

I2RS Protocol meeting 9/4/2015

10:00 -11:30am ET

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Attendees: Andy Beirman, Bogdonas, Sue Hares, Jan MedVed, Anu Nair, Kent Watsen

- Andy Bierman's slides on a Thermostat Model and Diagnostics
 - I2RS must be identified in the yang module
 - Andy is not sure how the disjoint data models work that Jeff proposed.
- Kent:
 - I added a leaf – which adds an OP-State value discovered (LSP-ID) . This is described in the thermostat-ephemeral structure.
 - I struggled with having a “config true” value so instead I created an RPC with the following data.
 - “rpc do-stuff-with-lsp-id”
 - If the LSP-ID disappears, it will send the notification
 - Client gets a LSP-ID from the RSP
 - Notification occurs if the LSP-ID disappears.
- Jan: You are getting around the config false by creating an RPC.
- Kent: For this example, we had a config true value. Of course, a thermostat would
- Anu: Can we do modification to the LSP-ID without an RPC?
- Kent: In this example, it could be changed to have LPS-ID config true
 - If this were a router, there would be list of route entries.
 - I guess if you get the applied config (see the the graphic image I shared last week¹ – the implied config was in the operational state and then put another entry into that list.
 - Ephemeral is editing the applied the config?
- Anu: Are you suggesting in this example, the special RPC need for lsp-id?
- Andy : We used to claim that would lead to lot of operations?
- Kent: This is true, it would lead to a lot of operations.
- Andy: Still in the agent it hooks, the code that reports the temperature is new. Whether this code exists in an RPC or editing temp or something – it is incidental. In the agent it turns out the approach.
- Jan: I like this approach from implementation. IN ODL, you have a datastore which keeps all the data. We allow the write for internal applications to the operational dasstore during a write to either config or operational state. We are already making that decision for ODL.
 - The write into the ODL store is now not permitted.
 - In the future, we could have RESTCONF write to the data store caused by a POST.
 - With the datastore, you can write the whole route table with the one command.
 - It becomes undoable, with single route additions.
- Jan: If you want to write into several different subtrees the RPCs, becomes very difficult.
- Kent: I like Andy's query parameter that has ephemeral.
 - A PUT/PATCH uses the ephemeral state.
 - If you use the query parameter ephemeral then anything you can configure persistently.

¹ This is included as an appendix along with Kent's input)

- Jan: It also passes the litmus test of minimal changes. I can see how this can be grafted on the implementation with minimal.
- Kent: In the ops-state draft, we have an example of how to query. It is similar to the query parameter that Andy has here.

