. COPS-PR only has the identity
(OID) of the object that is shared between all the assignments the
PEP created. However it is desirable to collect usage information
for each of the derived objects individually.

This capability is achieved in the feedback framework PIB by
distributing additional information to qualify a specific assignment
of an object between the selection criteria PRC and the feedback
usage PRC.

A selection criteria PRC that refers to a shared object, but contains
no qualifying information, selects all of the object's assignments.
Such a selection criteria PRC SHOULD be combined with a feedback
usage PRC that includes all the necessary information to identify a
specific assignment - a single selection criteria policy can then
result in the generation of many feedback usage objects, one for each
derived object.

If the selection criteria PRC contains all the required qualifying
attributes for a specific assignment, it is combined with a feedback
usage PRC that only contains the desired metrics but no additional
attributes.

Example:

   A frwkRoleCombo instance may be used as a selection criteria,
   identifying a set of interfaces through their role combination and
   capability set. If it is desired to get per-interface traffic
   statistics, the usage PRC has to include an additional attribute
   to qualify the specific interface.

   This could be achieved by linking the frwkFeedbackIfTraffic class
   with a frwkRoleCombo instance in a frwkFeedbackLink instance.
   Multiple frwkFeedbackIfTraffic instances will be created by the
   PEP, one for each interface selected by the frwkRoleCombo
   instance. The frwkFeedbackIfTraffic class contains the
   frwkFeedbackIfTrafficIfIndex attribute that allows the PDP to
   identify each interface's individual counters when the PEP reports
   the frwkFeedbackIfTraffic instances.

If traffic usage collection is only desired for an individual
interface, a selection criteria should be used that qualifies the
interface completely, for example a frwkIfRoleCombo instance. In
this case, it can be linked to the usage class that has no
additional qualifying attributes, frwkFeedbackTraffic.

3. Summary of the Feedback Framework Policy Information Base

3.1. SPPI ACCESS Clause Report-Only

The selection criteria and linkage policy classes follow the
definitions specified by [SPPI]. This structure specifies well-
defined policy classes and their instances residing in a common,
virtual repository [FR-PIB]. The additional PIB-ACCESS clause
attribute of "report-only" denotes the usage policy class reported by
the PEP.

3.2. Usage32 and Usage64 Textual Conventions

The SPPI does not support the Counter32/64 textual conventions (TC)
of SNMP - for feedback collection two similar textual conventions
have been defined in this PIB: Usage32 and Usage64.

In addition to the differential functionality of 'Counter', where
only the difference between two samples generally carries
information, a single value of a 'Usage' attribute usually provides
absolute information, since

- its initial value is known (0)
- no wrap-around events should occur
- the time or event when the initial value was set should be
  available directly or indirectly from other objects.

When 'Usage' attributes are defined in a PRC, events that could cause
a reset of the attribute to its initial value should be defined in
the description as well as the mechanism that allows the PDP to
detect the time of the last reset.

No usual COPS activity however should cause the reset of a Usage
attribute. In the case of a suspension of monitoring activity
(frwkFeedbackActionIndicator set to 'suspendMonitoringAndReports'),
 'Usage' attributes should keep their values and continue counting
after monitoring is resumed.

3.3. Feedback Groups and PRCs

These policy classes defined in this PIB are common to account type
reporting for various technologies and apply to ALL SUBJECT-
CATEGORIES. The policy classes are divided into three new groups,
namely, The Feedback Report Group, The Feedback Usage Group and The
Feedback Selection Group.

The policy classes in the Feedback Report Group are:

- Feedback Action
- Feedback Action List
- Feedback Selection Usage Combination Capability
- Feedback Linkage
- Feedback Traffic Statistics Threshold

The policy classes in the Feedback Usage Group are:

- Feedback Traffic
- Feedback Interface Traffic

The policy class in the Feedback Selection Group is:

- Feedback RoleCombo Filter Selection

3.3.1. Feedback Action

The Feedback Action class contains the attributes that specify action
that the PEP is to take regarding policy usage, monitoring and
tracking. The PDP may suspend usage monitoring and periodic
reporting, suspend periodic reporting only, resume usage and periodic
reporting or solicit immediate reporting. The action may affect all
feedback policies or be associated with one or more frwkFeedbackLink
instances.

The frwkFeedbackActionIndicator attribute defines the action. The
frwkFeedbackActionPri attribute indicates whether the action applies
to all of the usage policies or to a list. The
frwkFeedbackActionList attribute is the identifier of the list of
Linkage policy instances to which the action is to be applied.

The PDP can solicit the PEP for immediate usage feedback. The PEP
shall respond with a solicited report containing the usage feedback.

The PDP can direct the resumption of usage monitoring and reporting
per the defined intervals. For example, the PEP may have re-
connected to a PDP and has cached usage policies. The PDP indicates
to the PEP to resume usage tracking and monitoring and to send all

the cached usage policy. The PEP shall respond at the next
appropriate interval with an unsolicited report containing the usage
feedback.

The PDP can suspend the monitoring of usage policy. The PEP
maintains the current usage that has been monitored, but discontinues
any further monitoring until the PDP directs the PEP to resume
monitoring in a subsequent Decision.

The PDP can also suspend just the reporting of usage, but not
interrupt the monitoring and tracking of usage. The PEP shall
discontinue sending Report messages with usage feedback until the PDP
directs the PEP to resume. The PEP then begins reporting the usage
feedback at the next interval.

