C H A P T E R **6**

SCA BB Proprietary MIB Reference

Introduction

This chapter describes the proprietary CISCO-SCAS-BB Management Information Base (MIB) supported by the Service Control Engine (SCE) platform.

An MIB is a database of objects that can be monitored by a network management system (NMS). The SCE platform supports both the standard MIB-II and the proprietary Cisco Service Control Enterprise MIB. The CISCO-SCAS-BB MIB is the part of the Service Control Enterprise MIB that enables the external management system to monitor counters and metrics specific to Cisco Service Control Application for Broadband (SCA BB).

- Information About SNMP Configuration and Management, page 6-1
- Information About the Service Control Enterprise MIB, page 6-3
- Information About the CISCO-SCAS-BB MIB, page 6-4
- Guidelines for Using the CISCO-SCAS-BB MIB, page 6-24

Information About SNMP Configuration and Management

This section explains how to configure the SNMP interface, and how to load the MIB files.

- Configuring the SNMP Interface on the SCE Platform, page 6-2
- Related Information, page 6-2
- Required MIB Files, page 6-2
- The Order to Load the MIB Files, page 6-2

Configuring the SNMP Interface on the SCE Platform

Before using the SNMP interface:

- Enable SNMP access on the SCE platform (by default, SNMP access is disabled).
- Set the values of SNMP parameters:
  - The community string to be used for client authentication.
  - (Optional, recommended as a security measure) An access-list (ACL) of IP addresses. This limits access to SNMP information to a set of known locations. You can define a different community string for each ACL.
  - The destination IP address to which the SCE platform sends SNMP traps.

Note   You can enable or disable specific traps.

Related Information

For more information about SNMP configuration, see the following relevant document:

- "Configuring and Managing the SNMP Interface" section in "Configuring the Management Interface and Security" chapter of *Cisco SCE8000 10GBE Software Configuration Guide*.
- "Configuring and Managing the SNMP Interface" section in the "Configuring the Management Interface and Security" chapter of *Cisco SCE8000 GBE Software Configuration Guide*.

Required MIB Files

To access the SNMP variables on the SCE platform, you must load the SNMP browser with a standard MIB file (*SNMPv2.mib*) and proprietary Cisco MIB files (*pcube.mib*, *pcubeSEMib.mib*, and *PCubeEngageMib.mib*).

Note   You can download the CISCO-SCAS-BB MIB file (*PCubeEngageMib.mib*) and other MIB files (*pcube.mib* and *pcubeSEMib.mib*) from ftp://ftp.cisco.com/pub/mibs/.

The Order to Load the MIB Files

The SCA BB proprietary MIB uses definitions that are defined in other MIBs, such as *SNMPv2.mib* and *pcube.mib.*

This means that the order in which the MIBs are loaded is important; to avoid errors, the MIBs must be loaded in the correct order.

Load the MIBs in the following order:

1. *SNMPv2.mib*
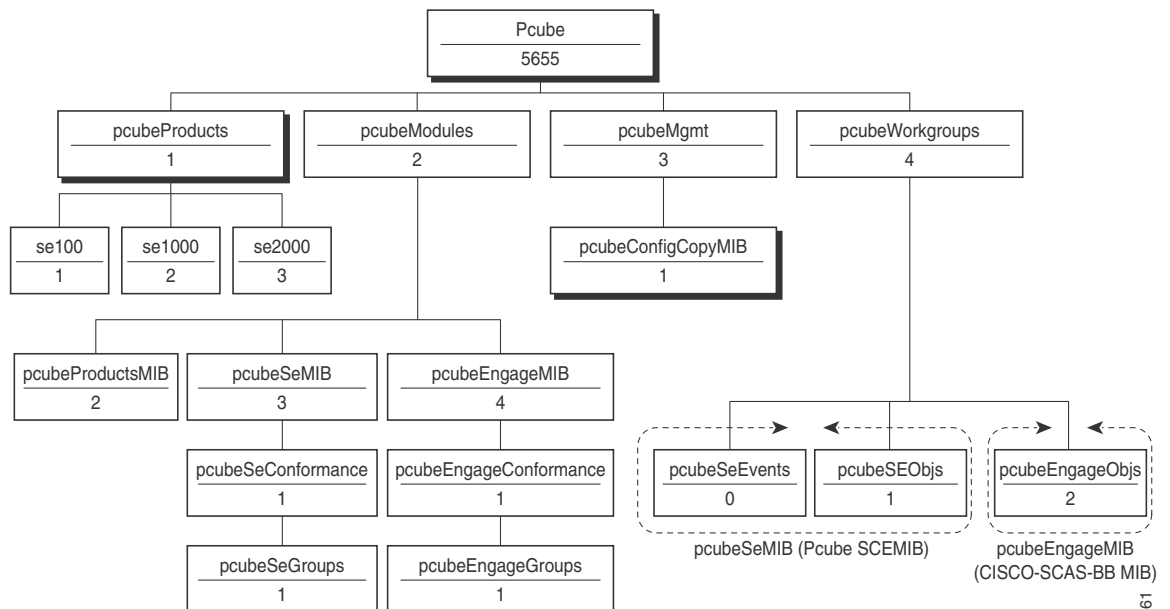2. *pcube.mib*
3. *pcubeSEMib.mib*
4. *PCubeEngageMib.mib*

