

ForCES MIB
draft-haas-forces-mib-00.txt

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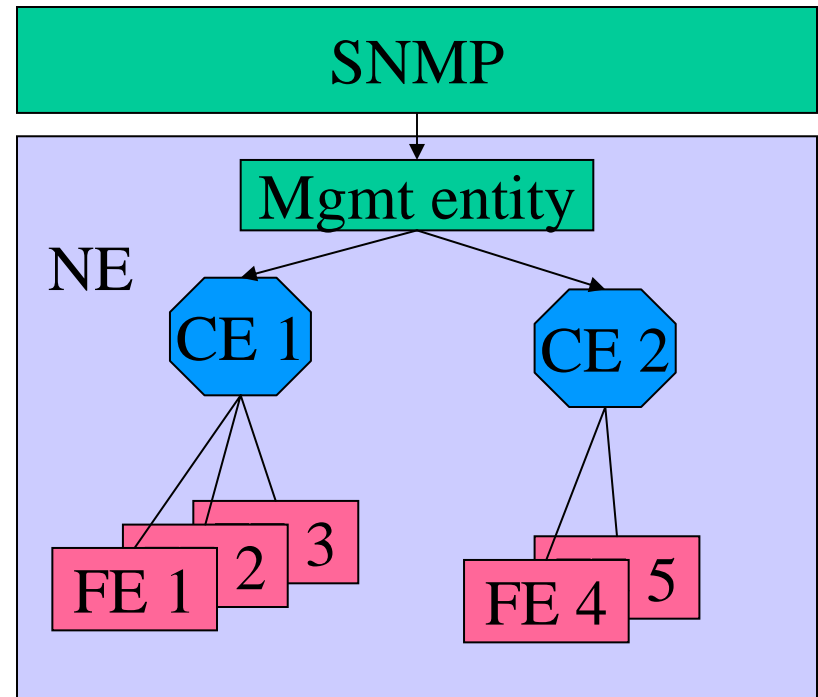
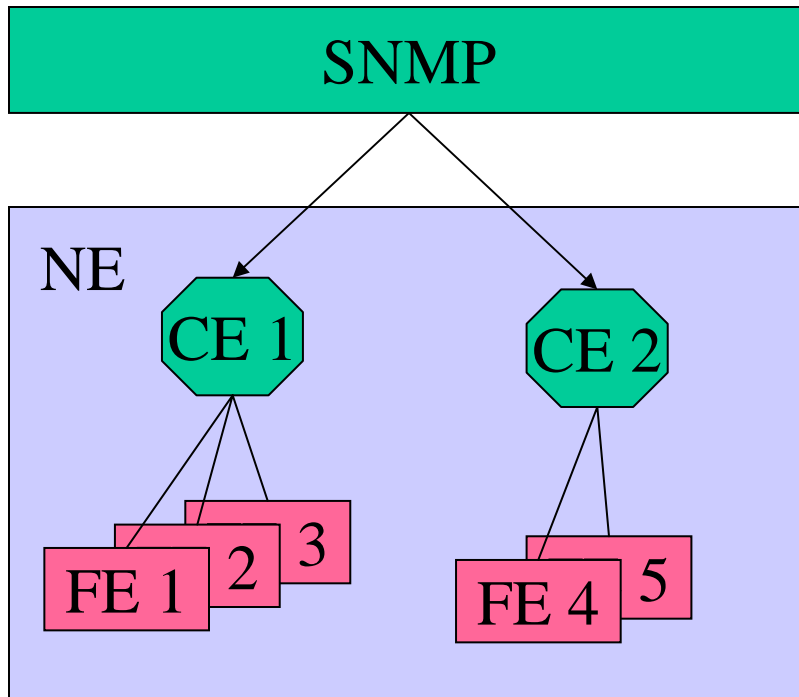
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Concept

- MIB allows management of the NE
 - Read-only, except possibly for a few parameters such as heartbeat interval to be read-write
- Not a duplicate of information available via ForCES
 - MIB is used to control the ForCES protocol, not the model
 - Except possibly for a few attributes such as ForCES protocol version (already present in the FE Protocol LFB)
- NE does not have to be a black-box wrt management (only routing):
 - SNMP may or may not see the multiple CEs.

CE MIBs vs single NE MIB



Discussion

- Single NE MIB alternative:
 - Provides central point of management for the NE
 - Requires a standard protocol between the Mgmt entity and the CEs
- CE MIBs alternative:
 - Requires connection to multiple CEs
 - No other standard protocol required

MIB Contents

- Active associations:
 - Current state: UP, ESTABLISHING/ATTEMPT
 - IDs associated
 - Heartbeat timer value
 - Heartbeat timer settings: ENABLED, DISABLED
 - Backup information: FE(s)/CE(s) configured to work as a back-up for this association
 - Association stats: Date/time or duration since association is UP, etc
- Other (tbd)

Relevant ForCES requirements

- From the ForCES requirements RFC [RFC 3654], Section 4, point 4:

“**A NE MUST support the appearance of a single functional device.** For example, in a router, the TTL of the packet should be decremented only once as it traverses the NE regardless of how many FEs through which it passes. However, external entities (e.g., FE managers and CE managers) **MAY** have direct access to individual ForCES protocol elements for providing information to transition them from the pre-association to post-association phase.”

- And [RFC 3654], Section 4, point 14:

“1. The ability for a management tool (e.g., SNMP) to be used to read (but not change) the state of FE **SHOULD NOT** be precluded.

2. It **MUST NOT** be possible for management tools (e.g., SNMP, etc) to change the state of a FE in a manner that affects overall NE behavior without the CE being notified.”

Relevant ForCES Architecture

- According to the ForCES architecture RFC [RFC 3746], Section 3.3:
“CE managers may be physically and logically separate entities that configure the CE with FE information via such mechanisms as COPS-PR [7] or SNMP [5].”
- and [RFC 3746], Section 5.7:
“RFC 1812 [2] also dictates that "Routers MUST be manageable by SNMP". In general, for the post-association phase, most external management tasks (including SNMP) should be done through interaction with the CE in order to support the appearance of a single functional device. Therefore, it is recommended that an SNMP agent be implemented by CEs and that the SNMP messages received by FEs be redirected to their CEs. AgentX framework defined in RFC 2741 ([6]) may be applied here such that CEs act in the role of master agent to process SNMP protocol messages while FEs act in the role of subagent to provide access to the MIB objects residing on FEs. AgentX protocol messages between the master agent (CE) and the subagent (FE) are encapsulated and transported via ForCES, just like data packets from any other application layer protocols.”