EXPT -6

**Aim:**

Identity Management in Private Cloud (Eucalyptus)

**Theory:**

Eucalyptus is a paid and open-source computer software for building Amazon Web Services (AWS)-compatible private and hybrid cloud computing environments, originally developed by the company Eucalyptus Systems. Eucalyptus is an acronym for Elastic Utility Computing Architecture for Linking Your Programs To Useful Systems. Eucalyptus enables pooling compute, storage, and network resources that can be dynamically scaled up or down as application workloads change. Mårten Mickos was the CEO of Eucalyptus. In September 2014, Eucalyptus was acquired by Hewlett-Packard and then maintained by DXC Technology. After DXC stopped developing the product in late 2017, AppScale Systems forked the code and started supporting Eucalyptus customers.

The Eucalyptus cloud platform primarily comprises of five main components, each briefly explained below:

Cloud controller (CLC): The cloud controller is essentially a Web-based interface between Eucalyptus and the outside world. It provides cloud administrators an interface with which they can configure and manage the cloud's underlying compute, storage and network resources. It also handles high-level user authentication, quota management along with a few basic accounting and reporting mechanisms. Users can also query the CLC using Eucalyptus's command line tools called Euca2ools.

Walrus: Walrus provides persistent storage capabilities to all of the virtual machines in the Eucalyptus cloud. It is basically a large storage container where users can upload data from any file type using simple HTTP put-get queries.

Cluster controller (CC): A typical Eucalyptus cloud set-up can comprise multiple nodes, which are actually hypervisors on which virtual machines are provisioned. These nodes can be collectively grouped and managed by using the cluster controller, which primarily looks after the inter-node communications and Service Level Agreements (SLAs) of each cluster.

Storage controller (SC): The storage controller provides persistent block-level storage for virtual machines that are launched within a Eucalyptus cloud. The SC interfaces with a wide variety of storage systems including local file systems, NFS, SAN and even iSCSI.

Node controller (NC): Node controllers or nodes are hypervisor-based virtualised servers that host virtual machines which are provisioned by the Eucalyptus cloud. Eucalyptus additionally provides an optional add-in component that even supports VMware ESXi hypervisor as a node, called a VMware broker.

Features

The latest release of Eucalyptus (Version 3.3.2) introduces many new features, some of which are explained below.

Auto-scaling: Mirrored on the concept of auto-scaling by AWS, Eucalyptus too provides similar APIs that help cloud administrators set rules and policies that enable applications running on virtual machines to scale-up and scale-down dynamically, based on fluctuating workloads.

Elastic load balancing: This is basically a service that provides better availability and scalability for applications running atop the Eucalyptus cloud. It automatically senses and distributes incoming application traffic and service calls across multiple running instances, thus improving the performance and uptime of the application.