3.3.2. Feedback Action List

This class defines sets of linkage instances that can be referred to
from the frwkFeedbackActionList attribute.

3.3.3. Feedback Linkage Capability

This class defines the valid selection criteria PRC, usage PRC and
threshold PRC combinations supported by the PEP.

3.3.4. Feedback Linkage

This class links the selection criteria instance with the usage
class. This table permits the reuse of a selection criteria instance
for multiple usage policies.

The linkage table also permits the definition of a maximum reporting
interval to use when issuing the COPS accounting type reports for the
usage instance. A value of 0 in this attribute indicates that the
usage policy must be solicited.

3.3.5. Feedback Traffic Statistics Threshold

This class is used to provide threshold values for the attributes
described in the traffic usage classes below.

3.3.6. Feedback Traffic

This class includes the packet counts, byte counts and a reference to
the associated Linkage instance.

3.3.7. Feedback Interface Traffic

   This class is similar to the previous Feedback Traffic class, except
   that it includes an additional reference to an interface index. This
   class should be used with a selection criteria instance that matches
   an element that is assigned to multiple interfaces. The interface
   field can be used to associate the instances of this table with the
   specific element's assignment.

3.3.8. Feedback RoleCombo Filter Selection

   This class is used as selection criteria based on role combination,
   capability set and a filter instance.

4. The Feedback Framework PIB Module

   FRAMEWORK-FEEDBACK-PIB PIB-DEFINITIONS ::= BEGIN

```
    IMPORTS
        pib, Unsigned32, Unsigned64, Integer32,
        MODULE-IDENTITY, OBJECT-TYPE, MODULE-COMPLIANCE, OBJECT-GROUP
                FROM COPS-PR-SPPI
        TruthValue, TEXTUAL-CONVENTION
                FROM SNMPv2-TC
        InstanceId, ReferenceId, Prid,
        TagId, TagReferenceId
                FROM COPS-PR-SPPI-TC
        PrcIdentifierOid, PrcIdentifierOidOrZero
                FROM FRAMEWORK-TC-PIB
        frwkRoleComboEntry
                FROM FRAMEWORK-PIB
        InterfaceIndex
                FROM IF-MIB;

    frwkFeedbackPib  MODULE-IDENTITY
        SUBJECT-CATEGORIES  { all }
        LAST-UPDATED "200307140000Z"  -- 14 July 2003
        ORGANIZATION "IETF RAP WG"
        CONTACT-INFO "IETF RAP WG
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```

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                    San Jose, CA 95134-1706
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                    Email: ddutt@cisco.com"

       DESCRIPTION
               "The PIB module containing the base set of policy rule
               classes that are required for support of all policy
               usage monitoring, tracking and reporting policies.

               Copyright (C) The Internet Society (2003). This version
               of this PIB module is part of RFC 3571; see the RFC
               itself for full legal notices."
       REVISION   "200307140000Z"
       DESCRIPTION
               "Initial version, published in RFC 3571."

            ::= { pib 5 }

   --
   -- Textual Conventions
   --

   Usage32 ::= TEXTUAL-CONVENTION
        STATUS   current

         DESCRIPTION
                     "The Usage32 type represents a non-negative integer
                     which monotonically increases.
                     Usage32 initial value is 0 and the object-type using
                     Usage32 needs to specify when it is initialized.

                     The Usage32 type is intended to reflect the absolute
                     number of counted events, so that even a new PDP
                     after a COPS reconnect can use the value directly.

                     If there is the possibility that the maximum Usage32
                     value of 2^32-1 is exceeded during the lifetime
                     of the Usage32 object, the larger Usage64 type
                     should be used.

                     If conditions other than the reset of the COPS
                     subsystem exist that disrupt the monotonic
                     characteristics of Usage32, these conditions and a
                     method how to detect their presence should be
                     specified in the description of the object-type using
                     Usage32 or its enclosing object-types (e.g. the
                     Entry or Table object-type of the Usage32
                     object-type).

                     Whenever the monotonic increase of Usage32 is violated,
                     it should be reset to 0 and the fact that this occurred
                     should be indicated through an appropriate mechanism,
                     for example a corresponding object of type TimeStamp
                     or TimeAndDate."
         SYNTAX Unsigned32

   Usage64 ::= TEXTUAL-CONVENTION
         STATUS   current
         DESCRIPTION
                     "The Usage64 type represents a non-negative integer
                     which monotonically increases.
                     Usage64 initial value is 0 and the object-type using
                     Usage64 needs to specify when it is initialized.

                     The Usage64 type is intended to reflect the absolute
                     number of counted events, so that even a new PDP
                     after a COPS reconnect can use the value directly.

                     The lifetime of the Usage64 object should be defined
                     in a way that ensures the maximum Usage64 value of
                     2^64-1 is never exceeded.

                     If conditions other than the reset of the COPS

                    subsystem exist that disrupt the monotonic
                    characteristics of Usage64, these conditions and a
                    method how to detect their presence should be
                    specified in the description of the object-type using
                    Usage64 or its enclosing object-types (e.g. the
                    Entry or Table object-type of the Usage64
                    object-type).

                    Whenever the monotonic increase of Usage64 is violated,
                    it should be reset to 0 and the fact that this occurred
                    should be indicated through an appropriate mechanism,
                    for example a corresponding object of type TimeStamp
                    or TimeAndDate."
        SYNTAX Unsigned64

    --
    -- The feedback report group
    --

    frwkFeedbackGroupClasses
                OBJECT IDENTIFIER ::= { frwkFeedbackPib 1 }

    --
    --   Feedback Action Table
    --

    frwkFeedbackActionTable OBJECT-TYPE
        SYNTAX   SEQUENCE OF FrwkFeedbackActionEntry
        PIB-ACCESS   install
        STATUS   current
        DESCRIPTION
                "This class represents commands that the PDP sends to
                suspend, resume or solicit collection or reporting of
                usage data."

            ::= { frwkFeedbackGroupClasses 1}

    frwkFeedbackActionEntry OBJECT-TYPE
        SYNTAX FrwkFeedbackActionEntry
        STATUS current
        DESCRIPTION
                "Each frwkFeedbackActionEntry represents a command from
                the PDP. FrwkFeedbackActionIndicator specifies the
                command itself while frwkFeedbackActionSpecificPri
                indicates if all frwkFeedbackLink objects in the system
                are affected by the command, or just the set that is
                referenced by frwkFeedbackActionList."

