
F5 Networks Japan Technical Information Documentation

F5 Networks, Inc.

Apr 07, 2023

F5 2023 Read The Docs Guide

NGINX Plus Ansible Lab

F5??????????????????



1	??	5
1.1	????	5
1.2	???? (UDF(Unified Demonstration Framework)) ????????????	5
1.2.1	????????	5
1.2.2	RDP??	5
1.2.3	SSH???	9
2	Ansible????????????	11
2.1	1. Ansible???	11
2.2	2. ?????????	11
2.3	Tips1. Ansible Galaxy ???????	13
2.4	Tips2. Inventory????????	14
3	NGINX????????	17
3.1	1. ????	17
3.2	2. NGINX Plus?NAP WAF/DoS????????	17
3.3	3. NGINX Plus?NAP WAF/DoS????????	20
4	????????????????????	25
4.1	1. ?????????????????	25
4.2	2. ????	31
4.3	3. ????	32
5	????????WAF????????	33
5.1	1. ?????????????????	33
5.2	2. ????	35
5.3	3. ????	36
6	(??) Ansible????????????????	37
6.1	Jinja Template????????	37
6.1.1	Ansible?????????Jinja????	37
6.1.2	????????????????	38
6.1.3	Jinja?Update	38



1.1 ????

- ??????????Invite??
- ?????????? git , jq , sudo, curl, apt
- NGINX Trial?????????????????????????????Home Directory???

1.2 ??? (UDF(Unified Demonstration Framework)) ??????????????

????????LAB????????????????????????????????
 ???
 Google Chrome?Support??
 ??? UDF Supported Browsers and Clients

1.2.1 ????????

1.2.2 RDP??

a. Windows Jump Host??RDP??

Note: ?????????????????RDP????????????????????? b. Windows Jump Host?VNC??? ??????????

Windows Jump Host??CLI????????????????RDP Client????????????????????

Note:

RDP?User????????DETAILS????????General????Credentials????????
user ??????????

•

•

b. Windows Jump Host?VNC???

vnc-windows? vnc-win ??????????????

?? ????????????

?????????????? admin ??????????

Windows????????????????VNC????????? Ctrl+Alt+Del??? ??????????

????????????????????? ?????????? ?????????????????? a. *Windows Jump Host??RDP??*
?????????????????????

•

•

1.2.3 SSH???

Windows	Jump	Host??????????SSH	Client??	ubuntu01
---------	------	-------------------	--	----------

•

•



Ansible????NGINX????????????????

2.1 1. Ansible???

•

NGINX?????????Ansible Galaxy?????????????NGINX????????????????????

NGINX? `nginx_core` ??????????????????????????????????URL????????????

- Ansible Galaxy `nginx_core`

2.2 2. ??????????

Ansible?????????????????????Ubuntu????????????????????????????????????

(?????Linux??)

- Ubuntu ?? Ansible ??????????

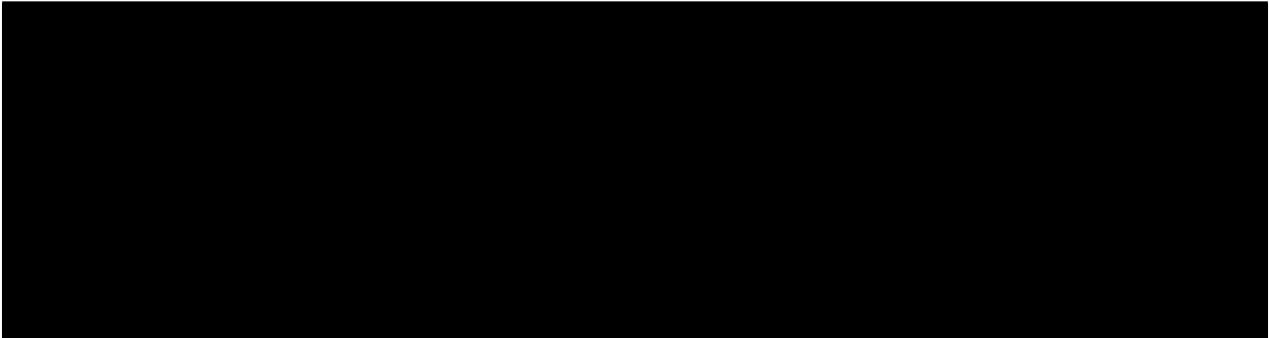


Ansible????????????????????



Listing 1: ????????

1
2
3
4
5
6
7
8
9



Note:

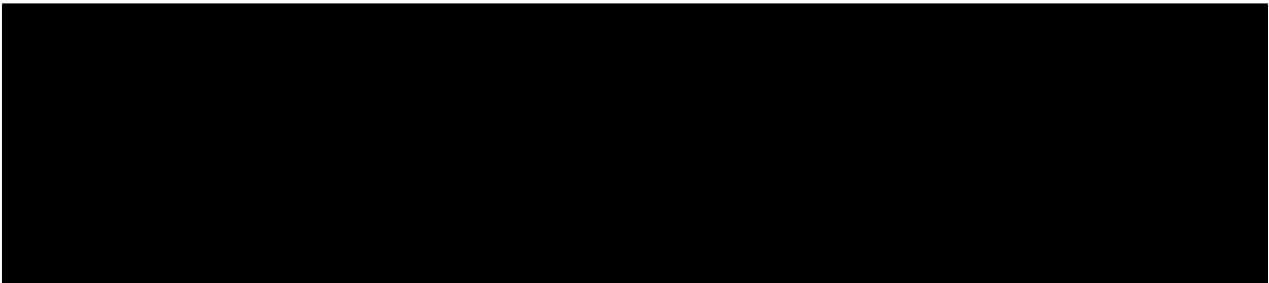
Ansible?jinja template?????NGINX????????????????????
????????????????Python???????????????? pip ?????????? jinja2 ??????????????????????
??? Jinja Template????????????? ????????????

Ansible?NGINX Core???????????????



Listing 2: ????????

1
2
3
4
5
6



??

Name	Description	Version
nginxinc.nginx	Install NGINX	0.23.1
nginxinc.nginx_config	Configure NGINX	0.5.1
nginxinc.nginx_app_protect	Install and configure NGINX App Protect	0.8.0

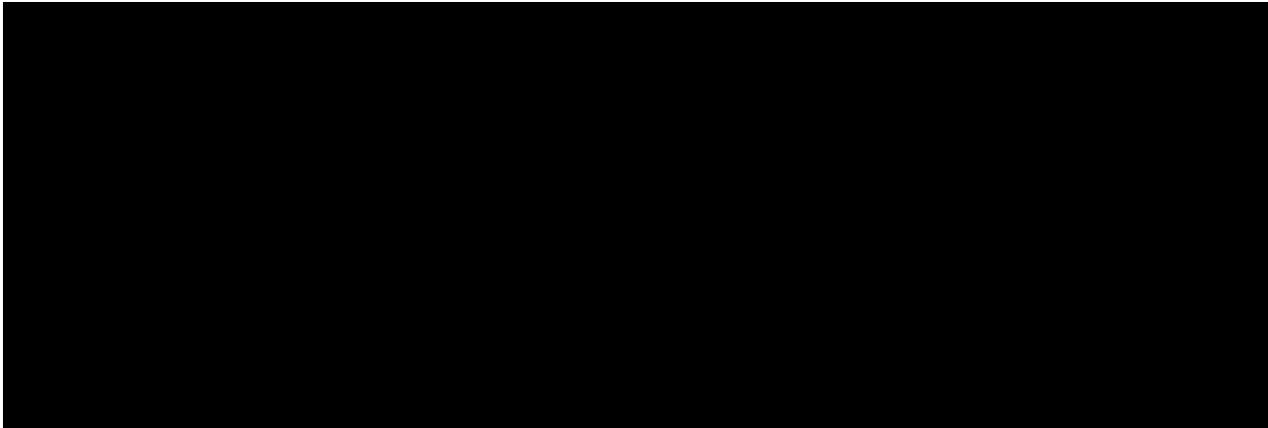
Note: ???Version??????? 0.6.0 ??????????????Ansible Galaxy?????????????

????????????????????????????????



Listing 3: ????????

1
2
3
4
5
6
7
8
9
10
11
12
13
14



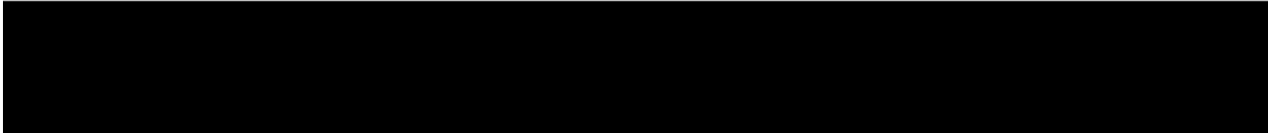
2.3 Tips1. Ansible Galaxy ??????

?????????????



Listing 4: ????????

1
2
3
4

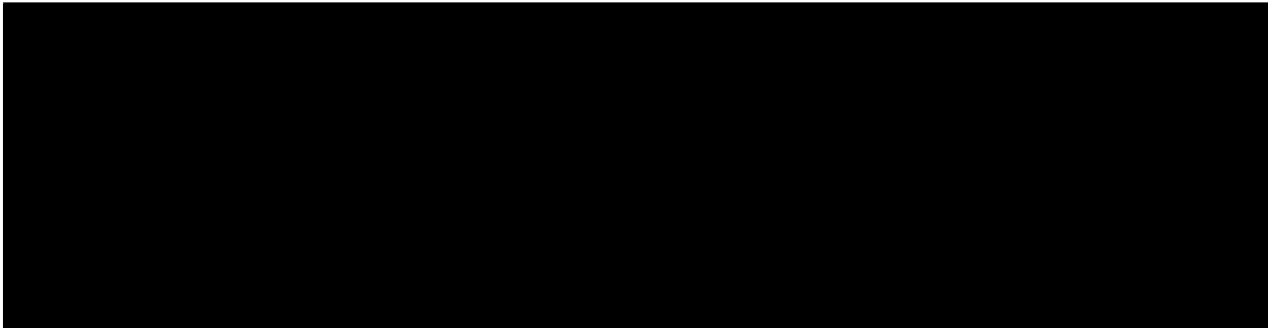


Author?????????????



Listing 5: ????????

