

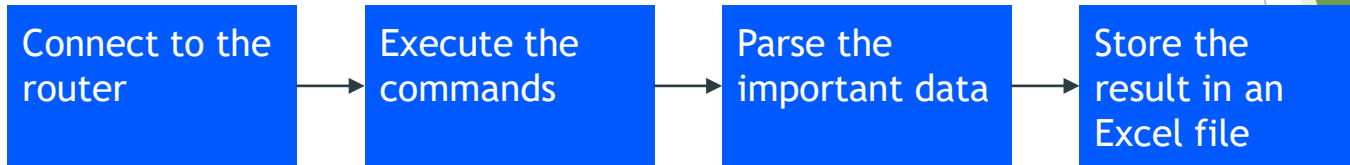
# Network inventory HW

Why ?

- Lifecycle Management
- Troubleshooting
- Disaster Recovery
- Planning and Capacity Management

# Network inventory HW

How?

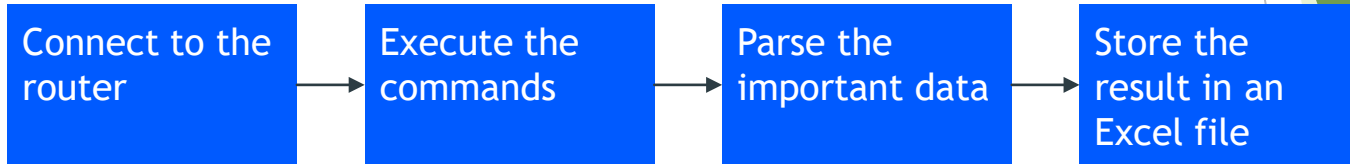


- show system information
- show router interface "system"
- show chassis detail
- show bof
- show card detail
- show mda detail
- show port
- show port description

Slot ID  
Card Type  
Part Number(card)  
Manufacture Date (card)  
Administrative State  
Operational State

# Network inventory HW

Estimated time per router?



- Manual way : 20m – 1h30
- Automated way : 20s-5m

## Network Inventory HW Log

Generated  
20230504 13:33:00 UTC+01:00  
13 days 5 hours ago

### Test Statistics

Total Statistics	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
All Tests	1	1	0	0	00:02:16	<div></div>
Statistics by Tag	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
No Tags						<div></div>
Statistics by Suite	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
Network Inventory HW	1	1	0	0	00:02:21	<div></div>

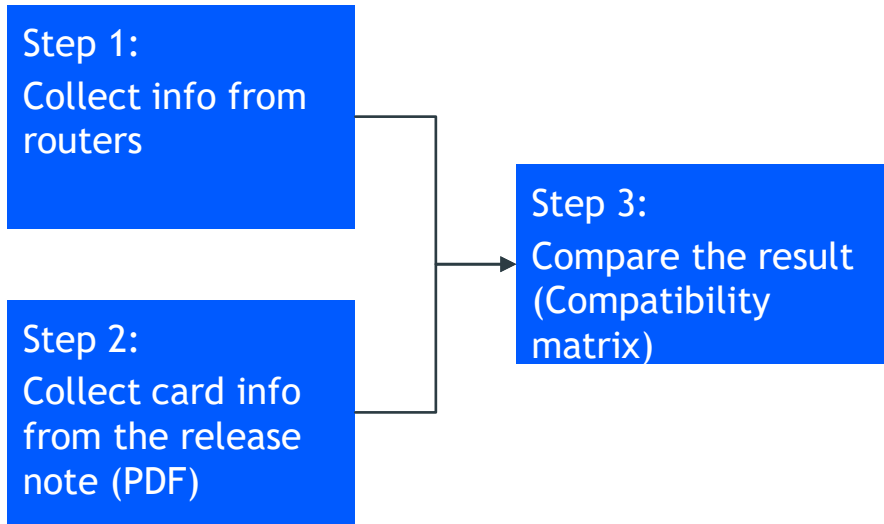
# NE SW upgrade assessment

Why ?