Sue's diagram

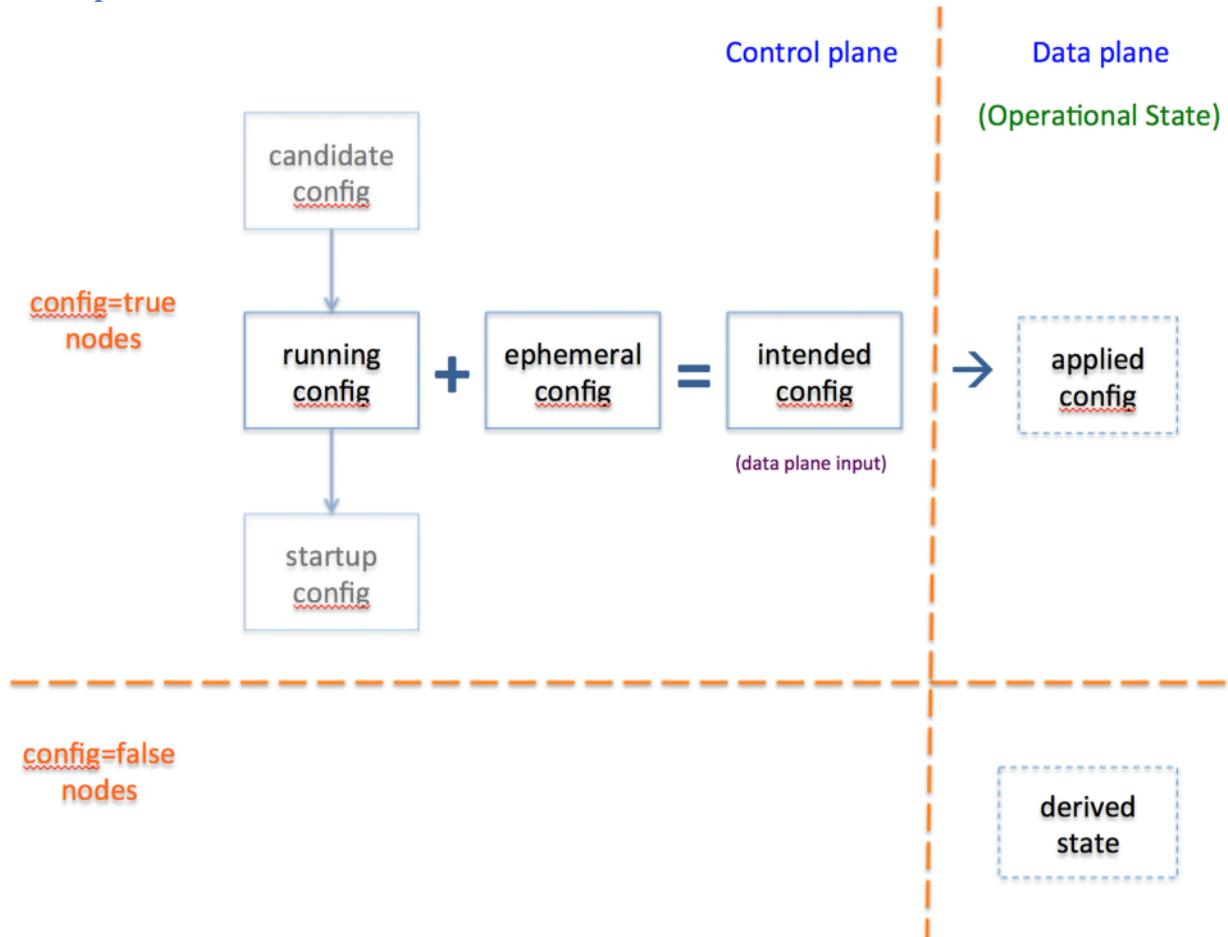
- Jan we have priority as part as concern; We have the intend priority from netconf.
 - Implicitly we could make the ephemeral state higher than anything that is configured.
- Sue: We could simply add an offset.
- Jan – it is a GET and not a PUT. In the last case.
- Sue – Yes, I incorrectly typed that state. The “route-installed-state” is a purely operational state.
- Jan – we have to have the ephemeral stated in the PUT.
 - What about operational state?
- Andy: The ephemeral data store can have config true/config false. It has to have ephemeral true; It is important that the objects can tagged.
- Jan: I agree.
- Andy: It does an overlay on the data model. You are adding a new yang attribute that indicates whether the data is ephemeral or config.
- Jan: You would say ephemeral true.
- Andy: If I have a configs that allowed operational state.
- Sue: Can operational state just not be there in some models? In other words can we put all the operational state into the joint model, and simply not implement it for unused cases.
- Andy: This is what the mandatory flag means.
- Sue: Do we have an mechanisms to clear statistics to a known state?
- Andy: Clear stats has a long history. SNMP experts state it disrupts another managers who are querying states. All counters should use deltas. However, in reality you want to walk up to a router and know what state it is in terms of counters.
- Sue: it sounds like clearing counters is a general state and not a
- Sue: What we should do next?
- Andy – big decision – should we do RPC or direct? How do we handle batch.
- Jan – I can batch with Direct. I do not know how to do this with RPC.
- Sue – I can use Andy model to represent the simple case from RIB, RB-FIB, and topology.
- Jan: I think that the explicit ephemeral in the model. I think it knocks 80% of the problem.
- Sue – I will do an IPv4, topology v4, and FB-RIB v4 using Andy's mechanism.
- Andy – I will send out suggested changes.
- Kent – Andy see the draft-kwatsen-netmod-opstate

Action items:

- 1) Sue to create example like Andy's with Topology with I2RS Topology and FB-RIB
- 2) Ignas to provide BGP model changes,
- 3) Andy to send text to Sue and Kent prior to sending to group

Goal: Begin to have text that provides a draft proposal.

Kent's picture



Kent's yang**Yang:**

```

module thermostat { ...
namespace "https://example.com/ns/thermostat";
leaf desired-temp {
type int32;
units "degrees Celsius";
description "The desired temperature";
}
leaf actual-temp {
type int32;
config false;
units "degrees Celsius";
description "The measured temperature";
}
leaf lsp-id {
config false;  <---- opstate value
type uint16;
}
}

```

```

module thermostat-ephemeral {
import thermostat { prefix t; } <!-- import
module-type ephemeral; <---- type declaration
rpc do-stuff-with-lsp-id {
input {
leaf lsp-id {
type leafref {
path "/t:thermostat/lsp-id
}
}
}
}
notify if ! /t:thermostat/lsp-id {
message "lsp id $(/t:thermostat/lsp-id) is gone.";
target notification-target; <--- e.g., SSE, syslog, etc.
}
}
}

```

Usage:

Request:

GET/restconf/data/thermostat:lsp-id?content=nonconfig
Host: example.com
Accept: application/yang.data+xml

Response:

HTTP/1.1 200 OK
Date: Mon, 23 Apr 2012 17:02:40 GMT
Server: example-server
Content-Type: application/yang.data+xml
Cache-Control: no-cache
Pragma: no-cache
ETag: a74eefc993a2b
Last-Modified: Mon, 23 Apr 2012 11:02:14 GMT
<lsp-id xmlns="<https://example.com/ns/thermostat>">123</lsp-id>

Request:

POST /restconf/operations/thermostat-ephemeral:do-stuff-with-lsp-id=123 HTTP/1.1
Server: example.com

Response:

HTTP/1.1 200 OK
Date: Mon, 25 Apr 2012 11:01:00 GMT
Server: example-server

Notification:

POST /<notification-target's URL> HTTP/1.1
Host: example.com
Content-Type: application/yang.operation+xml
<input xmlns="<https://example.com/ns/thermostat>">
 <lsp-id>-123</lsp-id>
 <message>LSP-id 123 is gone</message>
</input>