```
        PIB-INDEX { frwkFeedbackActionId}

      ::= { frwkFeedbackActionTable 1}

   FrwkFeedbackActionEntry ::= SEQUENCE {
         frwkFeedbackActionId                     InstanceId,
         frwkFeedbackActionIndicator              INTEGER,
         frwkFeedbackActionSpecificPri            TruthValue,
         frwkFeedbackActionList                   TagReferenceId
       }

   frwkFeedbackActionId  OBJECT-TYPE
         SYNTAX          InstanceId
         STATUS          current
         DESCRIPTION
           "An arbitrary integer index that uniquely identifies an
            instance of the frwkFeedbackAction class."

         ::= { frwkFeedbackActionEntry 1}

   frwkFeedbackActionIndicator OBJECT-TYPE
         SYNTAX  INTEGER {
                   suspendMonitoringAndReports(1),
                   suspendReports(2),
                   resume(3),
                   solicitReport(4)
         }
         STATUS  current
         DESCRIPTION
                   "The value indicates if the PEP is to send cached
                    usage policies via COPS accounting type report
                    messages.
                    The enumeration values are:
                    (1)  suspendMonitoringAndReports
                    (2)  suspendReports
                    (3)  resume
                    (4)  solicitReport "

            ::= { frwkFeedbackActionEntry 2 }

   frwkFeedbackActionSpecificPri OBJECT-TYPE
            SYNTAX          TruthValue
            STATUS          current
            DESCRIPTION
                    "A value of 0 indicates that the
                     frwkFeedbackActionList attribute should be ignored,
                     and the action applied to all policies. A value of
                     1 indicates that the action entry has a specific
```

```
                     list of policies to which it is to be applied."
             ::= { frwkFeedbackActionEntry 3}

    frwkFeedbackActionList OBJECT-TYPE
            SYNTAX          TagReferenceId
            PIB-TAG         { frwkFeedbackActionListTag }
            STATUS          current
            DESCRIPTION
                    "Identifies a group of frwkFeedbackLink instances
                    that this action should affect. The group is
                    identified through a tag reference in the
                    frwkFeedbackList class."
             ::= { frwkFeedbackActionEntry 4}

    --
    --  Feedback Action List Table
    --

    frwkFeedbackActionListTable OBJECT-TYPE
            SYNTAX            SEQUENCE OF FrwkFeedbackActionListEntry
            PIB-ACCESS        install
            STATUS            current
            DESCRIPTION
                    "This class defines groups of linkage instances.
                    Groups can be referenced by commands sent by the
                    PDP in a frwkFeedbackActionEntry -in this case the
                    command affects all linkage instances that are part
                    of the group.
                    A group can be referred to by its tag stored in
                    frwkFeedbackActionListTag."
             ::= { frwkFeedbackGroupClasses  2}

    frwkFeedbackActionListEntry OBJECT-TYPE
            SYNTAX          FrwkFeedbackActionListEntry
            STATUS          current
            DESCRIPTION
                    "Each instance associates a linkage instance with a
                     specific ActionListGroup."

            PIB-INDEX {frwkFeedbackActionListId }
            UNIQUENESS { frwkFeedbackActionListTag,
                        frwkFeedbackActionListRefID
                       }
             ::= { frwkFeedbackActionListTable 1}

    FrwkFeedbackActionListEntry::= SEQUENCE {
            frwkFeedbackActionListId            InstanceId,
            frwkFeedbackActionListTag           TagId,
```

```
                  frwkFeedbackActionListRefID       ReferenceId
          }

    frwkFeedbackActionListId OBJECT-TYPE
            SYNTAX          InstanceId
            STATUS          current
            DESCRIPTION
                    "Arbitrary integer index that uniquely
                    identifies an instance of the class."

            ::= { frwkFeedbackActionListEntry 1 }

    frwkFeedbackActionListTag OBJECT-TYPE
            SYNTAX          TagId
            STATUS          current
            DESCRIPTION
                    "Identifies a group of linkage instances that can
                    be referenced from the Action class."

