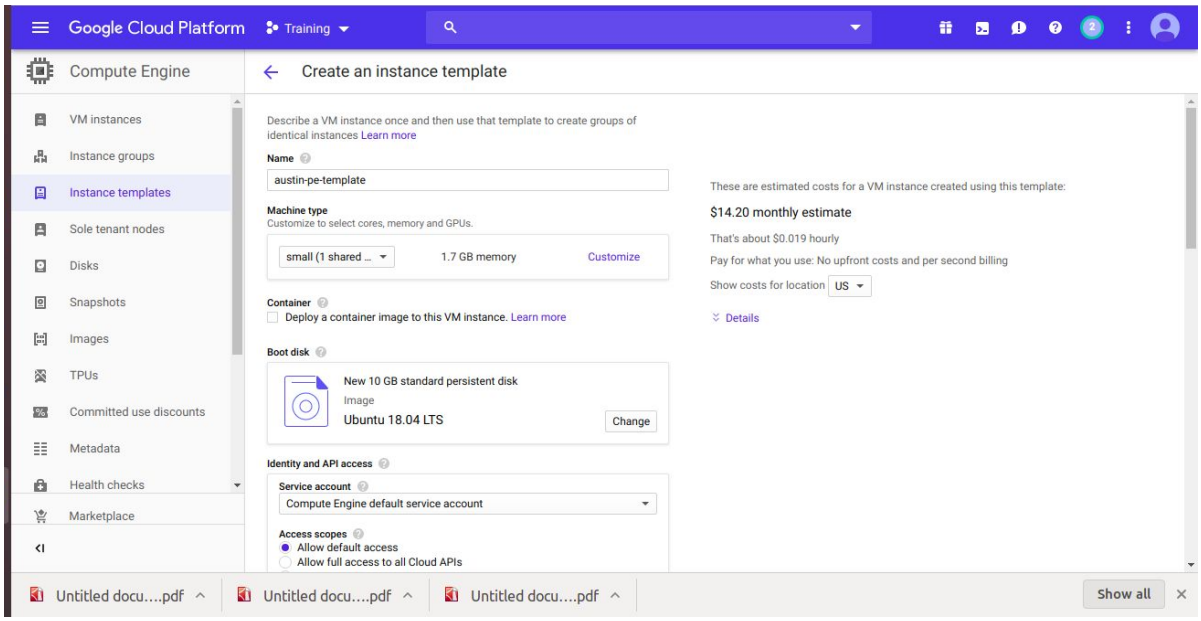
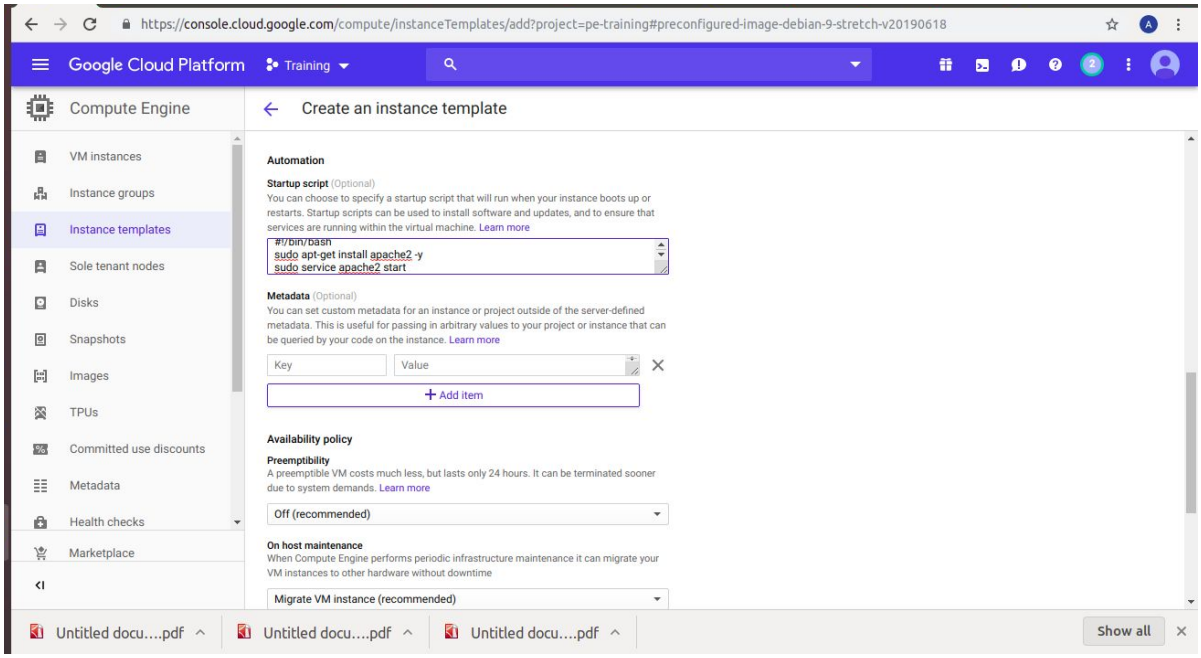
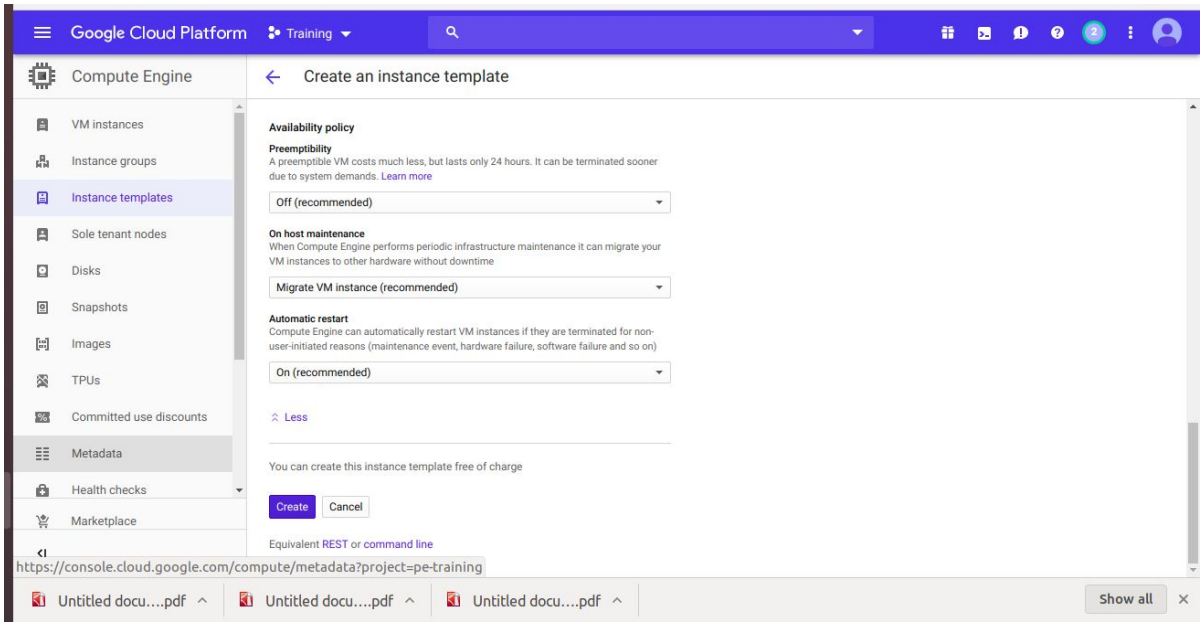
8. Create an auto scaling instance group that hosts the apache server that displays the name of the instance that has served the current request to the user. Stress the Autoscaling group artificially using the stress tool (sudo apt-get install stress) and demonstrate the group being autoscaled. Use cli/client library






Google Cloud Platform
Training
Compute Engine
Create an instance template
VM instances
Instance groups
Instance templates
Sole tenant nodes
Disks
Snapshots
Images
TPUs
Committed use discounts
Metadata
Health checks
Marketplace
Availability policy
Preemptibility
A preemptible VM costs much less, but lasts only 24 hours. It can be terminated sooner due to system demands. Learn more
Off (recommended)
On host maintenance
When Compute Engine performs periodic infrastructure maintenance it can migrate your VM instances to other hardware without downtime