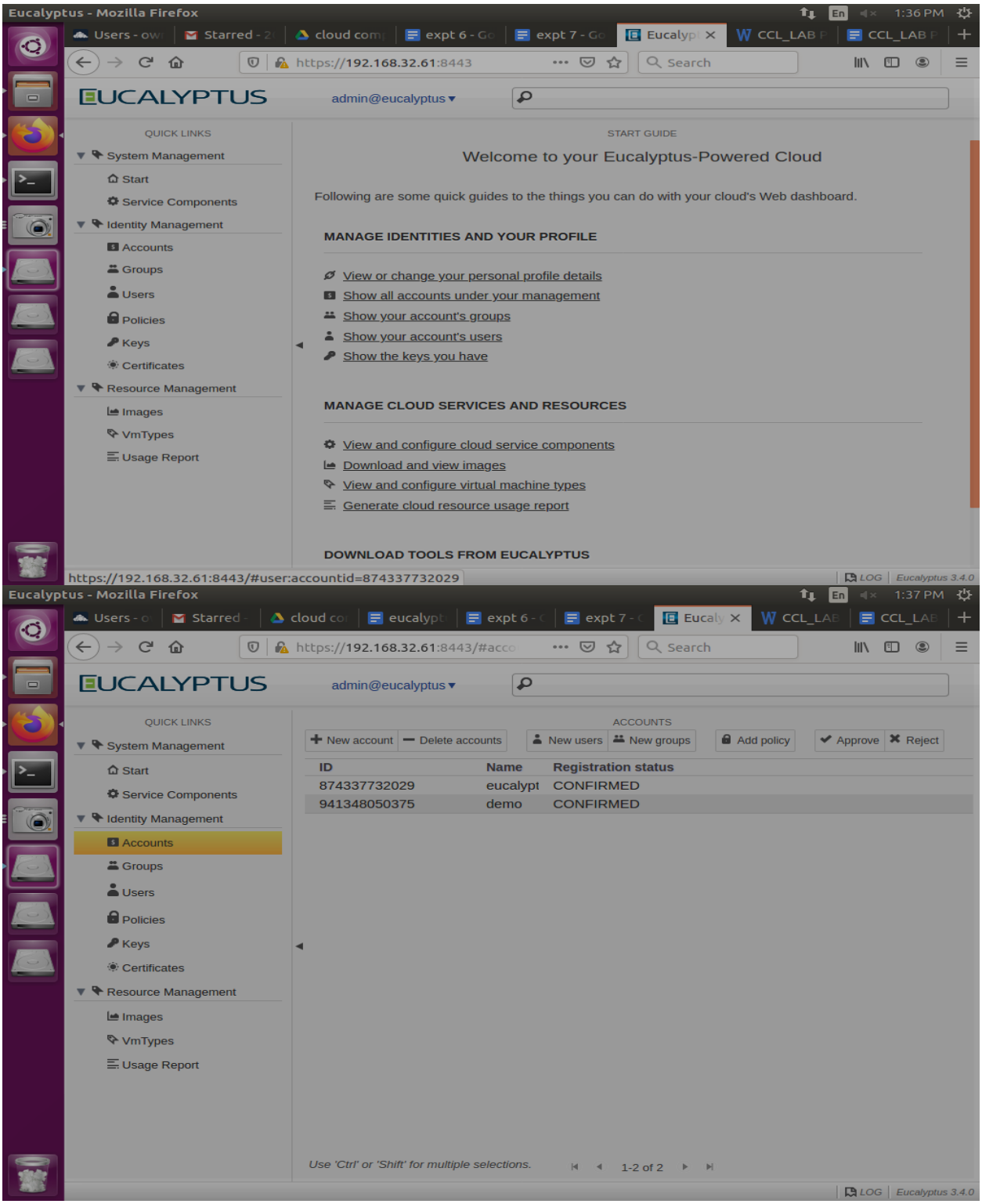
CloudWatch: This provides monitoring for virtual machines and applications hosted on the Eucalyptus cloud. Using CloudWatch, users can programmatically track, collect and analyse metrics, set alarms to troubleshoot performance issues and take automated action as well, based on the state of the cloud environment.

