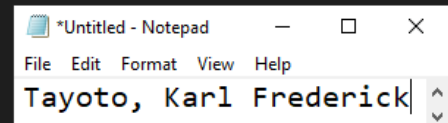


Ansible Playbook YAML

```
! config_acl.yaml
1  ---
2
3  - name: Configure Standard ACL
4    hosts: MANILA
5    gather_facts: false
6    connection: local
7    vars:
8      cli:
9        username: cisco
10       password: cisco123
11
12   tasks:
13     - name: Deny only PC3 network
14       ios_config:
15         provider: "{{ cli }}"
16         lines:
17           - 10 deny icmp host 192.168.1.2 any
18           - 20 permit ip any any
19         parents: ip access-list extended ACL-PC1
20         #before: no ip access-list extended ACL-MANILA
21
22     - name: Apply in S0/0
23       ios_config:
24         provider: "{{ cli }}"
25         parents: interface s0/1
26         lines:
27           - ip access-group ACL-PC1 in
28
29     - name: Save Configuration
30       ios_config:
31         provider: "{{ cli }}"
32         lines:
33           - do write
34
35     - name: print ip route
36       ios_command:
37         provider: "{{ cli }}"
38         commands:
39           - show ip access-lists
40       register: config
41
42     - name: SAVE OUTPUT TO ./iosconfig/
43       copy:
44         content: "{{ config.stdout[0] }}"
45         dest: "iosconfig/show_ip_accesslists{{inventory_hostname}}.txt"
```



! check-ip.yaml

```
1  ---
2  - name: check ip address
3    hosts: routers
4    gather_facts: false
5    connection: local
6    vars:
7      cli:
8        username: cisco
9        password: cisco123
10   tasks:
11     - name: print ip interfaces
12       ios_command:
13         provider: "{{ cli }}"
14         commands:
15           - show ip interface brief
16       register: config
17     - name: SAVE OUTPUT TO ./iosconfig/
18       copy:
19         content: "{{ config.stdout[0] }}"
20         dest: "iosconfig/showip{{ inventory_hostname }}.txt"
```

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```

! config_ospf.yaml
1 ---
2 - name: Configure Single Area OSPF
3   hosts: routers
4   gather_facts: false
5   connection: local
6   vars:
7     cli:
8       username: cisco
9       password: cisco123
10
11   tasks:
12     - name: Configure OSPF for PASIG
13       when: ansible_host == "10.0.0.6"
14       ios_config:
15         provider: "{{ cli }}"
16         parents: router ospf 100
17         lines:
18           - network 10.0.0.4 0.0.0.3 area 0
19
20
21     - name: Configure OSPF for QC
22       when: ansible_host == "192.168.0.1"
23       ios_config:
24         provider: "{{ cli }}"
25         parents: router ospf 100
26         lines:
27           - network 10.0.0.0 0.0.0.3 area 0
28           - network 192.168.0.0 0.0.0.255 area 0
29           - passive-interface FastEthernet0/0
30
31     - name: Configure OSPF for MANILA
32       when: ansible_host == "10.0.0.2"
33       ios_config:
34         provider: "{{ cli }}"
35         parents: router ospf 100
36         lines:
37           - network 10.0.0.0 0.0.0.3 area 0
38           - network 10.0.0.4 0.0.0.3 area 0
39
40
41     - name: print ip route
42       ios_command:
43         provider: "{{ cli }}"
44         commands:
45           - show running-config
46       register: config
47
48     - name: SAVE OUTPUT TO ./iosconfig/
49       copy:
50         content: "{{ config.stdout[0] }}"
51         dest: "iosconfig/showrun{{ inventory_hostname }}.txt"
52
53     - name: Save Configuration
54       ios_config:
55         provider: "{{ cli }}"
56         lines:
57           - do write

```

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pyats > yaml > ! testbed.yml

