

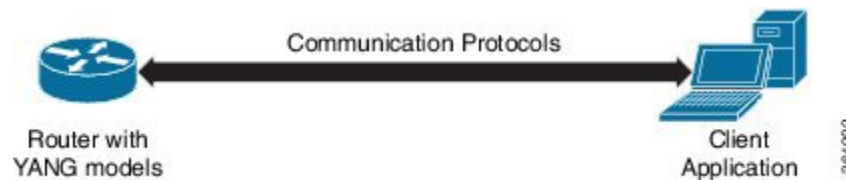


## Use Data Models

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## Use Data Models

*Figure 1: Workflow for using Data models*



The above illustration gives a quick snap shot of how YANG can be used with Netconf in configuring a network device using a client application.

The tasks that help the user to implement Data model configuration are listed here.

1. Load the software image ; the YANG models are a part of the software image. Alternatively, the YANG models can also be downloaded from:

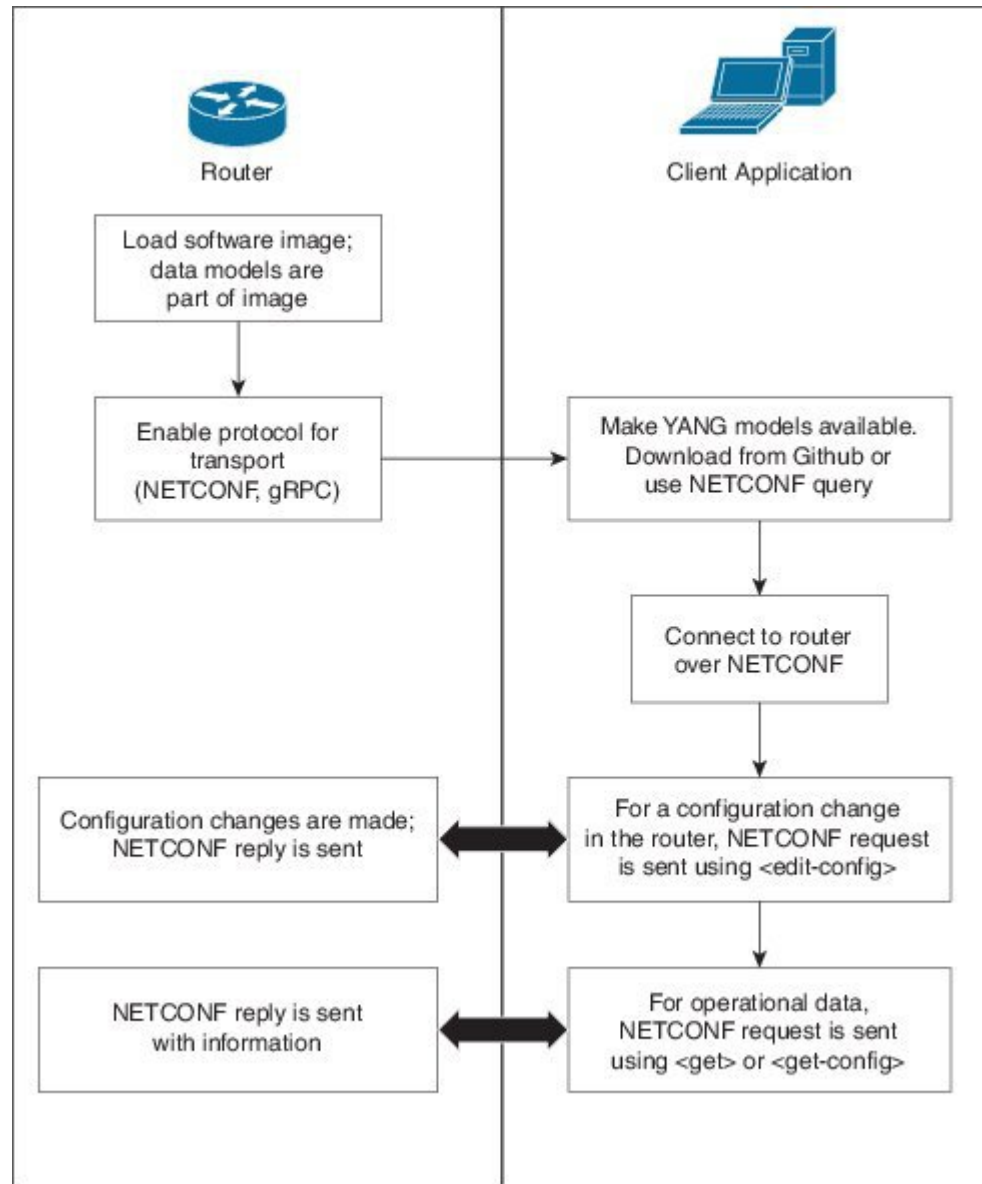
```
https://github.com/YangModels/yang/tree/master/vendor/cisco/xr
```

Users can also query using NETCONF to get the list of models.

```
<?xml version="1.0" encoding="utf-8"?>
<rpc message-id="100" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <get>
    <filter type="subtree">
      <netconf-state xmlns="urn:ietf:params:xml:ns:yang:ietf-netconf-monitoring">
        <schemas/>
      </netconf-state>
    </filter>
  </get>
</rpc>
```

2. Communication between the router and the application happens by Netconf over SSH. Enable Netconf on the router on a suitable port.
3. From the client application, connect to the router using Netconf over SSH. Run Netconf operations to make configuration changes or get operational data.

**Figure 2: Lane Diagram to show the router and client application operations**



## Enabling Netconf

This task enables Netconf over SSH.

### Before you begin

Generate relevant crypto keys.

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**Step 1** **netconf-yang agent ssh**

Enables the Netconf agent process.

**Step 2** **ssh server netconf**

Enables Netconf.

**Step 3** **ssh server v2**

Enables SSH on the device and enables Netconf on port 22 if the Netconf agent process is enabled.

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### What to do next

The **netconf-yang agent session** command enables the user to set session parameters.

```
netconf-yang agent session {limit value | absolute-timeout value | idle-timeout value}
```

where,

- **limit value**- sets the maximum count for concurrent netconf-yang sessions. Range is 1 to 1024. The default value is 50.
- **absolute-timeout value**- sets the absolute session lifetime. Range is 1 to 1440 (in minutes).
- **idle-timeout value**- sets the idle session lifetime. Range is 1 to 1440 (in minutes).

## Enabling gRPC

Use the following procedure to enable gRPC over HTTPS/2. gRPC supports both, the IPv4 and IPv6 address families (default is IPv4).

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**Step 1** Install the GO client. For more details on installing the GO client, see <https://golang.org/doc/install>.**Step 2** Configure the gRPC port, using the **grpc port** command.

```
RP/0/RP0/CPU0:ios(config)#grpc  
RP/0/RP0/CPU0:ios(config)#port 57400  
RP/0/RP0/CPU0:ios(config)#tls  
RP/0/RP0/CPU0:ios(config)#commit
```

Port can range from 57344 to 57999. If a port is unavailable, an error is displayed.

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