- Performance improvements
- Feature enhancements
- Compatibility with new technologies
- Patches & Security updates

# NE SW upgrade assessment

How?



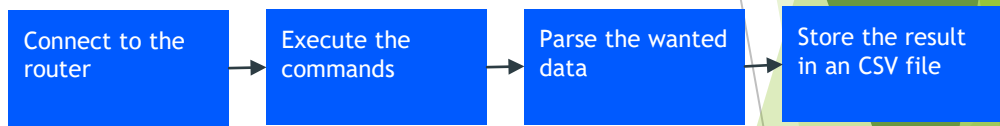
# NE SW upgrade assessment

## Step 1:

Case 1:



Case 2:

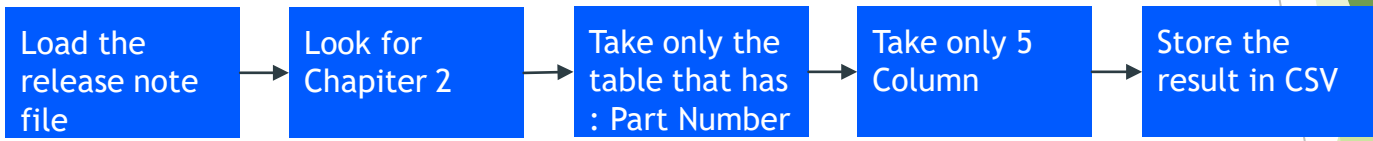


IP add | System name | Current Version | Card X name | Card X Part N

- show system information
- show card detail
- show mda detail

# NE SW upgrade assessment

Step 2:



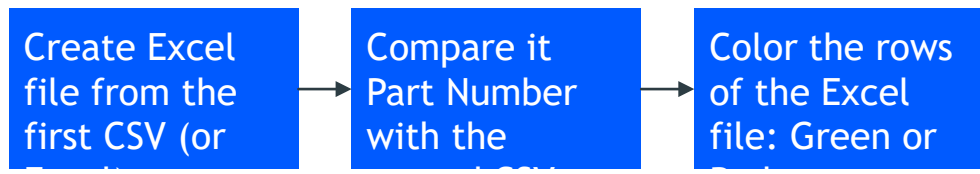
Release 22.2.R1 Supported Hardware

**Nokia Part | Description | CLI String (Card) | CLI String (MDA) | sat-type**

Estimated time in first time : 3-5min

# NE SW upgrade assessment

## Step 3:





# NE SW upgrade assessment

Estimated time per router?

Step 1:  
Collect info from  
routers

Step 2:  
Collect card info  
from the release  
note (PDF)

Step 3:  
Compare the  
result  
(Compatibility

- Manual way : 20min – 1h30
- Automated way : 20s-5m  
(+3-5m in total)

## NE SW upgrade assesment Log

### Test Statistics

Total Statistics	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
All Tests	1	1	0	0	00:03:33	<div></div>
Statistics by Tag	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
No Tags						
Statistics by Suite	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
NE SW upgrade assesment	1	1	0	0	00:03:36	<div></div>

Generated  
20230326 22:32:12 UTC+00:00  
4 hours 14 minutes ago

# IGP Topology Discovery

Why ?

