Link Aggregation YANG Considerations

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Review of issue for AXdz

- See Stephen Haddock's presentation here:
  - https://www.ieee802.org/1/files/public/docs2024/dz-haddock-link-agg-overview-and-modeling-questions-0312-v01.pdf

- Executive Summary
  - ieee802-dot1q-bridge.yang augments IETF interface
    - If the iftype is a bridge or ethernetCsmacd or ieee8023adLag or iLan then
      - The bridge-port container is available
    - That is ok except when an ethernetCsmacd is an aggregation port.
  - So… Need to update ieee802-dot1q-bridge.yang in some way to allow the bridge-port container to be excluded from the tree when an ethernetCsmacd is an aggregation port

Considerations

- (At least) Two ways of doing this…
  - Have the ieee802-dotq1-bridge module understand if an interface is an aggregation port.
    - Negative --- this requires the dot1ax module to be imported … always
  - Create a presence container in ieee802-dotq1-bridge that can be used to indicate that the bridge-port container should not be used
    - Positive --- backwardly compatible
- Is there a way to support this without modifying the bridge module?
  - I can't think of one… anyone else?

ieee802-dotq1-bridge modifications suggested

```
augment "/if:interfaces/if:interface" {

  container no-bridge-port {

    presence "Indicates if the bridge-port container should
be available or not";

    description "no-bridge-port indicator";

  }

}
```

```
augment "/if:interfaces/if:interface" {
  when
    "(derived-from-or-self(if:type,'ianaif:bridge') or "+
    "derived-from-or-self(if:type,'ianaif:ethernetCsmacd') or "+
    "derived-from-or-self(if:type,'ianaif:ieee8023adLag') or "+
    "derived-from-or-self(if:type,'ianaif:ilan')) and " +
    "not(dot1q:no-bridge-port)"

  {

    description
      "Applies when a Bridge interface.";
  }
```

Presence container that provides a way to indicate that no bridge-port container should be included

Here is the switch

Modification of bridge module

- Backward compatible change
- Completes the ability for link aggregation to be supported and leverage the existing bridge-port capability when appropriate
- If we don't do this…
  - The bridge-port container contains some dangerous things that should not be used when the interface is an aggregation port.
  - Bottom line, this makes for YANG that reduces the ability to do a wrong thing in relation to aggregation ports.