Information About the Service Control Enterprise MIB

The Service Control Enterprise MIB includes four main groups: Products, Modules, Management, and Workgroup. The Service Control enterprise tree structure is defined in a MIB file named *pcube.mib*.

- pcubeProducts subtree contains the sysObjectIDs of the Service Control products.

    Service Control product sysObjectIDs are defined in a MIB file named *Pcube-Products-MIB*.

- pcubeModules subtree provides a root object identifier from which MIB modules are defined.

- pcubeMgmt subtree contains the configuration copy MIB:

    – *pcubeConfigCopyMib* enables saving the running configuration of Cisco products. This MIB is documented in the "Cisco Service Control MIBs" appendix of *Cisco SCE8000 10GBE Software Configuration Guide* or in the "Cisco Service Control MIBs" appendix of *Cisco SCE8000 GBE Software Configuration Guide*.

- pcubeWorkgroup subtree contains:

    – *pcubeSeEvents* and *pcubeSEObjs* —*pcubeSeMib*, the SCE MIB, is the main MIB for the Service Control products and provides a wide variety of configuration and runtime statistics. This MIB is also documented in the "Cisco Service Control MIBs" appendix of *Cisco SCE8000 10GBE Software Configuration Guide* or in the "Cisco Service Control MIBs" appendix of *Cisco SCE8000 GBE Software Configuration Guide*.

    – *pcubeEngageObjs*—CISCO-SCAS-BB MIB provides configuration and runtime status for SCA BB, and is described in the following section.

Figure 6-1 illustrates the Service Control Enterprise MIB structure.

Figure 6-1   Service Control Enterprise MIB Structure

Note   The following object identifier represents the Service Control Enterprise MIB: *1.3.6.1.4.1.5655* or *so.org.dod.internet.private.enterprise.pcube*.

Information About the CISCO-SCAS-BB MIB

The CISCO-SCAS-BB MIB provides access to service usage counters through the SNMP interface. Using this MIB, a network administrator can collect usage information per service at link, package, or subscriber granularity.

The CISCO-SCAS-BB MIB is defined in the file *PCubeEngageMib.mib*.

The MIB is documented in the remainder of this chapter.

Using this Reference

This reference is divided into sections according to the MIB object groups. For each object, information is presented in the following format:

<Description of the object>

Access	access control associated with the object
Units	unit of measurement used for the object

Index

```
{Indexes used by the table}
```

Syntax

```
OBJECT DATA TYPE {
The general format of the object
}
```

pcubeEngageObjs (pcubeWorkgroup 2)

The pcubeEngageObjs objects provide current information about packages, service, and subscribers.

pcubeEngageObjs Objects

Table 6-1 lists the pcubeEngageObjs objects. Each object consists of a number of subordinate object types, which are summarized in the following section.

Table 6-1   *pcubeEngageObjs Objects*

serviceGrp	{pcubeEngageObjs 1}
linkGrp	{pcubeEngageObjs 2}
packageGrp	{pcubeEngageObjs 3}
subscriberGrp	{pcubeEngageObjs 4}
serviceCounterGrp	{pcubeEngageObjs 5}