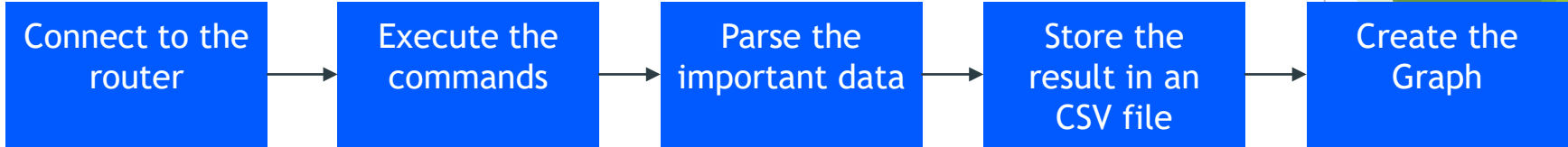
- Ensuring network stability
- Simplifying troubleshooting
- Supporting network documentation
- Facilitating network migrations

# IGP Topology Discovery

How?

show system information  
show router interface "system" | match "/32"  
show ospf neighbor  
show router isis adjacency  
show router isis database detail  
show router ospf routes | match "/32" post-lines 1  
show router isis routes | match "/32"  
show router ospf routes | match "No. of"  
show router isis routes | match "No. of"  
show router route-table protocol ospf | match "No. of"  
show router route-table protocol isis | match "No. of"