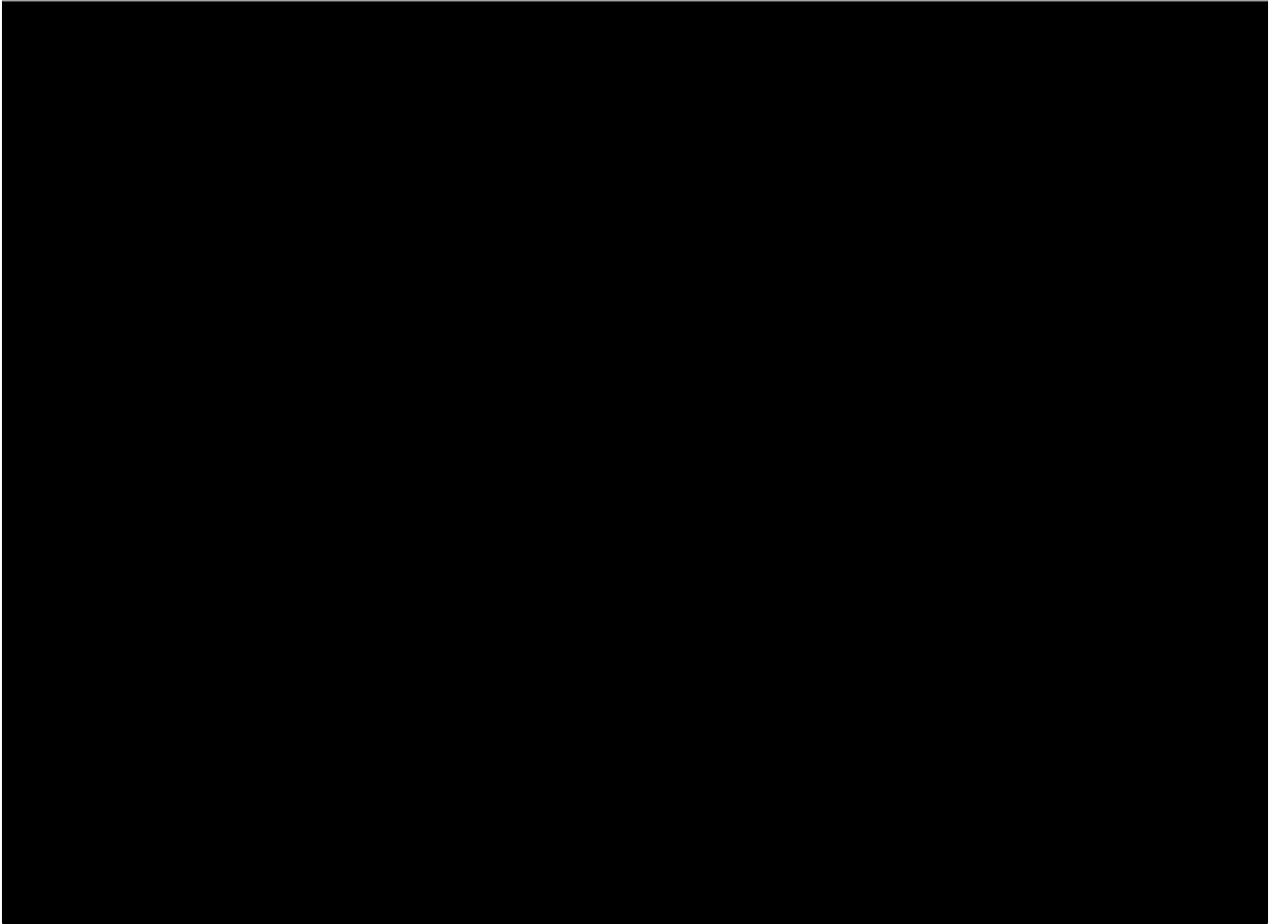
1
2
3
4
5
6
7
8



(continues on next page)

(continued from previous page)

9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

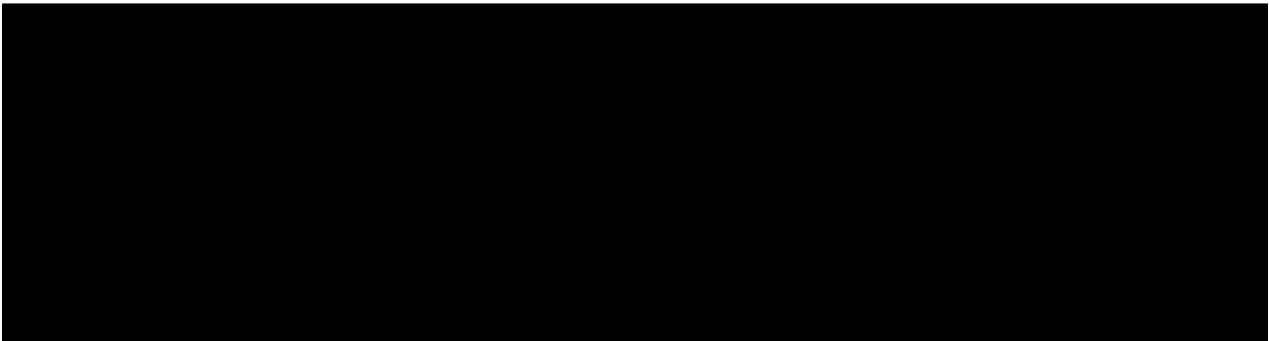


?????Author????????????



Listing 6: ????????

1
2
3
4
5
6
7
8
9



2.4 Tips2. Inventory????????

Graph????Inventory?????



Listing 7: ????????

1
2
3
4
5
6

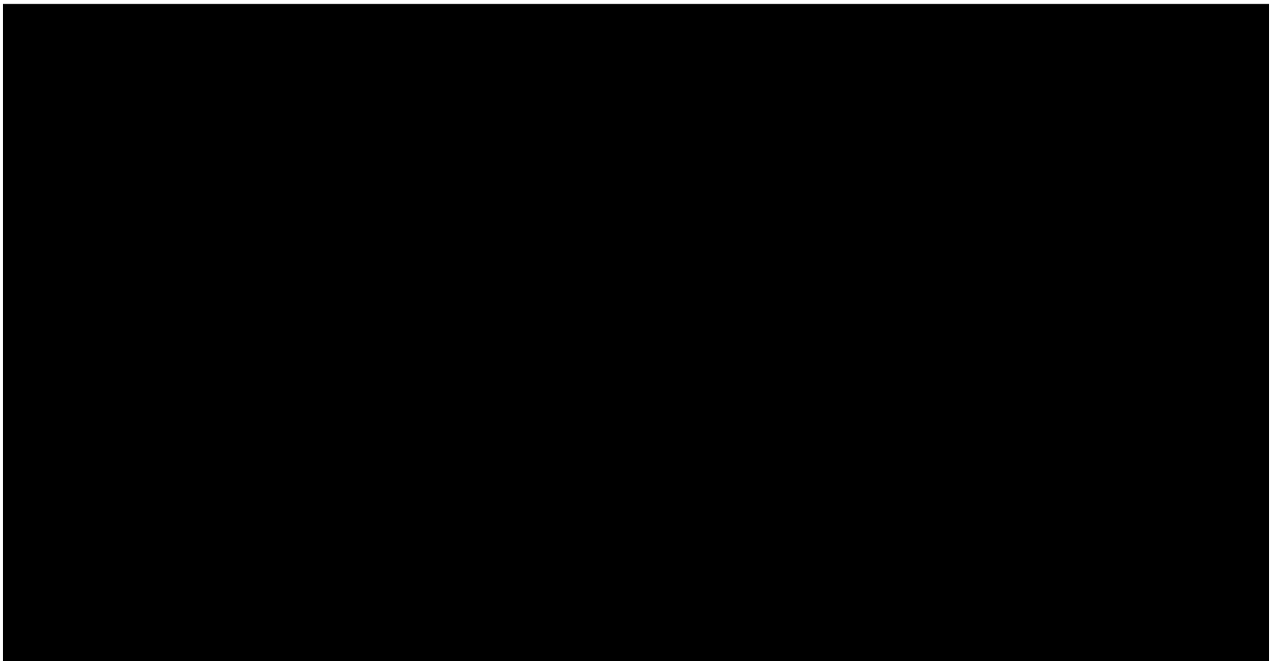


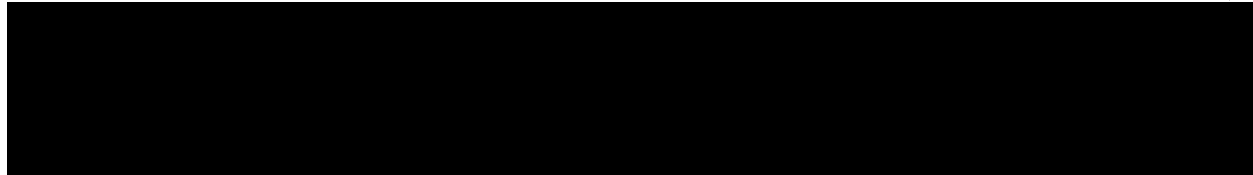
List????Inventory?????



Listing 8: ????????

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22



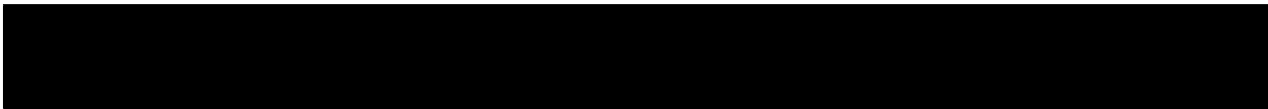


3.1 1. **????**

??



NGINX? Ansible Playbook?????????GitHub????????????????????????????????



Inventory????????????????????



Listing 1: ??????????

```
1  
2  
3  
4  
5  
6
```

nginx1 ? nginx2 ???2????????????????????????????????

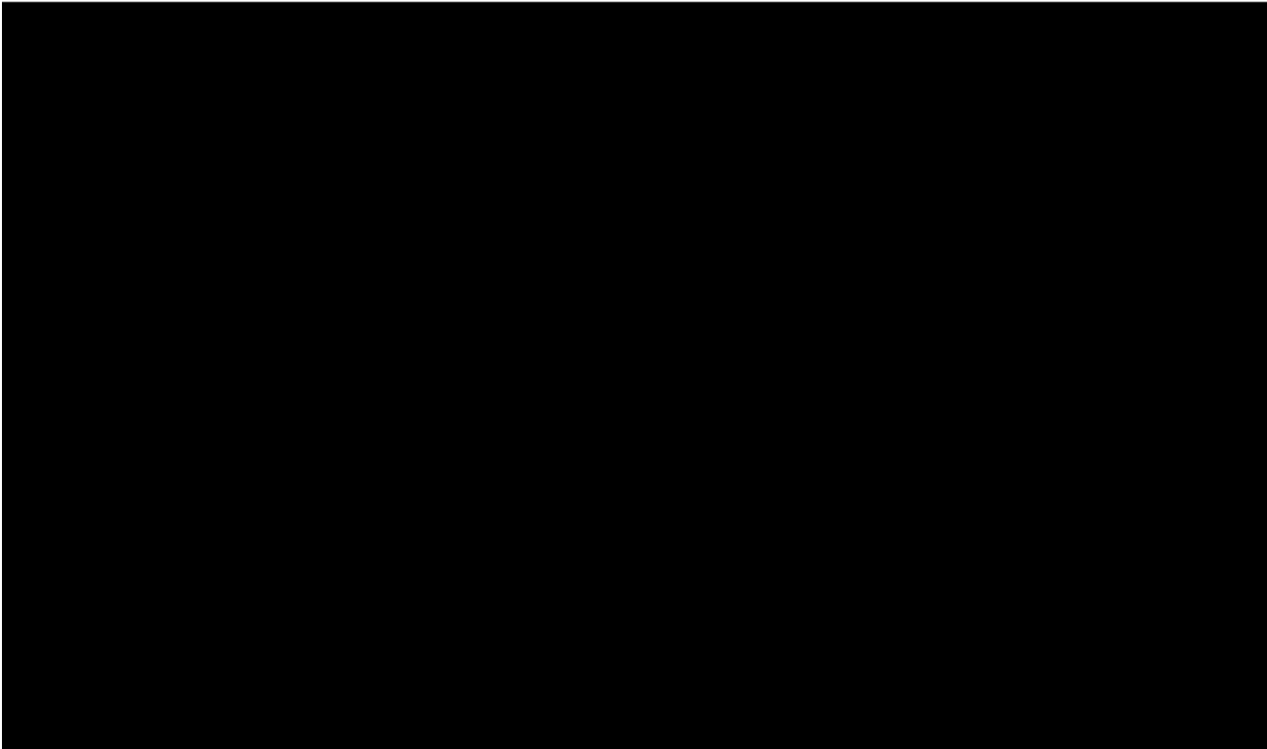
3.2 2. **NGINX Plus?NAP WAF/DoS?????????**

Playbook????????????



