



I2RS Related/Relevant Yang Models Currently in Use

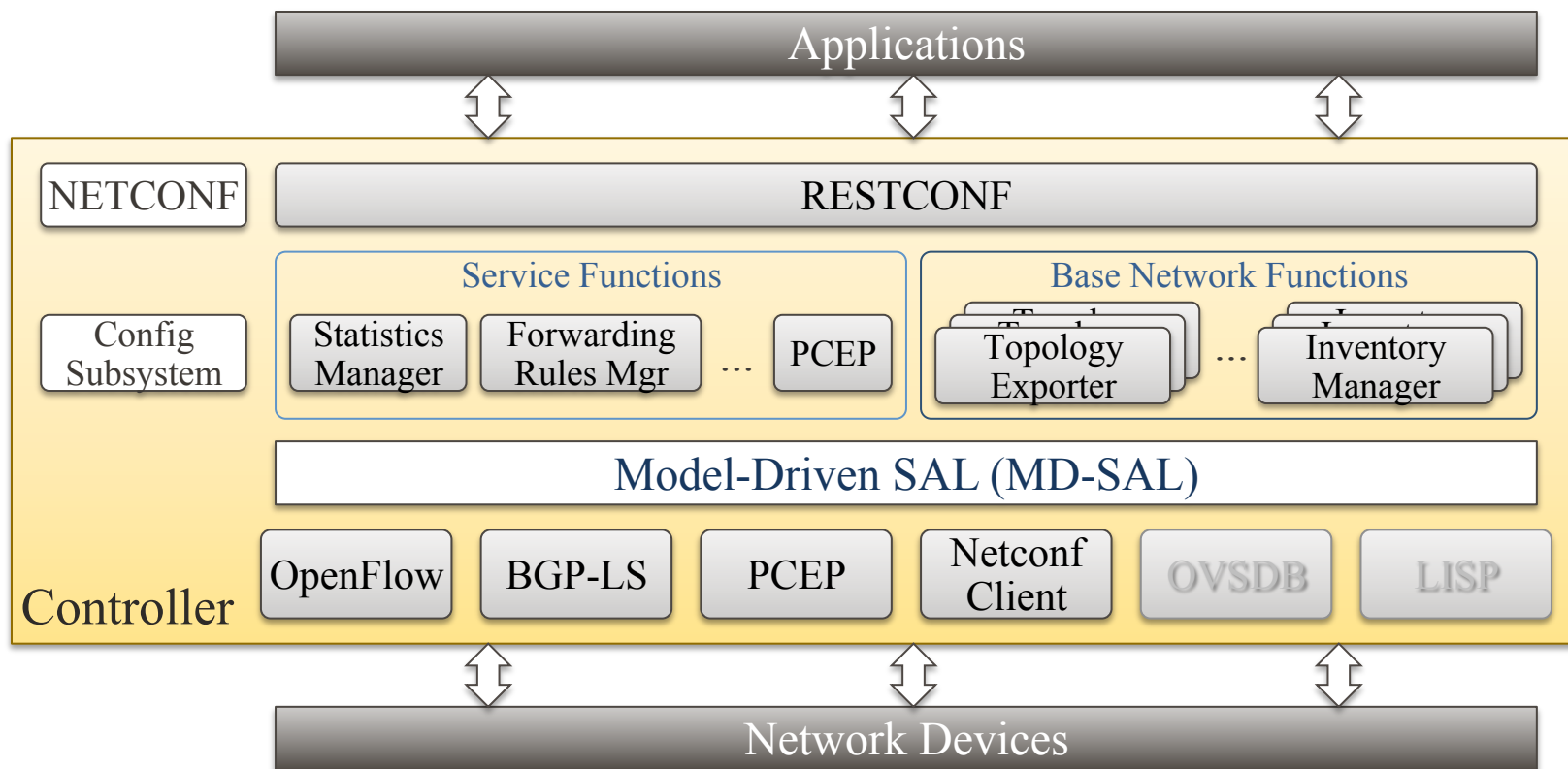
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Robert Varga, Anton Tkacik, Jan Medved

Agenda

- Architecture
- Why YANG
- What Models
- Inventory model
- PCEP protocol model

Architecture



Why YANG

- Network device management:
 - SNMP
 - TL1
 - CLI, proprietary protocols
 - NETCONF
- Extensible DDL
 - XML Information Set
 - Augments, Extensions
- Data-dependent structure
 - “when” statement
- Early validation
 - Ranges, “must” statement
- Backwards compatible (with SMIv2)
- Standardized models being worked on

What Models

- ~110 models defined in OpenDaylight
- https://wiki.opendaylight.org/view/OpenDaylight_Controller:MD-SAL:Model_Reference
- 3 models from RFCs
 - RFC6021
 - RFC6022
- 8 models from current drafts
 - draft-clemm-i2rs-yang-network-topo
 - draft-ietf-netmod-iana-afn-safi
 - draft-ietf-netmod-iana-if-type
- ~10 models dealing with IETF protocols (BGP, PCEP)
- ~27 models dealing with OpenFlow (1.0, 1.3)
- ~35 internal wiring models
- ~15 conceptual prototypes

Inventory model

- Represents manageable endpoints connected to controller
- Simple base model, only skeleton concepts
 - Node – manageable endpoint, logical node
 - Node Connector – connection point present on logical node (interface, port, etc.)
- Extended by technology-specific models
 - Flow-capable Node for OpenFlow 1.3
 - Capabilities
 - Flow tables
 - NETCONF Node
 - Capabilities
 - Pass-through access to the underlying device

PCEP protocol model


- Message-level model of PCEP
 - Based in part on draft-cmfg-pce-pcep-grammar
 - RFC5440, RFC5441, RFC5455, RFC5521, RFC5557
 - draft-ietf-pce-stateful-pce augmentation-{02,07}
 - draft-{crabbe,ietf}-pce-pce-initiated-lsp-00 augmentation
- Message is a Notification
- Augmentation of topology model with list of reported LSPs
- RPC model for invoking PCInitiate/PCUpd requests
- Tool-generated DTOs, extensible parser
- https://wiki.opendaylight.org/view/BGP_LS_PCEP:Models



Thank you



Resources

- More information and to join:
 - wiki.opendaylight.org
- Keep informed and join the conversation
 - IRC: #opendaylight on Freenode
 - Open mailing lists: lists.opendaylight.org
 - [@openDaylightSDN](https://twitter.com/openDaylightSDN) 
 - #OpenDaylight



Backup: BGP protocol model

- Message-level model of BGP
 - RFC4271, RFC4724, RFC4760, RFC1997, RFC4360, RFC6973
 - draft-ietf-idr-ls-distribution-04
- Message is a Notification
- Model of local RIB, no route dissemination at this time
- Tool-generated DTOs, extensible parser
- Translation into draft-clemm-i2rs-yang-network-topo
- https://wiki.opendaylight.org/view/BGP_LS_PCEP:Models

Backup: BGP processing