            ::= { frwkFeedbackActionListEntry 2 }

    frwkFeedbackActionListRefID   OBJECT-TYPE
            SYNTAX          ReferenceId
            PIB-REFERENCES { frwkFeedbackLinkEntry }
            STATUS          current
            DESCRIPTION
                    "A frwkFeedbackLink instance that is referred to
                    by this ReferenceId becomes part of the group,
                    that is identified by the
                    frwkFeedbackActionListTag."

            ::= { frwkFeedbackActionListEntry 3 }

    --
    -- The Feedback Link Capability Table
    --

    frwkFeedbackLinkCapsTable OBJECT-TYPE
        SYNTAX              SEQUENCE OF FrwkFeedbackLinkCapsEntry
        PIB-ACCESS          notify
        STATUS              current
        DESCRIPTION
                "Instances of the frwkFeedbackLink class reference
                 instances of selection and threshold classes and a
                 usage class.
                 This class allows the PEP to communicate valid
                 combinations of these three classes to the PDP."
          ::= { frwkFeedbackGroupClasses 3}
```

```
    frwkFeedbackLinkCapsEntry OBJECT-TYPE
         SYNTAX           FrwkFeedbackLinkCapsEntry
         STATUS           current
         DESCRIPTION
                 "The attributes of this class identify valid
                  combinations of selection criteria, usage and
                  threshold classes for feedback."
         PIB-INDEX { frwkFeedbackLinkCapsId }
         UNIQUENESS {
                    frwkFeedbackLinkCapsSelection,
                    frwkFeedbackLinkCapsUsage,
                    frwkFeedbackLinkCapsThreshold
                 }

         ::= {frwkFeedbackLinkCapsTable 1}

    FrwkFeedbackLinkCapsEntry ::= SEQUENCE {
         frwkFeedbackLinkCapsId           InstanceId,
         frwkFeedbackLinkCapsSelection    PrcIdentifierOid,
         frwkFeedbackLinkCapsUsage        PrcIdentifierOid,
         frwkFeedbackLinkCapsThreshold    PrcIdentifierOidOrZero
    }

    frwkFeedbackLinkCapsId OBJECT-TYPE
         SYNTAX           InstanceId
         STATUS           current
         DESCRIPTION
             "An arbitrary integer index that uniquely identifies an
              instance of the frwkFeedbackLinkCaps class."
         ::= { frwkFeedbackLinkCapsEntry 1}

    frwkFeedbackLinkCapsSelection OBJECT-TYPE
         SYNTAX           PrcIdentifierOid
         STATUS           current
         DESCRIPTION
                 "The identifier of a class that is supported by the
                  device for feedback selection in combination with the
                  usage and threshold classes referenced in this
                  instance."
         ::= { frwkFeedbackLinkCapsEntry 2}

    frwkFeedbackLinkCapsUsage OBJECT-TYPE
         SYNTAX           PrcIdentifierOid
         STATUS           current
         DESCRIPTION
                 "The identifier of the usage class that is supported by
                  the PEP in combination with the selection and threshold
                  classes referenced in this instance."
```

```
        ::= { frwkFeedbackLinkCapsEntry 3}


    frwkFeedbackLinkCapsThreshold OBJECT-TYPE
          SYNTAX          PrcIdentifierOidOrZero
          STATUS          current
          DESCRIPTION
              "The identifier of the threshold class that is
               supported by the PEP in combination with the selection
               and usage classes referenced in this instance.
               0.0 is used if this combination does not allow a
               threshold."
          ::= { frwkFeedbackLinkCapsEntry 4}

    --
    -- The Feedback Report Linkage Table
    --

    frwkFeedbackLinkTable OBJECT-TYPE
        SYNTAX            SEQUENCE OF FrwkFeedbackLinkEntry
        PIB-ACCESS        install
        STATUS            current
        DESCRIPTION
                "This class associates the selection criteria with the
                 usage policy. It also permits the defining of the max
                 interval used for reporting the usage instance."

        ::= { frwkFeedbackGroupClasses  4}

    frwkFeedbackLinkEntry OBJECT-TYPE
        SYNTAX            FrwkFeedbackLinkEntry
        STATUS            current
        DESCRIPTION
                "This class associates the selection criteria with the
                 usage policy. It also permits the defining of the max
                 interval used for reporting the usage instance."
        PIB-INDEX { frwkFeedbackLinkId }
        UNIQUENESS {frwkFeedbackLinkSel,
                    frwkFeedbackLinkUsage }
        ::= {frwkFeedbackLinkTable 1}

    FrwkFeedbackLinkEntry ::= SEQUENCE {
          frwkFeedbackLinkId          InstanceId,
          frwkFeedbackLinkSel         Prid,
          frwkFeedbackLinkUsage       PrcIdentifierOid,
          frwkFeedbackLinkInterval    Integer32,
          frwkFeedbackLinkThreshold   Prid,
          frwkFeedbackLinkFlags       BITS
```

```
    }

    frwkFeedbackLinkId OBJECT-TYPE
        SYNTAX        InstanceId
        STATUS        current
        DESCRIPTION
            "An arbitrary integer index that uniquely identifies an
             instance of the frwkFeedbackLinkTable class."
        ::= { frwkFeedbackLinkEntry 1}

    frwkFeedbackLinkSel OBJECT-TYPE
        SYNTAX        Prid
        STATUS        current
        DESCRIPTION
            "The PRID of the Policy Class instance as the monitoring
             point, or the PRID of the selection criteria instance that
             defines the conditions for monitoring, to be use by the
             PEP for usage reporting."

