

Integrating Operations in YANG Models

(draft-zheng-netmod-integrate-operations-00)

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IETF90 @Toronto, July 2014

Problems & Proposed Solution?

- **Problems**

- How user-defined non-standard operation use the capability of standard protocol RPC such as <Edit-config>.
- How to define the operation's impact to datastores for authorization more exact and accurate.
- Gap to I2RS requirements: No resource-specific methods

- **Proposed Solution**

- Define operations to data nodes on the data model hierarchy tree as a part of the data model attributes;
- The operations that will effect or side effect datastores should be specified which base standard RPC operations are inherited.
- The operation access control rules should depend on the impact to data models by the operations defined in the model.

Sample of Proposed Solutions

This example is based on the ARP conversion scenario described in Section 3.1.

Operation is defined as a "method" substatement in the YANG model:

```
module arp {
  namespace "http://example.com/network";
  prefix "arp";
  container arp-records {
    list arpList {
      leaf ipAddr {
        type string
      }
      leaf macAddr {
        type string
      }
      leaf styleType {
        type string;
      }
      method convert-arp {
        base edit-config
        description "A method to ...";
        input {
          leaf source-arptype {
            type string;
          }
          leaf dest-arptype {
            type string;
          }
        }
      }
    }
  }
}
```

Corresponding NETCONF message is as the following:

```
<rpc message-id="101"
  xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
  xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0">
  <edit-config>
    <target>
      <running/>
    </target>
    <config>
      <arp xmlns="http://example.com/network">
        <arp-records method="convert-arp">
          <source-arptype>dynamic</source-arptype >
          <dest-arptype>dynamic</dest-arptype >
        </arp-records >
      </arp>
    </config>
  </edit-config>
</rpc>
```

Next Steps

- Confirm the problem in the WG
- Discuss the proposed solutions
 - detailed technical designs
 - Any other solutions?

Comment?
Thank you!

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