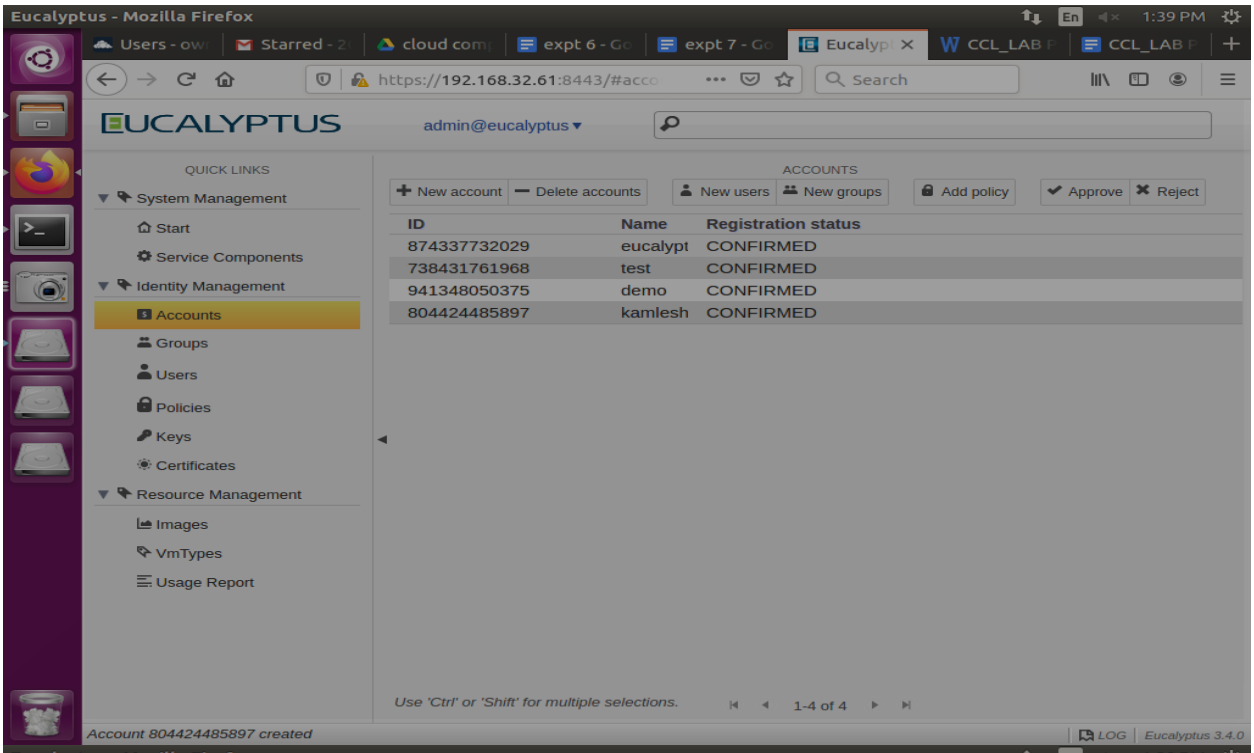
Resource tagging: This allows users and cloud administrators to assign meaningful metadata to cloud resources. This helps in tracking, as well as eases management and monitoring of specific resource collections used across the cloud.

