

802.1AXdz  
YANG for Link Aggregation  
Editor's Report: May 2024  
Version 1

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# 802.1AX status

- First draft: 802-1AXdz-d0.0
  - Clause 2 and Annex G: Add a couple RFCs to the normative references and bibliography entries.
  - Clause 3: Add a couple definitions
  - Clause 4 and Annex A: Add a new bullet to conformance clause and to PICS.
  - Clause 10: Link Aggregation YANG definitions
    - This is the bulk of the document.

# dot1ax YANG modules

- Three YANG modules:
  - ieee802-dot1ax-types
    - typedef, identity, etc. for the other two modules
  - ieee802-dot1ax
    - For Link Aggregation and LACP
      - System level container for the key-group list
      - Aggregator container to augment an if:interface
      - Aggregation-port presence container to augment an if:interface
  - ieee802-dot1ax-drni
    - For DRNI and DRCP
      - Presence container to augment an aggregator with DRNI



Re-name?

# Key Groups

- A key group associates all Aggregation Ports (and Aggregators) that can potentially be aggregated.
  - The fundamental characteristic of LACP is that all aggregation-ports/aggregators that can potentially be aggregated have the same combination of system id, system priority, and key.
  - There are several other parameters that are expected to be the same for all aggregation-ports/aggregators that can potentially be aggregated (e.g. LACPDU destination address, CSCD parameters that describe a distribution algorithm).
  - The key-group list in the YANG manages these parameters:
    - Each entry has a unique system id and key combination, and includes the other parameters that are expected to be consistent.
    - This prevents a having independent objects in each Aggregator and Aggregation Port that all (should) have the same value.
    - Reduces the likelihood of misconfigurations.

# JSON configuration file

```
{  
  "ieee802-dot1ax:link-aggregation": {  
    "key-group": [  
      {  
        "name": "Key-1",  
        "actor-admin-key": 1,  
        "actor-system-id": "00-80-C2-00-00-01"  
      }  
    ]  
  },  
}
```

Create a single entry  
in the key-group list

Create a couple Ethernet interfaces,  
augment with Aggregation-Port,  
and assign to the key-group

Create a couple LAG interfaces,  
augment with Aggregator, and  
assign to the key-group

```
"ietf-interfaces:interfaces": {  
  "interface": [  
    {  
      "name": "eth1",  
      "type": "iana-if-type:ethernetCsmacd",  
      "ieee802-dot1ax:aggregation-port": {  
        "agg-key-group": "Key-1"  
      }  
    },  
    {  
      "name": "eth2",  
      "type": "iana-if-type:ethernetCsmacd",  
      "ieee802-dot1ax:aggregation-port": {  
        "agg-key-group": "Key-1"  
      }  
    },  
    {  
      "name": "lag1",  
      "type": "iana-if-type:ieee8023adLag",  
      "ieee802-dot1ax:aggregator": {  
        "agg-key-group": "Key-1"  
      }  
    },  
    {  
      "name": "lag2",  
      "type": "iana-if-type:ieee8023adLag",  
      "ieee802-dot1ax:aggregator": {  
        "agg-key-group": "Key-1"  
      }  
    }  
  ]  
}
```

# Name changes?

- Xpaths get long:
  - E.g.: `if:interfaces/if:interface[if:name]/dot1ax:aggregation-port/dot1ax:aggregation-port-cscd`
- Proposed changes:
  - Module:
    - `ieee802-dot1ax` → `ieee802-dot1ax-linkagg`
  - Container:
    - `link-aggregation` → `linkagg`
    - `aggregation-port` → `aggport`
    - `aggregator` → `lag (?)`
    - `aggregation-port/aggregation-port-cscd` → `aggport/cscd`
    - `aggregator/aggregator-cscd` → `lag/cscd`
  - Leaf:
    - `agg-key-group` → `key-group-name`
    - `Intra-relay-port` → `irp-name`

