
NGINX Controller Lab Guide Documentation

F5 Networks, Inc.

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F5 2022 Read The Docs Guide

NGINX Controller Lab Guide

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



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????????????????????????2??????????????????????????

Lab 1: ???Active Directory?Authentication Provider??????????????????

Lab 2: NGINX Controller ??????????????????NGINX Controller ??????????????????

Lab 3: NGINX Controller ??????????NGINX Plus????????????????

1.1 Lab 1 - Active Directory Authentication

??????Active Directory?????????????Role Based Access Control??????????????
 ?????????????????????????

?????????????????????????????NGINX Controller??????????????

Important: ?????: 5?

Note: ??Lab?????????????Windows jumphost – jumphost-1 ??????????????????
 ?????????????????????? F5 Labs - Index

1.1.1 Authentication Providers??????????

1. jumphost?Chrome???????NGINX Controller??

2. ??????????Chrome????????????

3. Bookmark??NGINX Controller UI????????????

4. NGINX Controller ?admin account????Peter Parker ??????????

Username	Password
peter@acmefinancial.net	Peter123!@#

5. ????????????????????????????????? Platform ???????????

6. Auth Providers ?????????

7. **Edit** ??????ad-acmefinancial-net ????????????

1.1.2 Authentication Provider ????????

???????????"Authentication Provider Configuration"?????????? ????????????????????

1. Configuration ??

?????????? authentication provider?????????????????????????????:

Attribute	Description
Auth Provider Type	Define the authentication provider being used
User Format	Define if the user will login with username@domain (UPN) or domain/user (User Domain)

Note: release 3.15 ???Active Directory???Auth Provider????????????????

2. Connection ??

????????Domain?URL?SSL????????

Note: SSL Parameters ?????????????????????????????????

????????AD????????????????????

3. User Binding ??

?????NGINX Controller?Active Directory????????????????? "Bind" ??????????????????

4. Group Setup ??

?????Role Based Access Control????? Active Directory ??????????????????????Query??????????????

5. Group Mappings ??

??????Active Directory??????NGINX Controller “??(Internal)” ??????? “Roles Groups”
??????????????

??????? "Roles Groups" ? **Platform** -> **Roles** ?????????? ??????????????????????NGINX Controller
???????? managing roles ??????????

Group Mapping ??????????Active Directory Group??????Domain Controller??????

Note: ???????????Domain Controller????????????????????

Note: Add "Peter Parker" to the NGINX Controller "admin_group" Active Directory group. Add "nginx-controller-admins" to the NGINX Controller "admin_group" Active Directory group.

1.1.3 Add

Add the NGINX Controller to the Active Directory authentication provider (detail).

[illegible]

Note: ??Lab?????????????Windows jumphost - jumphost-1 ??????????????????
 ???????????????????????? F5 Labs - Index

1.2.1 NGINX Controller

- ## Chapter 1. Module 1 - Enterprise Features

4. NGINX Controller ?admin account????Peter Parker ????????????

Username	Password
peter@acmefinancial.net	Peter123!@#

5. ????????????????????????????????????? Platform ????????????

6. **Cluster** ????????

7. ??? “Cluster Configuration” ????????

Note: “Cluster Configuration” ??????????????NGINX Controller????????????? FQDN?API Gateway pod?????????????common name??????? ? API?????????GUI????????????????????

Important: “load balancer”?????????????NGINX Controller????????????? ?????????? ????

Note: “Nodes”?????2?NGINX Controller ?????????????????? (“controller-1” ??? “controller-2” ??????????)

1. ????? **Create Node** ??????????????????

2. ??????????????"controller-3" ??????????????????"Name" ? "Hostname ??? IP Address"
 ??????????????Save ??????????????????

Field	Value
Name	controller-3
Hostname or IP	10.1.1.10

3. View ?????????????????????????????????????? "join key" ??????????????????????????????????????

3. ???

1.2.3 View the results

1. Chrome????**Cluster** ? “Cluster Configuration” ?????????

1.2.4 (Optional) Kubernetes Cluster ???

???Kubernetes (k8s) ??????????????NGINX Controller????????? k8s ??????????????????????

1. ???????? PuTTY ? “controller-3” ??????????????NGINX Controller????????????????????

Important: ???Putty????????????????????????????????
 ?????????????????????????????host key????????????????????
 Yes ??????????????

2. ?????????????????



Note: ?????????????????k8s ??????3????????????????????????????
 ?????????????????????????????

3. ?????????????????



Note: ?????????????????NGINX Controller????Pod?3????????????????????????????
 ("NODE"?????????????)

1.2.5 ?????