pcubeEngageObjs Structure

This is a summary of the structure of pcubeEngageObjs. Note the table structure for objects that may have multiple entries.

```
serviceGrp
          serviceTable-deprecated

          linkGrp
          linkServiceUsageTable
              linkServiceUsageEntry
                  linkServiceUsageUpVolume
                  linkServiceUsageDownVolume
                  linkServiceUsageNumSessions
                  linkServiceUsageDuration
                  linkServiceUsageConcurrentSessions
                  linkServiceUsageActiveSubscribers
                  linkServiceUpDroppedPackets
                  linkServiceDownDroppedPackets
                  linkServiceUpDroppedBytes
                  linkServiceDownDroppedBytes
          packageGrp
          packageCounterTable
              packageCounterEntry
                  packageCounterIndex
                  packageCounterStatus
                  packageCounterName
                  packageCounterActiveSubscribers
                  packageServiceUsageTable
                  packageServiceUsageEntry
                  packageServiceUsageUpVolume
                  packageServiceUsageDownVolume
                  packageServiceUsageNumSessions
                  packageServiceUsageDuration
                  packageServiceUsageConcurrentSessions
                  packageServiceUsageActiveSubscribers
                  packageServiceUpDroppedPackets
                  packageServiceDownDroppedPackets
                  packageServiceUpDroppedBytes
                  packageServiceDownDroppedBytes
          subscriberGrp
          subscribersTable
              subscriberEntry
                  subscriberPackageIndex
                  subscriberServiceUsageTable
```

```
                                    subscriberServiceUsageEntry
                                    subscriberServiceUsageUpVolume
                                    subscriberServiceUsageDownVolume
                                    subscriberServiceUsageNumSessions
                                    subscriberServiceUsageDuration
                        serviceCounterGrp
                            globalScopeServiceCounterTable
                                globalScopeServiceCounterEntry
                                globalScopeServiceCounterIndex
                                globalScopeServiceCounterStatus
                                globalScopeServiceCounterName
                        subscriberScopeServiceCounterTable
                            subscriberScopeServiceCounterEntry
                                    subscriberScopeServiceCounterIndex
                                    subscriberScopeServiceCounterStatus
                                    subscriberScopeServiceCounterName
```

Service Group: serviceGrp (pcubeEngageObjs 1)

The Service group is deprecated. Use the Service Counter group.

serviceTable (serviceGrp 1)

Deprecated—Use the tables in the Service Counter group.

Access	not-accessible

Syntax

Counter32

Link Group: linkGrp (pcubeEngageObjs 2)

The Link Service group provides usage information per link for each global-scope service usage counter (for example, traffic statistics of a service for all subscribers using a particular link).

linkServiceUsageTable (linkGrp 1)

The Link Service Usage table provides usage information per link for each global-scope service usage counter.

Access	not-accessible

Syntax

```
SEQUENCE OF linkServiceUsageEntry
```

linkServiceUsageEntry (linkServiceUsageTable 1)

A Link Service Usage table entry containing parameters defining resource usage of one link for services included in one global-scope service usage counter.

Access	not-accessible

Index

```
{linkModuleIndex, linkIndex, globalScopeServiceCounterIndex}
```

Syntax

```
SEQUENCE{
linkServiceUsageUpVolume
linkServiceUsageDownVolume
linkServiceUsageNumSessions
linkServiceUsageDuration
linkServiceUsageConcurrentSessions
linkServiceUsageActiveSubscribers
linkServiceUpDroppedPackets
linkServiceDownDroppedPackets
linkServiceUpDroppedBytes
linkServiceDownDroppedBytes
}
```

linkServiceUsageUpVolume (linkServiceUsageEntry 1)

The upstream volume of services in this service usage counter carried over the link.

Access	read-only
Units	kilobytes

Syntax

```
Counter32
```

Note Although volume counters on the SCE platform hold 32-bit integers, CISCO-SCAS-BB MIB volume counters wraparound (turn back to zero) when the maximum 29-bit integer value (0x1FFFFFFF) is reached.

linkServiceUsageDownVolume (linkServiceUsageEntry 2)

The downstream volume of services in this service usage counter carried over the link.

Access	read-only
Units	kilobytes

Syntax

```
Counter32
```

Note   Although volume counters on the SCE platform hold 32-bit integers, CISCO-SCAS-BB MIB volume counters wraparound (turn back to zero) when the maximum 29-bit integer value (0x1FFFFFFF) is reached.

linkServiceUsageNumSessions (linkServiceUsageEntry 3)

The number of sessions of services in this service usage counter carried over the link.

Access	read-only
Units	Sessions

Syntax

```
Counter32
```

linkServiceUsageDuration (linkServiceUsageEntry 4)

The aggregated session duration of services in this service usage counter carried over the link.

Access	read-only
Units	seconds

Syntax

```
Counter32
```

linkServiceUsageConcurrentSessions (linkServiceUsageEntry 5)

The number of concurrent sessions of services in this service usage counter carried over the link.

Access	read-only
Units	sessions

Syntax

```
Counter32
```

linkServiceUsageActiveSubscribers (linkServiceUsageEntry 6)

The number of active subscribers of services in this service usage counter carried over the link.

Access	read-only
Units	subscribers

Syntax

```
Counter32
```

linkServiceUpDroppedPackets (linkServiceUsageEntry 7)

The number of dropped upstream packets of services in this service usage counter carried over the link.