        ::= { frwkFeedbackLinkEntry 2}

    frwkFeedbackLinkUsage OBJECT-TYPE
        SYNTAX        PrcIdentifierOid
        STATUS        current
        DESCRIPTION
            "The identifier of the usage class that the PEP uses to
             monitor, record and report."

        ::= { frwkFeedbackLinkEntry 3}

    frwkFeedbackLinkInterval  OBJECT-TYPE
        SYNTAX    Integer32
        STATUS    current
        DESCRIPTION
                "Maximum interval in units of the value of the
                 Accounting Timer specified by the PDP in the client
                 accept message. A frwkFeedbackLinkInterval of 1 is
                 equal to the value of the Accounting Timer. This value
                 must be 1 or greater. "

        ::= { frwkFeedbackLinkEntry 4}

    frwkFeedbackLinkThreshold  OBJECT-TYPE
        SYNTAX    Prid
        STATUS    current
        DESCRIPTION
                "The PRID of a threshold class instance. This instance
                 specifies the threshold values for the usage policy."
```

```
           ::= { frwkFeedbackLinkEntry 5}

    frwkFeedbackLinkFlags  OBJECT-TYPE
         SYNTAX    BITS {
                          periodic(0),
                          threshold(1),
                          changeOnly(2)
                     }
         STATUS    current
         DESCRIPTION
                 "This value indicates the reporting basis of the usage
                  policy. The feed back may be generated on demand, on a
                  periodic basis regardless of a change in value from the
                  previous report, on a periodic basis if a change in
                  value has occurred, or the usage is reported when an
                  identified threshold value in the usage instance has
                  been reached.
                 If the 'periodic' flag is set, the PEP will provide
                  unsolicited reports at the rate specified in
                  frwkFeedbackLinkInterval.
                 If the 'periodic' flag is not set, reports will only be
                  generated when solicited by the PDP.
                 The 'threshold' and 'changeOnly' flags make the
                  periodic reports conditional - these flags only make
                  sense in combination with the 'periodic' flag."

           ::= { frwkFeedbackLinkEntry 6}

    --
    -- The Threshold class that accompanies the above Usage PRCs
    --

    frwkFeedbackTrafficThresTable OBJECT-TYPE
         SYNTAX          SEQUENCE OF FrwkFeedbackTrafficThresEntry
         PIB-ACCESS      install
         STATUS          current
         DESCRIPTION
                 "This class defines the threshold attributes
                  corresponding to usage attributes specified in
                  frwkFeedbackTrafficTable, frwkFeedbackIfTrafficTable
                  and other similar usage classes.

                  The usage object is considered to match the threshold
                  condition if at least one of the packet or byte
                  threshold conditions match.

                  The byte and packet thresholds are considered to
                  match, if the threshold is present (not ASN1 NULL)
```

```
                and the corresponding usage value exceeds the
                threshold."

        ::= { frwkFeedbackGroupClasses  5}

   frwkFeedbackTrafficThresEntry OBJECT-TYPE
        SYNTAX            FrwkFeedbackTrafficThresEntry
        STATUS            current
        DESCRIPTION
                "Defines the attributes to hold threshold values."
        PIB-INDEX {frwkFeedbackTrafficThresId}

        ::= {frwkFeedbackTrafficThresTable 1}

   FrwkFeedbackTrafficThresEntry ::= SEQUENCE {
        frwkFeedbackTrafficThresId                InstanceId,
        frwkFeedbackTrafficThresPackets           Unsigned64,
        frwkFeedbackTrafficThresBytes             Unsigned64
   }

   frwkFeedbackTrafficThresId   OBJECT-TYPE
        SYNTAX       InstanceId
        STATUS       current
        DESCRIPTION
                "Arbitrary integer index that uniquely identifies
                 an instance of the class."
        ::= { frwkFeedbackTrafficThresEntry 1 }

   frwkFeedbackTrafficThresPackets   OBJECT-TYPE
        SYNTAX       Unsigned64
        STATUS       current
        DESCRIPTION
                "The threshold, in terms of packets, that must be
                 matched or exceeded to trigger a report in the
                 next reporting interval."
        ::= { frwkFeedbackTrafficThresEntry 2 }

   frwkFeedbackTrafficThresBytes   OBJECT-TYPE
        SYNTAX       Unsigned64
        STATUS       current
        DESCRIPTION
                "The threshold, in terms of bytes, that must be
                 exceeded to trigger a report in the next reporting
                 interval."
        ::= { frwkFeedbackTrafficThresEntry 3 }


   --
```

```
   -- All actual usage classes are in the separate
   -- frwkFeedbackUsageClasses group
   --

   frwkFeedbackUsageClasses
       OBJECT IDENTIFIER ::= { frwkFeedbackPib  2 }



   --
   -- The generic traffic (byte & packet count) usage class
   --

   frwkFeedbackTrafficTable OBJECT-TYPE
        SYNTAX            SEQUENCE OF FrwkFeedbackTrafficEntry
        PIB-ACCESS        report-only
        STATUS            current
        DESCRIPTION
                 "This class defines the usage attributes that the PEP
                  is to monitor for plain traffic handling elements
                  like filters. All packets and the bytes contained in
                  these packets are counted. It also contains the PRID
                  of the linkage instance associating the selection
                  criteria instance with the usage instance."