Migrate VM instance (recommended)
Automatic restart
Compute Engine can automatically restart VM instances if they are terminated for non-user-initiated reasons (maintenance event, hardware failure, software failure and so on)
On (recommended)
Less
You can create this instance template free of charge
Create
Cancel
Equivalent REST or command line
https://console.cloud.google.com/compute/metadata?project=pe-training
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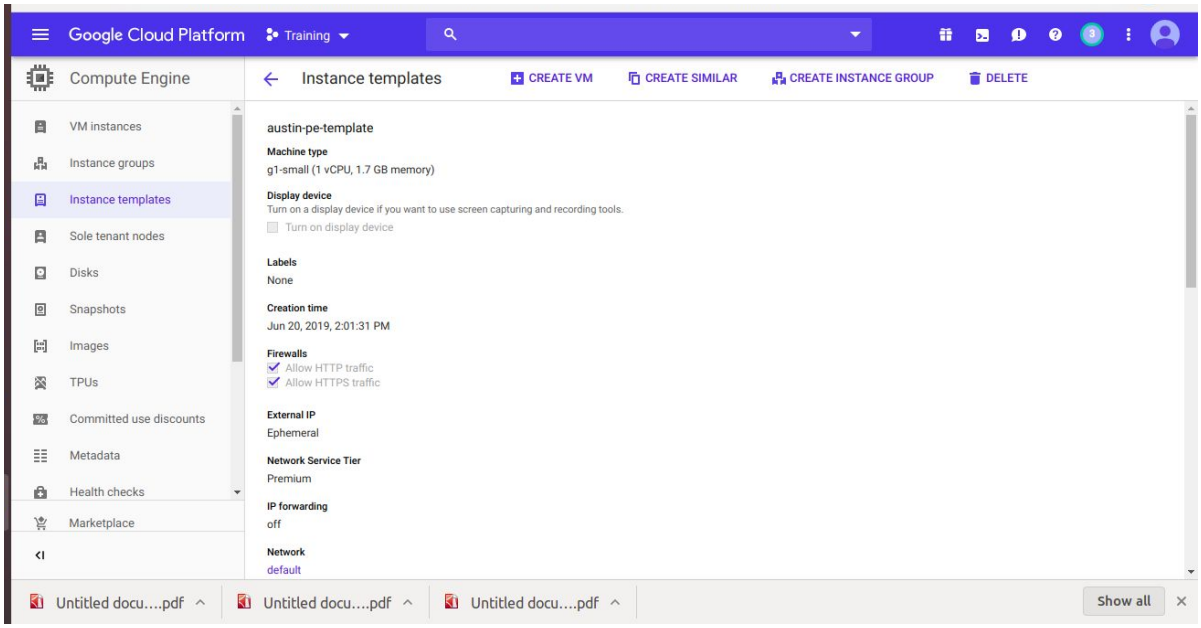
Untitled docu....pdf
Untitled docu....pdf
Show all


Google Cloud Platform
Training
Compute Engine
Instance templates
CREATE VM
CREATE SIMILAR
CREATE INSTANCE GROUP
DELETE
VM instances
Instance groups
Instance templates
Sole tenant nodes
Disks
Snapshots
Images
TPUs
Committed use discounts
Metadata
Health checks
Marketplace
austin-pe-template
Machine type
g1-small (1 vCPU, 1.7 GB memory)
Display device
Turn on a display device if you want to use screen capturing and recording tools.