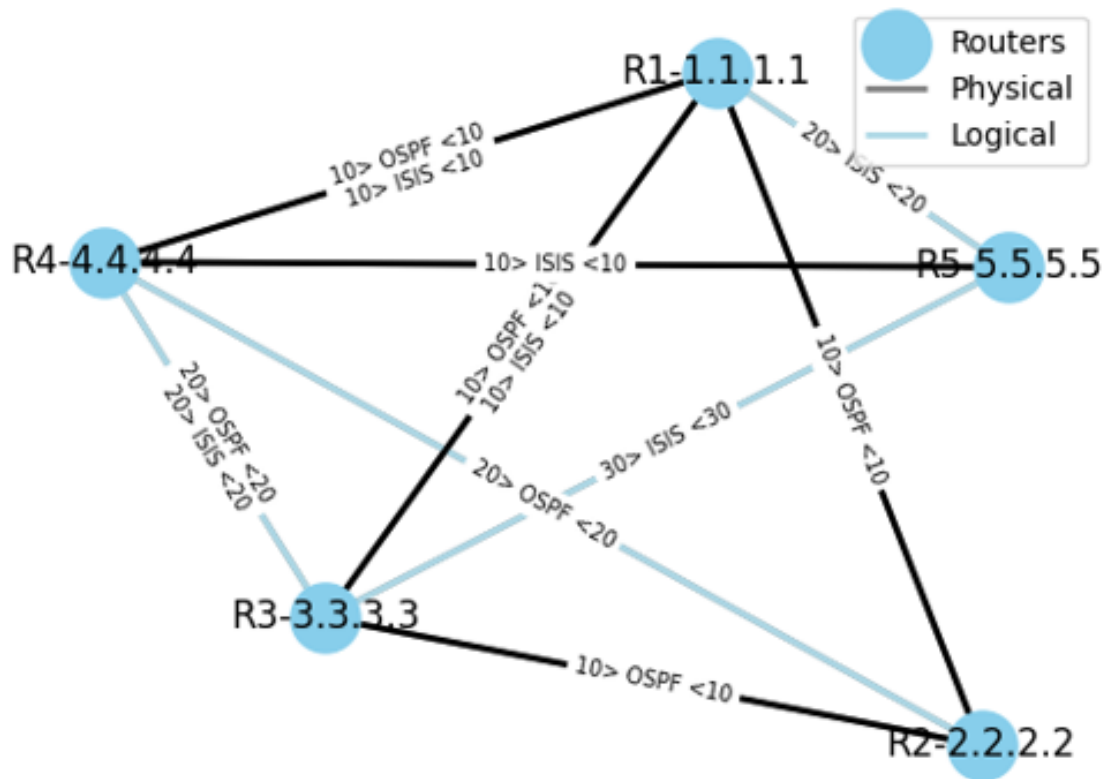
1 2 3 4



Node	dark	light	table		
R1-1.1.1.1	[[['R1-1.1.1.1', '3.3.3.3', 'OSPF\$\$\$ISIS', '10\n10'],	[[['R1-1.1.1.1', '2.2.2.2', 'OSPF', '10'],	['1', '2', '4', '2']		
R2-2.2.2.2	[[['R2-2.2.2.2', '1.1.1.1', 'OSPF', '10'],	[[['R2-2.2.2.2', '1.1.1.1', 'OSPF', '10'],	['1', 'not configured', '5', '0']		
R3-3.3.3.3	[[['R3-3.3.3.3', '1.1.1.1', 'OSPF\$\$\$ISIS', '10\n10'],	[[['R3-3.3.3.3', '1.1.1.1', 'OSPF\$\$\$ISI	['1', '2', '5', '2']		
R4-4.4.4.4	[[['R4-4.4.4.4', '1.1.1.1', 'OSPF\$\$\$ISIS', '10\n10'],	[[['R4-4.4.4.4', '1.1.1.1', 'OSPF\$\$\$ISI	['1', '2', '6', '1']		
R5-5.5.5.5	[[['R5-5.5.5.5', '4.4.4.4', 'ISIS', '10']]	[[['R5-5.5.5.5', '1.1.1.1', 'ISIS', '20'],	[['not configured', '2', '0', '5']		

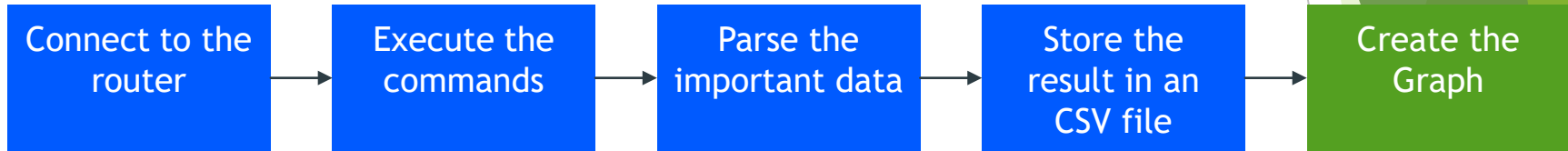
# IGP Topology Discovery

## Demo



# IGP Topology Discovery

Estimated time per router?



## IGP Topology Discovery Log

Generated  
20230326 14:45:33 UTC+00:00  
12 hours 48 minutes ago

### Test Statistics

Total Statistics	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
All Tests	1	1	0	0	00:03:18	<div></div>
Statistics by Tag	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
No Tags						<div></div>
Statistics by Suite	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
IGP Topology Discovery	1	1	0	0	00:03:21	<div></div>

- Manual way : -
- Automated way : 30s-5min

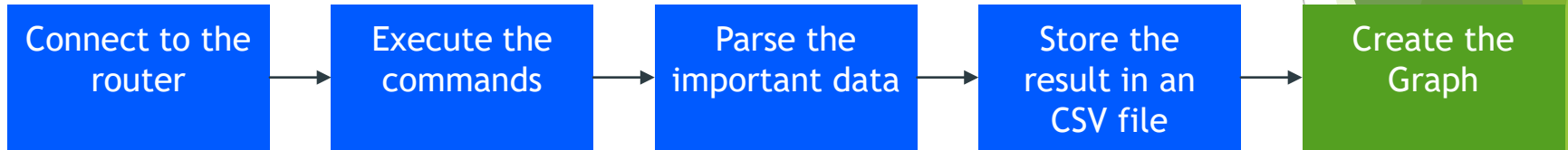
# BGP Topology Discovery

Why ?

- Ensuring network stability
- Simplifying troubleshooting
- Supporting network documentation
- Supporting IPv6 adoption

# BGP Topology Discovery

How?



