

Accredited Standards Committee  
X3, Information Processing Systems

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Reply to: John Scheible

To: X3T10.1 Membership  
From: John Scheible

Subject: Change format of Configutor table entry

BACKGROUND

The Configutor table has a different format from any other table in the spec. Each entry contains an array of ports/paths/Path Ids. It is then stated when entries are deleted, when we really mean array elements within an entry are deleted. There are other confusing points.

Therefore, I propose we change the format of the table to better match other tables and clarify the operations on the table. The format is vendor specific and therefore these changes are not requirements.

PROPOSAL

Make the following changes:

- 1) Change 9.2.4 (Configutor table) as shown below.

9.2.4 Configutor table

In the configuration process each node shall construct a Configutor table from the information received in QUERY NODE SMSs. All nodes construct a Configutor table. The table associates a Return Path ID with Unique ID, Return Path and port. The Configutor table is used by a node when processing SMSs that use the RETURN PATH ID fields to associate the Return Path ID to a Return Path and port. The Configutor table is built when processing QUERY NODE SMSs, and modified when processing QUIESCE SMS or DELETE RETURN PATH ID SMSs.

The format of the Configutor table is vendor specific, however the Configutor table shall contain the information shown in Table 1 either directly or indirectly (i.e., the Return Path ID could be an index into the Configutor table). The Configutor table optionally contains information needed by the upper level protocols.

Table 1 - Configutor table entry

Field	Description
RETURN PATH ID <sup>1</sup>	The Return Path ID assigned to the referenced Unique ID, Port, and Return Path.
UNIQUE ID	The Unique ID of a Configutor node.
PORT	The node port to be used with the Return Path associated with the Return Path ID.
RETURN PATH	The Return Path to be used with the Port associated with the Return Path ID.
STATUS	The STATUS of the Configutor table entry as defined in Table 2.
NOTE <sup>1</sup> - The Return Path ID field can be implied by indirect addressing of the table (i.e. The entry number is the same as the Return Path ID).	

Table 2 - Configurator table entry STATUS field

Value	Description
FREE	The Return Path ID is free for assignment and the associated UNIQUE ID, RETURN PATH and PORT elements are invalid.
HELD	The Return Path ID is held for the UNIQUE ID and the PORT and RETURN PATH fields are invalid.
VALID	The Return Path ID is assigned to the UNIQUE ID and uses the PORT and RETURN PATH. The Configurator table entry has changed since the last QUERY REGISTRATION SMS.
REPORTED	The Return Path ID is assigned to the UNIQUE ID and uses the PORT and RETURN PATH. The Configurator table entry has not changed since the last QUERY REGISTRATION SMS.

When a QUERY NODE SMS is received with the DR bit cleared, the node shall scan the Configurator table for an entry that matches all the following criteria:

- a) the STATUS field has a value of VALID or REPORTED;
- b) the UNIQUE ID field of the QUERY NODE SMS matches the UNIQUE ID element of the Configurator table entry;
- c) the RETURN PATH field of the QUERY NODE SMS matches the RETURN PATH element of the Configurator table entry;
- d) the port the QUERY NODE SMS was received on matches the PORT element of the Configurator table entry.

If a matching entry is found, then a QUERY NODE REPLY SMS is generated and the RETURN PATH ID field value from the Configurator table is copied into the RETURN PATH ID field of the SMS.

If no matching entry is found, then a search is made for an entry with a STATUS value of HELD and a matching UNIQUE ID field value. If no HELD entry match is found, then the first entry with a STATUS value of FREE is used. If a HELD or FREE entry is found, then the associated fields of the Configurator table entry are changed as follows:

- a) the PORT field is set to the port on which the QUERY NODE SMS was received;
- b) the STATUS field value is set to VALID
- c) the RETURN PATH field is set to the RETURN PATH field of the QUERY NODE SMS;
- d) the UNIQUE ID field is set to the UNIQUE ID field of the QUERY NODE SMS.

When a node executes a QUIESCE SMS it scans the Configurator table for all entries that have a UNIQUE ID element that matches the UNIQUE ID field of the QUIESCE SMS. If the RCTE bit is set in the QUIESCE SMS, then the STATUS field for all matching entries is set to FREE. If the RCTE bit is cleared in the QUIESCE SMS, then the STATUS field of the first matching entry is set to HELD, and the STATUS field of any other matching entries is set to FREE. This quiesce action is performed when a previously active path from that Configurator node has been disconnected. The quiesced Configurator node is required to issue a QUERY NODE SMS to register over each path that it intends to continue using. This ensures that any unused RETURN PATHS are removed from the Configurator table.

The Configurator table is cleared (i.e., the STATUS fields of all entries are set to a value of FREE) when a node executes a Total Reset or Absolute Reset Control frame. When one of the links to the node becomes Operational again each Configurator node receives an MASTER ALERT SMS and performs the Configuration process which results in the Configurator table being rebuilt.

NOTE 1 - It is recommended that Responder nodes provide space for at least 64 entries in the Configurator table. If there is no space to make an entry when a node receives a QUERY NODE SMS then the node sets the ITF bit in the QUERY NODE REPLY SMS.

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X3T10.1/96a163r1

Sincerely,

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