

USB4 1.0 ENGINEERING CHANGE NOTICE FORM

Title: Route String of Uninitialized Router
Applied to: USB4 Specification Version 1.0

Brief description of the functional changes:

A Read Response that originates from an Uninitialized Router should have the Route String field set to the Topology ID that was used to access the Router. A Notification Packet from an Uninitialized Router should have the Route string set to 0.
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Benefits as a result of the changes:

When a Connection Manager accesses an Uninitialized Router, the response will include a predictable Router String allowing the Connection Manager to enumerate the Router more quickly.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
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None

An analysis of the hardware implications:
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None

An analysis of the software implications:
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None

An analysis of the compliance testing implications:
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Need to verify that Control Packets from Uninitialized Router use the correct Route String.

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Actual Change

(a). Table 6-1, Control Packet Payload, Page 314

To Text:

DW	Field	Description
1	<i>Route String High</i>	<p>Route String High – All Control Packets shall include a Route String. The format of the Route String is shown in Figure 6-5.</p> <p>For Control Packets that originate from the Connection Manager and target a Router:</p> <p>TopologyID [55:32] – Shall contain the high 24 bits of the TopologyID of the target Router.</p> <p>Rsvd [62:56] – Shall be set to 0.</p> <p>CM [63] – Shall be set to 0b.</p> <p>For Control Packets that originate from an Initialized Router and target the Connection Manager:</p> <p>TopologyID [55:32] – Shall contain the high 24 bits of the TopologyID of the Router that originates the Control Packet.</p> <p>Rsvd [62:56] – Shall be set to 0.</p> <p>CM [63] – Shall be set to 1b.</p> <p><u>For Read Responses that originate from an Uninitialized Router and target the Connection Manager:</u></p> <p><u>TopologyID [55:32] – Shall be set to the high 24 bits of the TopologyID that was in the Read Request that the Router is responding to.</u></p> <p><u>Rsvd [62:56] – Shall be set to 0.</u></p> <p><u>CM [63] – Shall be set to 1b.</u></p> <p><u>For Notification Packets that originate from an Uninitialized Router and target the Connection Manager:</u></p> <p><u>TopologyID [55:32] – Shall be set to 0.</u></p> <p><u>Rsvd [62:56] – Shall be set to 0.</u></p> <p><u>CM [63] – Shall be set to 1b.</u></p>
2	<i>Route String Low</i>	<p>Route String Low – All Control Packets shall include a Route String. The format of the Route String is shown in Figure 6-5.</p> <p>For Control Packets that originate from the Connection Manager and target a Router:</p> <p>TopologyID [31:0] – Shall contain the low 32 bits of the TopologyID of the target Router.</p> <p>For Control Packets that originate from an Initialized Router and target the Connection Manager:</p> <p>TopologyID [31:0] – Shall contain the low 32 bits of the TopologyID of the Router that originates the Control Packet.</p> <p><u>For Read Responses that originate from an Uninitialized Router and target the Connection Manager:</u></p> <p><u>TopologyID [31:0] – Shall be set to the low 32 bits of the TopologyID that was in the Read Request that the Router is responding to.</u></p> <p><u>For Notification Packets that originate from an Uninitialized Router and target the Connection Manager:</u></p> <p><u>TopologyID [31:0] – Shall be set to 0.</u></p>

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(b). Section 6.3.2, Uninitialized Plugged State, Page 225

To Text:

When a Router is in the Uninitialized Plugged state, the values in the *Depth* and *TopologyID* fields of the Router Configuration Space are not valid.