```
1  devices:
2    QC:
3      connections:
4        cli:
5          ip: 192.168.0.1
6          protocol: ssh
7      credentials:
8        default:
9          password: '%ENC{w5PDos0Uw5fDosKQwpbCmA==}'
10         username: cisco
11         enable:
12           password: '%ASK{}'
13         os: iosxe
14         type: iosxe
15    MANILA:
16      connections:
17        cli:
18          ip: 10.0.0.2
19          protocol: ssh
20      credentials:
21        default:
22          password: '%ENC{w5PDos0Uw5fDosKQwpbCmA==}'
23          username: cisco
24          enable:
25            password: '%ASK{}'
26          os: iosxe
27          type: iosxe
28    PASIG:
29      connections:
30        cli:
31          ip: 10.0.0.6
32          protocol: ssh
33      credentials:
34        default:
35          password: '%ENC{w5PDos0Uw5fDosKQwpbCmA==}'
36          username: cisco
37          enable:
38            password: '%ASK{}'
39          os: iosxe
40          type: iosxe
```



QC terminal

Destination filename [startup-config]?
Building configuration...
[OK]
QC#copy r s
Destination filename [startup-config]?
Building configuration...
[OK]
QC#sh ip int brief

Interface	IP-Address	OK?	Method	Status	Protocol
FastEthernet0/0	192.168.0.1	YES	NVRAM	up	up
Serial0/0	10.0.0.1	YES	NVRAM	up	up
FastEthernet0/1	unassigned	YES	NVRAM	administratively down	down
Serial0/1	unassigned	YES	NVRAM	administratively down	down
Serial0/2	unassigned	YES	NVRAM	administratively down	down
FastEthernet1/0	unassigned	YES	NVRAM	administratively down	down
Serial2/0	unassigned	YES	NVRAM	administratively down	down
Serial2/1	unassigned	YES	NVRAM	administratively down	down
Serial2/2	unassigned	YES	NVRAM	administratively down	down
Serial2/3	unassigned	YES	NVRAM	administratively down	down

QC#

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Manila terminal

MANILA#sh ip int brief

Interface	IP-Address	OK?	Method	Status	Protocol
FastEthernet0/0	unassigned	YES	NVRAM	administratively down	down
Serial0/0	10.0.0.2	YES	NVRAM	up	up
FastEthernet0/1	unassigned	YES	NVRAM	administratively down	down
Serial0/1	10.0.0.5	YES	NVRAM	up	up
Serial0/2	unassigned	YES	NVRAM	administratively down	down
FastEthernet1/0	unassigned	YES	NVRAM	administratively down	down
Serial2/0	unassigned	YES	NVRAM	administratively down	down
Serial2/1	unassigned	YES	NVRAM	administratively down	down
Serial2/2	unassigned	YES	NVRAM	administratively down	down
Serial2/3	unassigned	YES	NVRAM	administratively down	down

MANILA#

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```
PASIG#sh ip int brief
Interface                               IP-Address      OK? Method Status          Protocol
FastEthernet0/0                         192.168.1.1     YES NVRAM    up              up
Serial0/0                               unassigned      YES NVRAM    administratively down down
FastEthernet0/1                         unassigned      YES NVRAM    administratively down down
Serial0/1                               10.0.0.6        YES NVRAM    up              up
Serial0/2                               unassigned      YES NVRAM    administratively down down
FastEthernet1/0                         unassigned      YES NVRAM    administratively down down
Serial2/0                               unassigned      YES NVRAM    administratively down down
Serial2/1                               unassigned      YES NVRAM    administratively down down
Serial2/2                               unassigned      YES NVRAM    administratively down down
Serial2/3                               unassigned      YES NVRAM    administratively down down

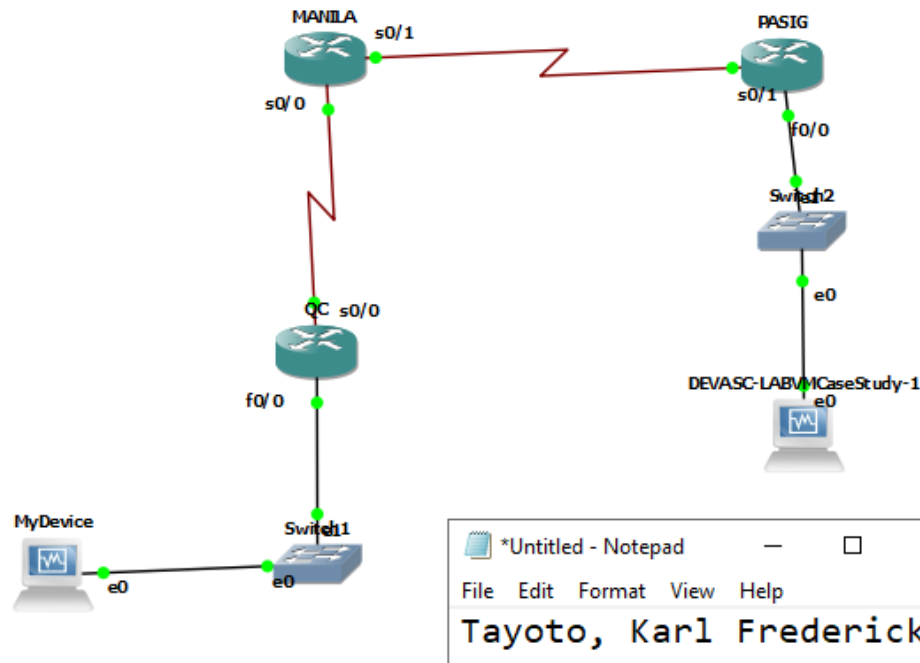
PASIG#copy r s
Destination filename [startup-config]?
Building configuration...
[OK]
PASIG#copy r s
Destination filename [startup-config]?
Building configuration...
[OK]
PASIG#
```