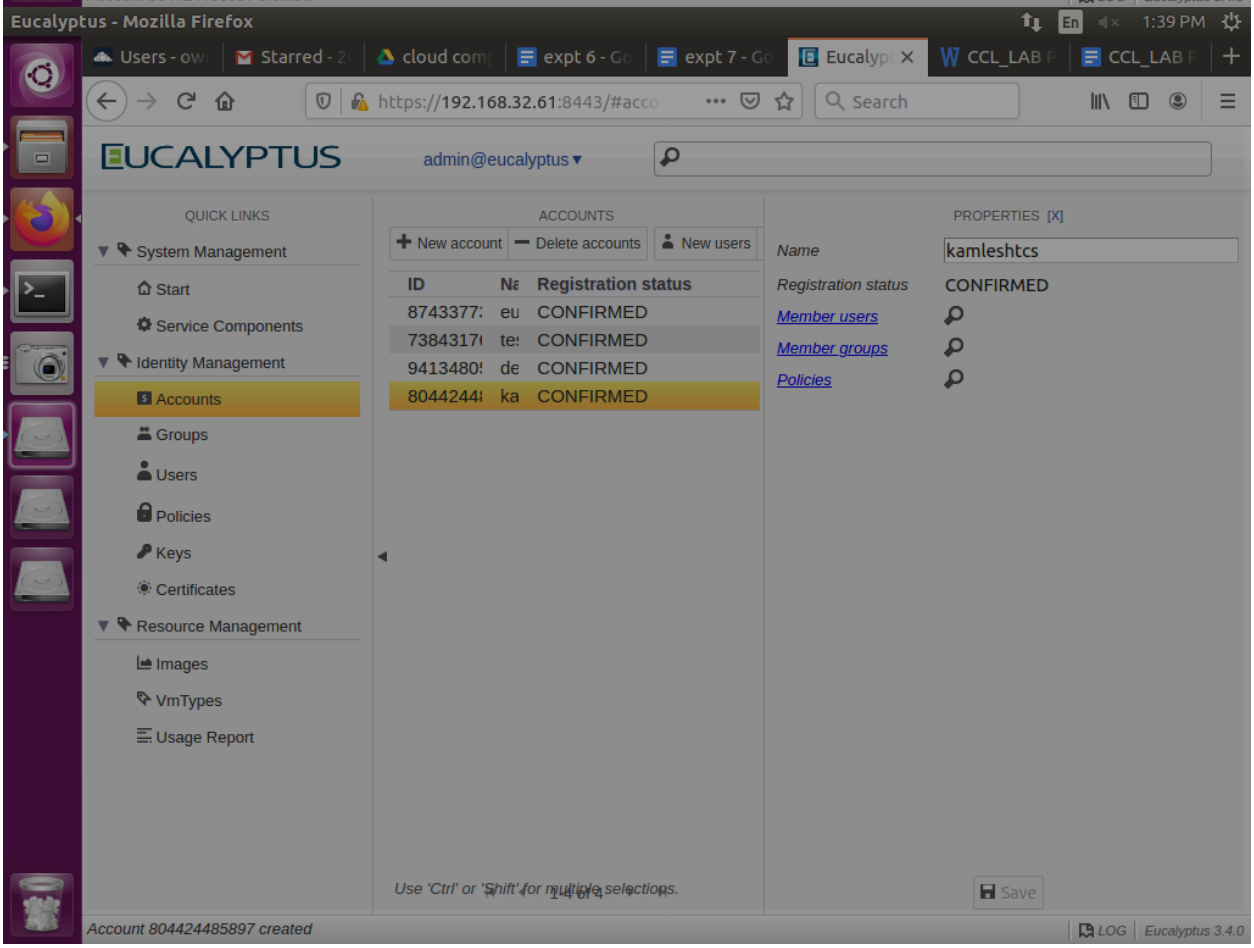
Maintenance mode: This feature enables cloud administrators to perform maintenance activities on the Eucalyptus cloud without any potential downtime. This helps make sure that the applications hosted on the cloud are always running and that they meet the required SLA levels as well.