Access	read-only
Units	packets

Syntax

```
Counter32
```

Note To enable the SCE application to count dropped packets and dropped bytes, disable the `accelerate-packet-drops` feature on the SCE platform; if `accelerate-packet-drops` is enabled, the MIB dropped packets and dropped bytes counters constantly show the value 0xFFFFFFFF. For more information about the accelerate-packet-drops feature, see either the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 10GBE Software Configuration Guide* or the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 GBE Software Configuration Guide*.

linkServiceDownDroppedPackets (linkServiceUsageEntry 8)

The number of dropped downstream packets of services in this service usage counter carried over the link.

Access	read-only
Units	packets

Syntax

```
Counter32
```

> **Note**   To enable the SCE application to count dropped packets and dropped bytes, disable the `accelerate-packet-drops` feature on the SCE platform; if `accelerate-packet-drops` is enabled, the MIB dropped packets and dropped bytes counters constantly show the value 0xFFFFFFFF. For more information about the accelerate-packet-drops feature, see either the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 10GBE Software Configuration Guide* or the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 GBE Software Configuration Guide*.

linkServiceUpDroppedBytes (linkServiceUsageEntry 9)

The number of dropped upstream bytes of services in this service usage counter carried over the link.

Access	read-only
Units	bytes

Syntax

```
Counter32
```

> **Note**   To enable the SCE application to count dropped packets and dropped bytes, disable the `accelerate-packet-drops` feature on the SCE platform; if `accelerate-packet-drops` is enabled, the MIB dropped packets and dropped bytes counters constantly show the value 0xFFFFFFFF. For more information about the accelerate-packet-drops feature, see either the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 10GBE Software Configuration Guide* or the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 GBE Software Configuration Guide*.

linkServiceDownDroppedBytes (linkServiceUsageEntry 10)

The link service-counter number of dropped downstream bytes of services in this service usage counter carried over the link.

Access	read-only
Units	bytes

Syntax

```
Counter32
```

> **Note**   To enable the SCE application to count dropped packets and dropped bytes, disable the `accelerate-packet-drops` feature on the SCE platform; if `accelerate-packet-drops` is enabled, the MIB dropped packets and dropped bytes counters constantly show the value 0xFFFFFFFF. For more information about the accelerate-packet-drops feature, see either the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 10GBE Software Configuration Guide* or the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 GBE Software Configuration Guide*.

Package Group: packageGrp (pcubeEngageObjs 3)

The Package group provides general and usage information for each global-scope package usage counter (for example, traffic statistics of a service for all subscribers assigned to a particular package or group of packages).

- packageCounterTable (packageGrp 1), page 6-11
- packageCounterEntry (packageCounterTable 1), page 6-12
- packageCounterIndex (packageCounterEntry 1), page 6-12
- packageCounterStatus (packageCounterEntry 2), page 6-12
- packageCounterName (packageCounterEntry 3), page 6-12
- packageCounterActiveSubscribers (packageCounterEntry 4), page 6-13
- packageServiceUsageTable (packageGrp 2), page 6-13
- packageServiceUsageEntry (packageServiceUsageTable 1), page 6-13
- packageServiceUsageUpVolume (packageServiceUsageEntry 1), page 6-14
- packageServiceUsageDownVolume (packageServiceUsageEntry 2), page 6-14
- packageServiceUsageNumSessions (packageServiceUsageEntry 3), page 6-14
- packageServiceUsageDuration (packageServiceUsageEntry 4), page 6-15
- packageServiceUsageConcurrentSessions (packageServiceUsageEntry 5), page 6-15
- packageServiceUsageActiveSubscribers (packageServiceUsageEntry 6), page 6-15
- packageServiceUpDroppedPackets (packageServiceUsageEntry 7), page 6-16
- packageServiceDownDroppedPackets (packageServiceUsageEntry 8), page 6-16
- packageServiceUpDroppedBytes (packageServiceUsageEntry 9), page 6-17
- packageServiceDownDroppedBytes (packageServiceUsageEntry 10), page 6-17

packageCounterTable (packageGrp 1)

The Package Counter table provides information for each package usage counter.

Access	non-accessible

Syntax

SEQUENCE OF packageCounterEntry

packageCounterEntry (packageCounterTable 1)

A Package Counter table entry containing parameters defining one package usage counter.

Access	non-accessible

Index

{pmoduleIndex, packageCounterIndex}

Syntax

```
SEQUENCE {
packageCounterIndex
packageCounterStatus
packageCounterName
packageCounterActiveSubscribers
}
```

packageCounterIndex (packageCounterEntry 1)

The package usage counter index.

Access	not-accessible

Syntax

```
Integer32 (1...1023)
```

packageCounterStatus (packageCounterEntry 2)

The package usage counter status.

Access	read-only

Syntax

```
INTEGER {
0 (disabled)
1 (enabled)
}
```

packageCounterName (packageCounterEntry 3)

The name of the package usage counter.