“load balancer”????????????NGINX Controller??
 ?????????NGINX Controller???API Gateway Kubernetes service????????????????floating self-ip? “load bal-
 ancer” ?????????????????????????????????????L2 Failover????????? MetalLB ????????????????? k8s? type LoadBal-
 ancer ???

1.3 Lab 3 - NGINX Plus ???

????????????????NGINX Controller????????????NGINX Plus???????????????? NGINX Controller????????????NGINX
 Plus?????NGINX Plus Subscription??

Important: ?????: 15?

Note: ??Lab????????????????Windows jumphost – jumphost-1 ?????????????????????
 ????????????????????????????????? F5 Labs - Index

1.3.1 NGINX Plus ????????

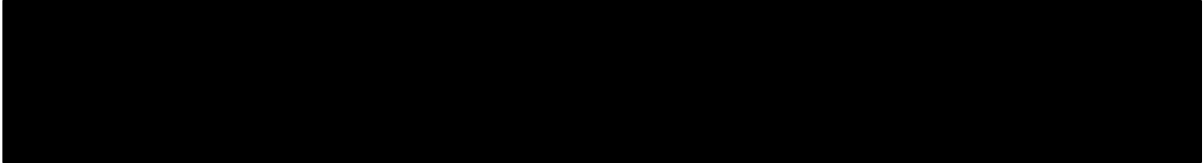
1. “nginxplus-4” ???
 ???
 nginxplus-4 ??????Open

Important: ???Putty??
 ???host key????????????????????

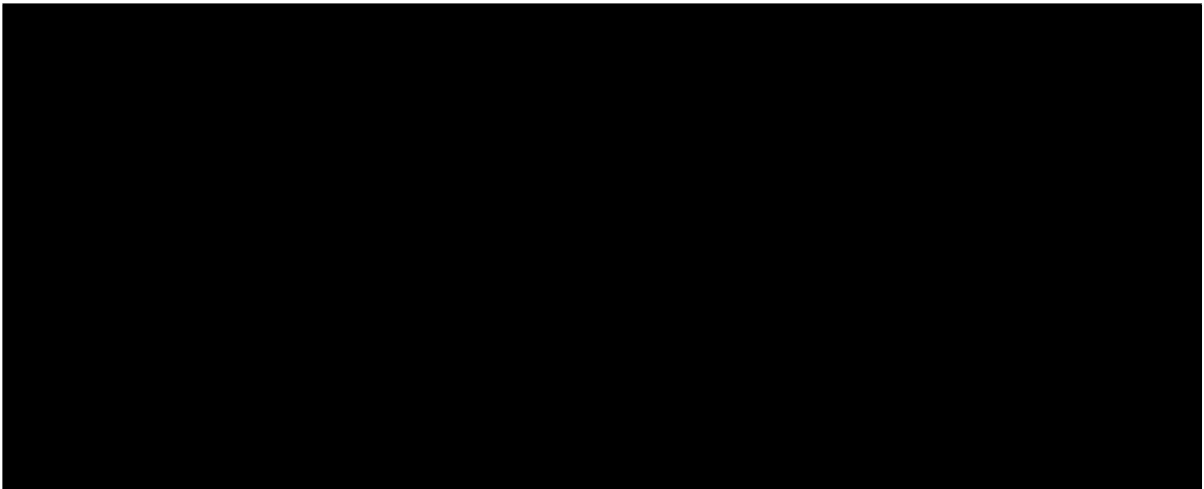
2. Curl ????????NGINX Controller????????Cookie????????????????Admin??? Peter Parker ????????



3. NGINX Plus ??????????????????????



4. NGINX Plus ??? NGINX Plus?????????(Ubuntu) ??????????



5. NGINX Plus ????????????NGINX Controller ?????Version???R24????????????NGINX Controller?????NGINX Plus?Version? Tech Spec ??????????



1.3.2 NGINX Plus????????NGINX Controller?????

1. jumphost?Chrome????????NGINX Controller??

2. ??????????Chrome????????????

3. Bookmark?NGINX Controller UI????????????

4. NGINX Controller ?admin account????Peter Parker ??????????

Username	Password
peter@acmefinancial.net	Peter123!@#

5. ??? Infrastructure ???????????

6. ????? Create ???????????????????

