netMiko for SOAR

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Release Notes

Version	Date	Notes
1.0.0	06/2019	Initial Release
1.1.0	10/2021	Add App Host Support

Overview

Resilient Circuits Components for 'fn_netdevice'

This integration uses netMiko to access network devices, such as firewalls, to run command-line queries and execute firewall configuration settings. SSH is used to access the hosts and results from the operations are returned as a Resilient incident note.

For more information on netMiko, refer to the documentation here

Key Features

This implementation utilizes all the functionality of netMiko including:

- Multiple host execution
- Configuration setting execution with commits
- Result parsing using TextFSM templates

Requirements

- resilient_circuits>=30.0.0
- resilient-lib

- netmiko>=2.3.3
  This app supports the IBM Resilient SOAR Platform and the IBM Cloud Pak for Security.

Resilient platform

The Resilient platform supports two app deployment mechanisms, App Host and integration server.

If deploying to a Resilient platform with an App Host, the requirements are:

- Resilient platform >= `40.0.6554`.
- The app is in a container-based format (available from the AppExchange as a `zip` file).

If deploying to a Resilient platform with an integration server, the requirements are:

- Resilient platform >= `40.0.6554`.
- The app is in the older integration format (available from the AppExchange as a `zip` file which contains a `tar.gz` file).
- Integration server is running `resilient_circuits>=30.0.0`.
- If using an API key account, make sure the account provides the following minimum permissions:

Name	Permissions
Org Data	Read
Function	Read

The following Resilient platform guides provide additional information:

- *App Host Deployment Guide*: provides installation, configuration, and troubleshooting information, including proxy server settings.
- *Integration Server Guide*: provides installation, configuration, and troubleshooting information, including proxy server settings.
- *System Administrator Guide*: provides the procedure to install, configure and deploy apps.

The above guides are available on the IBM Knowledge Center at ibm.biz/resilient-docs. On this web page, select your Resilient platform version. On the follow-on page, you can find the *App Host Deployment Guide* or *Integration Server Guide* by expanding **Resilient Apps** in the Table of Contents pane. The System Administrator Guide is available by expanding **System Administrator**.

Cloud Pak for Security

If you are deploying to IBM Cloud Pak for Security, the requirements are:

- IBM Cloud Pak for Security >= 1.4.
- Cloud Pak is configured with an App Host.
- The app is in a container-based format (available from the AppExchange as a `zip` file).

The following Cloud Pak guides provide additional information:

- *App Host Deployment Guide*: provides installation, configuration, and troubleshooting information, including proxy server settings. From the Table of Contents, select Case Management and Orchestration & Automation > **Orchestration and Automation Apps**.
- *System Administrator Guide*: provides information to install, configure, and deploy apps. From the IBM Cloud Pak for Security Knowledge Center table of contents, select Case Management and Orchestration & Automation > **System administrator**.

These guides are available on the IBM Knowledge Center at ibm.biz/cp4s-docs. From this web page, select your IBM Cloud Pak for Security version. From the version-specific Knowledge Center page, select Case Management and Orchestration & Automation.

Proxy Server

The app does support a proxy server.

Python Environment

Only Python 3.6 is supported. Additional package dependencies may exist for each of these packages:

- netmiko>=2.3.3
- resilient-lib
- resilient_circuits>=30.0.0

Installation

Install

- To install or uninstall an App or Integration on the *Resilient platform*, see the documentation at ibm.biz/resilient-docs.
- To install or uninstall an App on *IBM Cloud Pak for Security*, see the documentation at ibm.biz/cp4s-docs and follow the instructions above to navigate to Orchestration and Automation.