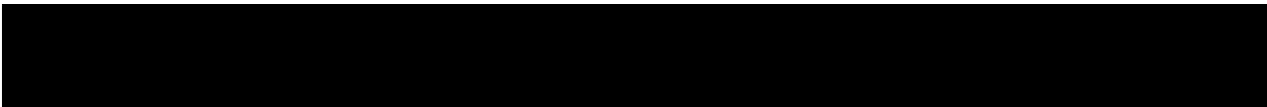
Listing 2: ????????

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25



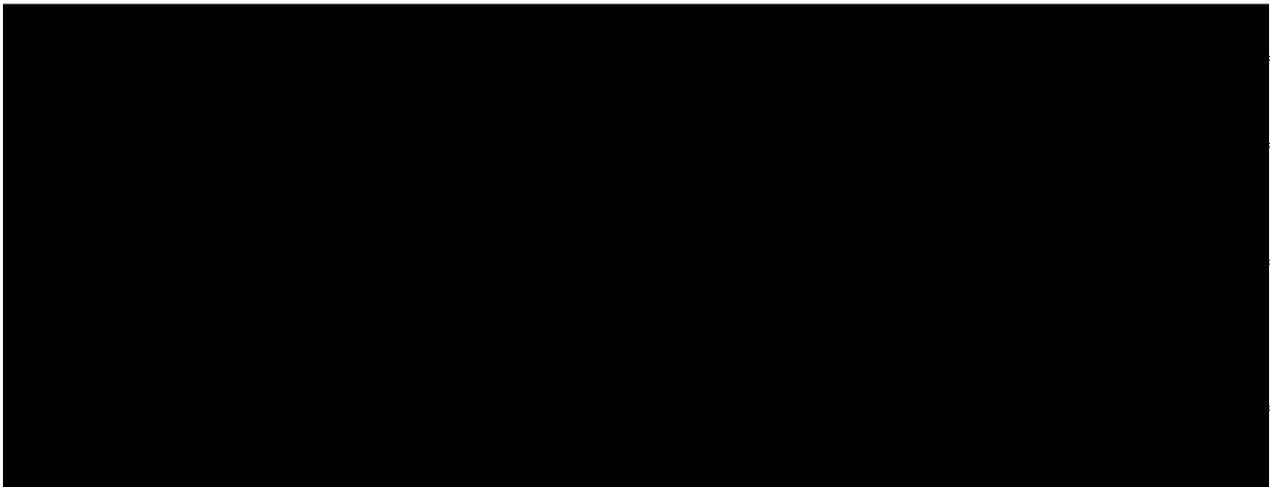
- 4??? nginxinc.nginx_core ????????????????
- 8??? nginx ??????????10-14?????????????????
 - 10?? nginx_type : Install??NGINX?OpenSource?Plus???????
 - 11?? nginx_license : NGINX Plus????????????????????
 - 14?? nginx_remove_license : ?????????????????????????????
 - ?????????? NGINX installation variables ??????????
- 18??? nginx_app_protect ??????????20-25?????????????????
 - 20?? nginx_app_protect_waf_enable : NGINX App Protect WAF ????????????
 - 21?? nginx_app_protect_dos_enable : NGINX App Protect DoS ????????????
 - 22-23?? nginx_app_protect_* : WAF?Signature?Threat Campaign Signature???????????
 - 24-25 nginx_app_protect_*_license : ???
 - ?????????? NGINX App Protect installation and configuration variables ??????????

NGINX Plus?NGINX App Protect WAF/DoS ??????????



Listing 3: ????????

1
2
3
4
5
6
7
8
9
10
11



????????????????????????????????

Listing 4: ansible-playbook ??????????

1



option	?????
-i	????????????????????????????????
-l (--limit)	????????????????????????????????
--private-key	????????????????????????????????
--become (-b)	become???????????????????????????? sudo ??

????????????????????????????????

????????????????????

K72015934: Display the NGINX software version



NGINX App Protect ?Version



NGINX App Protect DoS ?Version



??Ubuntu???????



Listing 5: ????????

```
1 [Redacted]
2 [Redacted]
3 [Redacted]
```

[Redacted]

Listing 6: ????????

```
1 [Redacted]
2 [Redacted]
3 [Redacted]
4 [Redacted]
5 [Redacted]
6 [Redacted]
7 [Redacted]
```

3.3 3. NGINX Plus?NAP WAF/DoS?????????

??????Playbook?? 1. ??? ???? ????????????

Playbook?????????????

```
[Redacted]
```

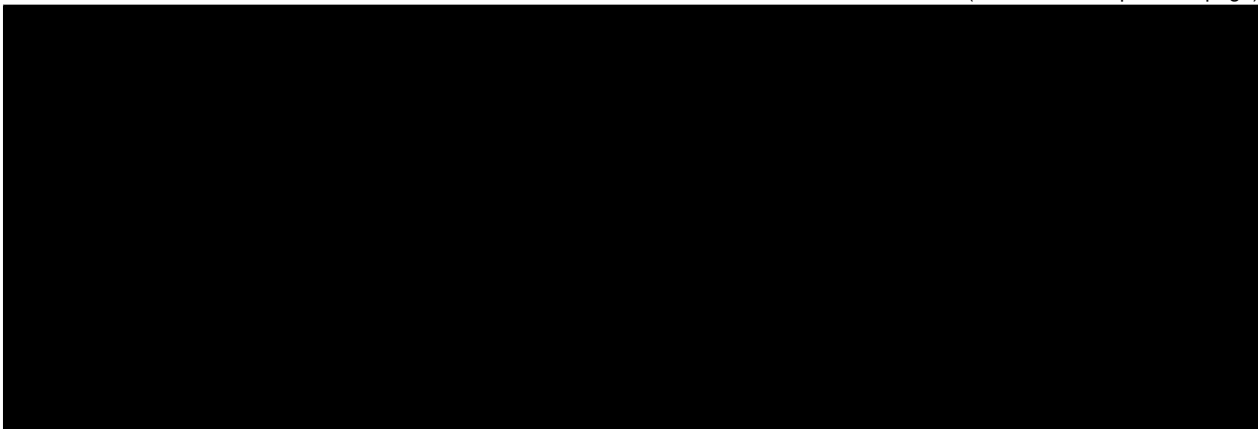
Listing 7: ????????

```
1 [Redacted]
2 [Redacted]
3 [Redacted]
4 [Redacted]
5 [Redacted]
6 [Redacted]
7 [Redacted]
8 [Redacted]
9 [Redacted]
10 [Redacted]
11 [Redacted]
12 [Redacted]
```

(continues on next page)

(continued from previous page)

13
14
15
16
17
18
19
20
21
22
23
24
25
26



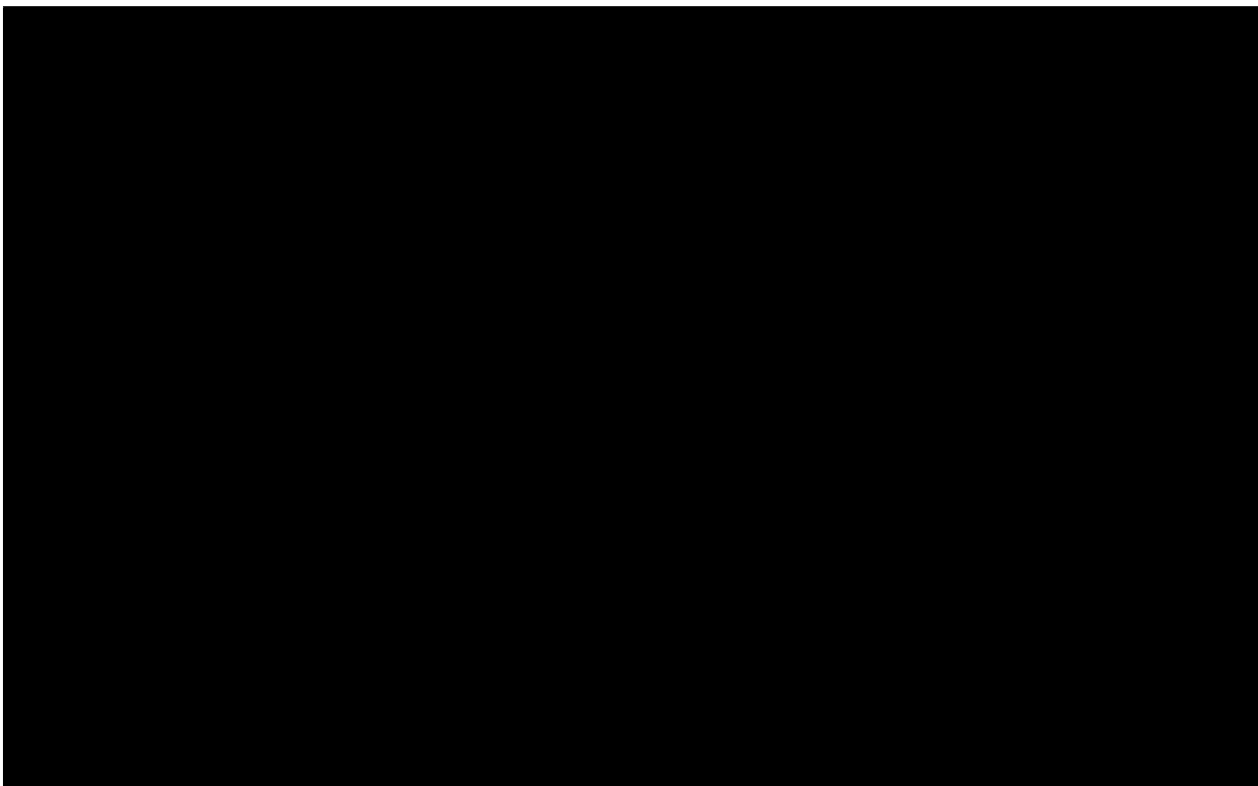
- 8??? nginx ??????????11??? nginx_setup ? uninstall ??????
- 20??? nginx_app_protect ??????????22??? nginx_app_protect_waf_setup 23??
uninstnginx_app_protect_dos_setupall ? uninstall ??????
- 16??? nginx_start: false ? 26??? nginx_app_protect_start: false
??