7. Add an existing instance `?????"nginxplus-4" ???`

Field	Value
Name	nginxplus-4
Location	West Coast Data Center (OTHER_LOCATION)
Allow insecure server connections to NGINX Controller using TLS	Enable(Check)

8. Instructions ?????CURL??
 ????????????????????????????

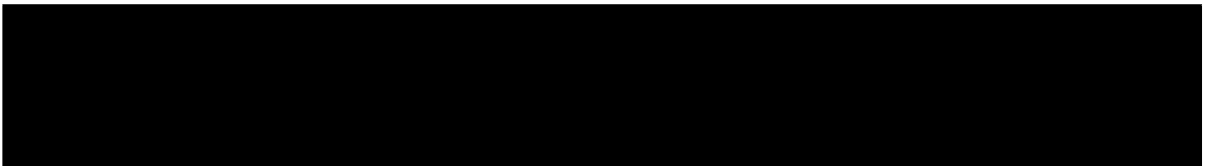
Close

11. ???(Display Name)?? **Edit** ??????????????

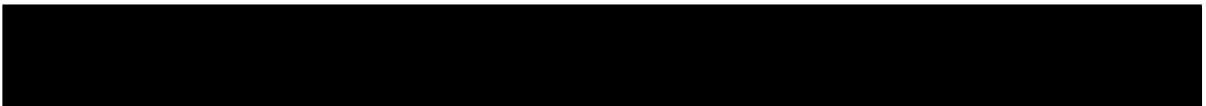
1.3.3 (Optional) NGINX Controller???????NGINX Plus???

NGINX Plus?NGINX Controller??

