

A YANG Data Model for Network Hardware Inventory

CCAMP WG, IETF113

draft-yg3bp-ccamp-network-inventory-yang-00

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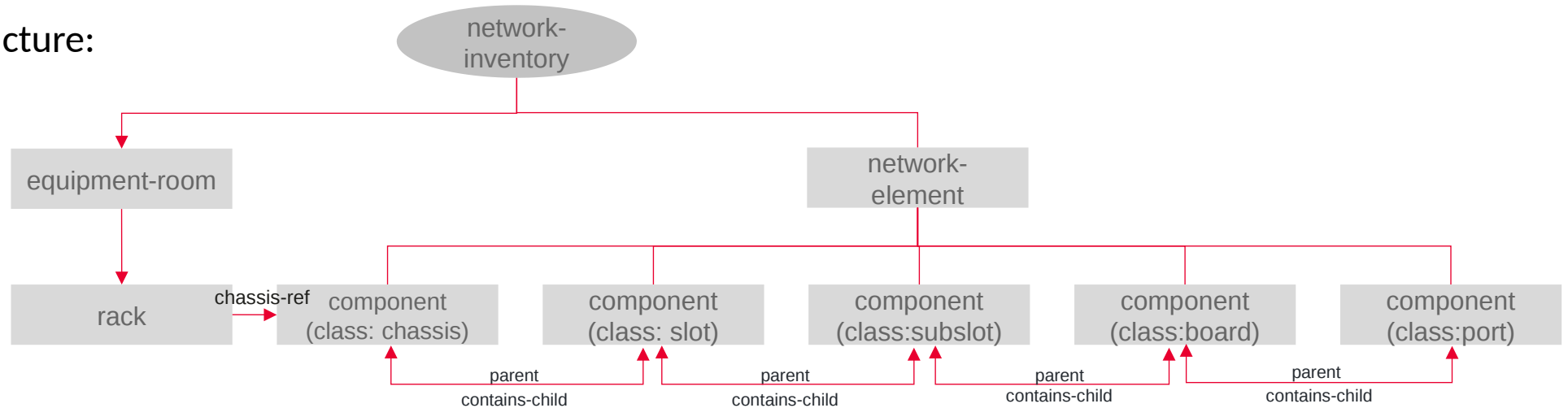
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Major Updates Since IETF 112

- Presented in IETF 112 as draft-yg3bp-ccamp-optical-inventory-yang
 - ✓ Feedbacks to target a broader scope
- Updated draft name and some other content for a broader scope
 - ✓ removed optical constraint in the draft name and title
 - ✓ Analyzed no overlap with other inventory related drafts
 - ✓ Clarified the scope is for hardware inventory on network scale
 - ✓ Replaced shelf with chassis, chassis is more recognized in other technology like IP
- Presented a scalability issue which may lower integration efficiency if using the current model

A Possible Integration Efficiency Issue of Current Model

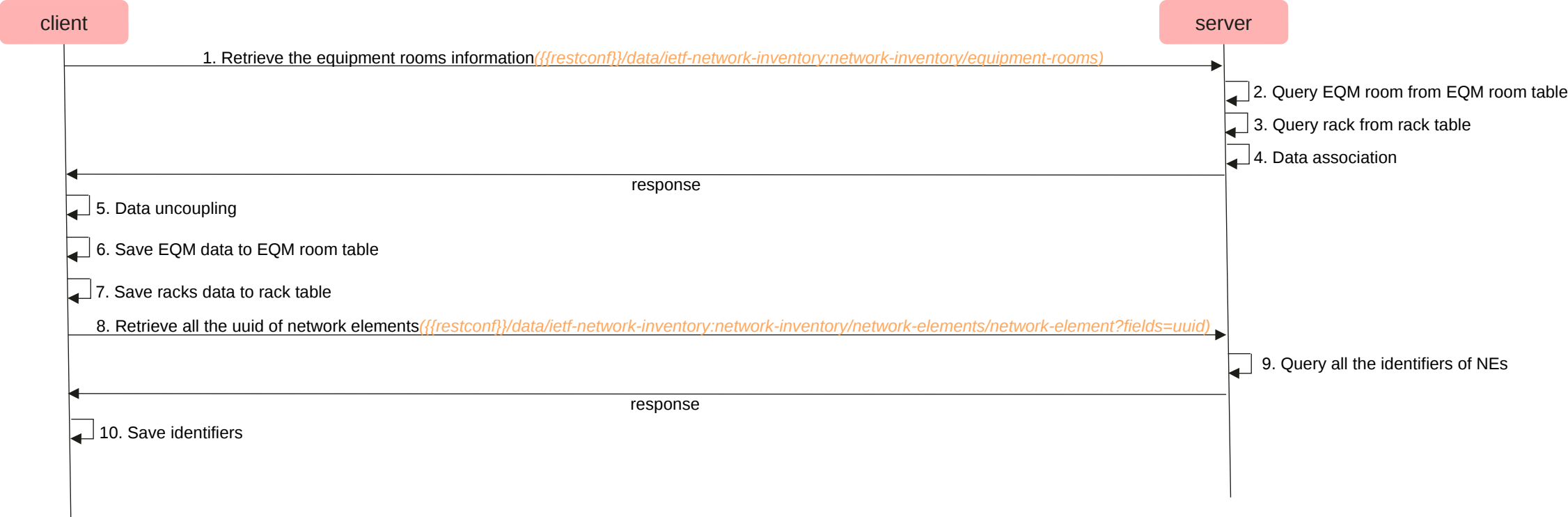
Current Model structure:



- In the current YANG model, chassis, slot/sub-slot, board, port objects are all defined as generic components under network element. The whole retrieval needs to be done one NE by one NE for the reason that the number of components in each NE is not certain and it is hard to use pagination.
- These component objects may be saved separately in both domain controller's and OSS/MDSC's database. While doing a whole retrieval, PNC combines those component objects together while OSS/MDSC classifies them as different groups which is inefficient.
- Though the time wasted in each NE is not too much, the time wasted in the whole network would be very large. Even if it is 1s wasted per NE, but if the scale of network is up to 10K, the time wasted will be hours.

(More information can be seen in the next work-flow slide)

Integration Work-flow of the Current Model(1/2)



Integration Work-flow of the Current Model(2/2)



- Since relational database is widely used by PNC and OSS/MDSC, inventory objects are probably stored by types. When retrieving a NE, PNC needs to query each table per NE and combine them together. Reversely, OSS/MDSC needs to divide them into different groups. This combining and regrouping step(step 18&19) is time-consuming. And this will lead a efficiency issue in large scale networks.
- A tree-like structure data integration may also face a similar issue, which should be discussed in a wider group.

Summary & Next Step

Summary

- Clarify the scope of this draft
- Clarify the possible efficiency issue with current model

Next Step:

- Raise more discussion in netmod & teas
- Determine a final model structure
- Analyze other use cases from other technologies
- Request WG adoption

Welcome to join our weekly discussion

- Meeting slot: Tuesday 10-11am CST
- Github: <https://github.com/italobusi/ietf-network-inventory>

Thank You ☐