NGINX Plus?NGINX App Protect WAF/DoS ??????????



Listing 8: ??????????

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17



[PROTECT] FINE NGINX CONFIG 11 Syntax Check fails]

(continues on next page)

(continued from previous page)

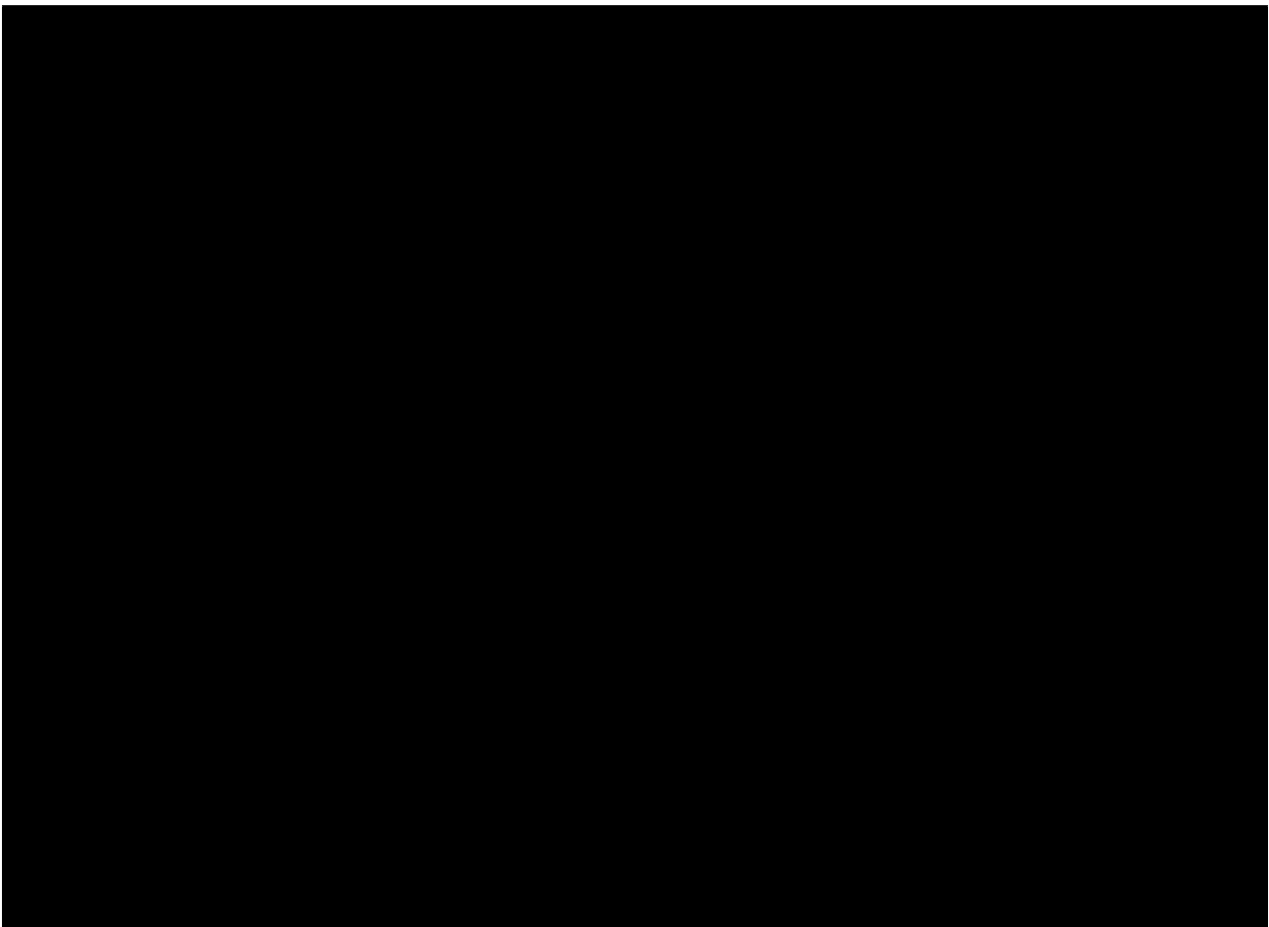
18
19
20
21



- 13-15????nginx_app_protect ?????????????????????? nginx -t ??????????????NGINX Plus??
- 21???????????????????? 13-15????????? ignore ?????????????? ???

Listing 9: ??????????

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22



????????? app-protect-common ??



Ansible?????????????????????NGINX Plus?????????????????Ubuntu??

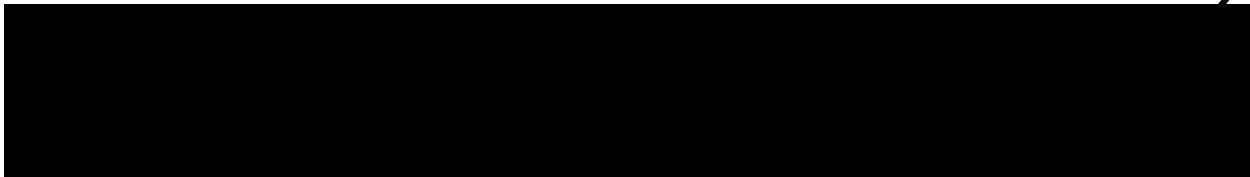


NGINX Plus????????????? /etc/nginx ??????????????

Listing 10: ????????

1
2





Note:

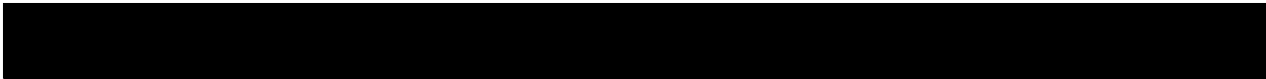
????NGINX??
??

Note:

Ansible?jinja template?????NGINX????????????????????????????????
?????????????????Python????????????????? pip ?????????? jinja2 ??????????????????????????
??? Jinja Template????????????? ????????????

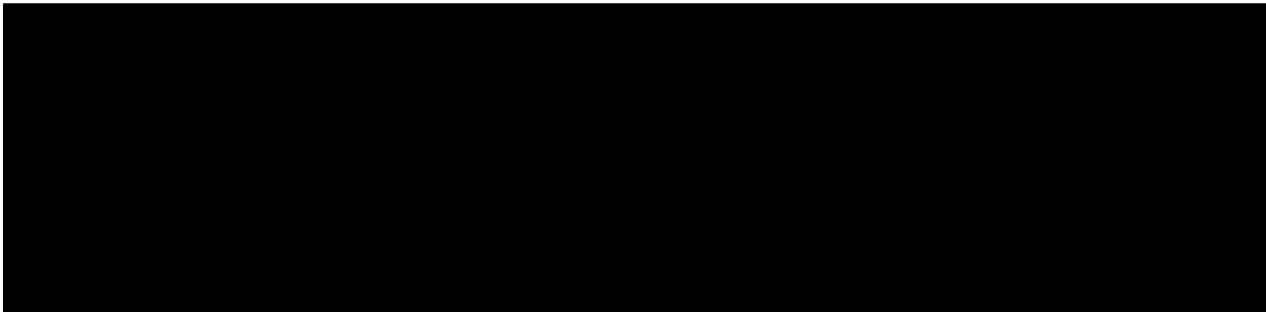
4.1 1. ????????????????????

NGINX Plus, NAP WAF/DoS??
????????Playbook?? 1. ??? ?
Playbook???????????



Listing 1: ??????????

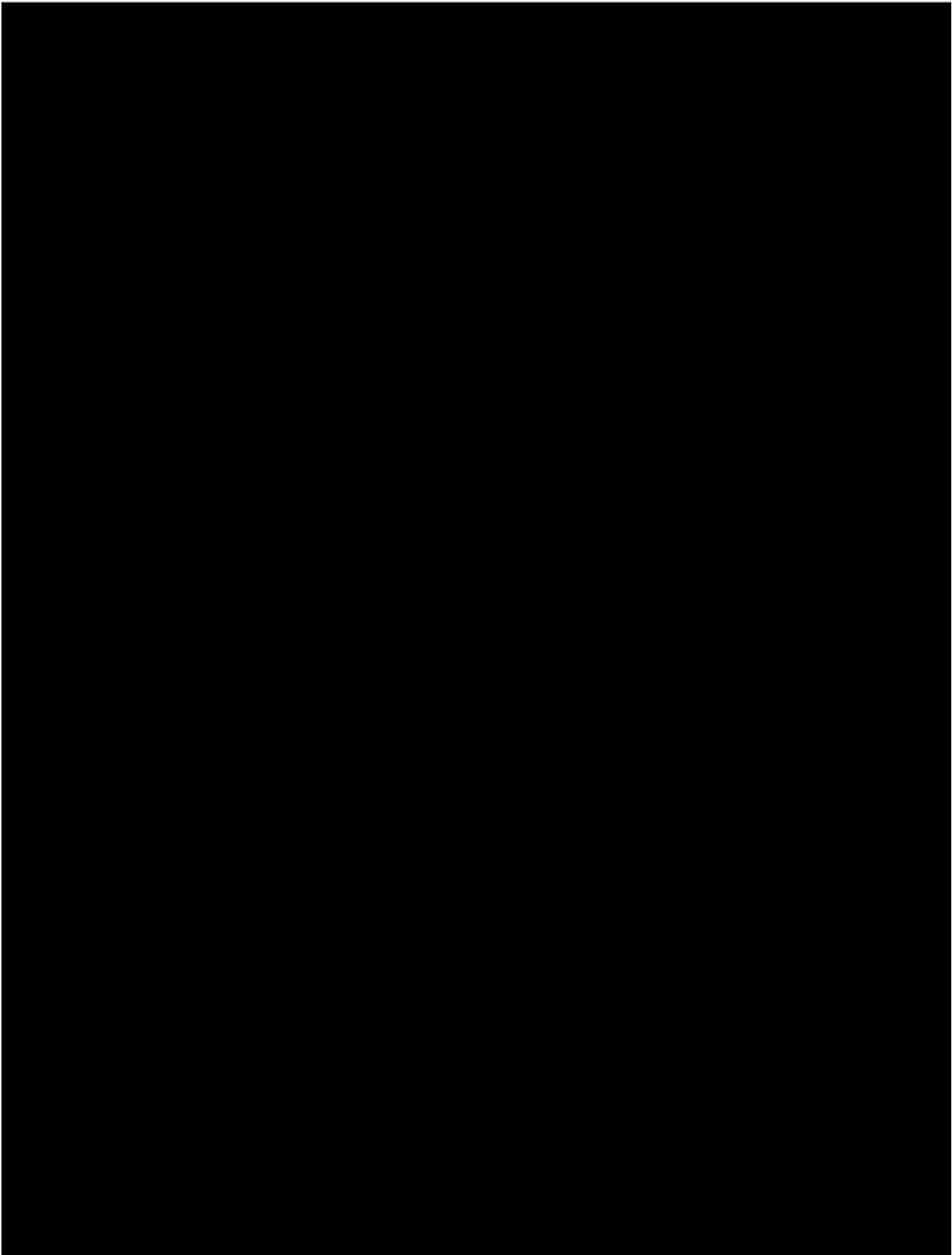
1
2
3
4
5
6
7
8
9
10



(continues on next page)