1. NGINX Plus??NGINX Controller Agent????????????????????????????

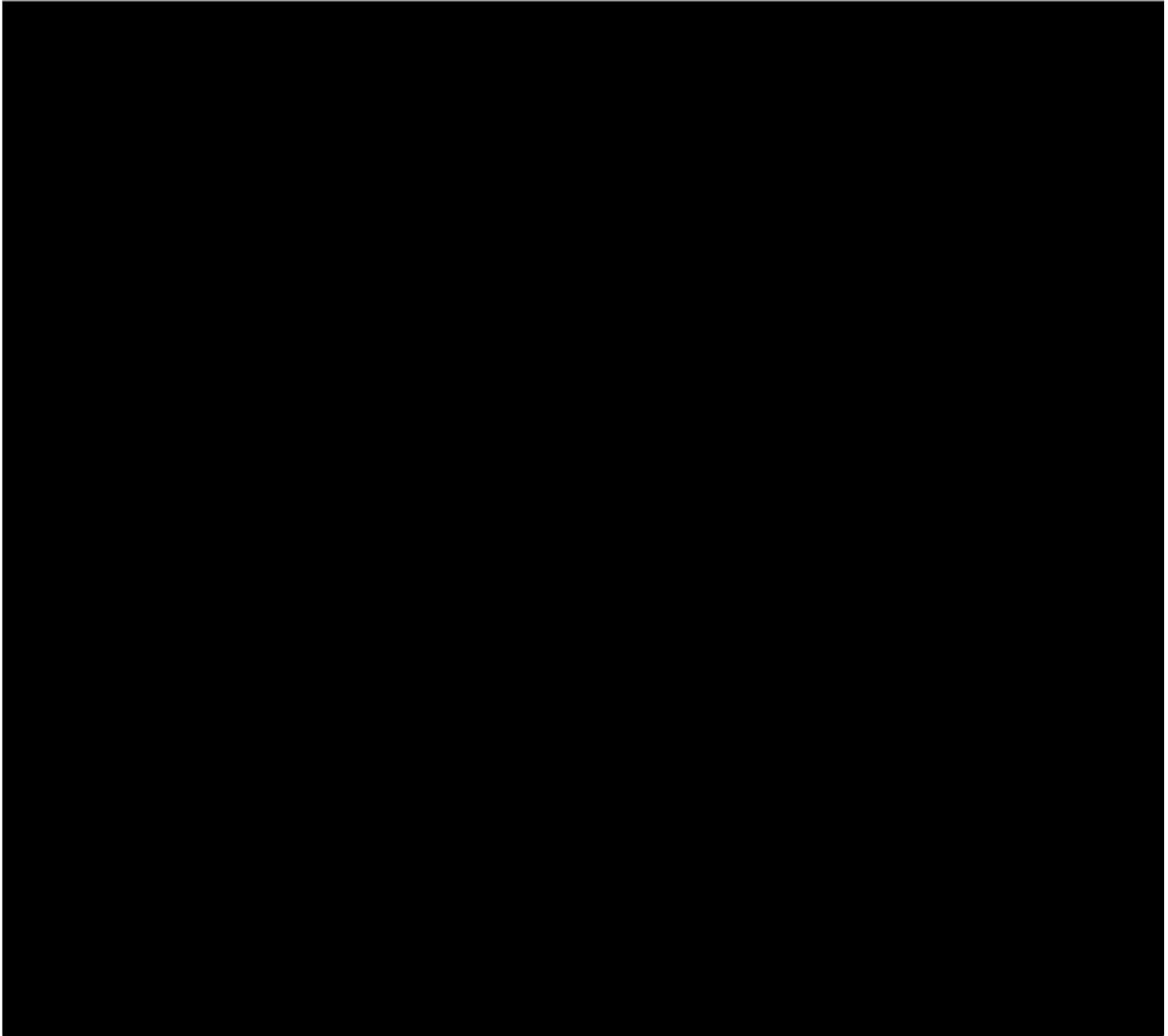


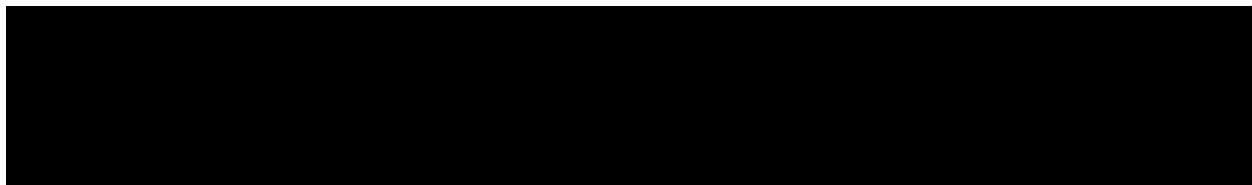
2. ??????NGINX Plus?????NGINX Controller?????????????
module2 ??????????????NGINX Plus????????????????????????????????
????????????????



