

A Quick Start of ndCONF Agent Studio Eval package in a Linux VM machine

Contact NuDesign at contact@ndt-inc.com to receive download credentials to the ndCONF Studio Eval Installation package, which is available at <https://www.ndt-inc.com/netconf/yang-demo-agent-download/>. You will also receive a ndCONF Eval License file, required to run the Eval.

The instructions listed below will quickly get your ndCONF Agent Eval running, with access via the built-in CLI and via the NETCONF test client, running over a secure TLS link, pre-enabled to demonstrate the Call Home feature.

To enable NETCONF access over SSH, or enable RESTCONF or SNMPv3 access, please consult the ndCONF Agent User Guide.

For RESTCONF testing, the ndCONF Eval provides a simple web page based client, called `restconf-submit-test.html`.

For SNMPv3 testing please download NuDesign's Windows based, Visual MIBBrowser Pro Eval, a simple SNMPv3 client, available at <https://www.ndt-inc.com/ndt/eval-download/>.

The ndCONF User Guide will also enable you to build and install, provided in the C++ source format, the ndCONF Datastore Server's sample extension Agents. Their build and configuration process demonstrates a road you would follow building the extension Agents for your own YANG or MIB modules.

You will need Linux "root" privilege for most commands below, including installing and starting the NETCONF Agent. You may use the "sudo" command to run any command as root.

1. open a Linux terminal window, and 'cd' to the directory where the ndCONF Eval install file was downloaded, then execute:
 - a. `# chmod +x ndCONF Eval_file_name` -- this command will make the Install file executable, after the download.
 - b. `# ./ndCONF Evalfilename` -- this command will start the installation process from the local directory.
 - c. copy the received ndCONF License file to your Linux /etc directory.
2. start the NETCONF Agent by running:
 - a. `# ./teststart` - from the "/opt/your ndCONF Eval_install_dir/ndconf/testagent" directory, you should now see the NETCONF Datastore Agent (Server) CLI prompt.

```
*****
NuDesign Yang Datastore TEST Agent
Version 2.0.0
Copyright (c) 2014-2024 NuDesign Technologies Inc.
*****
> █
```

3. open a new terminal window and start the NETCONF client, run:
 - a. `$./ncclientstart` - from the "opt/your ndCONF Eval_install_dir/ndconf/ncclient" directory
4. after a short period of time, a Call Home connection is established, and your NETCONF client is now connected to the Agent via TLS. You should see the following NETCONF client prompt:

```
TLS Connected, session-id = 3
CallHomeServer Connected 127.0.0.1:55258
```

```
1[3]<
```

```
reply message-id: 2
```

```
rpc-reply
data
  session
    session-id 3
    transport netconf-tls
    username chadmin
    source-host 127.0.0.1
    login-time 2024-03-27T17:23:57Z
    in-rpcs 1
    in-bad-rpcs 0
    out-rpc-errors 0
    out-notifications 0
```

```
1:T chadmin@127.0.0.1> █
```

5. You can now interrogate the Agent or you can also open a separate SSH session, see the ndCONF User Guide, Section 7.
6. From either TLS or SSH sessions you can execute NETCONF commands. For example run:
 - a. `> get-config running xpath //ndg:garage` - you should see the values of Garage extension agent objects, similar to the following reply:

```
1:T chadmin@127.0.0.1> get-config running xpath //ndg:garage
```

```
1[3]<
```

```
reply message-id: 3
```

```
rpc-reply
data
  garage
    garageObjects
      garageAddress 999 Persist Ave.
      garageCOLevelRisingThreshold 59
      garageCOLevelFallingThreshold 19
    vehiclesEntry
      vehicleIndex 1
      vehicleLicencePlate CAR001
      vehicleModel Model 1
    vehiclesEntry
      vehicleIndex 2
      vehicleLicencePlate CAR002
      vehicleModel Model 2
```

```
1:T chadmin@127.0.0.1> █
```

7. Note that both, the "testagent" & "ncclient" maintain separate log information in sub directories below each executable's directory. E.g. ./log