(continued from previous page)

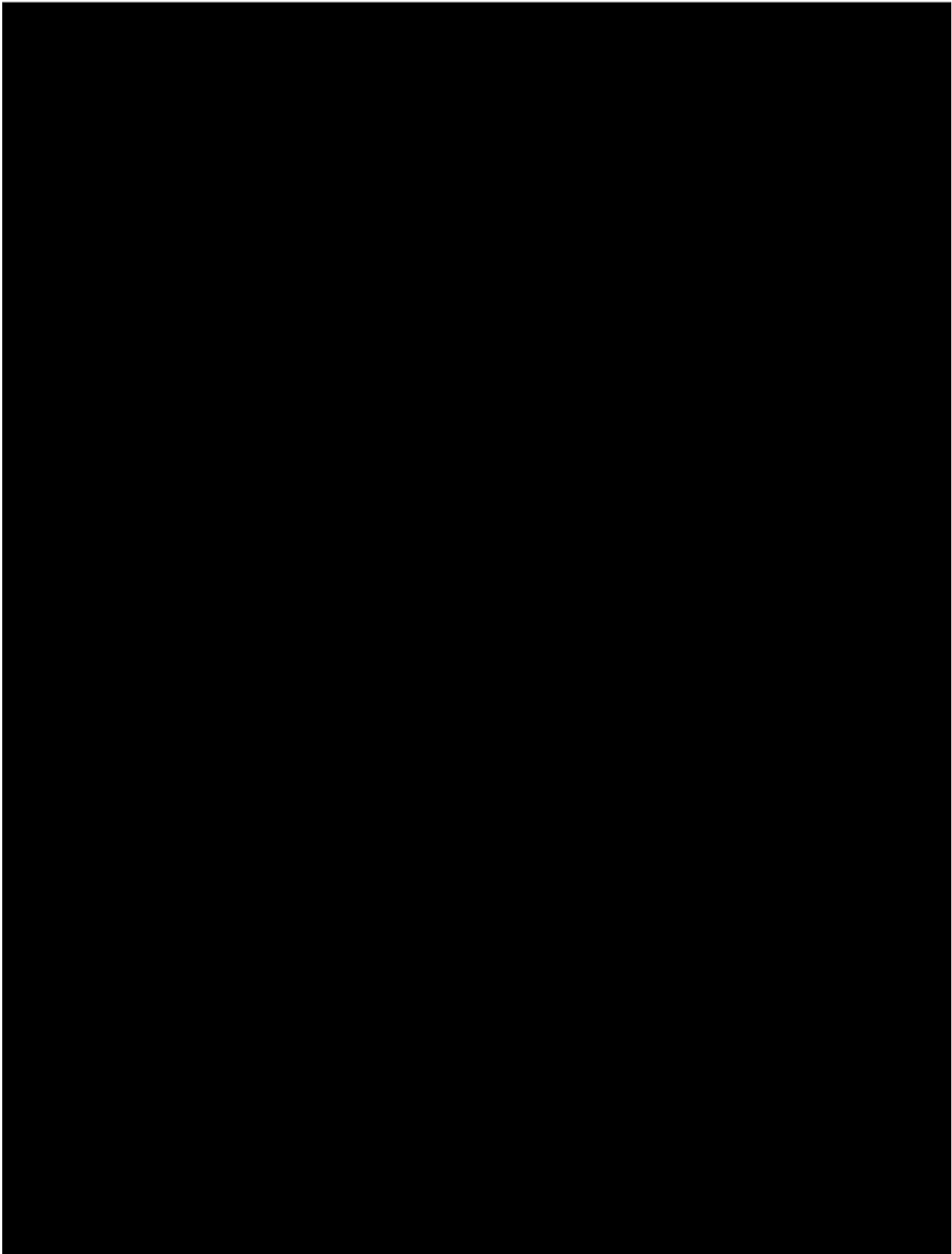
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66



(continues on next page)

(continued from previous page)

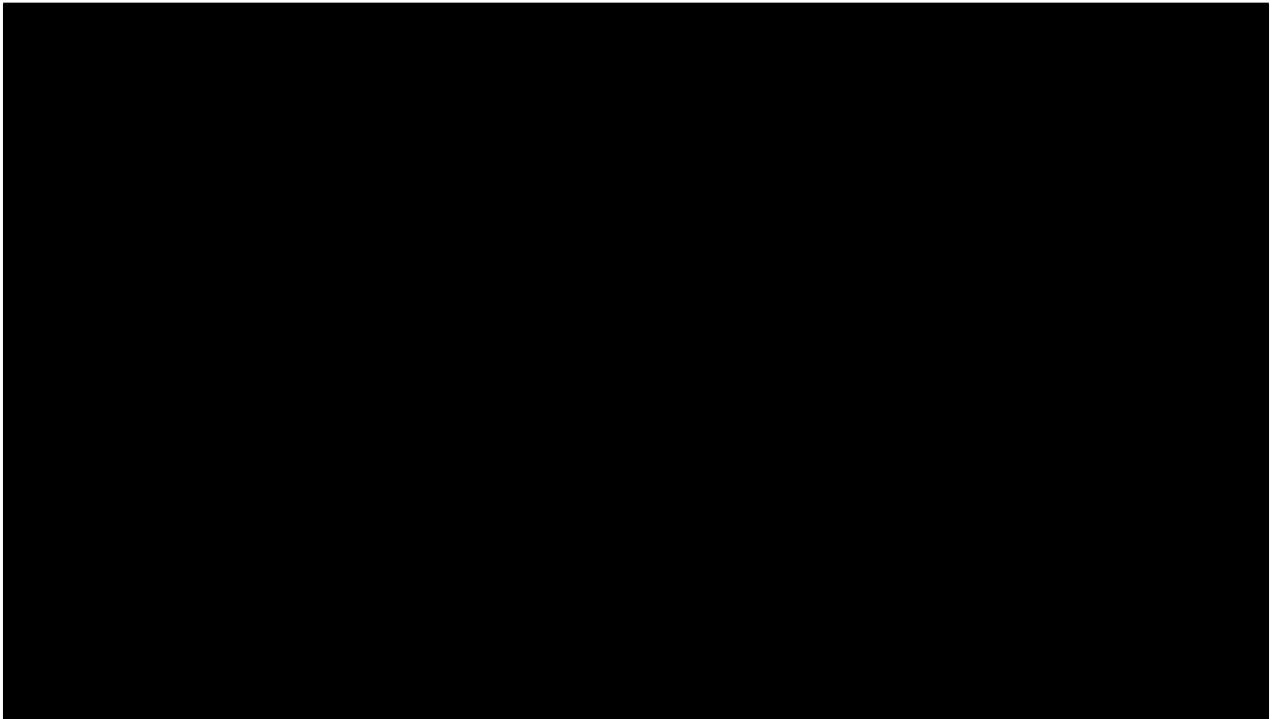
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122



(continues on next page)

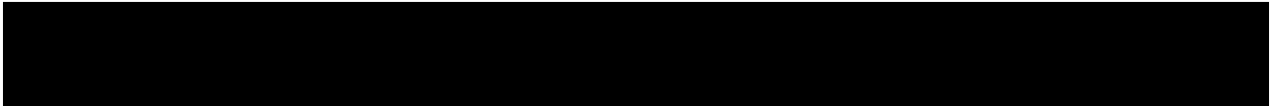
(continued from previous page)

123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146



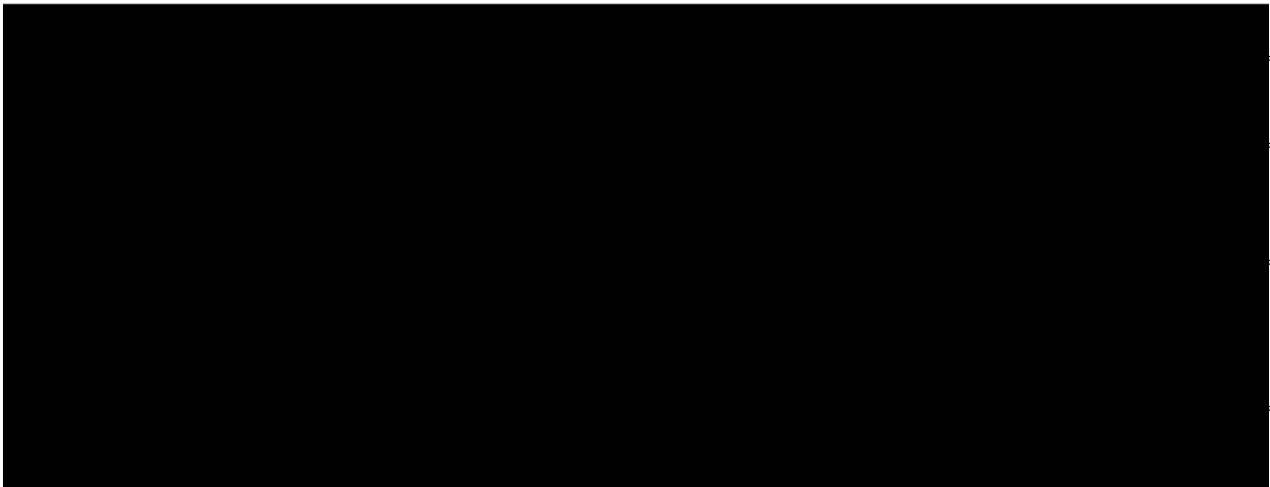
- 29??? nginx_config ??????????????????????????????????
- 31-33???? nginx_config_modules ?????????????????????????? nginx.conf ????????????
- 34???? nginx_config_http_template_enable ???HTTP?????NGINX?????????????????????
- 35???? nginx_config_http_template ???36????????????????????
 - 36?? template_file : ???HTTP Teamplate??????
 - 37?? deployment_location : ??????????????????????
 - 38?? config : ??????????????????????????????
- 139???? nginx_config_html_demo_template_enable ???HTML?????????????????????????????
- 140???? nginx_config_html_demo_template ???36????HTML????????????????
 - 141,144?? template_file : ???HTML Teamplate??????
 - 142,145?? deployment_location : ??????????????????????????????
 - 143,146?? web_server_name : ??????????????
- ???
 - Port 80 ??????Server????????????????8081?8082????????????
 - Port 8081 ? Port 8082 ??????????HTML?????WEB?????????????
- ???????? GitHub ansible-role-nginx-config ????????????

NGINX Plus?NGINX App Protect WAF/DoS ??????????



Listing 2: ????????