        ::= { frwkFeedbackUsageClasses  1}

   frwkFeedbackTrafficEntry OBJECT-TYPE
        SYNTAX            FrwkFeedbackTrafficEntry
        STATUS            current
        DESCRIPTION
                 "Defines the attributes the PEP is to monitor,
                  record and report."
        PIB-INDEX {frwkFeedbackTrafficId}
        UNIQUENESS { frwkFeedbackTrafficLinkRefID }

        ::= {frwkFeedbackTrafficTable 1}

   FrwkFeedbackTrafficEntry ::= SEQUENCE {
        frwkFeedbackTrafficId              InstanceId,
        frwkFeedbackTrafficLinkRefID       ReferenceId,
        frwkFeedbackTrafficPacketCount     Usage64,
        frwkFeedbackTrafficByteCount       Usage64

   }

   frwkFeedbackTrafficId   OBJECT-TYPE
        SYNTAX        InstanceId
        STATUS        current
```

```
        DESCRIPTION
                    "Arbitrary integer index that uniquely identifies
                     an instance of the class."
        ::= { frwkFeedbackTrafficEntry 1 }

    frwkFeedbackTrafficLinkRefID  OBJECT-TYPE
        SYNTAX       ReferenceId
        PIB-REFERENCES { frwkFeedbackLinkEntry }
        STATUS       current
        DESCRIPTION
                    "The ReferenceId of the Linkage policy instance used
                     to base this usage policy instance upon."

        ::= { frwkFeedbackTrafficEntry 2 }

    frwkFeedbackTrafficPacketCount OBJECT-TYPE
        SYNTAX       Usage64
        STATUS       current
        DESCRIPTION
                    "The count of packets handled by the associated
                     element. The initial value of 0 is set when the
                     frwkFeedbackTraffic instance is created, for example
                     triggered through the creation of a frwkFeedbackLink
                     instance."

        ::= {frwkFeedbackTrafficEntry 3}

    frwkFeedbackTrafficByteCount OBJECT-TYPE
        SYNTAX       Usage64
        STATUS       current
        DESCRIPTION
                    "The byte count of packets handled by the associated
                     element. The initial value of 0 is set when the
                     frwkFeedbackTraffic instance is created."
        ::= { frwkFeedbackTrafficEntry 4}


    --
    -- The traffic usage class, qualified for an interface
    --
    frwkFeedbackIfTrafficTable OBJECT-TYPE
        SYNTAX           SEQUENCE OF FrwkFeedbackIfTrafficEntry
        PIB-ACCESS    report-only
        STATUS        current
        DESCRIPTION
                "A usage class similar to the basic Traffic class that
                 also contains a reference to an interface index. This
```

```
                    class should be used with an underspecified selection
                    criteria entry from the frwkRoleComboTable that matches
                    an element that can be assigned to multiple interface
                    indices. The interface field can be used to associate
                    the instances of this class with the specific element's
                    assignment."
        ::= { frwkFeedbackUsageClasses  2 }

    frwkFeedbackIfTrafficEntry OBJECT-TYPE
        SYNTAX            FrwkFeedbackIfTrafficEntry
        STATUS            current
        DESCRIPTION
                  "Defines the attributes the PEP is to monitor,
                   record and report."
        PIB-INDEX {frwkFeedbackIfTrafficId}
        UNIQUENESS { frwkFeedbackIfTrafficLinkRefID,
                     frwkFeedbackIfTrafficIfIndex }

        ::= {frwkFeedbackIfTrafficTable 1}

    FrwkFeedbackIfTrafficEntry ::= SEQUENCE {
        frwkFeedbackIfTrafficId                InstanceId,
        frwkFeedbackIfTrafficLinkRefID         ReferenceId,
        frwkFeedbackIfTrafficIfIndex           InterfaceIndex,
        frwkFeedbackIfTrafficPacketCount       Usage64,
        frwkFeedbackIfTrafficByteCount         Usage64

    }

    frwkFeedbackIfTrafficId   OBJECT-TYPE
        SYNTAX        InstanceId
        STATUS        current
        DESCRIPTION
                  "Arbitrary integer index that uniquely identifies
                   an instance of the class."
        ::= { frwkFeedbackIfTrafficEntry 1 }

    frwkFeedbackIfTrafficLinkRefID  OBJECT-TYPE
        SYNTAX        ReferenceId
        PIB-REFERENCES { frwkFeedbackLinkEntry }
        STATUS        current
        DESCRIPTION
                  "The ReferenceId of the Linkage policy instance used
                   to base this usage policy instance upon."
        ::= { frwkFeedbackIfTrafficEntry 2 }

    frwkFeedbackIfTrafficIfIndex  OBJECT-TYPE
        SYNTAX            InterfaceIndex
```

```
            STATUS            current
            DESCRIPTION
                "The value of this attribute is the ifIndex which is
                associated with the specified RoleCombination and
                interface capability set name."