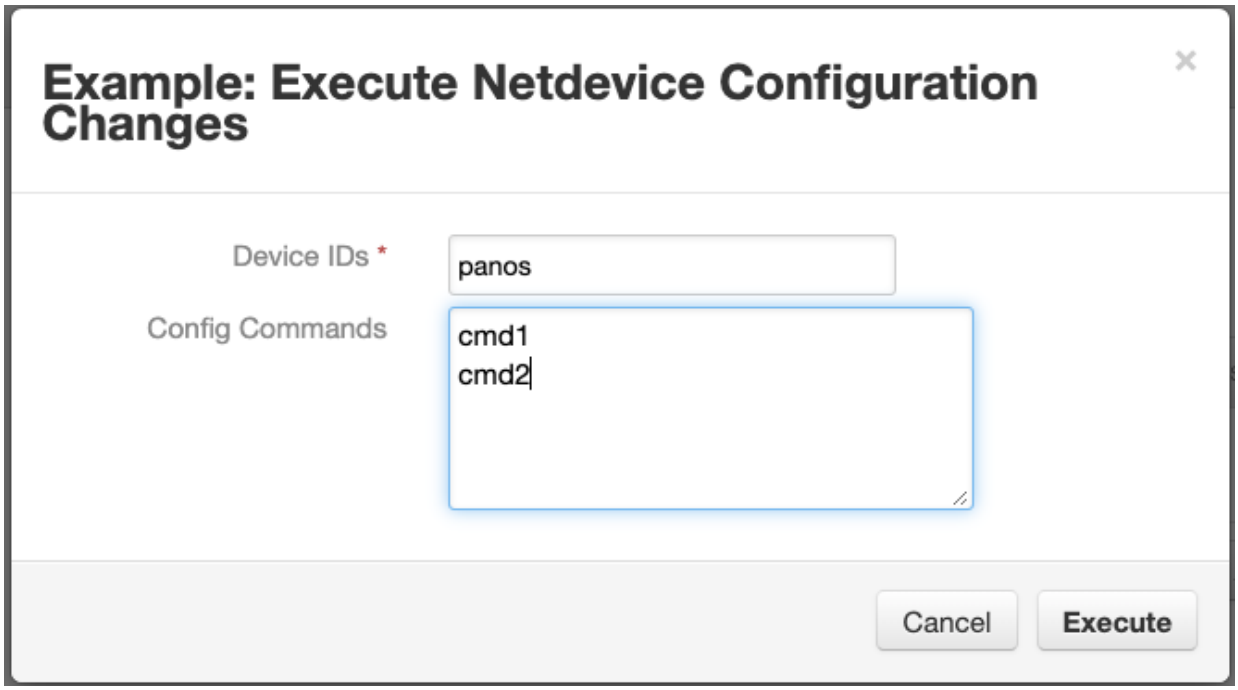
App Configuration

The following table provides the settings you need to configure the app. These settings are made in the app.config file. See the documentation discussed in the Requirements section for the procedure.

Config	Required	Example	Description
selftest	Yes	``	The section name used below for selftest
template_dir	No	``	Specify directory if using textFSM templates
device_type	Yes	linux	https://github.com/ktbyers/netmiko/blob/master/netmiko/ssh_dispatcher.py
ip	Yes	``	
username	Yes	``	
password	Yes	``	
port	Yes	22	
secret	No	``	
verbose	Yes	False	
use_commit	Yes	False	

Function - fn_netdevice_config

Use netMiko to attach to devices (such as firewalls) for command line configuration



▶ Inputs:

Name	Type	Required	Example	Tooltip
netdevice_config_cmd	text	No	–	separate multi-line input with commas
netdevice_ids	text	Yes	–	Specify device names with commas

▶ Outputs:

```
results = {
    'version': '1.0', 'success': True, 'reason': None, 'content': {'netdevice1':
{'config_command': 'ls\npwd', 'config_result': 'ls\nanaconda-
ks.cfg\n[root@netdevice1 ~]# pwd\n/root\n[root@netdevice1 ~]# ', 'status':
'success'}}, 'raw': '{"netdevice1": {"config_command": "ls\\npwd",
"config_result": "ls\\nanaconda-ks.cfg\\n[root@netdevice1 ~]#
pwd\\n/root\\n[root@netdevice1 ~]# ", "status": "success"}}', 'inputs':
{'netdevice_ids': 'netdevice1', 'netdevice_config_cmd': 'ls\npwd'}, 'metrics':
{'version': '1.0', 'package': 'fn-netdevice', 'package_version': '1.1.0', 'host':
'Christophers-MacBook-Pro.local', 'execution_time_ms': 11954, 'timestamp': '2021-
10-13 12:31:23'}
}
```

▶ Example Pre-Process Script:

```
inputs.netdevice_config_cmd = rule.properties.config_commands.content
inputs.netdevice_ids = rule.properties.device_ids
```