1
2
3
4
5
6
7
8
9
10
11

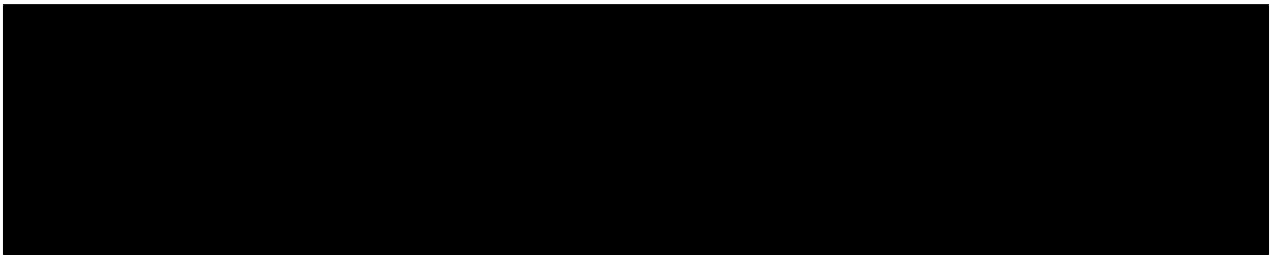


????????????????????
nginx.conf ???



Listing 3: ????????

1
2
3
4
5
6
7
8

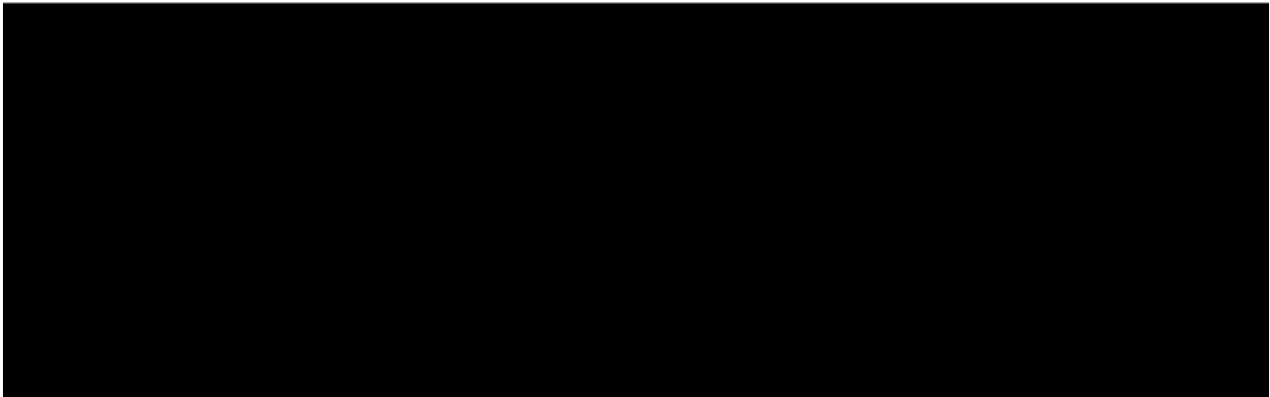


• 1,2??
???? default.conf ????????????



Listing 4: ????????

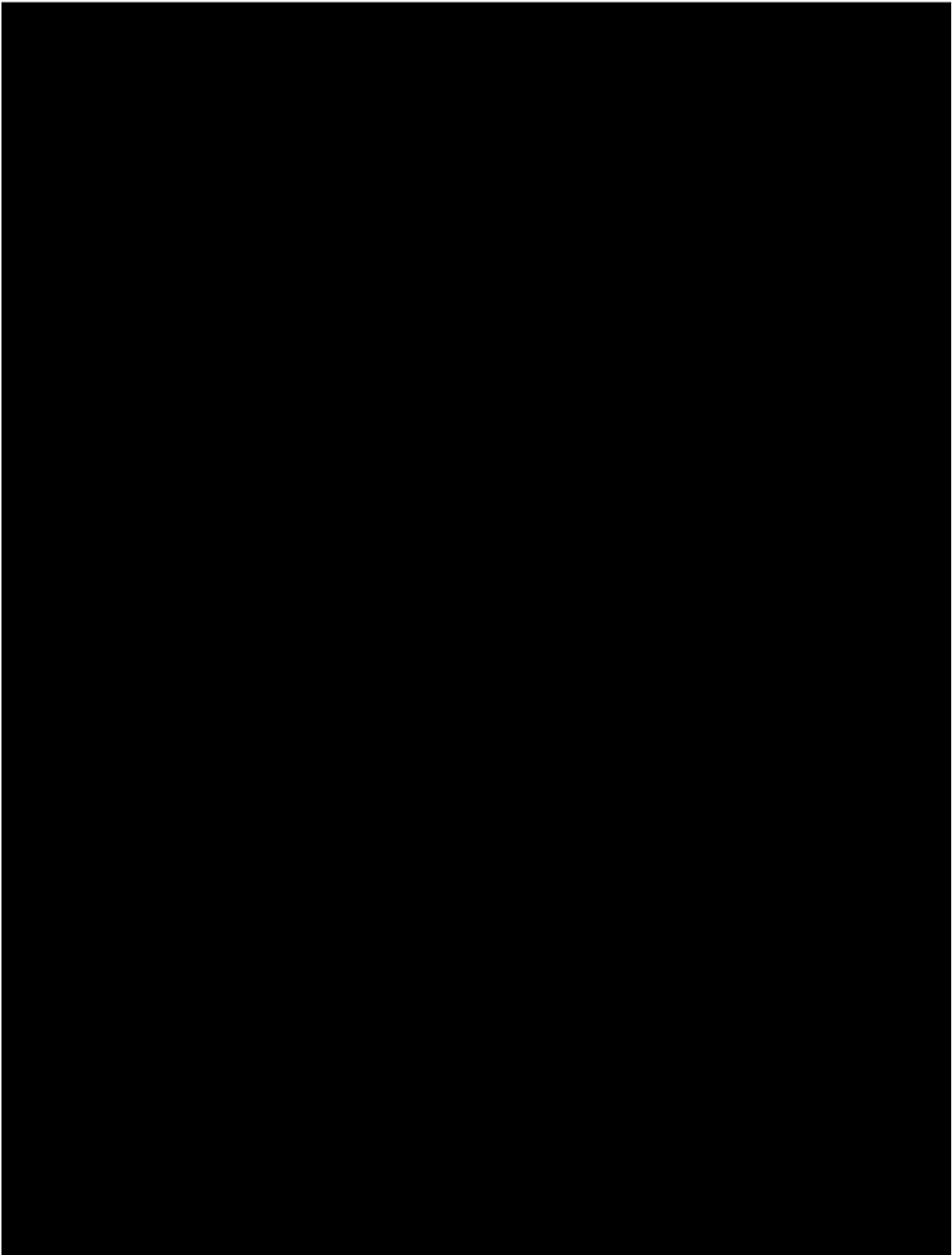
1
2
3
4
5
6
7
8
9
10
11
12
13



(continues on next page)

(continued from previous page)

14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69



(continues on next page)

(continued from previous page)

70
71
72
73
74
75
76
77
78



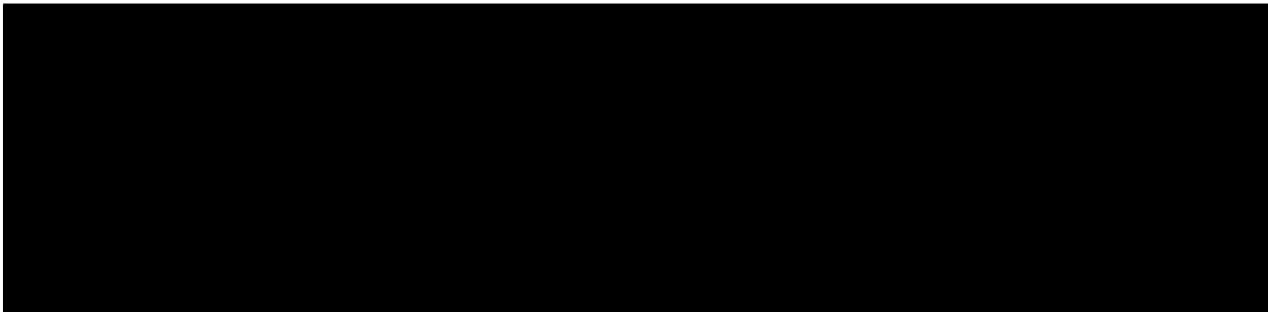
- ???Ansible Playbook?????????config???? upstream ? servers ?????????????? servers ?????3?? core ??????????????????
- ????????????????? upstream ?????? 3?? server ??????????????????????Playbook?????????????
- Playbook? core ?????????? server ??listen?????????????????????????????

grep ?????? Ansible ??????????HTML????????????????????



Listing 5: ??????????

1
2
3
4
5
6



- 1-3??? server_one.html ? 4-6??? server_two.html ??????
- 3,6??? title ? 4,7??? span ? ?????????? web_server_name ??????????????????

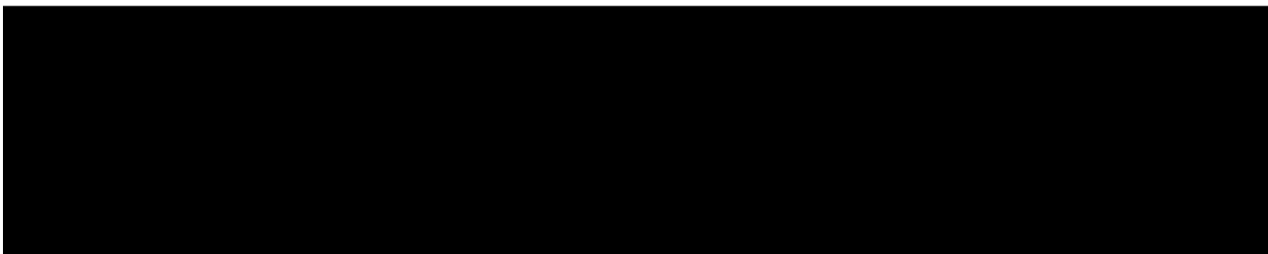
4.2 2. ?????

Curl????????????????????????????



Listing 6: ??????????

