

Network Management Datastore Architecture

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Martin Björklund
Jürgen Schönwälder
Phil Shafer
Kent Watsen
Robert Wilton

Definition

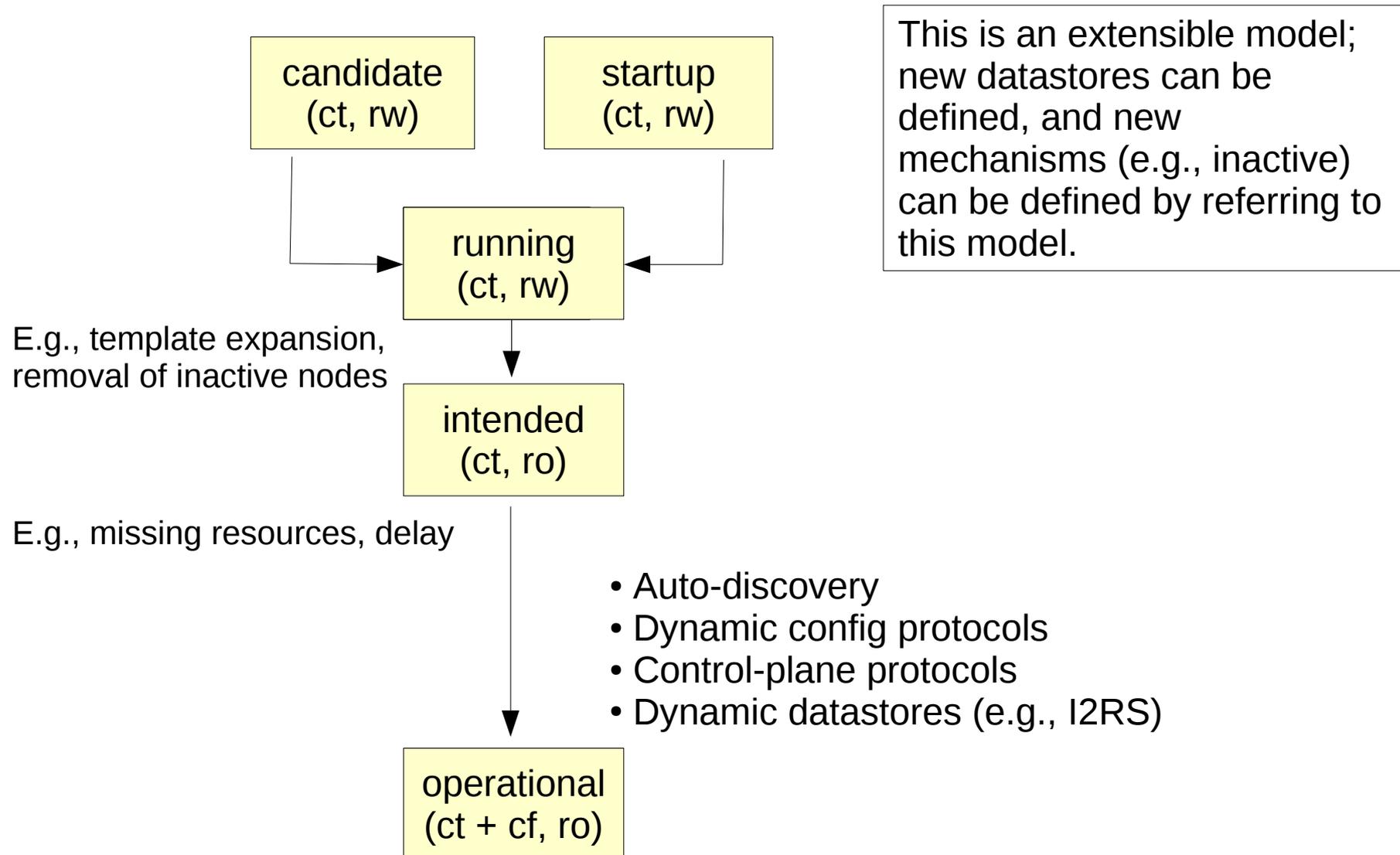
A datastore is a conceptual place to store and access information. Different datastores may have the same schema (same set of YANG nodes) but different instantiations. For example, the candidate may contain different data than running.

Original Model

In the original model (RFC 6241, RFC 7950, RFC 8040) it was not possible to access the operational state separately. It was always accessed together with the running configuration.

This has lead to data model duplication (“/foo” and “/foo-state”), which requires additional logic to relate configuration to its corresponding state.

Datastore Architecture



Keeping track of origin

Data in the *operational* datastore is marked with a meta data annotation “origin”. The origin value is an identity:

```
+-- origin
+-- static // from intended
+-- dynamic // from dynamic config protocol or datastore
+-- default // from default in data model
+-- system // from the device itself
```

Clients can filter on the attribute value, e.g., to retrieve applied configuration.

Implications on YANG

No changes to the YANG language are required. A server that implements the new datastores can continue to support YANG 1 and 1.1 modules.

Modules with split config and state trees will result in data duplication in the *operational* datastore.

Need to clarify the XPath context for notifications/rpcs/actions – should be the operational state rather than state data + running

Implications on YANG Modules

No changes to existing YANG modules are *required*.

However, we should revise published modules that use split trees, and rewrite them to use a single tree (notably ietf-interfaces, ietf-ip, ietf-routing et.al.)

Implications on YANG Guidelines

The current guidelines recommends separate config and state trees. This recommendation needs to change, and discuss the new *operational* datastore.

Next Steps

- Remove the temporary Appendix “Implication on other Documents”, and move its contents to separate documents.
- Then ready for WGLC.
- [What to do with RFC 6244?]