Turn on display device
Labels
None
Creation time
Jun 20, 2019, 2:01:31 PM
Firewalls
Allow HTTP traffic
Allow HTTPS traffic
External IP
Ephemeral
Network Service Tier
Premium
IP forwarding
off
Network
default
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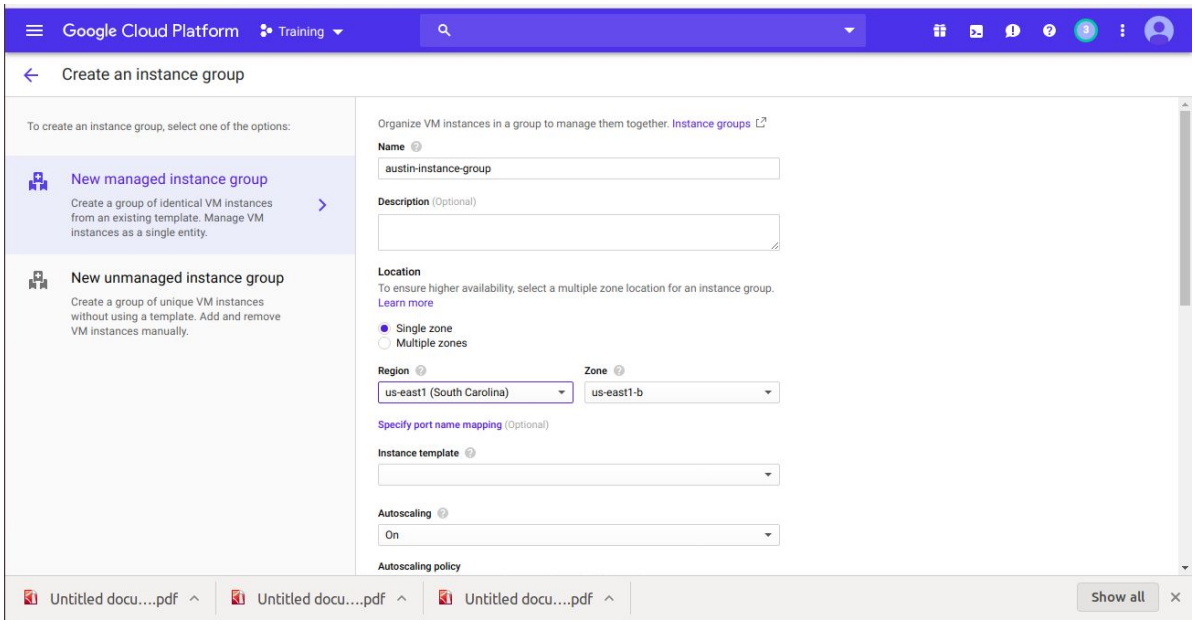
Untitled docu....pdf
Untitled docu....pdf
Show all


Google Cloud Platform
Training
Create an instance group
To create an instance group, select one of the options:
New managed instance group
Create a group of identical VM instances from an existing template. Manage VM instances as a single entity.
New unmanaged instance group
Create a group of unique VM instances without using a template. Add and remove VM instances manually.
Organize VM instances in a group to manage them together. Instance groups
Name
austin-instance-group
Description (Optional)
Location
To ensure higher availability, select a multiple zone location for an instance group.
Learn more
Single zone
Multiple zones
Region
us-east1 (South Carolina)
Zone
us-east1-b
Specify port name mapping (Optional)
Instance template
Autoscaling
On
Autoscaling policy
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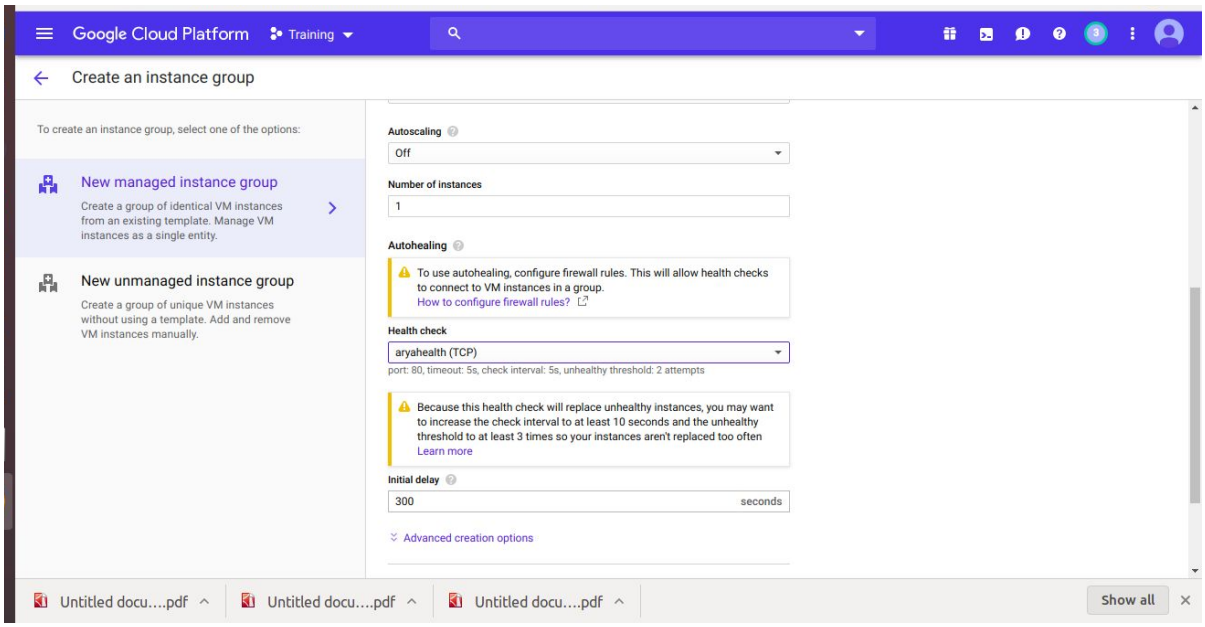
Show all


Google Cloud Platform
Training
Create an instance group
To create an instance group, select one of the options:
New managed instance group
Create a group of identical VM instances from an existing template. Manage VM instances as a single entity.
New unmanaged instance group
Create a group of unique VM instances without using a template. Add and remove VM instances manually.
Autoscaling
Off
Number of instances
1
Autohealing
To use autohealing, configure firewall rules. This will allow health checks to connect to VM instances in a group.
How to configure firewall rules?