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```
NGINX    Controller?????????????ADC????????????????????????????????
Controller??app-centric(????????????)????????????????????????????
```

Lab 1: NGINX Controller GUI????????????????????

Lab 2: ??????????NGINX Controller?????????????CI/CD

Pipeline????????postman????????????????????

Lab 3: ???ADC?advanced????????????URI rewrite?HTTP Header????????????

Lab 4: TCP proxy / Load Balancer??????

Lab 5: ???IP??????Gateway????????????????

Lab 6: Module 3?4 ?????????????????????????????????????

2.1 Lab 1 - GUI? ADC App ???

????????????????????ADC?????NGINX Controller????????????????????????????????????

NGINX Controller?????app-centric(?????????)?????????????????LB?????????network-centric(?????????)?????????????????NGINX????????????????????????????????

Important: ?????: 15?

Note: ??Lab?????????Windows jumphost - jumphost-1 ???????????????
 ????????????????? F5 Labs - Index

2.1.1 NGINX Controller ??????????????????

?????????NGINX Controller?????????????????BIG IP?NGINX????????????????????

Environments

“Environment”????App????????RBAC(Role Based Access Control)????????? En-
vironments??NGINX Plus????????????????????????????????
????????BIG-IP????????????????????????????????

Cert

SSL????????NGINX Controller???????????????????? “Gateway”????????????????????????????????

Gateway

“Gateway”????????NGINX Plus????????????????NGINX Config / Directive??????
????????????FQDN????HTTP????SSL/TLS????????HTTP Parameter(buffer , body size , TCP
keepalive)????????????????NGINX Config?“server” directive???????????????? BIG-IP?TCP /
HTTP / ClientSSL Profile????????????

App

“App”?? “App”????????????????“Component”????????????????
????????????????????????????NGINX Plus???????????????????????????????? BIG-
IP????????????????AS3????????BIG-IQ?“Application”????????

Component

“Component”??URI????????????????????“Workload
Group”????????????????????HTTP????????????(redirect, rewrite, header ??)???????????????????? BIG-
IP?VS?Pool?HTTP Profile?Local Traffic Policy?iRule????????????????

Workload Group

"Workload Group"????????????????????NGINX Config??"upstream"????????????? BIG-IP?"pool"?????"pool member"??????

2.1.2 Application???????

1. jumphost?Chrome??????NGINX Controller??

2. ??????????????Chrome????????????????

3. Bookmark??NGINX Controller UI??????????????

4. NGINX Controller ?admin account????Peter Parker ??????????????

Username	Password
peter@acmefinancial.net	Peter123!@#

5. **Services** ???

Environment?????

1. “Environments” ??????????.

2. ????? "Create" ????????????????

3. ???????????????????

Field	Value
Name	echo
Display Name	Echo Environment

4. **Submit** ??????????????????????

??????

1. "Certs" ??????????

2. ????? "Create" ????????????????

3. ?????????????? **Environment** ??????????????????????

Field	Value
Name	echoapp.net
Environment	Echo Environment

4. **Import PEM or PKC12** ????????????**Browse** ????????????????

??? (echoapp.net.crt) ? (echoapp.net.key) ?????????????????????????? (This PC -> Documents -> Certs)

Note: ??????????????????????????NGINX Controller?????????????????????????

5. **Submit** ??????????????????????????

Gateway???

1. “Gateways” ??????????

2. Click "Create" to create the application.

3. **Configuration** Click **Next** to create the application.

Field	Value
Name	echoappgw
Environment	Echo Environment

4. **Placements** ????????Instance Ref ? "Development NGINX West 03 (CAS)" ??????????

5. **Hostnames** **Match Method**

Note: You will need to use the **Add Hostname** link pictured below to add multiple hostnames.

6. **Submit**

App?????

1. “Apps” ??????????

2. ????? “Create” ??????????????????

3. ?????????????????????????????? **Environment** ??????????

Field	Value
Name	echoapp
Environment	Echo Environment

4. **Submit** ????????????????????

Component?????

1. “Components” ?????????????????? “Create Component” ????????????

2. ?????????????????????? Gateway Refs ??????????

Field	Value
Name	echoappcomponent
Gateway Refs	echoappgw

3. **URIs** ?????????URI? / ????????**Match Method** ???????????/

4. **Workload** **Groups** ?????????????????????????????Backend URI????Workload
 Group??"Done"????????????

Field	Value
Name	Echo Backend
Backend Workload URIs	http://10.1.20.11:8000

5. **Submit** ????????????????????

Echo Application???

1. `jump host-1` ??????????????????"Developer Tools"???????????

2. **URL** (http://echoapp.net and https://echoapp.net) **Echo Application** **echoapp.net** **URL**

Note: HTTP Request Web

2.2 Lab 2 - ADC App ????????????????

?????????NGINX Controller API????App Component?????
 ??????????????????CI/CD Pipeline?????????????????Proxy???Postman?????????

Important: ????: 5?

Note: ??Lab?????????????????Windows jumphost – jumphost-1 ??????????????????
 ?????????????????????? F5 Labs - Index

2.2.1 Trading App ???????????

1. Chrome??http://trading.acmefinancial.net ??? **Login** ?????????????????? ????"trading"
 ??????????????????

2. ?????????????????????????????????

Username	Password
matt	ilovef5

Note: ?????????????????? “Quick Money Transfer” ? “Coming Soon” ??????????????????

2.2.2 Postman????? Component ?????

1. Jumphost? **Postman** ?? **NGINX Controller 3.x**
Collection ??????????

2. Common Tasks? Admin Logon ???? Login to Controller – admin – local ????????????

3. Postman? **Send** ??????????

Note: NGINX Controller? “204 No Content” ? ??Cookie????????? Post-
man???Cookie?? (????????????Request????????Cookies?MANAGE
COOKIES??session?????????????)

4. **Retail-Development Environment, Application - trading** ?????????? **Application trading**
???????????????????? 4) **Create Component – transfers** ??????????

5. Postman????????????? **Body** ??????????????PUT ?????????????????????????????? JSON?
desiredState, logging, security, backend ?????????????????????????????? Component
?????????????????????????????

6. Postman? **Send** ???

Note: NGINX Controller? “eventual consistency model” ??????API?Postman??????? “202 Accepted” ?????????????? NGINX Controller????????????????????????????

2.2.3 Trading App ?????????

1. Chrome??<http://trading.acmefinancial.net/trading/index.php> ????????? “Quick Money Transfer” ?“Comming Soon”??Active????????????????????

2.3 Lab 3 - ADC (Programmability)

NGINX Controller “advanced ADC” NGINX Controller
 NGINX Instance

Important: 10

Note: Lab Windows jumphost – jumphost-1
 F5 Labs - Index

2.3.1 App Component

1. Chrome
2. NGINX Controller GUI

3. NGINX Controller ?admin account????Peter Parker ????????????

Username	Password
peter@acmefinancial.net	Peter123!@#

4. **Services** ??????????

5. “Apps” ??????????

6. “Echo Environment”?? Module 2 Lab 1 ?????? **echoapp** ??????????

2.3.2 URI Rewrite?????

1. **Components** ?????????? ??????? “echoappcomponent” ? **Edit** ??????????

2. “Advanced” ?????????? **Programmability** ??????????

