

USB4 1.0 ENGINEERING CHANGE NOTICE FORM

Title: Host Router State Machine
Applied to: USB4 Specification Version 1.0

Brief description of the functional changes:

The ECR separates the state machine diagram for a Host Router and a Device Router.
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Benefits as a result of the changes:

More accurate depiction of a Host Router state machine.

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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none

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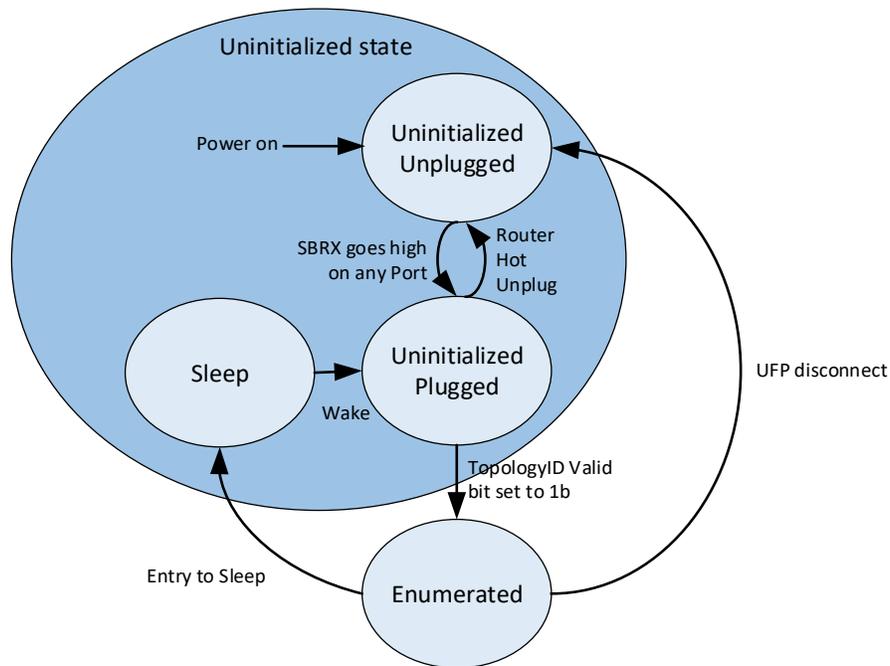
Actual Change

(a). Section 6.3 Router States

From Text:

Figure 6-2 describes the Router state machine.

Figure 6-2. Router State Machine



6.3.1 Uninitialized Unplugged State

A Router enters this state upon completion of the following events:

- Power on.
- Upstream Facing Port is disconnected.

Upon entering this state, a Router does the following:

- Discards all Transport Layer Packets.
- Removes all Paths.
- Restores all Configuration Spaces to their default values.

Note: All Lane Adapters are in CLd state while a Router is in the Uninitialized Unplugged state.

A Router exits this state after detecting a Router on any USB4 Port (see Section 4.1.2.2).

6.3.2 Uninitialized Plugged State

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A Router enters this state from the Uninitialized Unplugged state when it detects a Router on any USB4 Port (see Section 4.1.2.2).

While in this state, a Router performs Lane Initialization on all Connected Adapters.

A Router exits this state upon the following events:

- *TopologyID Valid* bit is set to 1b.
- The Router is hot unplugged.

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.

To Text:

Figure 6-2 describes a Host Router state machine.

