

Modelling Questions

- 1. What level of dependence do/should models have on Framework?**
- 2. What layers of models do we need, device, network, service, inventory, topology?**
- 3. How much granularity in power control? (e.g., power states vs on/off)**
- 4. Should control relate to intent or actual power usage?**
- 5. How generic should the model be for components? (e.g., linecards vs optics, vs forwarding planes)**
- 6. How to model power reported for other devices?**
- 7. How does the data get aggregated together?**
- 8. Accuracy of the data?**
- 9. Time intervals for data reporting?**

Q1. What level of dependence do/should models have on Framework?

- **Does the framework affect the structure of the models?**
- **Or is it beneficial for the models to be aligned to the framework?**
- **Or does it not matter (e.g., commonality in groupings)?**

Q2. What layer/relationship between the models do we need?

Device/Component & Network level models are obvious

What about topology/inventory (or are these just network models)

What about reporting the data to customers or end users (or is that outside YANG)

Q3. How much granularity in power control?

- **Should this be generic states (e.g. reusing EMAN work), or a range (e.g., 1-100)?**
- **Or should this be very simple (e.g., a simple boolean on/off)?**
- **Or should this vary by the component being modelled?**
- **How does a client know what states a device/component supports and what they actually mean?**
- **Does the configuration align with the operational state or are they different?**

Q4. Should control relate to intent or control actual power usage?

- **I.e., does the configuration put the device/component into low power sleep mode, or hybrid sleep or cold sleep?**
- **Or does the configuration put the device/component into sleep capable mode, leaving it to the device to decide what state it should be in?**
- **Or do we need to be able to model both?**

- **Related: Do you set the forwarding ASIC to act in a particular way or tell it to optimize for performance or to minimize power usage.**

Q5. How generic should the model be for components?

Does it treat each component generically, with a generic power mode, or is it more concrete (e.g., different modellings properties for interfaces vs optics vs fabric vs forwarding planes, etc)?

- **What does it mean to put a linecard into 70 out of 100? How would vendors implement consistently?**

Could using identities and augmentations can be cover both? I.e., both generic identities with more concrete refinements?

Q6. How to model reporting power for other devices?

- **Whilst not introducing any additional complexity in the main case where a device is reporting its power usage?**
- **Does this differ at the device vs network level?**
- **How to attribute power and avoid double counting?**

Q7. How/where does the data get aggregated?

Does any aggregation happen on the devices, or only at the network level?

Does power get reported both in aggregate and also in a fine-grained way?

How to avoid double accounting?

Q8. How to control or report accuracy of the information?

- **Is the granularity/accuracy statically defined in the data model?**
 - What do devices do if they cannot report at this level of accuracy?
 - Probably require a target accuracy that is sufficient to meet requirements.
 - Note accuracy for power consumption on a large router (i.e. KW), differs from says optics (W, or mW)
 - Floats/Doubles might have been helpful here, but YANG doesn't support those.
- **Or does a device need to report what accuracy it is able to report at?**
 - Note – this adds flexibility for the devices, but greatly increases the complexity of consumers of the data, particularly if they are trying to aggregate data from multiple sources.
 - At what level of granularity would the accuracy be reported at? E.g., could it differ for different linecards.

Q9. What time intervals is the data being reported over?

- **It is aggregated power over time, or instantaneous power usage (or both)?**
- **Can each component use its own time interval, or is this pre-defined and fixed?**
- **Or are there a standard set of time intervals that the data can be reported at?**

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Thank you for your contributions and participating