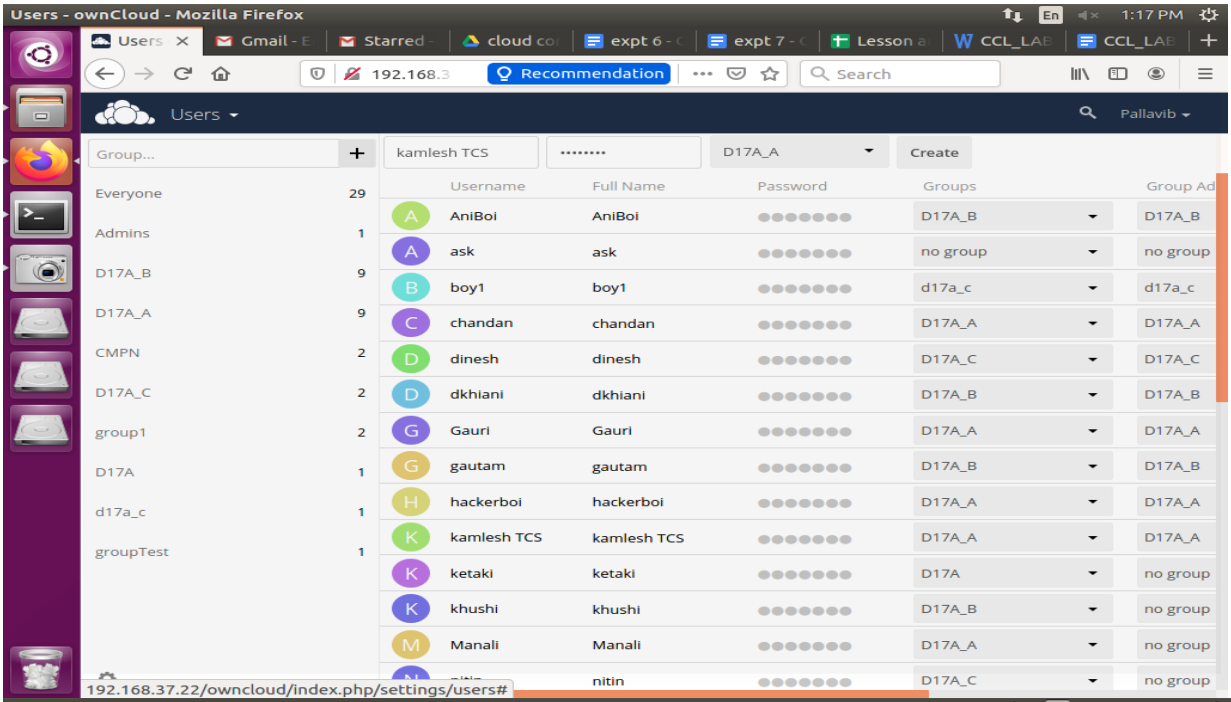
**Conclusion:**

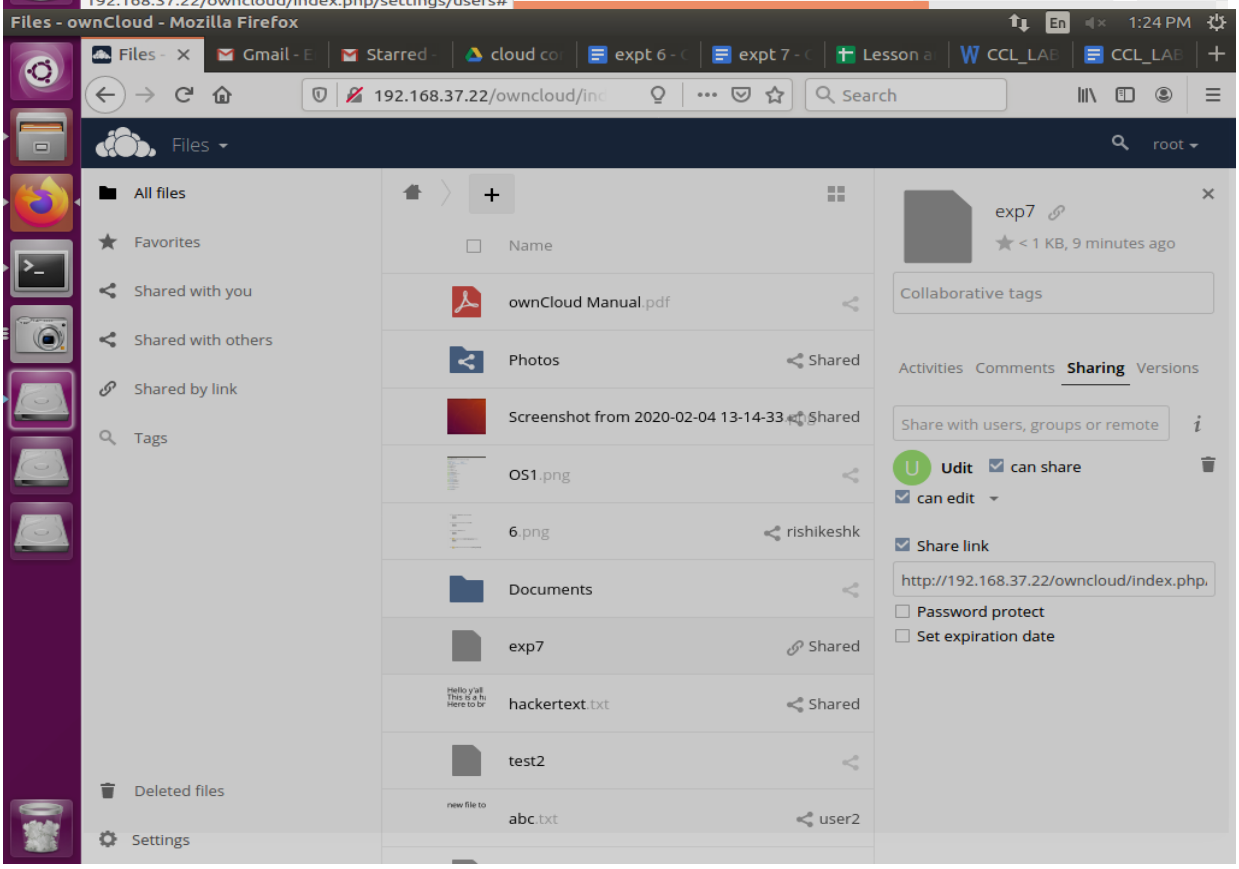
We have studied and implemented management in Eucalyptus.