Figure 6-2. Host Router State Machine

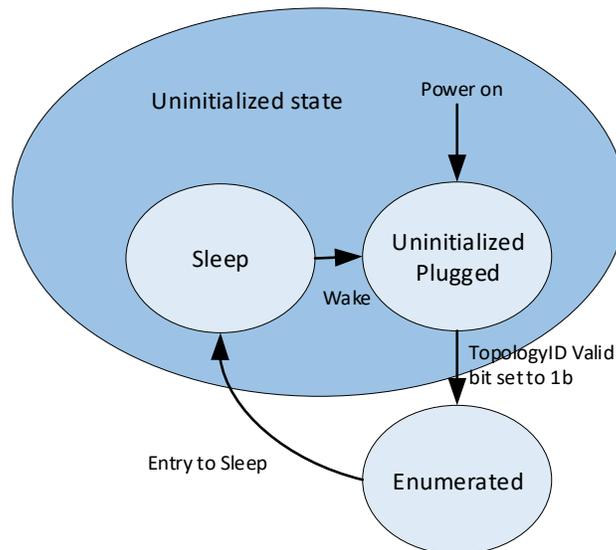
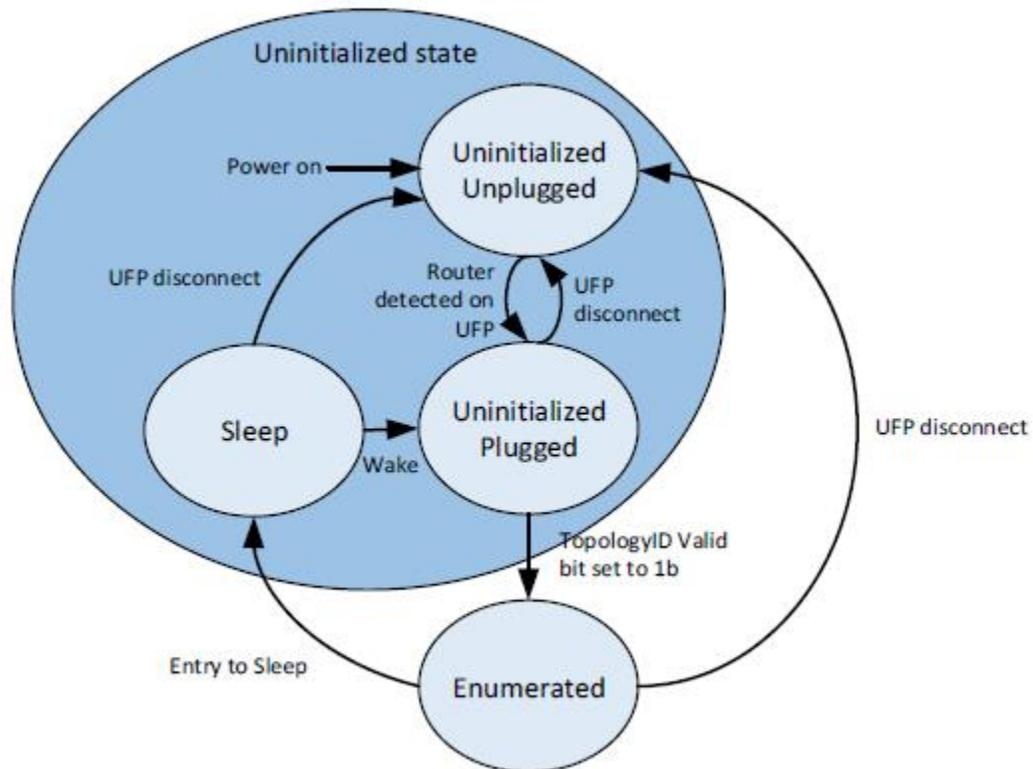


Figure 6-3 describes the a Device Router state machine.

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Figure 6-3. **Device** Router State Machine



6.3.1 Uninitialized Unplugged State

A **Device** Router enters this state upon completion of the following events:

- Power on.
- Upstream Facing Port is disconnected.

Upon entering this state, a **Device** Router does the following:

- Discards all Transport Layer Packets.
- Removes all Paths.
- Restores all Configuration Spaces to their default values.

Note: All Lane Adapters are in CLd state while a Router is in the Uninitialized Unplugged state.

A **Device** Router exits this state after detecting a Router on ~~any USB4~~ its Upstream Facing Port (see Section 4.1.2.2).

6.3.2 Uninitialized Plugged State

A **Host Router** enters this state:

- after Power On
- from the Sleep state on a wake event (see Section 4.5)

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A **Device** Router enters this state:

- from the Uninitialized Unplugged state when it detects a Router on **any-USB4 its Upstream Facing** Port (see Section 4.1.2.2).
- **from the Sleep state on a wake event (see Section 4.5)**

While in this state, a Router performs Lane Initialization on all Connected Adapters.

A Host Router exits this state when the *TopologyID Valid* bit is set to 1b.

A **Device** Router exits this state upon the following events:

- *TopologyID Valid* bit is set to 1b.
- The Router is hot unplugged.

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.