            ::= { frwkFeedbackIfTrafficEntry 3 }

    frwkFeedbackIfTrafficPacketCount OBJECT-TYPE
        SYNTAX        Usage64
        STATUS        current
        DESCRIPTION
                "The count of packets handled by the associated
                 element. The initial value of 0 is set when the
                 frwkFeedbackIfTraffic instance is created."
        ::= { frwkFeedbackIfTrafficEntry 4 }

    frwkFeedbackIfTrafficByteCount OBJECT-TYPE
        SYNTAX        Usage64
        STATUS        current
        DESCRIPTION
                "The byte count of packets handled by the associated
                 element. The initial value of 0 is set when the
                 frwkFeedbackIfTraffic instance is created."
        ::= { frwkFeedbackIfTrafficEntry 5 }


    --
    -- All Selection classes are in the separate
    -- FrwkFeedbackSelectionClasses group
    --

    frwkFeedbackSelectionClasses
        OBJECT IDENTIFIER ::= { frwkFeedbackPib  3 }


    --
    -- The Role Combination Filter Selection Table
    --

    frwkFeedbackRoleFilterSelTable OBJECT-TYPE
        SYNTAX            SEQUENCE OF FrwkFeedbackRoleFilterSelEntry
        PIB-ACCESS        install
        STATUS            current
        DESCRIPTION
                "A selection class that defines selection of objects
                 for monitoring based on the role combination,
                 capability set and a filter."
        ::= { frwkFeedbackSelectionClasses  1 }
```

```
    frwkFeedbackRoleFilterSelEntry OBJECT-TYPE
        SYNTAX            FrwkFeedbackRoleFilterSelEntry
        STATUS           current
        DESCRIPTION
                "Each instance selects a filter on multiple interfaces
                 that share the same frwkRoleCombo instance."
        PIB-INDEX { frwkFeedbackRoleFilterSelId}
        UNIQUENESS { frwkFeedbackRoleFilterSelRCombo,
                      frwkFeedbackRoleFilterSelFilter
                    }

        ::= {frwkFeedbackRoleFilterSelTable 1}

    FrwkFeedbackRoleFilterSelEntry ::= SEQUENCE {
         frwkFeedbackRoleFilterSelId            InstanceId,
         frwkFeedbackRoleFilterSelRCombo        ReferenceId,
         frwkFeedbackRoleFilterSelFilter        Prid
    }

    frwkFeedbackRoleFilterSelId    OBJECT-TYPE
        SYNTAX        InstanceId
        STATUS        current
        DESCRIPTION
                "Arbitrary integer index that uniquely identifies
                 an instance of the class."
        ::= { frwkFeedbackRoleFilterSelEntry 1 }

    frwkFeedbackRoleFilterSelRCombo  OBJECT-TYPE
        SYNTAX        ReferenceId
        PIB-REFERENCES { frwkRoleComboEntry }
        STATUS        current
        DESCRIPTION
                "The ReferenceId of the frwkRoleComboTable policy
                 instance used for selection."
        ::= { frwkFeedbackRoleFilterSelEntry 2 }

    frwkFeedbackRoleFilterSelFilter       OBJECT-TYPE
        SYNTAX        Prid
        STATUS        current
        DESCRIPTION
                "The identifier of a filter instance. Valid classes
                 are the subclasses of frwkBaseFilter:
                 - frwkIpFilter
                 - frwk802Filter
                 - frwkILabelFilter"
        ::= { frwkFeedbackRoleFilterSelEntry 3 }
```

```
   --
   -- Compliance Section
   --

   frwkFeedbackPibConformance
              OBJECT IDENTIFIER ::= { frwkFeedbackPib 4 }

   frwkFeedbackPibCompliances
              OBJECT IDENTIFIER ::= { frwkFeedbackPibConformance 1 }

   frwkFeedbackPibGroups
              OBJECT IDENTIFIER ::= { frwkFeedbackPibConformance 2 }


   frwkFeedbackPibCompliance MODULE-COMPLIANCE
       STATUS  current
       DESCRIPTION
       "Describes the requirements for conformance to the feedback
       framework PIB"

      MODULE    -- this module
        MANDATORY-GROUPS { frwkFeedbackLinkCapsGroup,
                           frwkFeedbackLinkGroup,
                           frwkFeedbackActionGroup }

      GROUP frwkFeedbackActionListGroup
         DESCRIPTION
                   "The frwkFeedbackActionListGroup is mandatory if
                   actions on subsets linkEntries are to be
                   supported."

      GROUP frwkFeedbackTrafficGroup
         DESCRIPTION
                   "The frwkFeedbackTrafficGroup is mandatory if
                   monitoring of traffic data is to be supported."

      GROUP frwkFeedbackTrafficThresGroup
         DESCRIPTION
                   "The frwkFeedbackTrafficThresGroup is mandatory
                   if conditional reporting of traffic usage
                   thresholds is to be supported."

      GROUP frwkFeedbackIfTrafficGroup
         DESCRIPTION
                   "The frwkFeedbackIfTrafficGroup is mandatory if
                   per-interface usage collection of traffic data is
                   to be supported."
```

```
      GROUP frwkFeedbackRoleFilterSelGroup
         DESCRIPTION
                    "The frwkFeedbackRoleFilterSelGroup is mandatory
                     if monitoring of filters referenced through the
                     frwkRoleCombo class is to be supported."