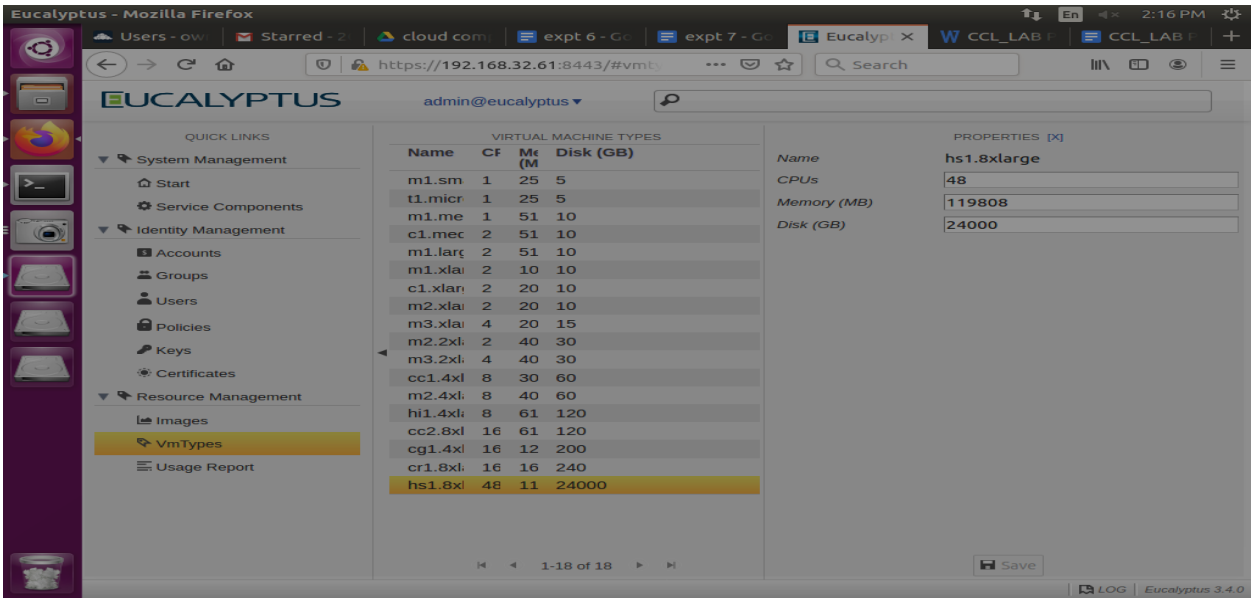

Eucalyptus - Mozilla Firefox
1:36 PM
https://192.168.32.61:8443
Search
EUCALYPTUS
admin@eucalyptus
QUICK LINKS
System Management
Start
Service Components
Identity Management
Accounts
Groups
Users
Policies
Keys
Certificates
Resource Management
Images
VmTypes
Usage Report
START GUIDE
Welcome to your Eucalyptus-Powered Cloud
Following are some quick guides to the things you can do with your cloud's Web dashboard.
MANAGE IDENTITIES AND YOUR PROFILE
View or change your personal profile details
Show all accounts under your management
Show your account's groups
Show your account's users
Show the keys you have
MANAGE CLOUD SERVICES AND RESOURCES
View and configure cloud service components
Download and view images
View and configure virtual machine types
Generate cloud resource usage report
DOWNLOAD TOOLS FROM EUCALYPTUS
https://192.168.32.61:8443/#user:accountid=874337732029
LOG
Eucalyptus 3.4.0
Eucalyptus - Mozilla Firefox
1:37 PM
https://192.168.32.61:8443/#acco
Search
EUCALYPTUS
admin@eucalyptus
QUICK LINKS