Access	read-only

Syntax

```
SnmpAdminString
```

packageCounterActiveSubscribers (packageCounterEntry 4)

The total number of active subscribers of packages included in the package usage counter.

Access	read-only

Syntax

```
Counter32
```

packageServiceUsageTable (packageGrp 2)

The Package Service Usage table provides usage information for each global-scope package usage counter.

Access	not-accessible

Syntax

```
SEQUENCE OF packageServiceUsageEntry
```

packageServiceUsageEntry (packageServiceUsageTable 1)

A Package Service Usage table entry containing parameters defining resource usage of packages included in one global-scope package usage counter.

Access	non-accessible

Index

```
{pmoduleIndex, packageCounterIndex, globalScopeServiceCounterIndex}
```

Syntax

```
SEQUENCE {
packageServiceUsageUpVolume
packageServiceUsageDownVolume
packageServiceUsageNumSessions
packageServiceUsageDuration
packageServiceUsageConcurrentSessions
packageServiceUsageActiveSubscribers
packageServiceUpDroppedPackets
packageServiceDownDroppedPackets
packageServiceUpDroppedBytes
packageServiceDownDroppedBytes
}
```

packageServiceUsageUpVolume (packageServiceUsageEntry 1)

The upstream volume of packages in this package usage counter.

Access	read-only
Units	kilobytes

Syntax

```
Counter32
```

Note Although volume counters on the SCE platform hold 32-bit integers, CISCO-SCAS-BB MIB volume counters wraparound (turn back to zero) when the maximum 29-bit integer value (0x1FFFFFFF) is reached.

packageServiceUsageDownVolume (packageServiceUsageEntry 2)

The downstream volume of packages in this package usage counter.

Access	read-only
Units	kilobytes

Syntax

```
Counter32
```

Note Although volume counters on the SCE platform hold 32-bit integers, CISCO-SCAS-BB MIB volume counters wraparound (turn back to zero) when the maximum 29-bit integer value (0x1FFFFFFF) is reached.

packageServiceUsageNumSessions (packageServiceUsageEntry 3)

The number of sessions of packages in this package usage counter.

Access	read-only
Units	sessions

Syntax

```
Counter32
```

packageServiceUsageDuration (packageServiceUsageEntry 4)

The aggregated session duration seconds of packages in this package usage counter.

Access	read-only
Units	seconds

Syntax

```
Counter32
```

packageServiceUsageConcurrentSessions (packageServiceUsageEntry 5)

The number of concurrent sessions of packages in this package usage counter.

Access	read-only
Units	sessions

Syntax

```
Counter32
```

packageServiceUsageActiveSubscribers (packageServiceUsageEntry 6)

The number of active subscribers of packages in this package usage counter.

Access	read-only
Units	subscribers

Syntax

```
Counter32
```

packageServiceUpDroppedPackets (packageServiceUsageEntry 7)

The number of dropped upstream packets of packages in this package usage counter.

Access	read-only
Units	packets

Syntax

```
Counter32
```

Note To enable the SCE application to count dropped packets and dropped bytes, disable the `accelerate-packet-drops` feature on the SCE platform; if `accelerate-packet-drops` is enabled, the MIB dropped packets and dropped bytes counters constantly show the value 0xFFFFFFFF. For more information about the accelerate-packet-drops feature, see either the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 10GBE Software Configuration Guide* or the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 GBE Software Configuration Guide*.

packageServiceDownDroppedPackets (packageServiceUsageEntry 8)

The number of dropped downstream packets of packages in this package usagecounter.

Access	read-only
Units	packets

Syntax

```
Counter32
```

Note To enable the SCE application to count dropped packets and dropped bytes, disable the `accelerate-packet-drops` feature on the SCE platform; if `accelerate-packet-drops` is enabled, the MIB dropped packets and dropped bytes counters constantly show the value 0xFFFFFFFF. For more information about the accelerate-packet-drops feature, see either the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 10GBE Software Configuration Guide* or the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 GBE Software Configuration Guide*.

packageServiceUpDroppedBytes (packageServiceUsageEntry 9)

The number of dropped upstream bytes of packages in this package usage counter.

Access	read-only
Units	bytes

Syntax

Counter32

> **Note** To enable the SCE application to count dropped packets and dropped bytes, disable the `accelerate-packet-drops` feature on the SCE platform; if `accelerate-packet-drops` is enabled, the MIB dropped packets and dropped bytes counters constantly show the value 0xFFFFFFFF. For more information about the accelerate-packet-drops feature, see either the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 10GBE Software Configuration Guide* or the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 GBE Software Configuration Guide*.

packageServiceDownDroppedBytes (packageServiceUsageEntry 10)

The number of dropped downstream bytes of packages in this package usage counter.