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Topology



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OSPF Configuration

Neighbor ID	Pri	State	Dead Time	Address	Interface
10.0.0.5	0	FULL/ -	00:00:33	10.0.0.5	Serial0/1

PASIG#

solarwinds | Solar-PuTTY *free tool*

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Neighbor ID	Pri	State	Dead Time	Address	Interface
192.168.1.1	0	FULL/ -	00:00:32	10.0.0.6	Serial0/1
192.168.0.1	0	FULL/ -	00:00:37	10.0.0.1	Serial0/0

MANILA#

solarwinds | Solar-PuTTY *free tool*

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Neighbor ID	Pri	State	Dead Time	Address	Interface
10.0.0.5	0	FULL/ -	00:00:30	10.0.0.2	Serial0/0

QC#

solarwinds | Solar-PuTTY *free tool*

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Show list of ACL, IP, OSPF(running config)

```
iosconfig > show_ip_accesslistsMANILA.txt
1 Extended IP access list ACL-PC1
2 10 deny icmp host 192.168.1.2 any (276 matches)
3 20 permit ip any any (3198 matches)
```

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iosconfig > ≡ showipMANILA.txt

1	Interface	IP-Address	OK?	Method	Status	Protocol
2	FastEthernet0/0	unassigned	YES	NVRAM	administratively down	down
3	Serial0/0	10.0.0.2	YES	NVRAM	up	up
4	FastEthernet0/1	unassigned	YES	NVRAM	administratively down	down
5	Serial0/1	10.0.0.5	YES	NVRAM	up	up
6	Serial0/2	unassigned	YES	NVRAM	administratively down	down
7	FastEthernet1/0	unassigned	YES	NVRAM	administratively down	down
8	Serial2/0	unassigned	YES	NVRAM	administratively down	down
9	Serial2/1	unassigned	YES	NVRAM	administratively down	down
10	Serial2/2	unassigned	YES	NVRAM	administratively down	down
11	Serial2/3	unassigned	YES	NVRAM	administratively down	down

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iosconfig > ≡ showipQC.txt

1	Interface	IP-Address	OK?	Method	Status	Protocol
2	FastEthernet0/0	192.168.0.1	YES	NVRAM	up	up
3	Serial0/0	10.0.0.1	YES	NVRAM	up	up
4	FastEthernet0/1	unassigned	YES	NVRAM	administratively down	down
5	Serial0/1	unassigned	YES	NVRAM	administratively down	down
6	Serial0/2	unassigned	YES	NVRAM	administratively down	down
7	FastEthernet1/0	unassigned	YES	NVRAM	administratively down	down
8	Serial2/0	unassigned	YES	NVRAM	administratively down	down
9	Serial2/1	unassigned	YES	NVRAM	administratively down	down
10	Serial2/2	unassigned	YES	NVRAM	administratively down	down
11	Serial2/3	unassigned	YES	NVRAM	administratively down	down

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iosconfig > ≡ showipTARLAC.txt