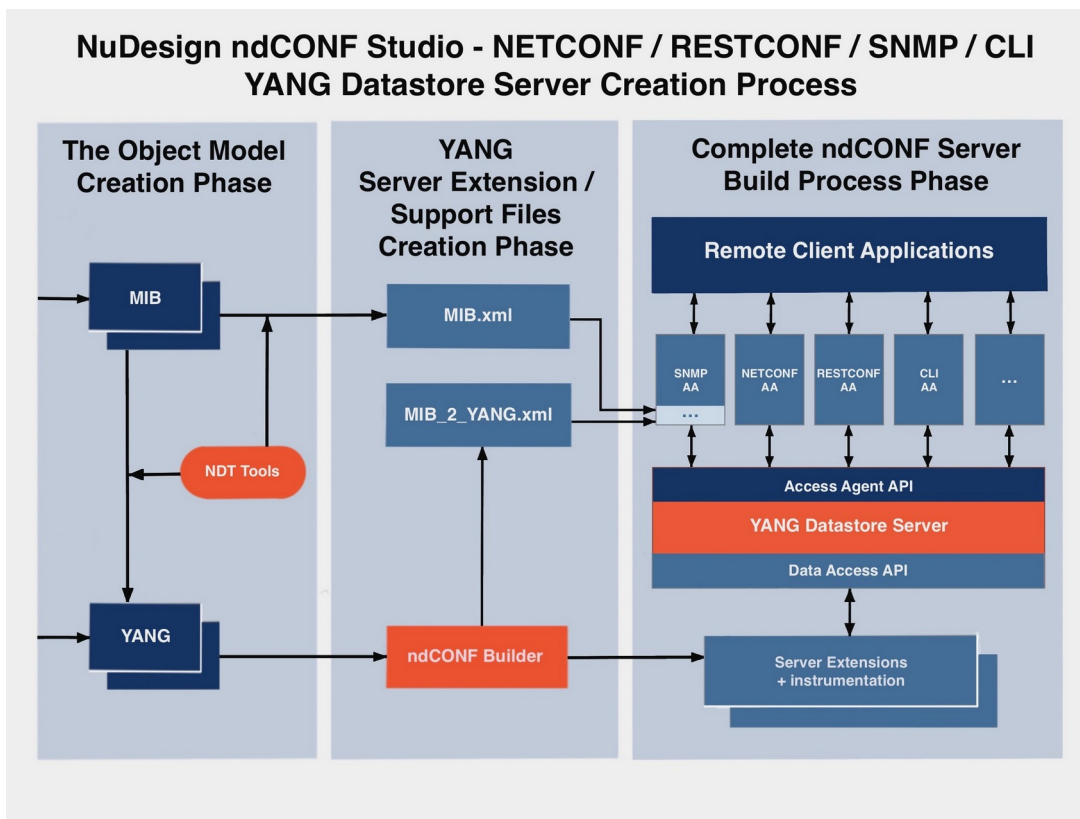
Your NETCONF connection to testagent from ncclient is established; you can now configure the Agent for SNMP or RESTCONF client access. Please review the ndCONF User Guide and we are always here to support you!

Summary

The user builds a complete sample ndCONF Agent with NETCONF / RESTCONF / CLI and SNMPv3 access and tests its functionality using NuDesign's or their own NETCONF / RESTCONF and SNMPv3 clients.

The evaluation package does not contain NuDesign's ndCONF Builder, the C++ code generator of YANG Datastore Server extensions, however, after having extended the YANG Datastore Server with the provided sample Loadable Data Handlers (LDH), the user is invited to submit their own YANG and/or optionally MIB modules to NuDesign and receive their custom module's LDH extension source code and project files, generated by the NuDesign's ndCONF Builder. Then, the user can build their specific ndCONF Agent with NETCONF, RESTCONF, CLI and optionally SNMPv3 access, for further evaluation.

With the full version of the ndCONF Agent Development Studio tools, the user receives a full version of ndCONF Builder, the generator of C++ code and project files for YANG Datastore Server's extensions.



Please also review these NuDesign's [Technical Briefs](#):

1. Overview of NuDesign's ndCONF Agent Development Studio Tools for NETCONF, RESTCONF, CLI & SNMP Access.
2. Overview of NuDesign's ndCONF Agent Development Studio Evaluation Package with NETCONF, RESTCONF, CLI & SNMP Access.
3. Overview of NuDesign's ndCONF extensible YANG Server Build Process for NETCONF, RESTCONF, CLI & SNMP Access.

The resource links below provide additional information.

NETCONF / YANG / PYANG Web Accessible Resources

1. NETCONF - <https://datatracker.ietf.org/wg/netconf/documents>
2. YANG - <https://datatracker.ietf.org/wg/netmod/documents>
3. SNMPv3 - <https://datatracker.ietf.org/wg/snmpv3/documents/>
4. YANG Editors and PYANG Validating Tools Resources - <https://1.ieee802.org/yangsters/tools-for-yang/>
5. YANG Modeling for Network Automation - <https://www.linkedin.com/pulse/quick-look-yang-data-modeling-network-automation-sachin-verma/>

About NuDesign Technologies

NuDesign Technologies, Inc., based in Toronto, ON, Canada, specializes in providing NETCONF, RESTCONF, CLI & SNMPv3 Agent & Manager development applications, tools, libraries and consulting services to developers and networking OEMs worldwide. The benefits of deploying NuDesign's management software technologies are reliable, low risk, well integrated and quick-to-market solutions, supporting remote management operations over secure networks in Telco carrier, campus, enterprise and IoT settings.

Contact Information



NuDesign Technologies, Inc.

tel: 416 737 0328 / fax: 416 445 9101

toll free: 1 866 886 SNMP (7667)

contact@ndt-inc.com

www.ndt-inc.com / www.snmp4windows.com