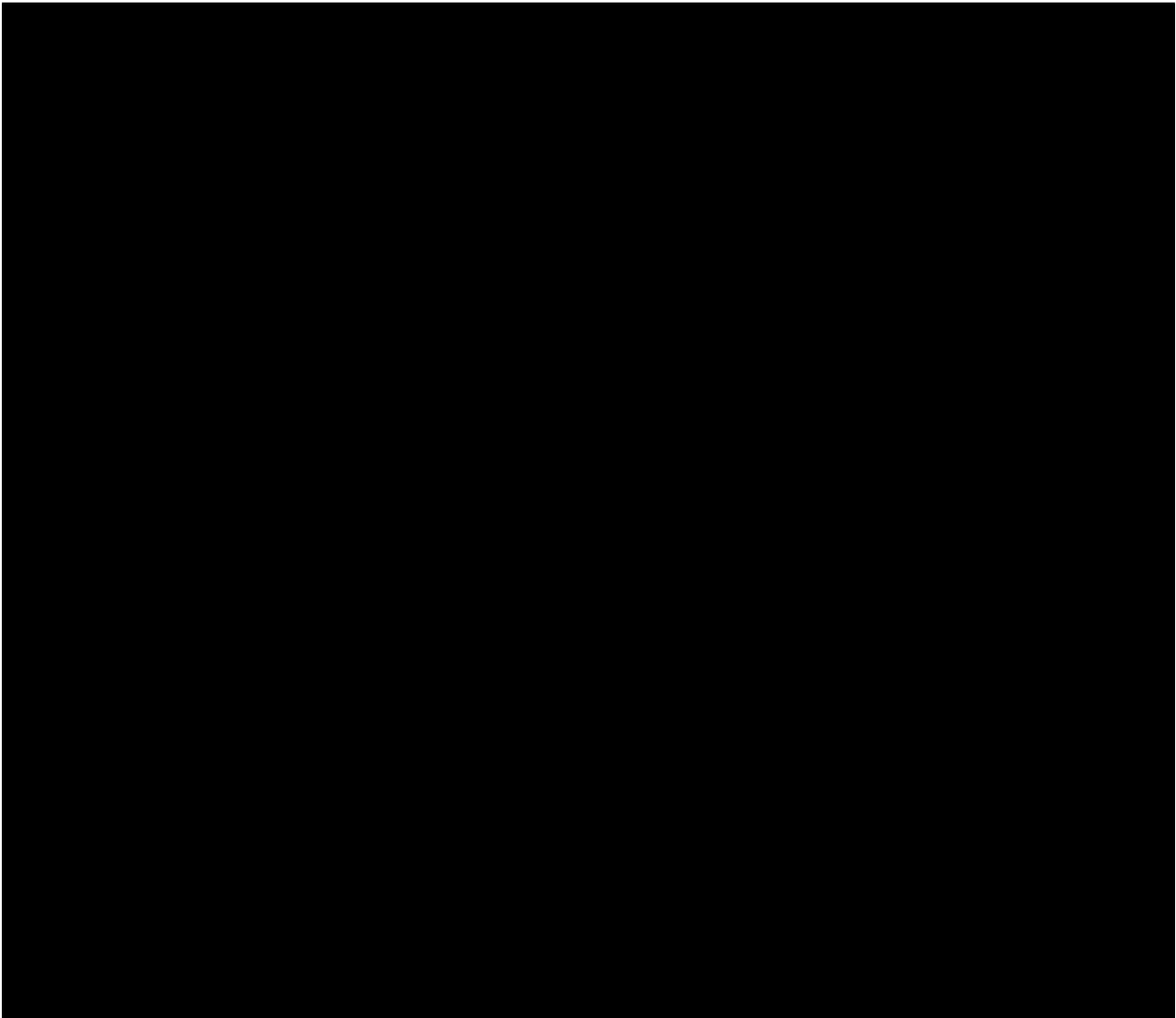
1
2
3
4
5
6
7



(continues on next page)

(continued from previous page)

8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39



- for?3? Curl ??????????????????????
- 1,14,27??
- 3,17,30?????????Playbook????? web_server_name ???? one , two , one ??????????????????????
- ?????????? sub_filter ?????????????????????????????????????

4.3 3. ??????

???????????? 3. NGINX Plus?NAP WAF/DoS???????????? ?????????????????????????????????



Note:

????NGINX??
??

Note:

Ansible?jinja template?????NGINX????????????????????????????????
?????????????????Python????????????????? pip ?????????? jinja2 ?????????????????????????
??? Jinja Template????????????? ???????????

5.1 1. ???????????????????

NGINX Plus, NAP WAF/DoS??
????????Playbook?? 1. ???????????????

Playbook?????????????
(???????? NGINX Plus Lab Security ? 2. ????????? ??????????)



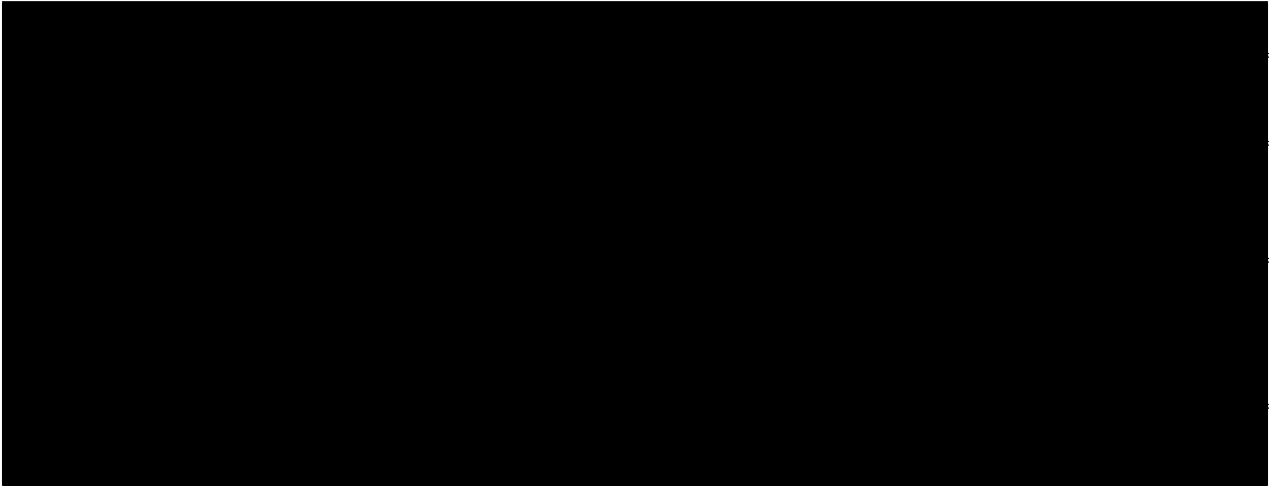
- 26-34?????Ansible?????Playbook????????????????? ../files/nap-waf/ ??????????Security Pol-
icy?Log Policy????????????????????????????????
- 60-66????? App Protect WAF ?????????????????????????46????????????????????????
- ?????????????????? GitHub ansible-role-nginx-config app_protect_waf ??????????????????

NGINX Plus?NGINX App Protect WAF/DoS ??????????



Listing 1: ????????

1
2
3
4
5
6
7
8
9
10
11

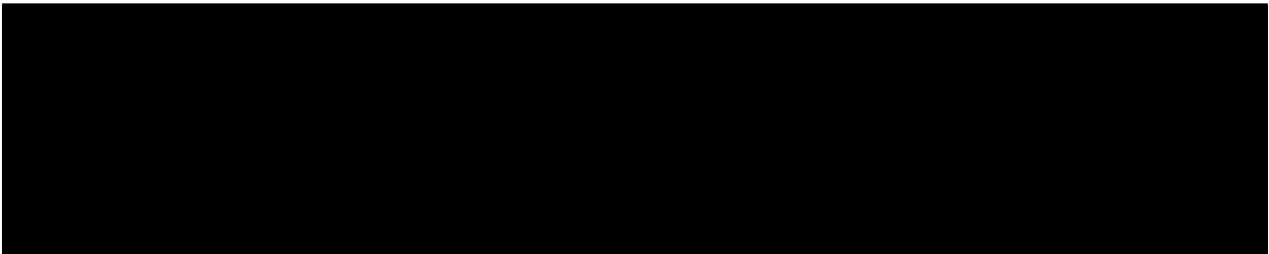


????????????????
nginx.conf ???



Listing 2: ????????

1
2
3
4
5
6
7
8



• 1,2??
WAF??



Listing 3: ????????

1
2

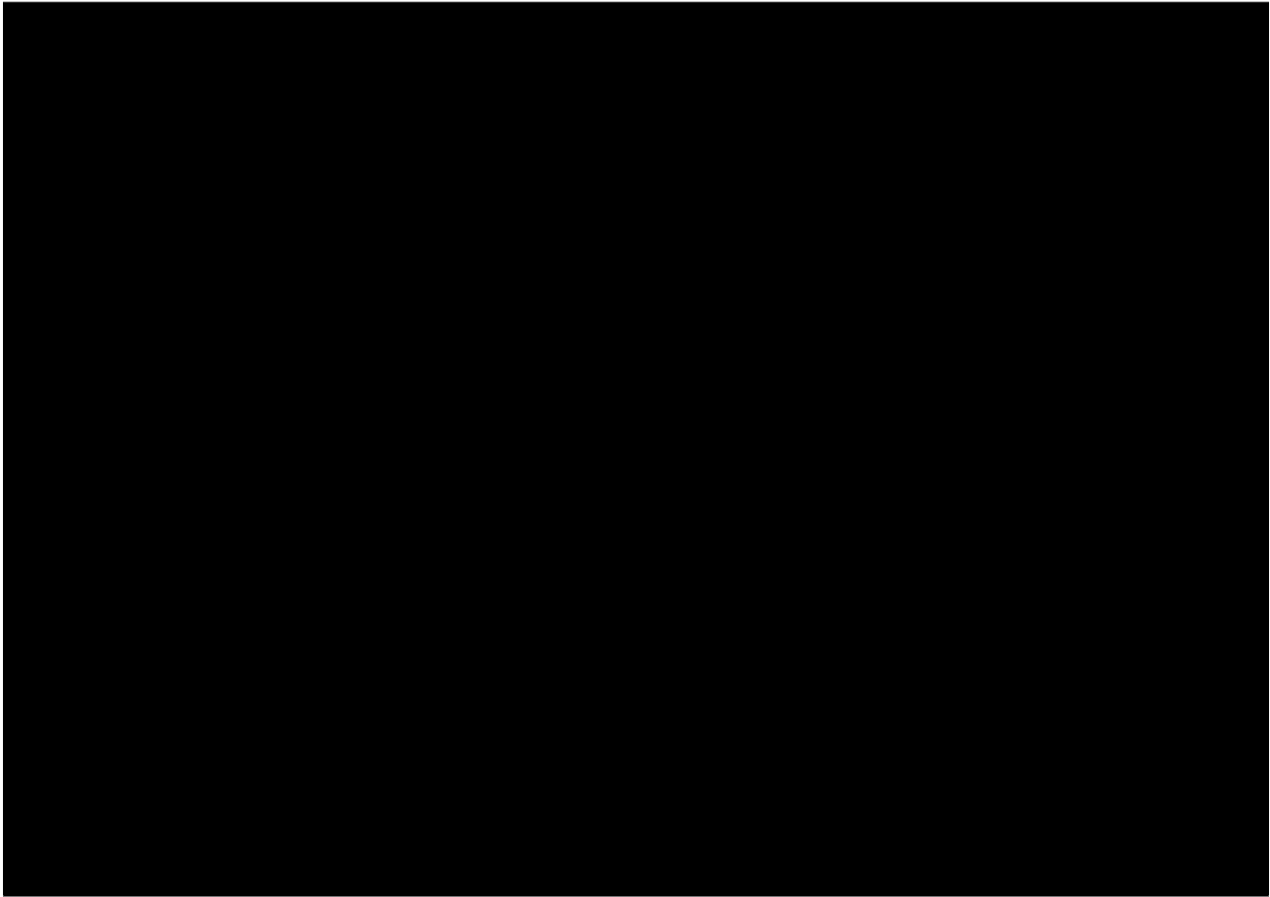


???? default.conf ??????????



Listing 4: ????????

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29



- 14-15????App Protect WAF?????WAF?????????????????
- 16-17????App Protect WAF???

5.2 2. ????