Access	read-only
Units	bytes

Syntax

Counter32

> **Note** To enable the SCE application to count dropped packets and dropped bytes, disable the `accelerate-packet-drops` feature on the SCE platform; if `accelerate-packet-drops` is enabled, the MIB dropped packets and dropped bytes counters constantly show the value 0xFFFFFFFF. For more information about the accelerate-packet-drops feature, see either the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 10GBE Software Configuration Guide* or the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 GBE Software Configuration Guide*.

Subscriber Group: subscriberGrp (pcubeEngageObjs 4)

The Subscriber group provides general information for each subscriber and usage information per service usage counter for each subscriber (for example, traffic statistics of a service for a particular subscriber defined in the system).

Note **For the SCE8000:** To use the tables in this group, first create an entry to reference a particular subscriber in the cServiceControlSubscribersTable object of the CISCO-SERVICE-CONTROL-SUBSCRIBERS MIB (not the CISCO-SCAS-BB MIB). Using the index of this table (cServiceControlSubscribersIndex), information about the subscriber can be collected.

Note **For the SCE2000:** To use the tables in this group, first create an entry to reference a particular subscriber in the subscribersPropertiesValueTable object of the subscriberGrp in the SCE MIB (not the CISCO-SCAS-BB MIB). Using the index of this table (spvIndex), information about the subscriber can be collected.

Related Topics

subscribersTable (subscriberGrp 1)

The Subscribers Table provides information for each subscriber.

Access	not-accessible

Syntax

```
SEQUENCE OF subscribersEntry
```

subscribersEntry (subscribersTable 1)

A Subscribers Table entry containing the package index of each subscriber.

Access	not-accessible

Index

```
{pmoduleIndex, spvIndex}
```

Syntax

```
SEQUENCE {
subscriberPackageIndex
}
```

subscriberPackageIndex (subscribersEntry 1)

The package index of the subscriber's package.

Access	read-only

Syntax

```
Integer32 (1...255)
```

subscriberServiceUsageTable (subscriberGrp 2)

The Subscriber Service Usage table provides usage information per service usage counter for each subscriber.

Access	not-accessible

Syntax

```
Sequence of subscriberServiceUsageEntry
```

subscriberServiceUsageEntry (subscriberServiceUsageTable 1)

A Subscriber Service Usage table entry containing parameters defining resource usage by one subscriber of services included in one service usage counter.

Access	not-accessible

Index

{pmoduleIndex, spvIndex, subscriberScopeServiceCounterIndex}

Syntax

```
SEQUENCE {
subscriberServiceUsageUpVolume
subscriberServiceUsageDownVolume
subscriberServiceUsageNumSessions
subscriberServiceUsageDuration
```

subscriberServiceUsageEntry (subscriberServiceUsageTable 1)

A Subscriber Service Usage table entry containing parameters defining resource usage by one subscriber of services included in one service usage counter.

Access	not-accessible

Index

{pmoduleIndex, spvIndex, subscriberScopeServiceCounterIndex}

Syntax

```
SEQUENCE {
subscriberServiceUsageUpVolume
subscriberServiceUsageDownVolume
subscriberServiceUsageNumSessions
subscriberServiceUsageDuration
```

subscriberServiceUsageDownVolume (subscriberServiceUsageEntry 2)

The downstream volume of services in this service usage counter used by this subscriber.

Access	read-only
Units	kilobytes

Syntax

```
Counter32
```

Note Although volume counters on the SCE platform hold 32-bit integers, CISCO-SCAS-BB MIB volume counters wraparound (turn back to zero) when the maximum 29-bit integer value (0x1FFFFFFF) is reached.

subscriberServiceUsageNumSessions (subscriberServiceUsageEntry 3)

The number of sessions of services in this service usage counter used by this subscriber.

Access	read-only
Units	sessions

Syntax

```
Integer32 (1...65535)
```

subscriberServiceUsageDuration (subscriberServiceUsageEntry 4)

Aggregated session duration of services in this service usage counter used by this subscriber.

Access	read-only
Units	seconds

Syntax

```
Integer32 (1...65535)
```

Service Counter Group: serviceCounterGrp (pcubeEngageObjs 5)

The Service Counter group provides general information for each global-scope and subscriber-scope service usage counter. You can use it, for example, to read the names of the services as defined in a SCA BB service configuration.

globalScopeServiceCounterTable (serviceCounterGrp 1)

The Global-Scope Service Counter table consists of data about each service usage counter used by the link and by packages.