```
3. Chrome???Component?????????"echo"                ?????????????????????????????
   ??????????????????????????      Chrome Developer tools  ???http://echoapp.net/example
   ??????????????????????????
```

Note: The app's JSON response confirms that the request received was to path: `"/example"`.

1. NGINX Controller??”URI Rewrite”?? “/example*” ?????????? “/modified*” ??????? “Programmability” ??????? **Add URI Rewrites** ??????????????

http://echoapp.net/example

1. ??????????????????Done ?????????????? NGINX??? rewrite
 ??????????PCRE?????????????NGINX Controller?????????????

Field	Value
Incoming Pattern	<code>~*^/example(.*)\$</code>
Rewrite Pattern	<code>/modified\$1</code>

3. Chrome??echoapp ??? "/example" ????????????Rewrite??

Note: "Echo" app?JSON????????????URI????????("/example")?????"/modified(???)????????????????????????????????

2.3.3 Request Header ??????????

1. NGINX Controller? "echoapp" App ??????????**Components** ?????????????????? "echoappcomponent" ? **Edit** ??????????????

2. "Advanced" ???????????? **Programmability** ???????????

3. Chrome???? “echo” app ??

4. NGINX Controller????????????“Request Header Modification”????????????????????upstream/pool member????????????ADC????????NGINX Plus?HTTP Header???????????? “Programmability” ? **Add Request Header Modification** ??????????????

5. ?????????????????????? **Done** ??????????

Field	Value
Action	Add
Header Name	X-Controller-Instance
Header Value	Development NGINX West 03 (CAS)

Note: “echo” App????JSON????HTTP??NG-
INX Plus????????????????HTTP Header????????????????????????????HTTP
Header??

2.3.4 ?????

“Programmability” ????????URI???????URI Rewrite??
 ????????NGINX?‘rewrite’_??module????????????????

NGINX REGEX validator ???(regex
 blog)?????NGINX???Perl?????(PCRE)????????????????????????????

2.4 Lab 4 - TCP Load Balancing / Routing

???????????L4 / TCP????????????????????? ????????????HTTP?????HTTP????????????????????????????TCP/UDP?????

Important: ?: 5?

Note: ??Lab?????????????????Windows jumphost – jumphost-1 ??????????????????
 ?????????????????????? F5 Labs - Index

2.4.1 App Component???

1. Chrome?????
2. Bookmark??NGINX Controller?GUI?????

3. NGINX Controller ?admin account????Peter Parker ????????????

Username	Password
peter@acmefinancial.net	Peter123!@#

4. **Services** ??????????????

5. "Apps" ??????????

6. “Echo Environment”?? Module 2 Lab 1 ????? **echoapp** ??????????

2.4.2 TCP Component ?????

1. echoapp ??????: ??? "Create Component" ????????"Components" ????????????????

2. ?????????????????????? **Gateway Refs** ????????????????

Field	Value
Component Type	TCP/UDP
Name	echoapptcp
Gateway Refs	echoappgw

3. **URIs** ?????????URI tcp://*:9443 ??????????

4. **Workload Groups** ?????????????????????

Field	Value
Name	TCP Backend
Backend Workload URIs	tcp://10.1.20.21:8000
Backend Workload URIs	tcp://10.1.20.11:8000

5. ????????? **Submit** ???????????

TCP Component???????

1. jump`host-1` ?Chrome?????????? "Developer Tools" ???????????

2. `url(http://echoapp.net:9443)tcp echoapp.net` "echo"

Note: HTTP Request Web

[illegible]

2.4.3 ????

```

"TCP/UDP"  ????????L4  /  Stream  Proxy???????  ????????  NGINX?  stream
????????????????????????????????????????

```

2.5 Lab 5 - ??????????????????

?????????Gateway?????????IP????????????????????? NGINX?????????IP?????????????????????
 ??????????????????NGINX plus?????????IP?????????????????????

Important: ???? : 5?

Note: ??Lab?????????????Windows jumphost – jumphost-1 ??????????????????
 ?????????????????? F5 Labs - Index

2.5.1 Gateway?????????IP?????????????

1. jumphost?Chrome?????????NGINX Controller??

2. ??????????????Chrome?????????????

3. Bookmark??NGINX Controller UI?????????????

4. NGINX Controller ?admin account????Peter Parker ????????????

Username	Password
peter@acmefinancial.net	Peter123!@#

5. **Services** ???

Gateway?????

1. "Gateways" ??????

2. ??? “Create” ????????????

3. **Configuration** ?????????????????????? **Next** ??????????????????????

Field	Value
Name	specialapp
Environment	Echo Environment

4. **Placements** ??Development NGINX West 03 (CAS) ????????????????????

5. **Placements** ??10.1.20.213 ??????IP??????????????????

Note: ??? “Development NGINX West 03 (CAS)” ????????Secondary IP????????????????NGINX Controller **Infrastructure** ?????????????????????????????????

6. **Hostnames** ? Hostname ?????????????? ??????????????????????URI????????????????????TCP ? UDP????????????????IP??

7. Click **Submit** to complete.

Component ?????

1. echoapp ??????: ??? "Create Component" ??????????"Components" ???????????

2. ?????????????????????????????? **Gateway Refs** ???????????????

Field	Value
Name	wildcard
Gateway Refs	specialapp

3. **URIs** `URI http://.*:8080` `REGEX ?` **Match Method** `??????????`

Note: `URI?Port?8080` `ListenIP 10.1.20.213` on Port 80 conflicts with

