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[PyNet Learning Python] - Lesson6 / Netmiko

1 message

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To: sydasif78@gmail.com

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Syd

Note: There is a table of contents for each video at the bottom of this email including timestamps to where various content is located. This should be helpful in navigating the videos.

In this email of Learning Python we are going to cover the following:

1. Netmiko Introduction and BasicsVideo link <https://vimeo.com/254569911>

Length is 8 minutes

2. Netmiko Show CommandsVideo link <https://vimeo.com/254578980>

Length is 13 minutes

3. Netmiko and PromptingVideo link <https://vimeo.com/254587832>

Length is 12 minutes

4. Netmiko and TextFSMVideo link <https://vimeo.com/254611876>

Length is 10 minutes

5. Netmiko Config ChangesVideo link <https://vimeo.com/254614073>

Length is 8 minutes

6. Netmiko TroubleshootingVideo link <https://vimeo.com/254786724>

Length is 9 minutes

Additional Content:

[Netmiko Readme](#)

[Netmiko Examples](#)

[Netmiko Tutorial](#)

This tutorial is a bit old, but still should be generally correct.

Exercises

Reference code for these exercises is posted on GitHub at:

https://github.com/ktbyers/pynet/tree/master/learning_python/lesson6

Note, you will need some sort of a network device to work on these exercises.

This can be a virtual or physical device. Make sure you are only working on test or lab devices.

1. Using Netmiko, establish a connection to a network device and print out the device's prompt.
2. Use `send_command()` to send a show command down the SSH channel. Retrieve the results and print the results to the screen.
3. Find a command on your device that has additional prompting. Use `send_command_timing` to send the command down the SSH channel. Capture the output and handle the additional prompting.
4. Use `send_config_set()` and `send_config_from_file()` to make configuration changes.

The configuration changes should be benign. For example, on Cisco IOS I typically change the logging buffer size.

As part of your program verify that the configuration change occurred properly. For example, use `send_command()` to execute 'show run' and verify the new configuration.

5. Optional, use `send_command()` in conjunction with `ntc-templates` to execute a show command. Have `TextFSM` automatically convert this show command output to structured data.

6. Optional, connect to three networking devices one after the other. Use `send_command()` to execute a show command on each of these devices. Print this

output to the screen.

CLASS OUTLINE

1. Netmiko Introduction and Basics (VIDEO1)
 - A. Netmiko overview [00:05]
 1. Alternate libraries [00:36]
 2. Netmiko supported platforms [1:00]
 - B. Establishing a connection [2:02]
 1. device_type [3:35]
 2. Passing connection arguments using a dictionary [5:00]
2. Netmiko Show Commands (VIDEO2)
 - A. Using the .enable() method [00:47]
 - B. Executing show commands [4:14]
 1. Command echo, trailing prompt are removed [5:42]
 2. Executing multiple commands in sequence [6:35]
 - C. Changing the terminating search pattern [7:48]
 - D. Other platforms (Arista, Juniper) [8:57]
 1. Convert to a loop structure [10:26]
3. Netmiko and Prompting (VIDEO3)
 - A. Multiline commands (i.e. additional prompting) [00:36]
 1. Handling of additional prompting [1:16]
 - B. Commands that take longer than expected [6:53]
 1. Using delay_factor [9:13]
 2. Using global_delay_factor [10:11]
4. Netmiko and TextFSM (VIDEO4)
 - A. Integrating to TextFSM [1:23]
 1. Using ntc-templates [2:03]
 2. How to use TextFSM in Netmiko [2:17]
 3. How Netmiko finds the templates [4:20]
 - a. Use 'git clone' for installation [5:25]
 4. Listing of templates [6:22]
 5. Using an environment variable [7:34]
5. Netmiko and Config Changes (VIDEO5)
 - A. Making configuration changes [00:05]
 1. How to use send_config_set() [1:28]
 2. Juniper commit() example [2:39]
 3. Separate 'write memory' is required [4:25]
6. Netmiko Troubleshooting (VIDEO6)
 - A. Logging all reads and writes [0:40]
 - B. Using write_channel() and read_channel() [3:50]

- C. Misc items [6:55]
 - 1. Secure Copy [6:59]
 - 2. Telnet and Serial support [7:32]
 - 3. Terminal server [8:19]

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