Access	non-accesible

Syntax

```
SEQUENCE OF globalScopeServiceCounterEntry
```

globalScopeServiceCounterEntry (globalScopeServiceCounterTable 1)

A Global-Scope Service Counter table entry containing parameters defining one global-scope service usage counter.

Access	not-accessible

Index

```
{pmoduleIndex, globalScopeServiceCounterIndex}
```

Syntax

```
SEQUENCE {
globalScopeServiceCounterIndex
globalScopeServiceCounterStatus
globalScopeServiceCounterName
}
```

globalScopeServiceCounterIndex (globalScopeServiceCounterEntry 1)

The global-scope service usage counter index.

Access	not-accesible

Syntax

```
Integer32 (1...255)
```

globalScopeServiceCounterStatus (globalScopeServiceCounterEntry 2)

The global-scope service usage counter status.

Access	read-only

Syntax

```
INTEGER {
0 (disabled)
1 (enabled)
}
```

globalScopeServiceCounterName (globalScopeServiceCounterEntry 3)

The name of the global-scope service usage counter.

Access	read-only

Syntax

```
SnmpAdminString
```

subscriberScopeServiceCounterTable (serviceCounterGrp 2)

The Subscriber-Scope Service Counter table consists of data about each service usage counter used by subscribers.

Access	not-accessible

Syntax

```
SEQUENCE OF subscriberScopeServiceCounterEntry
```

subscriberScopeServiceCounterEntry (subscriberScopeServiceCounterTable 1)

A Subscriber-Scope Service Counter table entry containing parameters defining one subscriber-scope service usage counter.

Access	not-accessible

Index

```
{pmoduleIndex, subscriberScopeServiceCounterIndex}
```

Syntax

```
SEQUENCE {
subscriberScopeServiceCounterIndex
subscriberScopeServiceCounterStatus
subscriberScopeServiceCounterName
}
```

subscriberScopeServiceCounterIndex (subscriberScopeServiceCounterEntry 1)

The subscriber-scope service usage counter index.

Access	not-accesible

Syntax

```
Integer32 (1...255)
```

subscriberScopeServiceCounterStatus (subscriberScopeServiceCounterEntry 2)

The subscriber-scope service usage counter status.

Access	read-only

Syntax

```
INTEGER {
0 (disabled)
1 (enabled)
}
```

subscriberScopeServiceCounterName (subscriberScopeServiceCounterEntry 3)

The name of the subscriber-scope service usage counter.

Access	read-only

Syntax

```
SnmpAdminString
```

Guidelines for Using the CISCO-SCAS-BB MIB

This section provides guidelines to help access SNMP information about the SCE platform using the CISCO-SCAS-BB MIB.

- globalScopeServiceCounterTable and subscriberScopeServiceCounterTable, page 6-25
- packageCounterTable, page 6-25
- Accessing Subscriber Information (the spvIndex), page 6-25

Note Indices in SNMP start from 1; SCA BB indices start from 0. When accessing a counter in the SCA BB SNMP MIB by its index, add 1 to the index of the entity. For example, the global usage counter with index 0 is located at globalScopeServiceCounter index 1.

Note Although volume counters on the SCE platform hold 32-bit integers, CISCO-SCAS-BB MIB volume counters wraparound (turn back to zero) when the maximum 29-bit integer value (0x1FFFFFFF) is reached.

Note To enable the SCE application to count dropped packets and dropped bytes, disable the accelerate-packet-drops feature on the SCE platform; if accelerate-packet-drops is enabled, the MIB dropped packets and dropped bytes counters constantly show the value 0xFFFFFFFF. For more information about the accelerate-packet-drops feature, see either the "Counting Dropped Packets"

section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 10GBE Software Configuration Guide* or the "Counting Dropped Packets" section in the "Configuring the Line Interface" chapter of *Cisco SCE8000 GBE Software Configuration Guide*.

globalScopeServiceCounterTable and subscriberScopeServiceCounterTable

The index of a service usage counter as defined in a SCA BB service configuration is used to reference services in the CISCO-SCAS-BB MIB. Since MIB index values count from 1, but SCA BB indices count from 0, the index used in the MIB must always be one greater than the index of the service it is referencing.

For example, to get the number of upstream bytes used by a service on a link, use LinkServiceTable.lnkServiceUpVolume (part of the linkGrp). The value assigned to serviceIndex for this table must be one greater than service index defined for this service in the service configuration.

To identify or change the index of a service, go to the Advanced tab of the Service Settings dialog box in the SCA BB Console (see the "Using the Service Configuration Editor: Traffic Classification" chapter of *Cisco Service Control Application for Broadband User Guide*). For example, to reference the P2P service (which has a (default) service index of 9) in the MIB, a serviceIndex of 10 (= 9 + 1) must be used.

packageCounterTable

The package index, defined in a SCA BB service configuration, is used to reference entries in packageTable and packageServiceTable (part of the packageGrp). As with serviceIndex the value assigned to packageIndex must be one greater than the package index in the service configuration.