```
an existing gateway ?????????? ???NGINX Plus???????HTTP(port 80)?HTTPS(port
443)????????????Gateway????????????????????????????????????????????? ??Listen
IP????????????IP?????Gateway?????????
```

4. Workload Groups ??????????????????

Field	Value
Name	wildcard Backend
Backend Workload URIs	http://10.1.20.21:8001

5. ?????????? **Submit** ??????????????

Listen IP Component ??????

1. `jumphost-1 ?Chrome?????????? "Developer Tools" ??????????`

Note: . * ?????URI????????????IP????????????????

2.6 Lab 6 - Security ?????????????? ??????

??

Note: ???

Important: ?????: 5?

Note: ??Lab????????????Windows jumphost – jumphost-1 ??????????????????
???????????????????????? F5 Labs - Index

2.6.1 Analytics WAF Traffic Generation

Important: Module3 Analytics /

1. "loadgen-1" PuTTY" saved session **loadgen-1** **Open**

Important: Putty Yes
 host key

2. "docker" command

3. ("wrk_trading.acmefinancial.net-cas").

?????????NGINX Controller?Analytics???NetOps , DevOps ? Persona????????????????

Lab 1?NGINX Controller?????NGINX Plus instance????????????

Lab 2?Controller App Security (CAS)?????????????App?WAF????????????????

Important:

- Module 2 Lab 6 (*Analytics* ????? *WAF Traffic Generation* ???) ?Load Genra-
tor????????????????Lab????????????????????????
-

3.1 Lab 1 - NetOps/Admin??Analytics

?????????NGINX Controller?????NGINX Plus instance????????????????? ??Analyt-
ics?????????NetOps????????????

Important: ???? : 5?

Note: ??Lab?????????????Windows jumphost – jumphost-1 ??????????????????
????????????????????? F5 Labs - Index

3.1.1 Dashboard??

1. jumphost?Chrome?????????NGINX Controller??

2. ??????????Chrome????????????

3. Bookmark?NGINX Controller UI????????????

4. NGINX Controller ?admin account????Peter Parker ??????????

Username	Password
peter@acmefinancial.net	Peter123!@#

5. [Dashboard](#) > [Overview](#) > [System Metrics](#) > [Overview](#) > [NetOps](#)

3.1.2 Instance Analytics

1. ?????Navigation Bar???????????????????????????????? Infrastructure ??????????

2. ?????????????????????Production NGINX East 01 ?????????????? ?????? "Instance Overview"
????????Bytes In?Bytes Out?CPU Usage?Memory Usage ?????????????????????????????????

3.2 Lab 2 - DevOps/Developer??Analytics

????????? Controller App Security (CAS)?????????????????NGINX Con-
troller?????????????????WAF????????????????? ??Analytics???DevOps?????????????????

Important: ?????: 5?

Note: ??Lab?????????????????Windows jumphost – jumphost-1 ??????????????????
????????????????????????????? F5 Labs - Index

3.2.1 Dashboard??

1. jumphost?Chrome?????????NGINX Controller???

2. ??????????????????Chrome?????????????????

3. Bookmark??NGINX Controller UI?????????????????

4. NGINX Controller user accountNatasha Romanoff

Username	Password
natasha@acmefinancial.net	Natasha123!@#

5. NDashboardOverviewApplication MetricsDashboardDevOps

3.2.2 Critical Analytics

1. ?????Navigation Bar???????????????????????????????? Infrastructure ???????????

2. ?????????????????????**Production NGINX East 03 (CAS)** ?????????????? ??????????????NGINX App
Protect (WAF) ??????????????NGINX Plus Insntance???????????

Note: NGINX Controller instance "Controller Application Security (CAS)"

3. Navigation Bar **Services**

1. **Apps** ?????????

2. **Trading Application (CAS)** app?????????"Analytics" ??????"App"?????????"Components"????????????????

3. ??????"Component"????Analytics????????????????? Components
 ?????????DevOps????????App???WAF?????????????????
 ("Natasha"?????????)

Note: NGINX Controller?????app?????self-service?WAF????????????????????

4. **Trading Main Component** **Critical Analytics** **Breakout By**
Request Outcome Reason "HTTP Requests (SUM)"

Note: CAS

?????????NGINX Controller Application Security?????????NGINX App Protect?????????NGINX
Controller?Add On Module??

Lab 1: ??NGINX Controller Application Security
Module??????

Lab 2: NGINX Controller Application Security Module?API????????????????????

Important: Module 2 Lab 6 (Analytics ????? WAF Traffic Generation
???)??Analytics????????????

4.1 Lab 1 - Application Security (GUI)

???NGINX Controller Application Security Mod-
ule??????????

Important: ????: 15?

Note: ??Lab?????????????????Windows jumphost – jumphost-1 ????????????????????
????????????????????????????? F5 Labs - Index

4.1.1 Component ? Security ??????

1. Chrome?????
2. Bookmark??NGINX Controller UI??????????????

3. NGINX Controller??????????????? Natasha Romanoff ????????????

Username	Password
natasha@acmefinancial.net	Natasha123!@#

1. **Services** ??????????

2. **Apps** ??????

3. “Trading Application (CAS)” app ????????

4. Overview ??App??

5. ?????????????WAF???????????????? Components ?????????Trading Main Component ?????????

6. **Edit Component** ???????????

7. **Security** ??????????????????????WAF?????????????????????
?? DevOps/ ??? ?WAF??
("Natasha"????????????????????????????????)

Note: NGINX Controller app self-service WAF

Note: Retail Development environment WAF Acme Financial corporation Monitor Only

4.1.2 Security Analytics

1. "Trading Application (CAS)" app Components Trading Main Component

2. Security Analytics ???

3. ?????????? Last 30 minutes ??????WAF Suspicious vs Normal Traffic
??
??(Prev
Day ??????????????????) ???

4. "Top URIs Targeted" list ??????????????????????????????URI????????????????
 ???

5. "WAF Top Threats" **Attack Types** (default selection) **Signatures**

Note: "WAF Top Threats"

Note: WAF Monitor Only Mode Analytics ? Splunk Data

4.1.3 Security Events

1. **Security Events**

2. ??????????????????????Last 24 hours ??????????????????????Last 5 minutes ???????

3. ???

4.1. Lab 1 - Application Security (GUI) 127

Note: Notice that many “Event Details” data points can be used as filters. This powerful filtering feature allows for quick pattern detection.

- [illegible]

9. ????????Attack Signature??

10. ?????????????	THREAT	TARGET	????????????????????	Request	Detail
????????????????????????????????????WAF?????GET????????:					