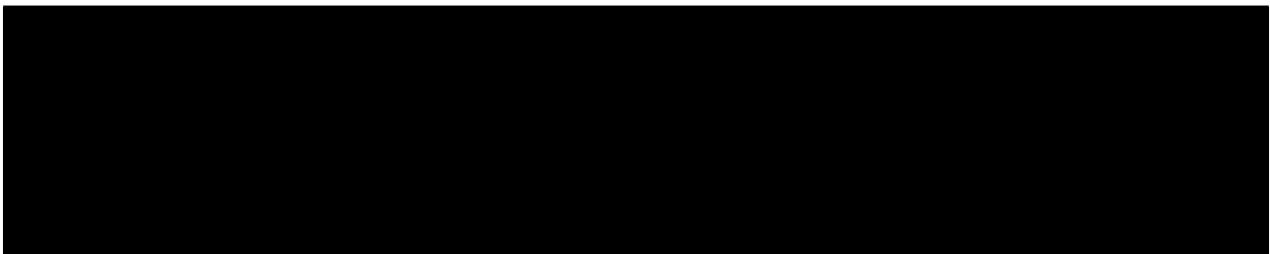
Curl?????????????????????????????



????????????????HTML?????????????????????????????

Listing 5: ????????

1
2
3
4
5
6
7
8



(continues on next page)

(continued from previous page)

9
10

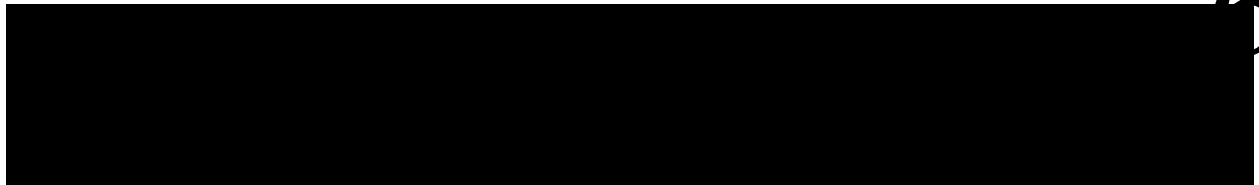


- NGINX App Protect WAF???????????????? 3??? Request Rejected ??????????
- 7??? Support ID ??????????????ID??

F5 UDF????????????????????ELK????????????????????ELK????WAF?Log? support_id
?????????support ID ?????????????????? NGINX Plus Lab Security ?????? ??????????????

5.3 3. ??????

??????????? 3. NGINX Plus?NAP WAF/DoS??????????? ??????????????????????



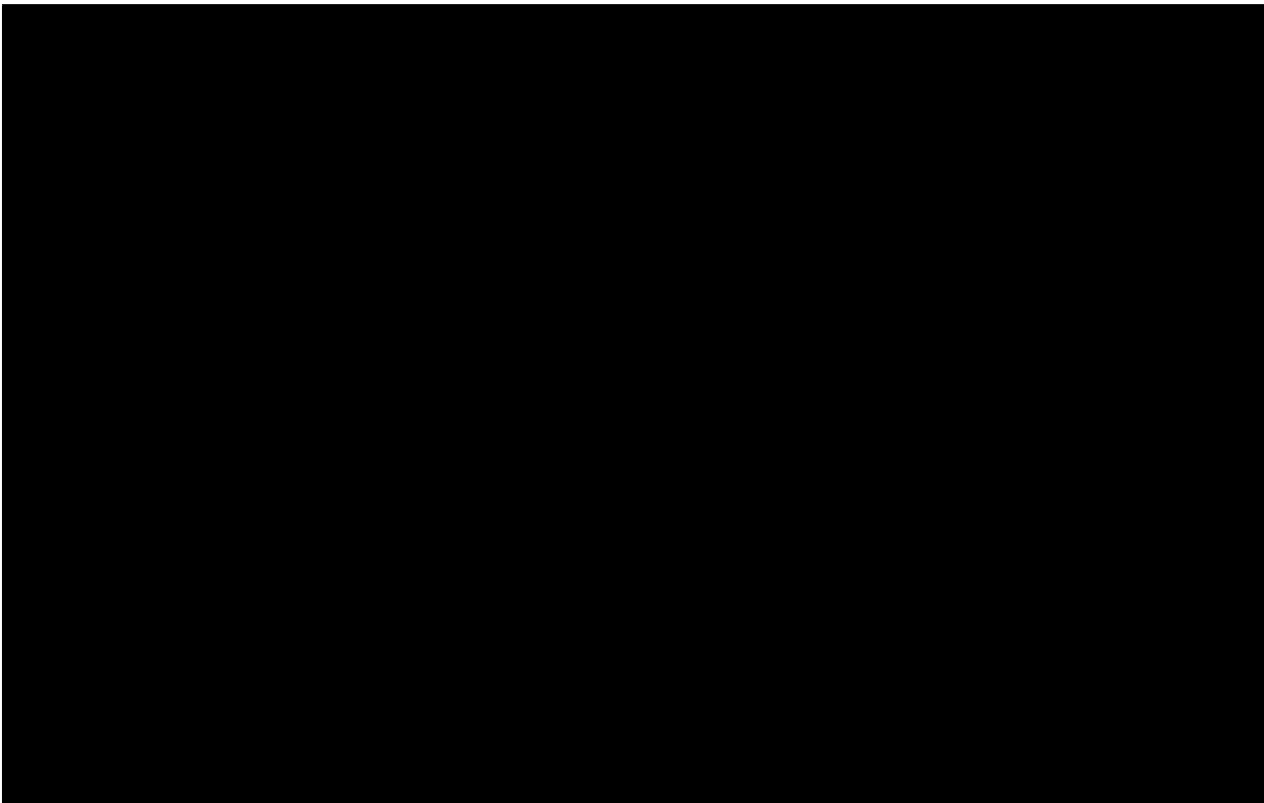
6.1 Jinja Template???????????

6.1.1 Ansible?????????Jinja?????

Ansible Playbook ?? Jinja Template?????????????????
?????????????????Jinja Template????????????????????

Listing 1: ????????

1
2
3



↪ "replacement": "\$request_uri", "string": "server_url"}, {"replacement": "\$time_local", "string": "server_date"}, {"replacement": "\$http_user_agent", "string": "client_browser"},

↪ {"replacement": "\$request_id", "string": "request_id"}, {"replacement": "\$nginx_version", "string": "nginx_version"}, {"replacement": "\$document_root", "string": "document_root"}, {"replacement": "\$http_x_forwarded_for", "string": "proxied_for_ip"}]]]]], "upstreams": [{"least_conn": true, "name": "upstr", "servers": [{"address": "0.0.0.0:8081"}, {"address": "0.0.0.0:8082"}]}]]]]], "deployment_location": "/etc/

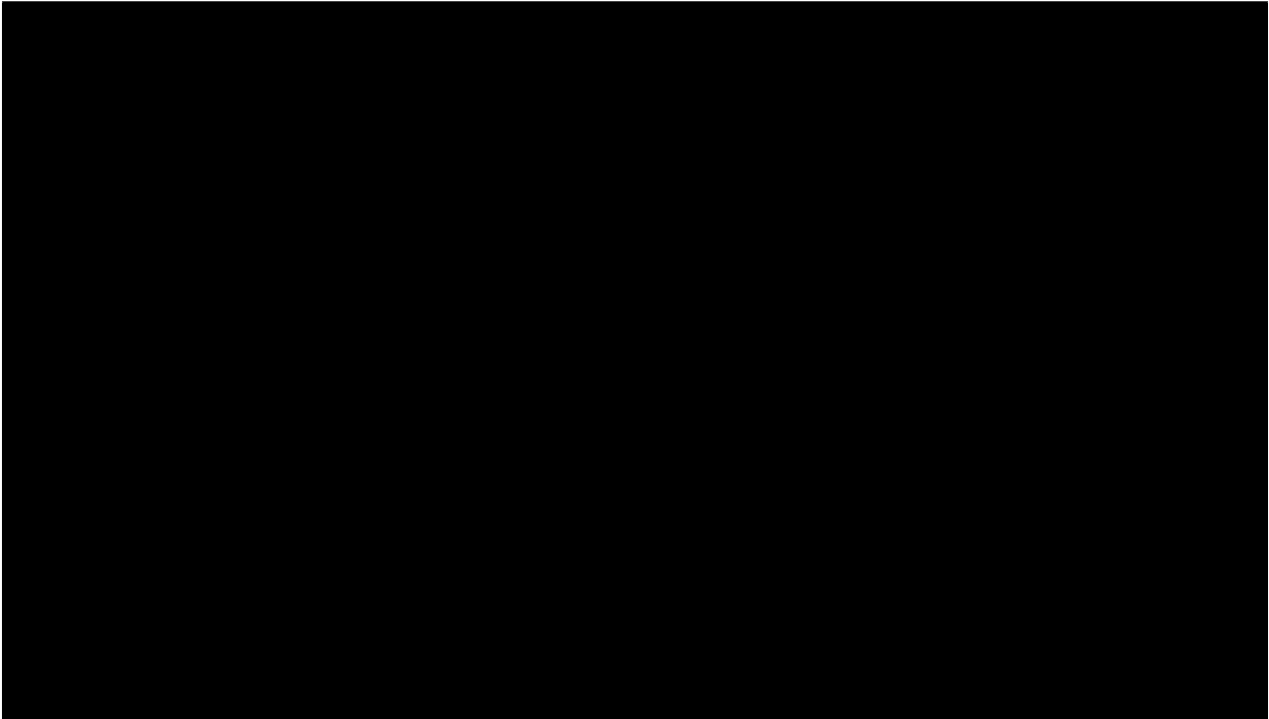
(continued from previous page)

Ubuntu?????????????????Jinja Template?Version?????????????????Jinja ????????????

6.1.2 ??????????????????????

Listing 2: ??????????

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18



6.1.3 Jinja?Update

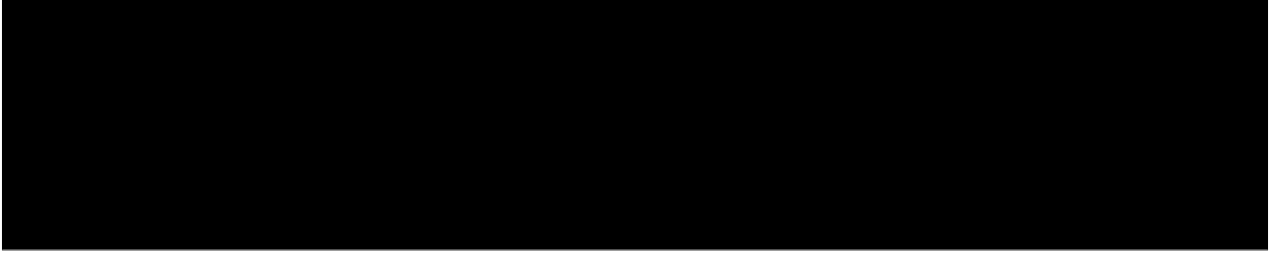
Note: PIP??



????????????????????? (??)

Listing 3: ??????????????????????

1
2
3



Listing 4: jinja2?????????

1
2
3
4
5
6
7
8



????????????????????????????

Listing 5: jinja2 ????????

1
2



Listing 6: ansible ??????????

1
2
3
4
5
6
7
8
9
10