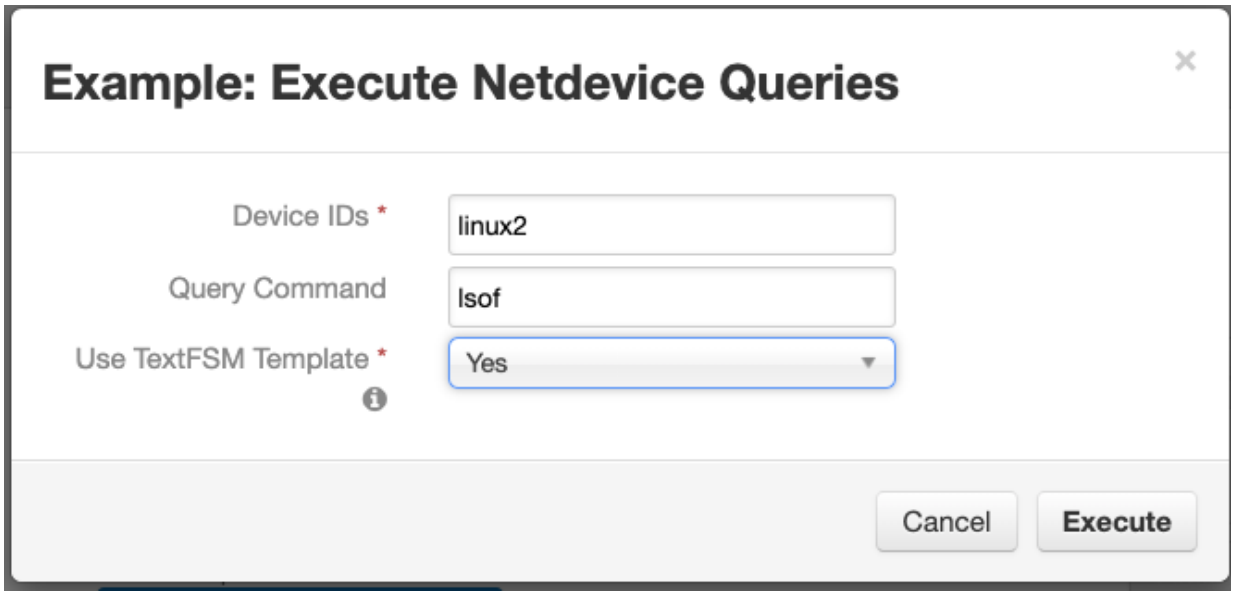
▶ Example Post-Process Script:

```
import re
```

```
pp = '(\\x1b\[\w*\d*(;\d*)*m)'

note = u""
for host in results['content']:
  note = note + u"Host: {}\n".format(host)
  note = note + u"Config Cmd: {}\nResult: {}\n".format(results['content'][host]
['config_command'], re.sub(pp, '', results['content'][host].get('config_result',
'')))

  if results['content'][host]['status'] == 'failure':
    note = note + u"Failure: {}\n".format(results['content'][host]['reason'])

  note = note + "\n"

note_text = helper.createPlainText(note)
incident.addNote(note_text)
```

Function - fn_netdevice_query

Use netMiko to attach to devices (such as firewalls) for command line querying



▶ Inputs:

Name	Type	Required	Example	Tooltip
netdevice_ids	text	Yes	–	Specify device names with commas
netdevice_send_cmd	text	No	–	Specify a command to execute on remote device
netdevice_use_textfsm	boolean	Yes	–	Return results based on a textFSM template

▶ Outputs:

```
results = {
   'version': '1.0', 'success': True, 'reason': None, 'content': {'netdevice1':
{'send_command': 'ls', 'send_result': 'anaconda-ks.cfg', 'status': 'success'}},
'raw': '{"netdevice1": {"send_command": "ls", "send_result": "anaconda-ks.cfg",
```

```
"status": "success"}}', 'inputs': {'netdevice_ids': 'netdevice1',
'netdevice_use_textfsm': False, 'netdevice_send_cmd': 'ls'}, 'metrics':
{'version': '1.0', 'package': 'fn-netdevice', 'package_version': '1.1.0', 'host':
'Christophers-MacBook-Pro.local', 'execution_time_ms': 13474, 'timestamp': '2021-
10-13 12:29:57'}
}
```

▶ Example Pre-Process Script:

```
inputs.netdevice_ids = rule.properties.device_ids
inputs.netdevice_send_cmd = rule.properties.send_command
inputs.netdevice_use_textfsm = rule.properties.use_textfsm_template
```

▶ Example Post-Process Script:

```
import re

pp = '(\\x1b\[\w*\d*(;\d*)*m)'

note = u""
for host in results['content']:
  note = note + u"Host: {}\n".format(host)
  if results['content'][host].get('send_result') and
isinstance(results['content'][host]['send_result'], list):
    note = note + u"Cmd: {}\nResult: {}\n".format(results['content'][host]
['send_command'], results['content'][host]['send_result'])
  else:
    note = note + u"Cmd: {}\nResult: {}\n".format(results['content'][host]
['send_command'], re.sub(pp, '', results['content'][host].get('send_result',
'')))

  if results['content'][host]['status'] == 'failure':
    note = note + u"Failure: {}\n".format(results['content'][host]['reason'])

  note = note + "\n"

note_text = helper.createPlainText(note)
incident.addNote(note_text)
```

Rules

Rule Name	Object	Workflow Triggered
Example: Execute Netdevice Configuration Changes	incident	`example_execute_netdevice_configuration_commands`
Example: Execute Netdevice Queries	incident	`example_execute_netdevice_command`

Troubleshooting & Support

Refer to the documentation listed in the Requirements section for troubleshooting information.

For Support

This is a IBM Community provided App. Please search the Community https://ibm.biz/resilientcommunity for assistance.