draft-ietf-forces-protocol-02.txt



Progress

Setup and use of Issue Tracker
Extensive Discussions among authors and others on list
Coordination with Model team
Defined Protocol BNF
Tracker Issues Closed 1, 2, 3, 5, 7

Protocol BNF

Section 6.1.1

PL level PDU := MAINHDR 1*LFBselect-TLV LFBselec-TLV := LFBCLASSID LFBInstance 1*OPER-TLV OPER-TLV := 1*PATH-DATA-TLV OPERATION-Type := SET / DEL / GET ... PATH-DATA-TLV := PATH [DATA] PATH := flags IDcount IDs [SELECTOR] SELECTOR := KEYINFO-TLV DATA := DATARAW-TLV / RESULT-TLV / 1*PATH-DATA-TLV KEYINFO-TLV := KEYID KEY_DATA DATARAW-TLV := encoded data which may nest DATARAW TLVs RESULT-TLV := TBD. Holding result code and optional DATARAW

BNF Cont'd

- MAINHDR Defines message type
- LFBCLASSID 32 bit uniques id per LFB class
- LFBInstance 32 bit unique instance id of a LFB class
- PATH-DATA-TLV defines exact element targeted
- PATH path to date being defined
- SELECTOR optional construct to additionally define a path
- KEYINFO-TLV used for selecting an array entry by the value of a key field

DATA -

- DATARAW use for sets and get responses
- RESULT-TLV still TBD
- Other PATH-DATA-TLV
- RESULTS still under discussion on how this is used

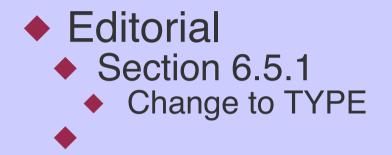
Implications of BNF

- There can be one or more LFB Class + InstanceId combo targeted in a message (batch)
- There can one or more operations on an addressed LFB classid+instanceid combo(batch)
- There can be one or more path targets per operation (batch)
- It is assumed that the type of the data can be inferred by the context in which data is used. Hence, data will not include its type information. The basis for the inference is typically the LFB class id and the path.
- Still discussing:
 - efficiency of encoding
 - efficiency of parsing and decoding
 - the packaging overhead.
- Updates made to all messages to support inclusion of PATH-DATA

Issue 1

 Association Setup and Association Setup Response messages, will use the same grammar as other messages.
 The FE Object LFBs would be used to advertise any existing FE attributes to the CE and vice versa in these messages.







 Query and Query Response messages modified to use PATH-DATA
 With the limitation specifically for GET operation that the PATH-DATA does not require DATARAW-TLV or RESULT-TLV



Events defined in XML as attributes
 Will have a path that can be used by the config message for subscription

Issue 7

- Issue of how paths described in the protocol messages to target a specific attribute or set of attributes.
- Major issue to progress protocol forward
 Resolved with definition of PATH-DATA

Transactions

ACIDity

- Atomicity: all or nothing
- Consistency: new and valid state or state unchanged
- Isolation: Transactions are isolated from each other
- Durability: State is maintained even acrtoss failure or restart
- Under discussion
 - Abort message for rollback
 - Format of Response messages
- Trying to be careful to say enough without restricting implementation – need to find balance

Protocol

main hdr (e.g. Config)

```
+--+T = LFBselect
     +-- LFBCLASSID
     +-- LFBInstance
     +-- T = SET-CREATE
       +-- // one or more path targets
          // with their data here to be added
     +--T = DEL
     . +-- // one or more path targets to be deleted
```

XML for FE Protocol LFB

Definition started
 Appendix C

Please review carefully

XML for FE Object LFB

Definition started
 Found in Model Draft

Use Cases/Examples

- Many many examples in Appendix D
 - Get
 - Set
 - Dump Table
 - Multiple Operations
 - Block Operations
 - Get Row
 - Get Specific entry of a table
 - Create row in table
 - Create and Return a table index
 - Dump contents of table
 - Using Keys get row entry from table
 - Delete row with key match
 - Multiple atomic opérations
 - Selective setting using indices
 - Manipulation of table of tables etc
 - Get entire LFB

To Do

- All TBDs, editor's note, open issue notes etc.. to be added to be added to issue tracker
- Fix references
- Check consistency of descriptions
- Are any other Appendices required: e.g. Types
- Create IANA section
- Scrub for nits
- Get to WGLC



Discussion on spec to the ForCES list
FORCES@PEACH.EASE.LSOFT.COM
Issue Tracker:
http://www.mip4.org/issues/tracker/forces/