Health check
aryahealth (TCP)
port: 80, timeout: 5s, check interval: 5s, unhealthy threshold: 2 attempts
Because this health check will replace unhealthy instances, you may want to increase the check interval to at least 10 seconds and the unhealthy threshold to at least 3 times so your instances aren't replaced too often
Learn more
Initial delay
300
seconds
Advanced creation options
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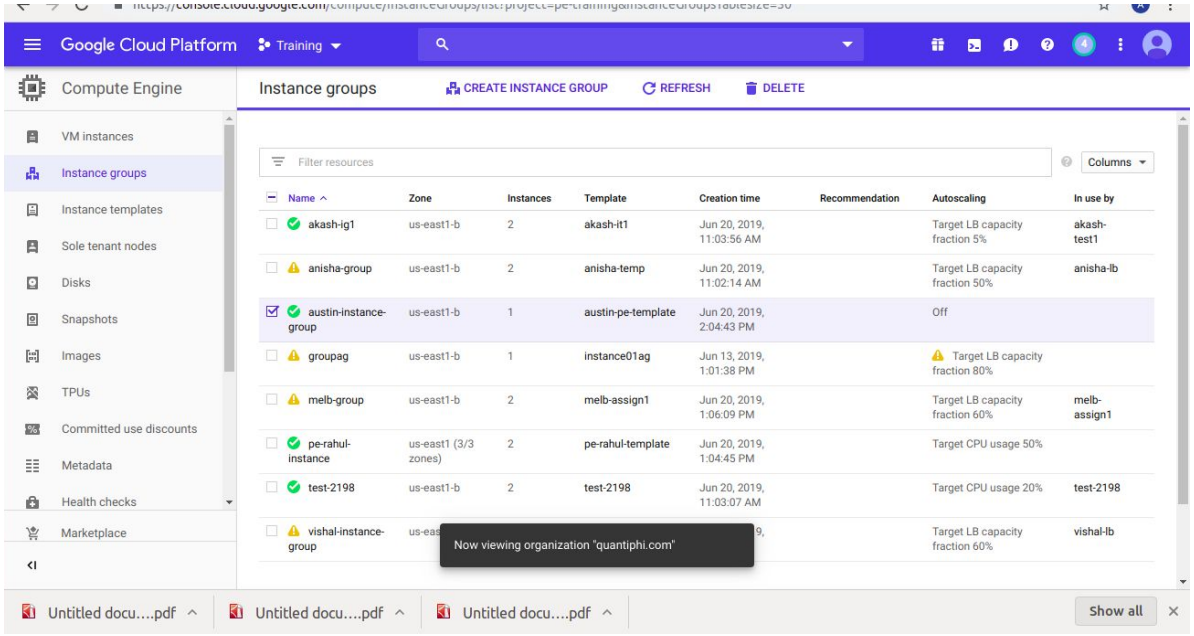
Show all


Google Cloud Platform
Training
Compute Engine
Instance groups
CREATE INSTANCE GROUP
REFRESH
DELETE
VM instances
Instance groups
Instance templates
Sole tenant nodes
Disks
Snapshots
Images
TPUs
Committed use discounts
Metadata
Health checks
Marketplace
Filter resources
Columns
Name
Zone
Instances
Template
Creation time
Recommendation
Autoscaling
In use by
akash-ig1
us-east1-b
2
akash-it1
Jun 20, 2019, 11:03:56 AM
Target LB capacity fraction 5%
akash-test1
anisha-group
us-east1-b
2
anisha-temp
Jun 20, 2019, 11:02:14 AM
Target LB capacity fraction 50%
anisha-lb
austin-instance-group
us-east1-b
1
austin-pe-template
Jun 20, 2019, 2:04:43 PM
Off
groupag
us-east1-b
1
instance01ag
Jun 13, 2019, 1:01:38 PM
Target LB capacity fraction 80%
melb-group
us-east1-b
2
melb-assign1
Jun 20, 2019, 1:06:09 PM
Target LB capacity fraction 60%
melb-assign1
pe-rahul-instance
us-east1 (3/3 zones)
2
pe-rahul-template
Jun 20, 2019, 1:04:45 PM
Target CPU usage 50%
test-2198
us-east1-b
2
test-2198
Jun 20, 2019, 11:03:07 AM
Target CPU usage 20%
test-2198
vishal-instance-group
Target LB capacity fraction 60%
vishal-lb
Now viewing organization "quantiphi.com"
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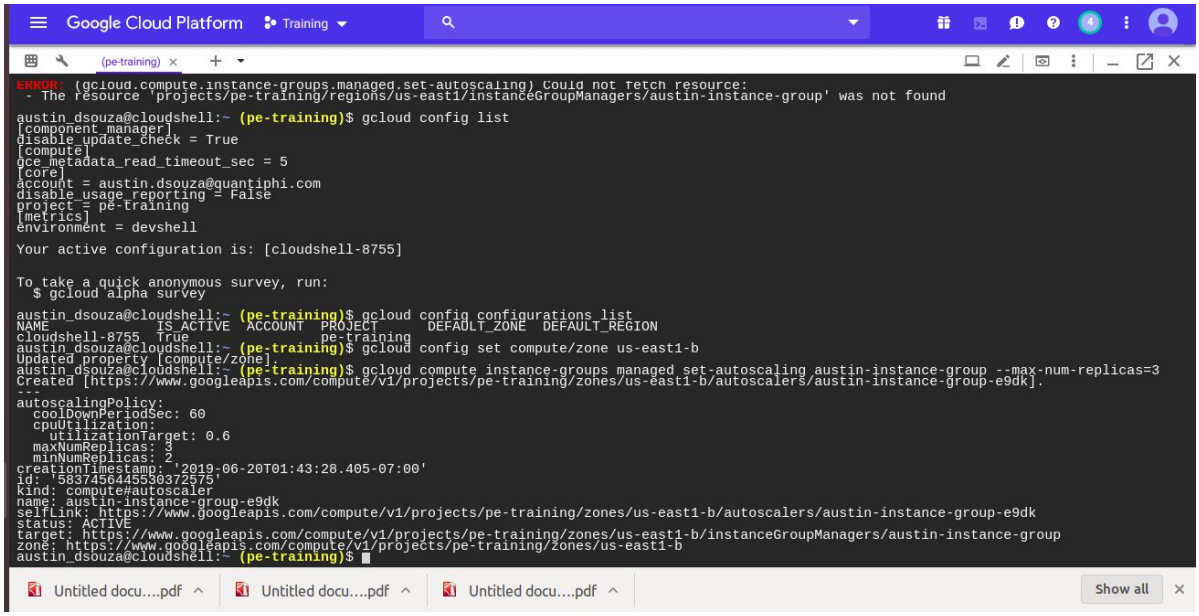
Show all


Google Cloud Platform
Training
(pe-training)
ERROR: (gcloud.compute.instance-groups.managed.set-autoscaling) Could not fetch resource:
- The resource 'projects/pe-training/regions/us-east1/instanceGroupManagers/austin-instance-group' was not found
austin_dsouza@cloudshell:~ (pe-training)$ gcloud config list
[component_manager]
disable_update_check = True
[compute]
gce_metadata_read_timeout_sec = 5
[core]
account = austin.dsouza@quantiphi.com
disable_usage_reporting = False
project = pe-training
[metrics]
environment = devshell
Your active configuration is: [cloudshell-8755]
To take a quick anonymous survey, run:
$ gcloud alpha survey
austin_dsouza@cloudshell:~ (pe-training)$ gcloud config configurations list
NAME IS_ACTIVE ACCOUNT PROJECT DEFAULT_ZONE DEFAULT_REGION
cloudshell-8755 True pe-training
austin_dsouza@cloudshell:~ (pe-training)$ gcloud config set compute/zone us-east1-b
Updated property [compute/zone].
