

14 Management entities

14.1 Introduction

14.2 Branch 0xDA “identification”

14.3 Branch 0x07 “basic attributes”

14.4 Branch 0xDB “extended attributes”

14.5 Branch 0x09 “basic actions”

14.6 Branch 0xDD “extended actions”

This subclause specifies a set of extended management actions used by the OLT to enforce a specific behavior in the ONU. The extended management actions shown in Table 14-206 shall be supported.

Table 14-206—Extended actions defined in branch 0xDD

Leaf	Attribute	Defined in
Object group: ONU management		
0x00-01	acOnuReboot	14.6.1.1
Object group: Bridging		
0x01-01	acMacClearDynamicTable	14.6.2.1
0x01-02	acMacAddDynamicAddress	14.6.2.2
0x01-03	acMacDeleteDynamicAddress	14.6.2.3
0x01-04	acMacClearStaticTable	14.6.2.4
0x01-05	acMacAddStaticAddress	14.6.2.5
0x01-06	acMacDeleteStaticAddress	14.6.2.6
0x01-08	acGetUniMacLearned	14.6.2.7
0x01-20	acConfigLlid	14.6.2.8
0x01-21	acConfigServicePort	14.6.2.9
0x01-23	acConfigGlid	14.6.2.10
0x01-24	acConfigGlidMember	14.6.2.11
Object group: Statistics and counters		
0x02-01	acCountersClear	14.6.3.1
Object group: Alarms		
0x03-01	acAlarmGetCurrentSummary	14.6.4.1
Object group: Encryption		
0x04-01	acConfigEncrKey	14.6.5.1
Object group: Frame processing		
0x05-01	acRulesClearAll	14.6.5.1
0x05-02	acRulesAddOne	14.6.5.2
0x05-03	acRulesDeleteOne	14.6.5.3
Object group: Transmission control		
0x06-01	acEnableUserTraffic	14.6.6.1
0x06-02	acDisableUserTraffic	14.6.6.2
0x06-03	acLoopbackEnable	14.6.6.3
0x06-04	acLoopbackDisable	14.6.6.4
0x06-05	acLaserTxPowerOff	14.6.6.5
Object group: Power management		
0x07-01	acEeeChangeState	14.6.7.1
0x07-02	acPoeChangeState	14.6.7.2

14.6.1 ONU management

14.6.2 Bridging

14.6.3 Statistics and counters

14.6.4 Alarms

14.6.5 Encryption

14.6.5.1 Action *acConfigEncrKey* (0xDD/0x04-01)

This action is used by the NMS to convey a new encryption key to an ONU. This action consists of the following sub-attributes: *sKeyIndex* and *sKeyValue*.

Sub-attribute *acConfigEncrKey.sKeyIndex*:

- Syntax:** Unsigned integer
- Range:** 0 to 1
- Remote access:** Write-Only
- Description:** This sub-attribute represents the index of the key being provisioned to the ONU. This index value is the opposite of the index of the currently active key, as indicated by the encryption key index (*EncKey* field) in the received envelope header (see IEEE Std 802.3, 143.3.2): if the *EncKey* = 0, then *sKeyIndex* = 1, else if the *EncKey* = 1, then the *sKeyIndex* = 0.

Sub-attribute *acConfigEncrKey.sKeyValue*:

- Syntax:** 128-bit or 256-bit key (bit sequence)
- Remote access:** Write-Only
- Description:** This sub-attribute specifies the value of the next key, i.e., the key that is to become active on the next key switch event (see 11.6.1).

The *acConfigEncrKey* action is associated with the ONU object or the LLID object that represents a unidirectional LLID (see 14.2.1.1).

If the action is associated with the ONU object, the given key is used for all the bidirectional LLIDs already provisioned at the ONU or the ones to be provisioned in the future. The same key value is used for encryption and decryption (see 11.5.2).

If the *acConfigEncrKey* action is associated with the unidirectional LLID object, the encryption key is being provisioned for this specific LLID, which may be used as a multicast LLID (see 4.5.2). This key is used for decryption only (see 11.5.3). If the supplied context object represents a bidirectional LLID, the ONU shall respond with the “Invalid Context Object” code 0xA5 (see 13.4.7) and discard the supplied key value.

The Variable Container TLV for the *acConfigEncrKey* action shall be as specified in Table 14-xxx.

Table 14-xxx—Config Encryption Key TLV (0xDD/0x04-01)

Size (octets)	Field name	Value	Notes
1	<i>Branch</i>	0xDD	Branch identifier
2	<i>Leaf</i>	0x04-01	Leaf identifier
1	<i>Length</i>	Varies	The size of TLV fields following the <i>Length</i> field. This field takes the following values: 16, if <i>KeyValue</i> field contains a 128-bit key; 32, if <i>KeyValue</i> field contains a 256-bit key.
16 or 32	<i>KeyValue</i>	Varies	Value of <i>sKeyValue</i> sub-attribute.