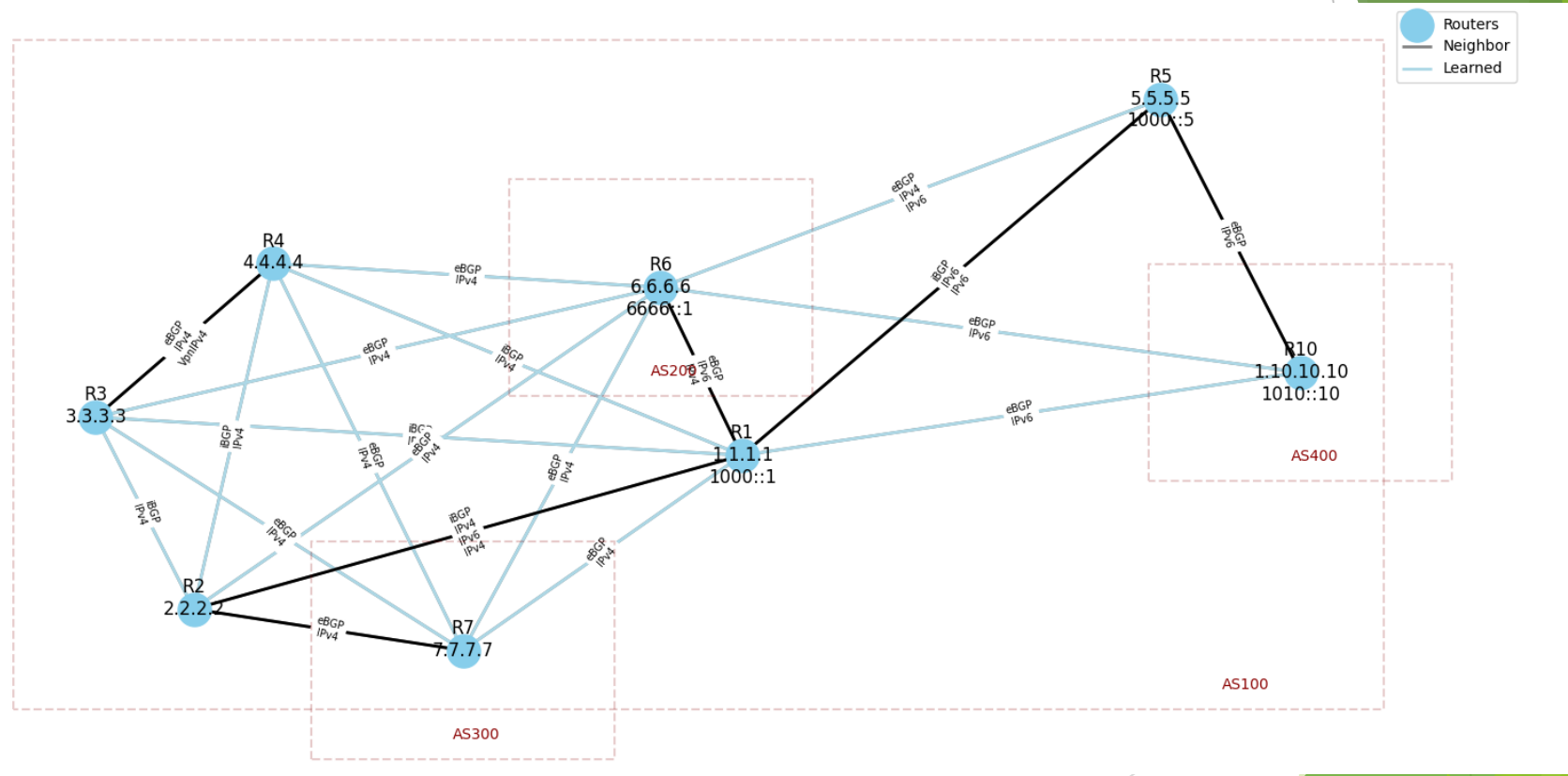
**show system information**  
**show router interface "system"**  
**show router bgp summary all**  
**show router bgp routes**  
**show router bgp routes ipv6**  
**show router bgp routes | match "Routes"**  
**show router bgp routes ipv6 | match "Routes"**  
**show router route-table protocol bgp | match "Routes"**  
**show router route-table family ipv6 protocol bgp | match "Routes"**  
**show router interface**