austin_dsouza@cloudshell:~ (pe-training)$ gcloud compute instance-groups managed set-autoscaling austin-instance-group --max-num-replicas=3
Created [https://www.googleapis.com/compute/v1/projects/pe-training/zones/us-east1-b/autoscalers/austin-instance-group-e9dk].
---
autoscalingPolicy:
coolDownPeriodSec: 60
cpuUtilization:
utilizationTarget: 0.6
maxNumReplicas: 3
minNumReplicas: 2
creationTimestamp: '2019-06-20T01:43:28.405-07:00'
id: '5837456445530372575'
kind: compute#autoscaler
name: austin-instance-group-e9dk
selfLink: https://www.googleapis.com/compute/v1/projects/pe-training/zones/us-east1-b/autoscalers/austin-instance-group-e9dk
status: ACTIVE
target: https://www.googleapis.com/compute/v1/projects/pe-training/zones/us-east1-b/instanceGroupManagers/austin-instance-group
zone: https://www.googleapis.com/compute/v1/projects/pe-training/zones/us-east1-b
austin_dsouza@cloudshell:~ (pe-training)$
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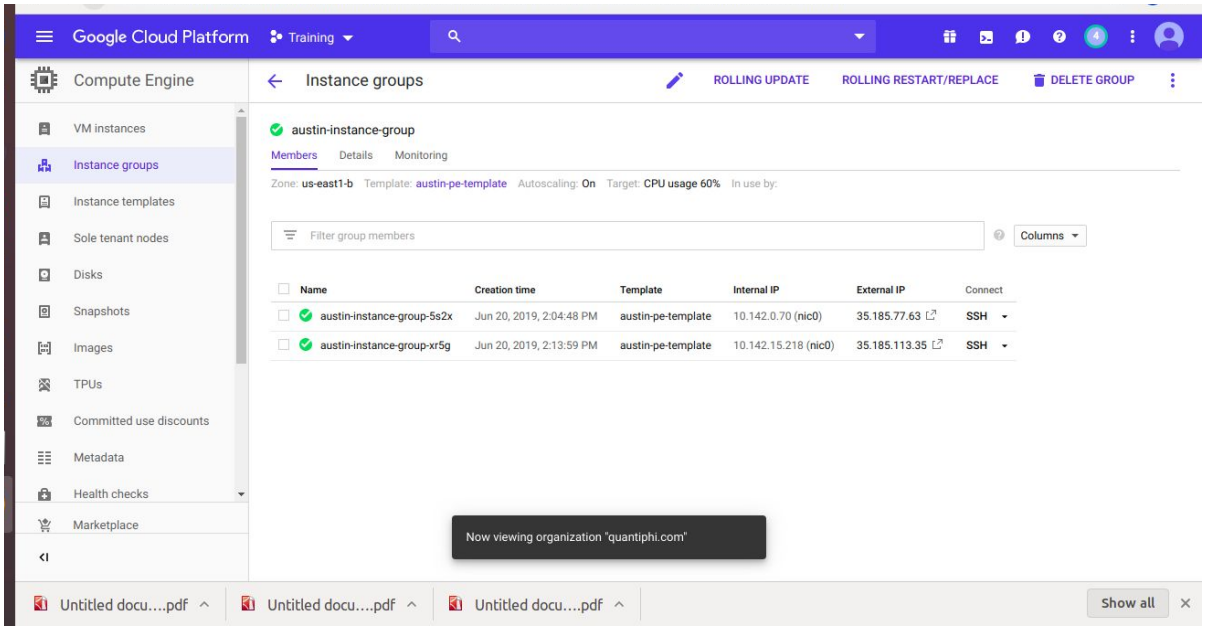
Google Cloud Platform
Training
Compute Engine
Instance groups
ROLLING UPDATE
ROLLING RESTART/REPLACE
DELETE GROUP
VM instances
Instance groups
Instance templates
Sole tenant nodes
Disks
Snapshots
Images
TPUs
Committed use discounts
Metadata
Health checks
Marketplace
austin-instance-group
Members
Details
Monitoring
Zone: us-east1-b Template: austin-pe-template Autoscaling: On Target: CPU usage 60% In use by:
Filter group members
Columns
Name
Creation time
Template
Internal IP
External IP
Connect
austin-instance-group-5s2x
Jun 20, 2019, 2:04:48 PM
austin-pe-template
10.142.0.70 (nic0)
35.185.77.63
SSH
austin-instance-group-xr5g
Jun 20, 2019, 2:13:59 PM
austin-pe-template
10.142.15.218 (nic0)
35.185.113.35
SSH
Now viewing organization "quantiphi.com"