```
11. ????????????????????????????????????????????????????????? URL? http://trading.  
acmefinancial.net/wp-admin/admin-post.php?do_reset_wordpress  
???????????????????????????????????????????????????????????? "Support ID"  
????????????????????????????????????????????????????????ID??
```

12. ??????????????????????????????NGINX Controller????????????????????Signature
ID????????????????

4.1.4 WAF policy ???????

1. ????????Security Configuration?????????Edit Config ????????????

Note: WAF ??????????????????????????????:

1. ?????30??(???
???WAF??). 404???

4.2 Lab 2 - Application Security (API)

????????????NGINX Controller Application Security Module?API????????????????

Important: ???? : 5?

Note: ??Lab????????????????Windows jumphost – jumphost-1 ??????????????????
???????????????????????????? F5 Labs - Index

4.2.1 Alter Security Settings in API

????NGINX Controller?REST API????WAF??Postman?Red
Hat Ansible????????????????????????????????????Postman?Windows jumphost????????????????

4.2.2 Postman?????Component ? Security Settings ?????

1. jumphost? **Postman** ??????NGINX Controller 3.x Collection ?????

2. Common Tasks? User Logon ??? Login to Controller – Natasha Romanoff - AD ??????

3. Postman **Send** ??????

Note: Controller responds with a “204 No Content” response and an authentication cookie.

4. **Retail-Development Environment? Application - trading ????? Application trading
????????????2) Create Component - main (CAS monitoring) ??????**

5. Postman????????????? **Body** ??????????????PUT ?????????????????????? JSON?
 desiredState, security ?????????????????????????? Component ??????????????????????

6. Postman? **Send** ??????

Note: NGINX Controller? “eventual consistency model” ??????API?Postman??????? “202 Accepted” ?????????????? NGINX Controller????????????????????????????

4.2.3 ?

1. Chrome?NGINX Controller?
2. Bookmark?NGINX Controller UI?

3. NGINX Controller? Natasha Romanoff ?

Username	Password
natasha@acmefinancial.net	Natasha123!@#

1. **Services** ??????????????

2. **Apps** ??????

3. **Trading Application (CAS)** app?????Trading Main ????????**WAF Enablement Status** ?**WAF Monitoring Only Status**? "On" ??????????????

4. **Components** ??????????????????

4.2.4 NGINX Controller Lab