To identify or change the index of a package, go to the Advanced tab of the Package Settings dialog box in the SCA BB Console (see the "Using the Service Configuration Editor: Traffic Classification" chapter of *Cisco Service Control Application for Broadband User Guide*). For example, to reference the default package (which has a package index of 0) in the MIB, a packageIndex of 1 (= 0 + 1) must be used.

Accessing Subscriber Information (the spvIndex)

In order to collect subscriber-level information using the SNMP interface, you must first create an entry in the proper subscriber MIB table and associate this entry with a subscriber name. Its index can be then be referred to in order to collect usage statistics for this subscriber.

The exact MIB objects vary, depending on the particular SCE platform, as described in the following sections.

Accessing Subscriber Information in the Cisco SCE 2000

Create an entry in the subscriberPropertiesValuesTable part of the subscriberGrp in *pcubeSEMib* (not *PCubeEngageMib*). After an entry in this table is created and associated with a subscriber name, its index (spvIndex) can be referred to in *PCubeEngageMib* to collect usage statistics for this subscriber.

An entry is created in the subscriberPropertiesValuesTable by setting the entry spvRowStatus object with CreateAndGo(4) then setting the name of the subscriber in the spvSubName property and the *spvIndex* variable to be used as an index to the subscriber.

For example, to poll the downstream volume of subscriber "sub123" for the P2P service using PCubeEngageMib, perform the following steps.

Step 1 Obtain the index of the P2P service from the SCA BB Console (this is a one-time operation that you should perform only if services are changed in the policy). In this example, assume that the P2P service index has its default value of 9.

Step 2 In order to create a subscriber entry, you must specify the index of the module and the desired *spvIndex* .

- Set pmoduleIndex = 1.

- In SEMib:subscriberGrp:subscriberPropertiesValuesTable, choose an index for spvIndex (for this example arbitrarily choose index 7).

Step 3 Create an entry in SEMib:subscriberGrp:subscriberPropertiesValuesTable, at the index that you have chosen:

- Set *spvRowStatus* to 4 (using CreateAndGo).

- Set *spvSubName* to "sub123".

Step 4 Read the subscriberServiceDownVolume property out of EngageMib:subscriberGrp:subscriberServiceTable Step 6 where *spvIndex* is set to 7 and *serviceIndex* is set to 10. (In general, you may walk the cServiceControlSubscribersTable in order to find out the various subscriber indexes, but in this case we have chosen it to be 7 so we can directly use the same index for accessing the data of this subscriber).

Accessing Subscriber Information in the Cisco SCE8000

Create an entry in the cServiceControlSubscribersTable of the CISCO-SERVICE-CONTROL-SUBSCRIBERS MIB. After an entry in this table is created and associated with a subscriber name, its index (cServiceControlSubscribersIndex) can be referred to in PCubeEngageMib (as spvIndex) to collect usage statistics for this subscriber.

An entry is created in the cServiceControlSubscribersTable table (at an index chosen by the user) by setting the entry cServiceControlSubscribersRowStatus object with CreateAndGo(4) then setting the name of the subscriber in the cServiceControlSubscribersName property.

For example, to poll the downstream volume of subscriber "sub123" for the P2P service using PCubeEngageMib, perform the following steps.

Step 1 Obtain the index of the P2P service from the SCA BB Console (this is a one-time operation that you should perform only if services are changed in the policy). In this example, assume that the P2P service index has its default value of 9.

Step 2 In order to create a subscriber entry, you must specify the indexes of the module and the desired cServiceControlSubscribersIndex.

- Set entPhyIndex according to the index of the Service Control Module (SCM) entry in the Entity MIB.

- Choose an index for cServiceControlSubscribersIndex (for this example arbitrarily choose index 7).

Step 3   Create an entry in ciscoServiceControlSubscribersMIB:cServiceControlSubscribersTable, at the index that you have chosen:

- Set cServiceControlSubscribersRowStatus to 4 (using CreateAndGo).
- Set cServiceControlSubscribersName to "sub123".

Step 4   Read the subscriberServiceUsageDownVolume property out of EngageMib:subscriberGrp:subscriberServiceUsageTable where entPhyIndex is set as instructed, spvIndex is set to 7 and serviceIndex is set to 10. (In general, you may walk the cServiceControlSubscribersTable in order to find out the various subscriber indexes, but in this case we have chosen it to be 7 so we can directly use the same index for accessing the data of this subscriber).