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Untitled docu....pdf
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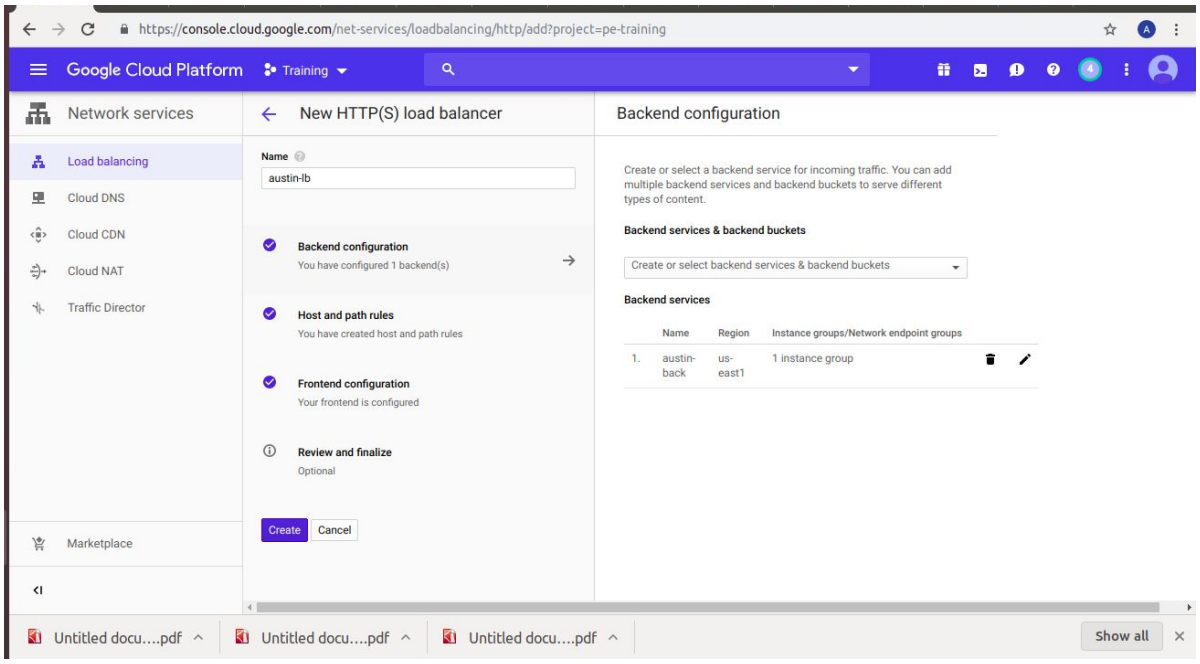
https://console.cloud.google.com/net-services/loadbalancing/http/add?project=pe-training
Google Cloud Platform
Training
Network services
New HTTP(S) load balancer
Backend configuration
Load balancing
Cloud DNS
Cloud CDN
Cloud NAT
Traffic Director
Marketplace
Name
austin-lb
Backend configuration
You have configured 1 backend(s)
Host and path rules
You have created host and path rules
Frontend configuration
Your frontend is configured
Review and finalize
Optional
Create
Cancel
Create or select a backend service for incoming traffic. You can add multiple backend services and backend buckets to serve different types of content.
Backend services & backend buckets
Create or select backend services & backend buckets
Backend services
Name
Region
Instance groups/Network endpoint groups
1.
austin-back
us-east1
1 instance group
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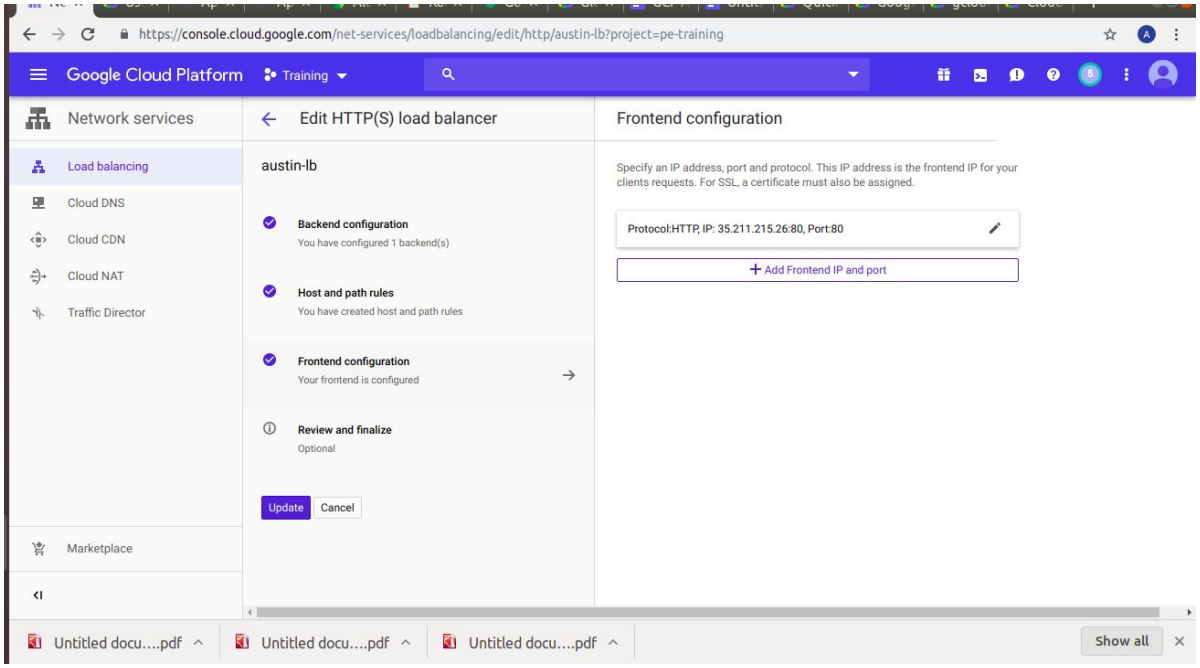
https://console.cloud.google.com/net-services/loadbalancing/edit/http/austin-lb?project=pe-training
Google Cloud Platform
Training
Network services
Edit HTTP(S) load balancer
Frontend configuration
Load balancing
Cloud DNS
Cloud CDN
Cloud NAT
Traffic Director
Marketplace
austin-lb
Backend configuration
You have configured 1 backend(s)
Host and path rules
You have created host and path rules
Frontend configuration
Your frontend is configured
Review and finalize
Optional
Update
Cancel
Specify an IP address, port and protocol. This IP address is the frontend IP for your clients requests. For SSL, a certificate must also be assigned.