# BGP Topology Discovery

Node	dark	light	table	interfaces
R1 1.1.1.1 1000::1	[[['R1\n1.1.1.1\n1000::1', '2.2.2.2', '100', 'iBGP\niPv4'], [	[[['R1\n1.1.1.1\n1000::1', '1.1.1.1', '100', 'iBGP\niPv4'], [	['18', '12', '4', '4']	['R1\n1.1.1.1\n1000::1', '100', ['1.1.1.1', '1000::1',
R2 2.2.2.2	[[['R2\n2.2.2.2\n', '1.1.1.1', '100', 'iBGP\niPv4'], [	[[['R2\n2.2.2.2\n', '1.1.1.1', '100', 'iBGP\niPv4'], [	['16', 'N', '4', '0']	['R2\n2.2.2.2\n', '100', ['2.2.2.2', '192.168.11.2', '1
R3 3.3.3.3	[[['R3\n3.3.3.3\n', '4.4.4.4', '100', 'eBGP\niPv4\nVpnIPv4'] []		['N', 'N', '0', '0']	['R3\n3.3.3.3\n', 0, ['3.3.3.3', '192.168.11.3', '192.1
R4 4.4.4.4	[[['R4\n4.4.4.4\n', '3.3.3.3', '100', 'eBGP\niPv4\nVpnIPv4'] []		['N', 'N', '0', '0']	['R4\n4.4.4.4\n', 0, ['4.4.4.4', '192.168.11.4', '192.1
R5 5.5.5.5 1000::5	[[['R5\n5.5.5.5\n1000::5', '1000::1', '100', 'eBGP\niPv6'], [	[[['R5\n5.5.5.5\n1000::5', '1000::1', '100', 'eBGP\niPv6']	['N', '12', '0', '4']	['R5\n5.5.5.5\n1000::5', 0, ['5.5.5.5', '1000::5', '192
R6 6.6.6.6 6666::1	[[['R6\n6.6.6.6\n6666::1', '192.168.2.1', '100', 'eBGP\niPv4']	[[['R6\n6.6.6.6\n6666::1', '1.1.1.1', '100', 'eBGP\niPv4']	['16', '10', '12', '7']	['R6\n6.6.6.6\n6666::1', '200', ['6.6.6.6', '6666::1',
R7				

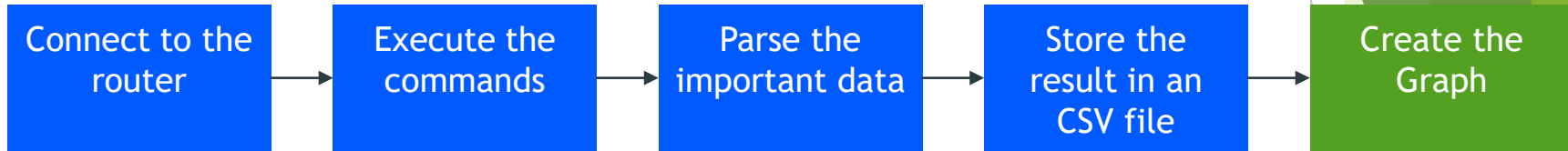


# BGP Topology Discovery



# BGP Topology Discovery

Estimated time per router?



## BGP Topology Discovery Log

Generated  
20230327 19:46:57 UTC+00:00  
1 minute 51 seconds ago

### Test Statistics

Total Statistics	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
All Tests	1	1	0	0	00:04:37	<div></div>
Statistics by Tag	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
No Tags						<div></div>
Statistics by Suite	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
BGP Topology Discovery	1	1	0	0	00:04:51	<div></div>

- Manual way : -
- Automated way : 30s-5min