# Plan going forward:

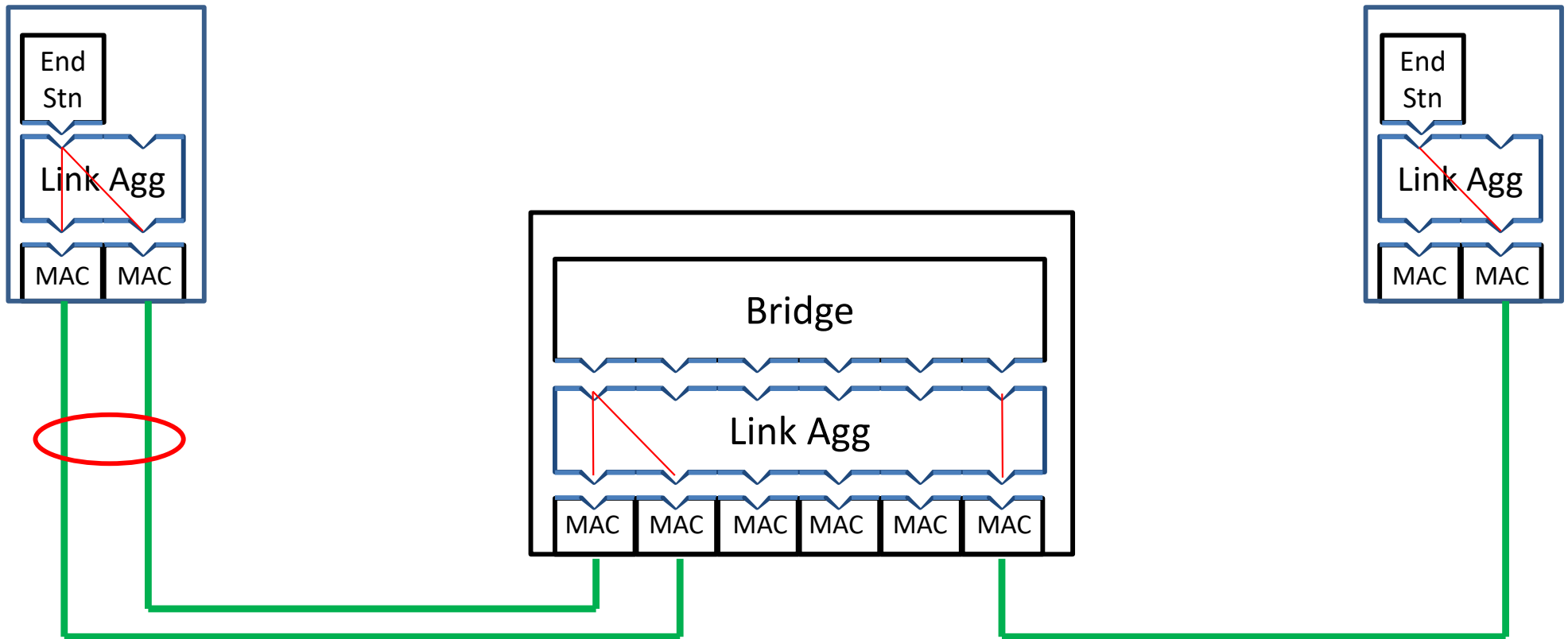
- Complete draft 0.1:
  - Implement name changes (?)
  - Where do statistics go?
  - Improve description of modules
    - E.g. use of higher-layer-if / lower-layer-if
- Complete first task group ballot before July

Thank You



Back up slides

# LinkAgg Sublayer in Systems



- Link Aggregation Sublayer sits between Bridge Ports and MACs in a bridge; between MAC Client(s) and MACs in an end station.

# Link Aggregation Service Sublayer

The Link Aggregation Sublayer is a collection of Aggregators and Aggregation Ports.

- Typically one Aggregation Port per MAC.
- At least one Aggregator per BridgePort/MAC SAP. (Can always model with one Aggregator per Aggregation Port, but some Aggregators may be unused.)
- Aggregation Ports are attached to Aggregators dynamically by the Link Aggregation Control Protocol (LACP).