Protocol:HTTP, IP: 35.211.215.26:80, Port:80
Add Frontend IP and port
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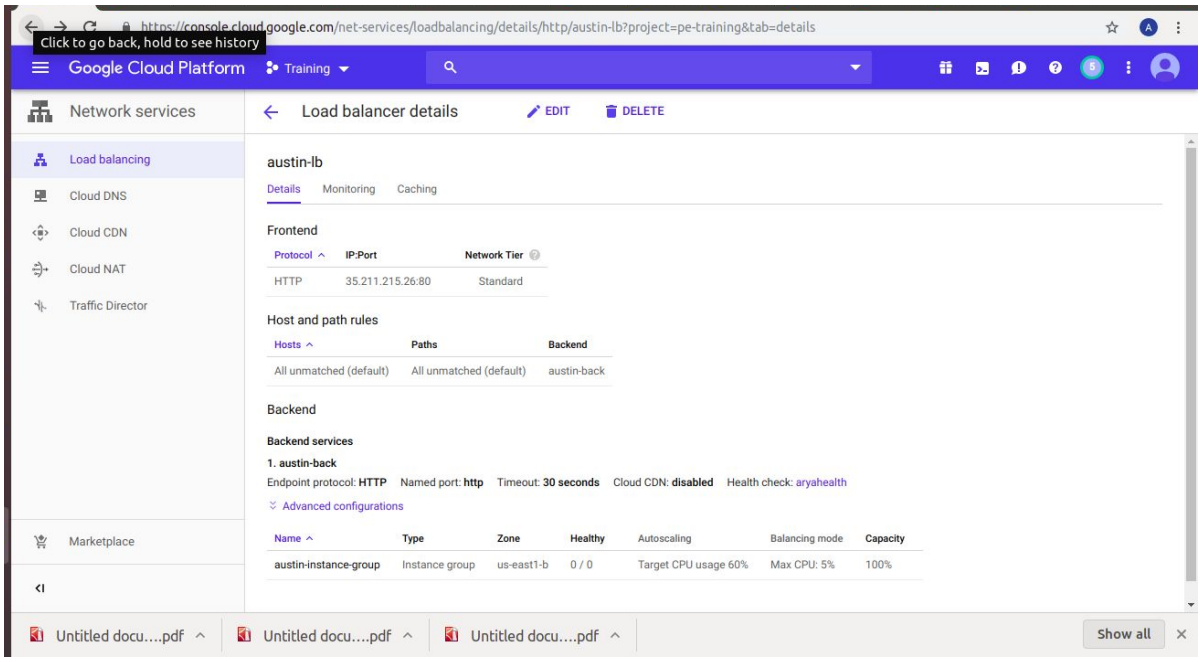
https://console.cloud.google.com/net-services/loadbalancing/details/http/austin-lb?project=pe-training&tab=details
Click to go back, hold to see history
Google Cloud Platform
Training
Network services
Load balancer details
EDIT
DELETE
Load balancing
Cloud DNS
Cloud CDN
Cloud NAT
Traffic Director
Marketplace
austin-lb
Details
Monitoring
Caching
Frontend
Protocol
IP:Port
Network Tier
HTTP
35.211.215.26:80
Standard
Host and path rules
Hosts
Paths
Backend
All unmatched (default)
All unmatched (default)
austin-back
Backend
Backend services
1. austin-back
Endpoint protocol: HTTP Named port: http Timeout: 30 seconds Cloud CDN: disabled Health check: aryahealth
Advanced configurations
Name
Type
Zone
Healthy
Autoscaling
Balancing mode
Capacity
austin-instance-group
Instance group
us-east1-b
0 / 0
Target CPU usage 60%
Max CPU: 5%
100%
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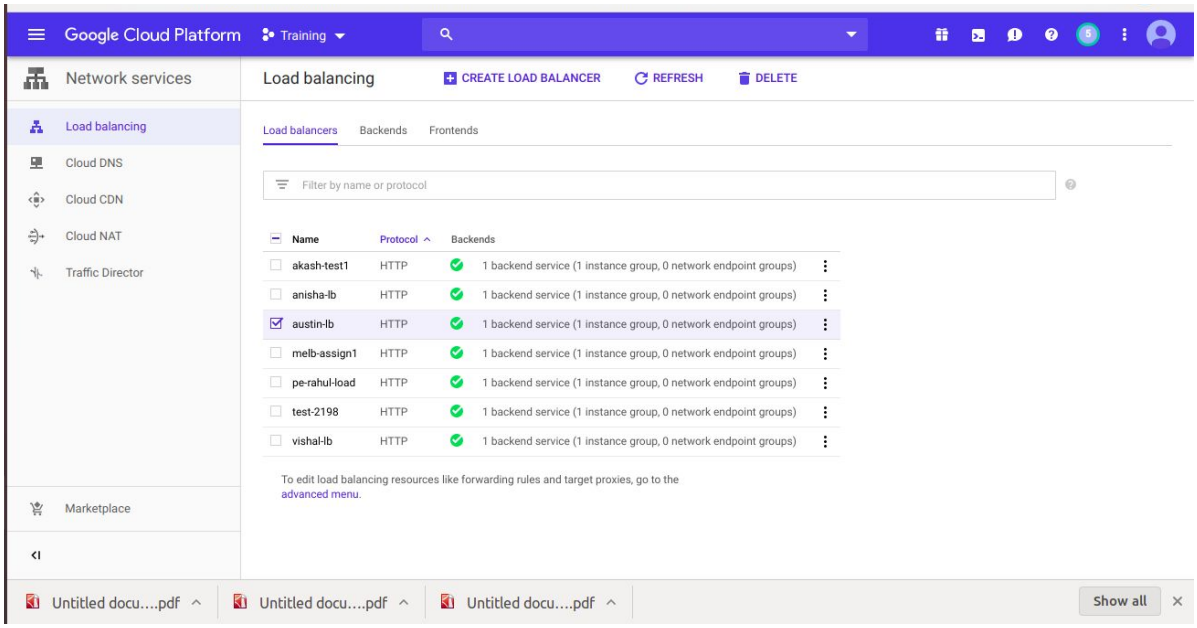
Google Cloud Platform
Training
Network services
Load balancing
Cloud DNS
Cloud CDN
Cloud NAT
Traffic Director
Marketplace
Load balancing
CREATE LOAD BALANCER
REFREFRESH
DELETE
Load balancers
Backends
Frontends
Filter by name or protocol
Name
Protocol
Backends
akash-test1 HTTP 1 backend service (1 instance group, 0 network endpoint groups)
anisha-lb HTTP 1 backend service (1 instance group, 0 network endpoint groups)
austin-lb HTTP 1 backend service (1 instance group, 0 network endpoint groups)
melb-assign1 HTTP 1 backend service (1 instance group, 0 network endpoint groups)
pe-rahul-load HTTP 1 backend service (1 instance group, 0 network endpoint groups)
test-2198 HTTP 1 backend service (1 instance group, 0 network endpoint groups)
vishal-lb HTTP 1 backend service (1 instance group, 0 network endpoint groups)
To edit load balancing resources like forwarding rules and target proxies, go to the advanced menu.