System Management
Start
Service Components
Identity Management
Accounts
Groups
Users
Policies
Keys
Certificates
Resource Management
Images
VmTypes
Usage Report
ACCOUNTS
New account
Delete accounts
New users
New groups
Add policy
Approve
Reject
ID
Name
Registration status
874337732029
eucalypt
CONFIRMED
941348050375
demo
CONFIRMED
Use 'Ctrl' or 'Shift' for multiple selections.
1-2 of 2
LOG
Eucalyptus 3.4.0

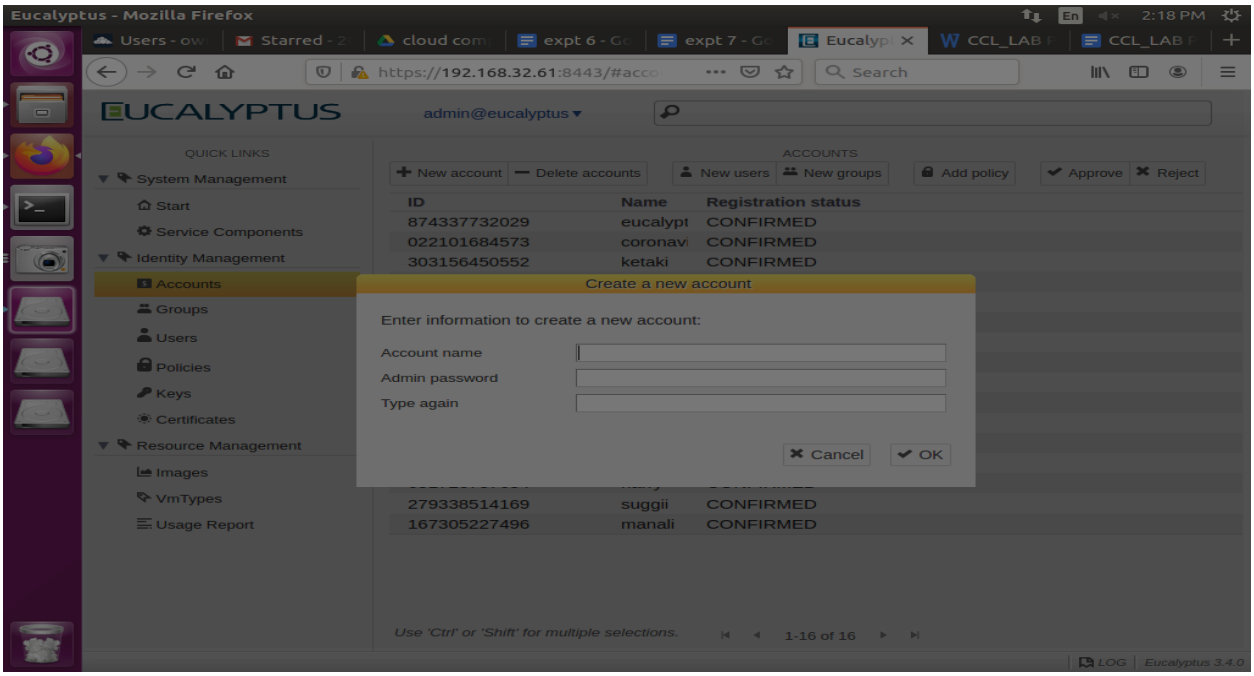

Eucalyptus - Mozilla Firefox
1:39 PM
https://192.168.32.61:8443/#acco
Search
EUCALYPTUS
admin@eucalyptus
QUICK LINKS
System Management
Start
Service Components
Identity Management
Accounts
Groups
Users
Policies
Keys
Certificates
Resource Management
Images
VmTypes
Usage Report
ACCOUNTS
New account
Delete accounts
New users
New groups
Add policy
Approve
Reject
ID
Name
Registration status
874337732029
eucalypt
CONFIRMED
738431761968
test
CONFIRMED
941348050375
demo
CONFIRMED
804424485897
kamlesh
CONFIRMED
Use 'Ctrl' or 'Shift' for multiple selections.
1-4 of 4
Account 804424485897 created
LOG
Eucalyptus 3.4.0