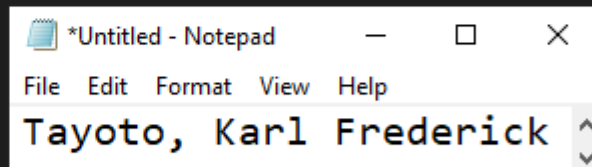
1	Interface	IP-Address	OK?	Method	Status	Protocol
2	FastEthernet0/0	192.168.1.1	YES	NVRAM	up	up
3	Serial0/0	unassigned	YES	NVRAM	administratively down	down
4	FastEthernet0/1	unassigned	YES	NVRAM	administratively down	down
5	Serial0/1	10.0.0.6	YES	NVRAM	up	up
6	Serial0/2	unassigned	YES	NVRAM	administratively down	down
7	FastEthernet1/0	unassigned	YES	NVRAM	administratively down	down
8	Serial2/0	unassigned	YES	NVRAM	administratively down	down
9	Serial2/1	unassigned	YES	NVRAM	administratively down	down
10	Serial2/2	unassigned	YES	NVRAM	administratively down	down
11	Serial2/3	unassigned	YES	NVRAM	administratively down	down

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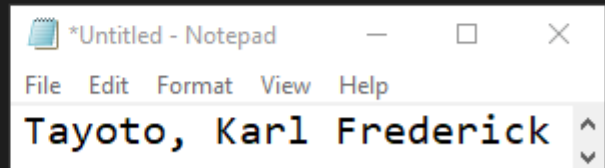

```
1 Building configuration...
2
3 Current configuration : 1925 bytes
4 !
5 version 12.4
6 service timestamps debug datetime msec
7 service timestamps log datetime msec
8 no service password-encryption
9 !
10 hostname MANILA
11 !
12 boot-start-marker
13 boot-end-marker
14 !
15 !
16 no aaa new-model
17 memory-size iomem 5
18 no ip icmp rate-limit unreachable
19 ip cef
20 !
21 !
22 !
23 !
24 no ip domain lookup
25 ip domain name www.cisco.com
26 !
27 multilink bundle-name authenticated
28 !
29 !
30 !
31 !
32 !
33 !
34 !
35 !
36 !
37 !
38 !
39 !
40 !
41 !
42 !
43 !
44 !
45 !
46 !
47 !
48 !
49 username cisco privilege 15 password 0 *****
50 < archive
51 < log config
52 hidekeys
```



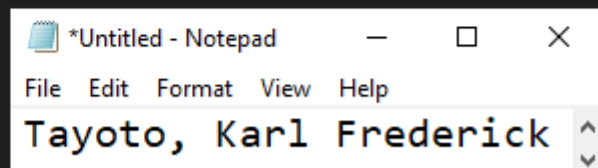
```
57 ip tcp synwait-time 5
58 ip ssh version 2
59 !
60 !
61 !
62 !
63 < interface FastEthernet0/0
64 | no ip address
65 | shutdown
66 | duplex auto
67 | speed auto
68 | !
69 < interface Serial0/0
70 | ip address 10.0.0.2 255.255.255.252
71 | clock rate 128000
72 | !
73 < interface FastEthernet0/1
74 | no ip address
75 | shutdown
76 | duplex auto
77 | speed auto
78 | !
79 < interface Serial0/1
80 | ip address 10.0.0.5 255.255.255.252
81 | ip access-group ACL-PC1 in
82 | clock rate 2000000
83 | !
84 < interface Serial0/2
85 | no ip address
86 | shutdown
87 | clock rate 2000000
88 | !
89 < interface FastEthernet1/0
90 | no ip address
91 | shutdown
92 | duplex auto
93 | speed auto
94 | !
95 < interface Serial2/0
96 | no ip address
97 | shutdown
98 | serial restart-delay 0
99 | !
100 < interface Serial2/1
101 | no ip address
102 | shutdown
103 | serial restart-delay 0
104 | !
105 < interface Serial2/2
106 | no ip address
107 | shutdown
108 | serial restart-delay 0
```



```
110 < interface Serial2/3
111     no ip address
112     shutdown
113     serial restart-delay 0
114     !
115 < router ospf 100
116     log-adjacency-changes
117     network 10.0.0.0 0.0.0.3 area 0
118     network 10.0.0.4 0.0.0.3 area 0
119     !
120 < router rip
121     version 2
122     network 10.0.0.0
123     !
124     ip forward-protocol nd
125     !
126     !
127     no ip http server
128     no ip http secure-server
129     !
130 < ip access-list extended ACL-PC1
131     deny icmp host 192.168.1.2 any
132     permit ip any any
133     !
134     no cdp log mismatch duplex
135     !
136     !
137     !
138     !
139     !
140     !
141     control-plane
```



```
152 < line con 0
153     exec-timeout 0 0
154     privilege level 15
155     logging synchronous
156 < line aux 0
157     exec-timeout 0 0
158     privilege level 15
159     logging synchronous
160 < line vty 0 4
161     login local
162     transport input ssh
163 < line vty 5 15
164     login local
165     transport input ssh
166     !
167     !
168     end
```