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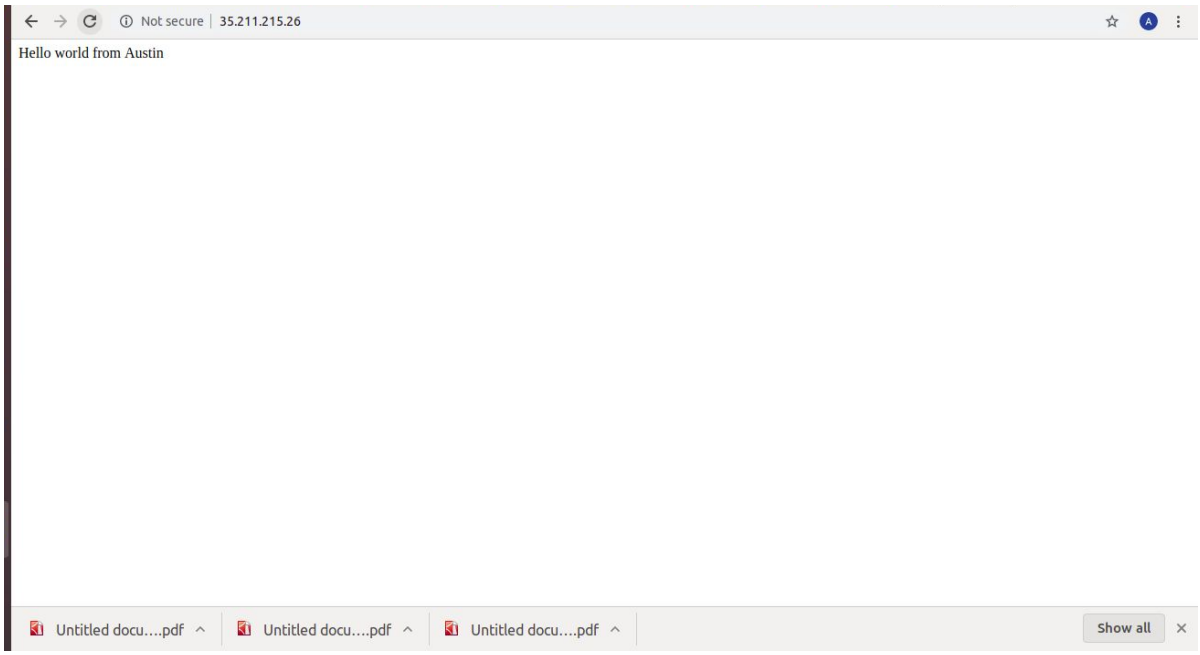
Show all


Not secure
35.211.215.26
Hello world from Austin
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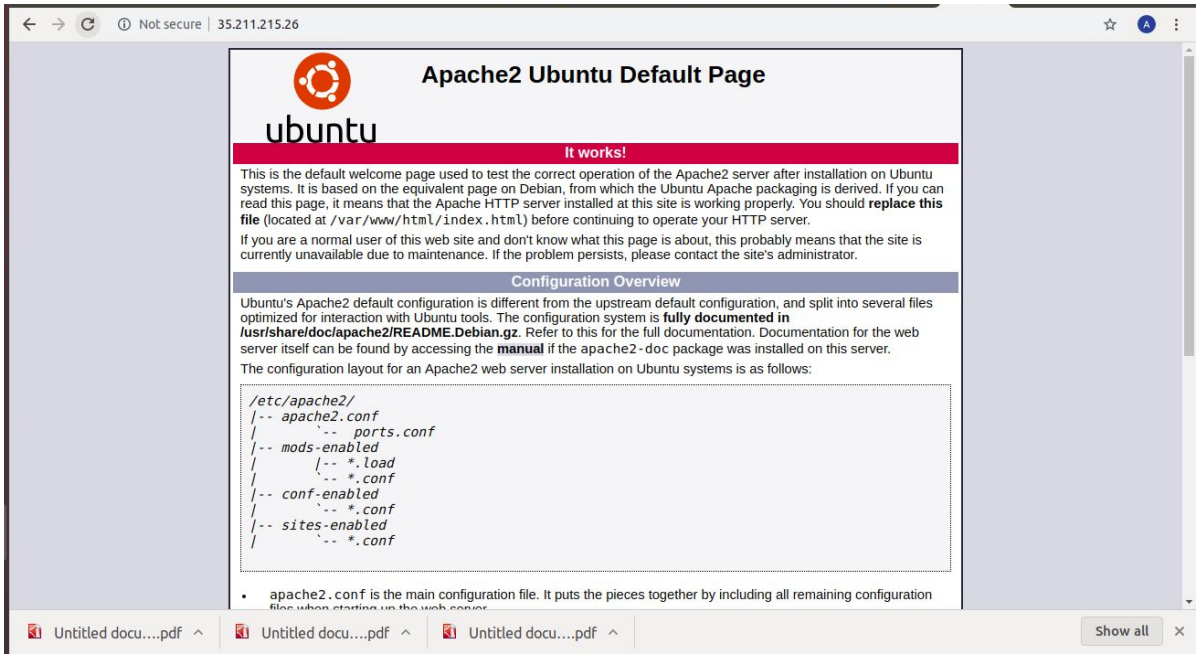
Show all


Not secure | 35.211.215.26
Apache2 Ubuntu Default Page
ubuntu
It works!
This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should replace this file (located at /var/www/html/index.html) before continuing to operate your HTTP server.
If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.
Configuration Overview
Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is fully documented in /usr/share/doc/apache2/README.Debian.gz. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the manual if the apache2-doc package was installed on this server.
The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:
/etc/apache2/
|-- apache2.conf
| `-- ports.conf
|-- mods-enabled
| |-- *.load
| `-- *.conf
|-- conf-enabled
| `-- *.conf
|-- sites-enabled
| `-- *.conf
apache2.conf is the main configuration file. It puts the pieces together by including all remaining configuration
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Untitled docu....pdf
Show all