      ::= { frwkFeedbackPibCompliances 1 }

   frwkFeedbackLinkCapsGroup OBJECT-GROUP
       OBJECTS {
                frwkFeedbackLinkCapsId,
                frwkFeedbackLinkCapsSelection,
                frwkFeedbackLinkCapsUsage,
                frwkFeedbackLinkCapsThreshold }
       STATUS  current
       DESCRIPTION
            "Objects from the frwkFeedbackLinkCapsTable."

       ::= { frwkFeedbackPibGroups 1 }

   frwkFeedbackLinkGroup OBJECT-GROUP
       OBJECTS {
                frwkFeedbackLinkId,
                frwkFeedbackLinkSel,
                frwkFeedbackLinkUsage,
                frwkFeedbackLinkInterval,
                frwkFeedbackLinkThreshold,
                frwkFeedbackLinkFlags }
       STATUS  current
       DESCRIPTION
            "Objects from the frwkFeedbackLinkTable."

       ::= { frwkFeedbackPibGroups 2 }

   frwkFeedbackActionGroup OBJECT-GROUP
       OBJECTS {
                frwkFeedbackActionId,
                frwkFeedbackActionIndicator,
                frwkFeedbackActionSpecificPri,
                frwkFeedbackActionList }
       STATUS  current
       DESCRIPTION
            "Objects from the frwkFeedbackActionTable."

       ::= { frwkFeedbackPibGroups 3 }

   frwkFeedbackActionListGroup OBJECT-GROUP
       OBJECTS {
```

```
                frwkFeedbackActionListId,
                frwkFeedbackActionListTag,
                frwkFeedbackActionListRefID }
        STATUS  current
        DESCRIPTION
            "Objects from the frwkFeedbackActionListTable."

        ::= { frwkFeedbackPibGroups 4 }

    frwkFeedbackTrafficGroup OBJECT-GROUP
        OBJECTS {
                frwkFeedbackTrafficId,
                frwkFeedbackTrafficLinkRefID,
                frwkFeedbackTrafficPacketCount,
                frwkFeedbackTrafficByteCount }
        STATUS  current
        DESCRIPTION
            "Objects from the frwkFeedbackTrafficTable."

        ::= { frwkFeedbackPibGroups 5 }

    frwkFeedbackTrafficThresGroup OBJECT-GROUP
        OBJECTS {
                frwkFeedbackTrafficThresId,
                frwkFeedbackTrafficThresPackets,
                frwkFeedbackTrafficThresBytes }
        STATUS  current
        DESCRIPTION
            "Objects from the frwkFeedbackTrafficThresTable."

        ::= { frwkFeedbackPibGroups 6 }

    frwkFeedbackIfTrafficGroup OBJECT-GROUP
        OBJECTS {
                frwkFeedbackIfTrafficId,
                frwkFeedbackIfTrafficLinkRefID,
                frwkFeedbackIfTrafficIfIndex,
                frwkFeedbackIfTrafficPacketCount,
                frwkFeedbackIfTrafficByteCount }
        STATUS  current
        DESCRIPTION
            "Objects from the frwkFeedbackIfTrafficTable."

        ::= { frwkFeedbackPibGroups 7 }

    frwkFeedbackRoleFilterSelGroup OBJECT-GROUP
        OBJECTS {
                frwkFeedbackRoleFilterSelId,
```

```
                frwkFeedbackRoleFilterSelRCombo,
                frwkFeedbackRoleFilterSelFilter }
        STATUS   current
        DESCRIPTION
            "Objects from the frwkFeedbackRoleFilterSelTable."

        ::= { frwkFeedbackPibGroups 8 }

    END
```

5. Security Considerations

    This PIB defines structured information that may be sensitive when
    transported by the COPS protocol [COPS-PR].

    This PIB does not contain classes that directly contain security
    relevant information like passwords or monetary amounts. However,
    unauthorized access or changes to information defined in this PIB
    could compromise network operations or reveal sensitive business or
    personal information.

    Specifically for the classes:

    frwkFeedbackLinkCaps

        This class has the ACCESS clause 'notify'. Access to this
        information reveals feedback collection capabilities of the COPS
        client and malicious changes could affect feedback operation by
        misleading the server to generate corrupt feedback configuration.

    frwkFeedbackLinkTable, frwkFeedbackAction, frwkFeedbackActionList,
    frwkFeedbackTrafficThres, frwkFeedbackRoleFilterSel

        These classes have the ACCESS clause 'install' and allow the COPS
        server to control feedback collection and reporting on the client.
        Access to this information exposes the client's configuration;
        malicious changes could disrupt network or business operations and
        raise privacy issues.

    frwkFeedbackTraffic, frwkFeedbackIfTraffic

        These classes have the ACCESS clause 'report-only' and contain the
        usage information delivered from the COPS client to the server.
        Unauthorized access to this information may reveal detailed
        information on the network and its users. Malicious changes may
        affect network and business operations.

[COPS] and [COPS-PR] define mechanisms to secure the COPS protocol
communication and implementations of COPS servers or clients
supporting this PIB MUST follow the security guidelines specified
there.

6. IANA Considerations

This document describes the frwkFeedbackPib Policy Information Base
(PIB) module for registration under the "pib" branch registered with
IANA. The IANA has assigned PIB number 5.

This PIB uses "all" in the SUBJECT-CATEGORY clause, so it applies to
all COPS client types. No new COPS client type is requested for this
PIB.

7. Acknowledgements

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