iosconfig > ≡ showrunQC.txt

```
1  Building configuration...
2
3  Current configuration : 1903 bytes
4  !
5  version 12.4
6  service timestamps debug datetime msec
7  service timestamps log datetime msec
8  no service password-encryption
9  !
10 hostname QC
11 !
12 boot-start-marker
13 boot-end-marker
14 !
15 !
16 no aaa new-model
17 memory-size iomem 5
18 no ip icmp rate-limit unreachable
19 ip cef
20 !
21 !
22 !
23 !
24 no ip domain lookup
25 ip domain name www.cisco.com
26 !
27 multilink bundle-name authenticated
```

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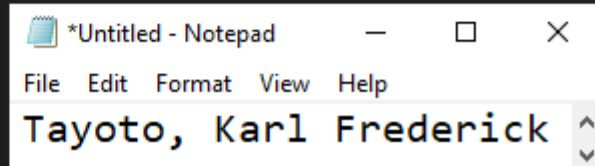
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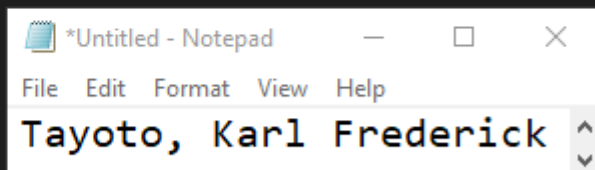
```
49 username cisco privilege 15 password 0 *****
50 ∨ archive
51 ∨ log config
52 | hidekeys
53 !
54 !
55 !
56 !
57 ip tcp synwait-time 5
58 ip ssh version 2
59 !
60 !
61 !
62 !
63 ∨ interface FastEthernet0/0
64 | ip address 192.168.0.1 255.255.255.0
65 | duplex auto
66 | speed auto
67 !
68 ∨ interface Serial0/0
69 | ip address 10.0.0.1 255.255.255.252
70 | clock rate 128000
71 !
72 ∨ interface FastEthernet0/1
73 | no ip address
74 | shutdown
75 | duplex auto
76 | speed auto
77 !
78 ∨ interface Serial0/1
79 | no ip address
80 | shutdown
81 | clock rate 2000000
82 !
83 ∨ interface Serial0/2
84 | no ip address
85 | shutdown
86 | clock rate 2000000
87 !
88 ∨ interface FastEthernet1/0
89 | no ip address
90 | shutdown
91 | duplex auto
92 | speed auto
93 !
94 ∨ interface Serial2/0
95 | no ip address
96 | shutdown
97 | serial restart-delay 0
98 !
99 ∨ interface Serial2/1
100 | no ip address
101 | shutdown
102 | serial restart-delay 0
```



```
104 < interface Serial2/2
105     no ip address
106     shutdown
107     serial restart-delay 0
108     !
109 < interface Serial2/3
110     no ip address
111     shutdown
112     serial restart-delay 0
113     !
114 < router ospf 100
115     log-adjacency-changes
116     passive-interface FastEthernet0/0
117     network 10.0.0.0 0.0.0.3 area 0
118     network 192.168.0.0 0.0.0.255 area 0
119     !
120 < router rip
121     version 2
122     passive-interface FastEthernet0/0
123     network 10.0.0.0
124     network 192.168.0.0
125     !
126     ip forward-protocol nd
127     !
128     !
129     no ip http server
130     no ip http secure-server
131     !
132     no cdp log mismatch duplex
133     !
134     !
135     !
136     !
137     !
138     !
139     control-plane
```



