C H A P T E R 4

PCSP SOAP API

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The PacketCable specification details the Simple Object Access Protocol (SOAP) message interface. This message specification is the "defacto application programming interface (API)" to the Cisco BTS 10200 Softswitch through this interface.

User level security or Web Services User Security (WSUS) is a separate service offering that enables the Cisco BTS 10200 user security within the confines of PacketCable provisioning.

Login/Logout: User Security API

The Web Services Description Language (WSDL) for the security interface is defined below. A full listing of the WSDL is provided in the appendix. The WSUS service is provided to create user login sessions that parallel the behavior of login sessions of the Cisco BTS 10200 CLI. This allows for the application of command authorization and authentication for the PacketCable service.

Note In the PacketCable specification, user or session level security is not addressed. There is a need for these capabilities which allow for differentiation of users. This need may be addressed in a future release.

The interface offers two basic SOAP message containers and one generic fault container. The service name is "Bts10200SecurityService" and the default URL for the service is https://localhost/wsus/services/bts10200Security

The service coexists with the PacketCable Subscriber Provisioning (PCSP) service and has the following messages:

- **login**—This is the basic login function that authenticates and returns a session key.
- **loginWithStatus**—This function processes a normal login. It also checks for warnings on the expiration of the password and returns a status string indicating the status of the password. For example, if the password is about to expire, a warning status is returned. A session key is returned as part of the function.

- **loginResetPassword**—This function allows the user to access the system and log in under normal authentication. It resets the user password to a new value. This clears any warning indication about password expiration.

- **logout**—This terminates any session associated with the supplied session key.

- **BtsUserException** – This is the general fault defined in the Bts10200SecurityService. It contains a descriptive string and numeric value for the associated fault that occurred in the WSUS service.

EMS Admissions Control Policy

The EMS Admissions Control Policy (EACP) feature defines the policies basis on which it is determined whether a BTS EMS user is allowed to access and use the OAM&P functions of the BTS 10200. One policy is used to apply a user based limit on EMS sessions. It determines the limit on number of simultaneous sessions (through a specific adapter) that can be opened for a user. Once the policy set limit is reached, no more new sessions from that user are allowed. This policy is applied on each adapter independently.

Current specifications of the EACP are:

- EMS users are subject to the EACP based on a per adapter-type basis. Currently only the PCSP (Packet Cable for SOAP) addapter is supported.

- The EMS user session-limit is configurable on a combination of user and adapter-type basis.

- For each admissions-denied condition, an appropriate event (no clearance) is raised (OSS 24). The event information includes user-id, adapter-type, max-limit, #denials-so-far (since adapter restart), date, time, and EMS-SIDE. Additionally, a trace log with similar information is also logged.

- Only users with command-level 10 are able to reconfigure (CHANGE) the user session limit. But all EMS users are able to view (SHOW) the session limits.

- Only users with command-level 10 are able to reconfigure (CHANGE) the default user session limit for an adapter. But all EMS users are able to view (SHOW) the default session limit.

- The EACP feature is able to show EMS users a counter of the number of times a user has been denied entry since the adapter was started or restarted. This information is viewable using the **show user_session_limit** command.

- On switchover, the static status of EACP takes effect on the new active side. The static status includes user changeable provisioning SESSION_LIMIT and USE_DEFAULT_LIMIT parameters.

- On dual-outage conditions and subsequent restart, the dynamic status is reset. The dynamic status is defined as denials.

- On a restart not involving a dual-outage, the static status of the mate EMS (active-side) takes effect on the standby side.

- The EACP is limited to PC 1.5 Simple Object Access Protocol/Extensible Markup Language (SOAP/XML) sessions only in BTS 6.0. The EACP for generic SOAP/XML and CORBA will be added later.

- The default EMS user session-limit is configurable on adapter-type basis. The initial default user session-limit of PC 1.5 SOAP/XML is 10. The range of available sessions is 1–20, with the default of 10 sessions.

The EACP feature capability is part of the standard BTS 10200 deployment for Release 6.0.

PCSP API

The WSDL for this interface is defined below. A full listing of the WSDL is provided in the appendix. The interface offers three basic SOAP messages and one generic fault container.

The basic PacketCable Subscriber Provisioning or PCSP service is accessible through the general URL format: https://localhost/pcsp/services/PcspI01Service.

The interface offers three basic message constructs (listed below). The three constructs provide all the defined input and output for the basic PCSP service.

- **PUT**—The PUT message accepts an array of homogenous objects to be processed as either an add or a change function. The type of function is defined in the command status field. This alters or adds elements in the Cisco BTS 10200 database. A response consisting of homogeneous argument objects is returned.

- **GET**—The GET message accepts a homogenous array of arguments defined as "keys" to indicate which database elements are to be returned in this request. The reply is a homogenous array of objects generated from the show or display request.

- **DELETE**—The DELETE message accepts an array of homogenous arguments defined as "keys" to indicate which elements of the database are to be removed. A response consisting of argument objects is returned to indicate the success or failure of the request.

PcspCiscoBtsCli API

The provisioning of PcspCiscoBtsCli is a propriety extension to PacketCable1.5 specific for Cisco Cisco BTS 10200. Only the PUT messaging interface is supported. The DELETE and GET messaging interfaces do not allow XmlEncoding to support the necessary information for the request. Inside the PUT messaging interface, a PcspObj is passed in as the parameter. For the interface to invoke the PcspCiscoBtsCli object, the following must be set in the PcspObj:

- PcspObj.EntityName=PcspCiscoBtsCli (case-insensitive)
- PcspObj.key=<bts.noun>
- PcspObj.XmlEncoding=<bts.cli_xml>

The PcspObj.cmdStatus field is *not* used and is ignored. The key is the noun portion as specified in Cisco BTS 10200 CLI syntax: "<verb> <noun> <parameters>". The XmlEncoding is the request (or response) and is exactly the same syntax as in the Cisco BTS 10200 generic SOAP/XML and CORBA interface currently available. For further details of this existing syntax, please refer to the programmer's guide for the CORBA interface or the Generic SOAP/XML.