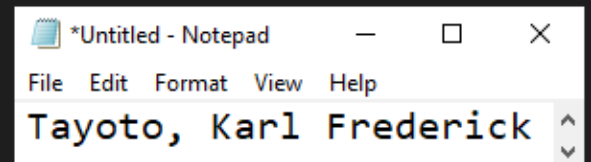
```
150 < line con 0
151     exec-timeout 0 0
152     privilege level 15
153     logging synchronous
154 < line aux 0
155     exec-timeout 0 0
156     privilege level 15
157     logging synchronous
158 < line vty 0 4
159     login local
160     transport input ssh
161 < line vty 5 15
162     login local
163     transport input ssh
164     !
165     !
166     end
```



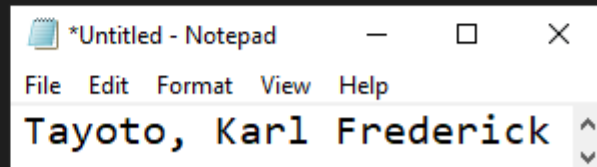
```
iosconfig > ≡ showrunTARLAC.txt
1 Building configuration...
2
3 Current configuration : 1834 bytes
4 !
5 version 12.4
6 service timestamps debug datetime msec
7 service timestamps log datetime msec
8 no service password-encryption
9 !
10 hostname PASIG
11 !
12 boot-start-marker
13 boot-end-marker
14 !
15 !
16 no aaa new-model
17 memory-size iomem 5
18 no ip icmp rate-limit unreachable
19 ip cef
20 !
21 !
22 !
23 !
24 no ip domain lookup
25 ip domain name www.cisco.com
26 !
27 multilink bundle-name authenticated
28 !
```



```
49 username cisco privilege 15 password 0 *****
50 ✓ archive
51 ✓ log config
52   hidekeys
53   !
54   !
55   !
56   !
57 ip tcp synwait-time 5
58 ip ssh version 2
59   !
60   !
61   !
62   !
63 ✓ interface FastEthernet0/0
64   ip address 192.168.1.1 255.255.255.0
65   duplex auto
66   speed auto
67   !
68 ✓ interface Serial0/0
69   no ip address
70   shutdown
71   clock rate 2000000
72   !
73 ✓ interface FastEthernet0/1
74   no ip address
75   shutdown
76   duplex auto
77   speed auto
78   !
79 ✓ interface Serial0/1
80   ip address 10.0.0.6 255.255.255.252
81   clock rate 2000000
82   !
83 ✓ interface Serial0/2
84   no ip address
85   shutdown
86   clock rate 2000000
87   !
88 ✓ interface FastEthernet1/0
89   no ip address
90   shutdown
91   duplex auto
92   speed auto
93   !
94 ✓ interface Serial2/0
95   no ip address
96   shutdown
97   serial restart-delay 0
98   !
99 ✓ interface Serial2/1
100  no ip address
101  shutdown
102  serial restart-delay 0
```




```
104 interface Serial2/2
105     no ip address
106     shutdown
107     serial restart-delay 0
108     !
109 interface Serial2/3
110     no ip address
111     shutdown
112     serial restart-delay 0
113     !
114 router ospf 100
115     log-adjacency-changes
116     network 10.0.0.4 0.0.0.3 area 0
117     !
118 router rip
119     version 2
120     network 10.0.0.0
121     network 192.168.1.0
122     !
123 ip forward-protocol nd
124 ip route 0.0.0.0 0.0.0.0 Serial0/0
125     !
126     !
127 no ip http server
128 no ip http secure-server
129     !
130 no cdp log mismatch duplex
131     !
132     !
133     !
134     !
135     !
136     !
137 control-plane
```



```
148 < line con 0
149     exec-timeout 0 0
150     privilege level 15
151     logging synchronous
152 < line aux 0
153     exec-timeout 0 0
154     privilege level 15
155     logging synchronous
156 < line vty 0 4
157     login local
158     transport input ssh
159 < line vty 5 15
160     login local
161     transport input ssh
162     !
163     !
164 end
```