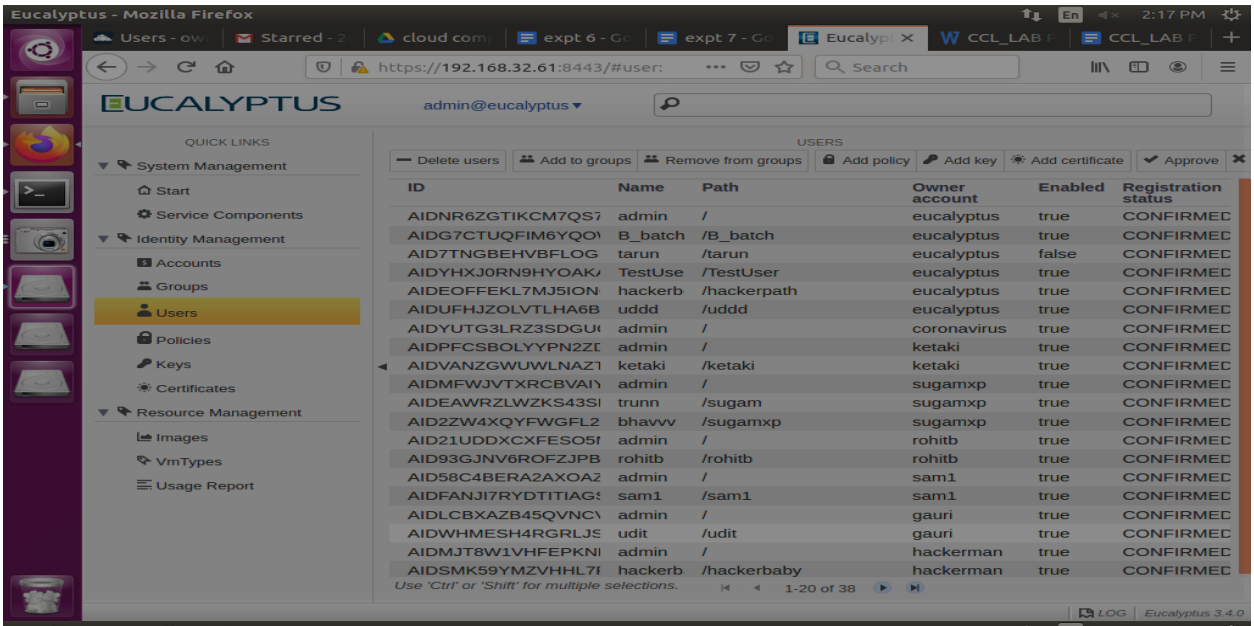

Eucalyptus - Mozilla Firefox
1:39 PM
https://192.168.32.61:8443/#acco
Search
EUCALYPTUS
admin@eucalyptus
QUICK LINKS
System Management
Start
Service Components
Identity Management
Accounts
Groups
Users
Policies
Keys
Certificates
Resource Management
Images
VmTypes
Usage Report
ACCOUNTS
New account
Delete accounts
New users
ID
Registration status
8743377
eu
CONFIRMED
7384317
te
CONFIRMED
9413480
de
CONFIRMED
8044244
ka
CONFIRMED
PROPERTIES [X]
Name
kamleshtcs
Registration status
CONFIRMED
Member users
Member groups
Policies
Use 'Ctrl' or 'Shift' for multiple selections.
Save
Account 804424485897 created
LOG
Eucalyptus 3.4.0

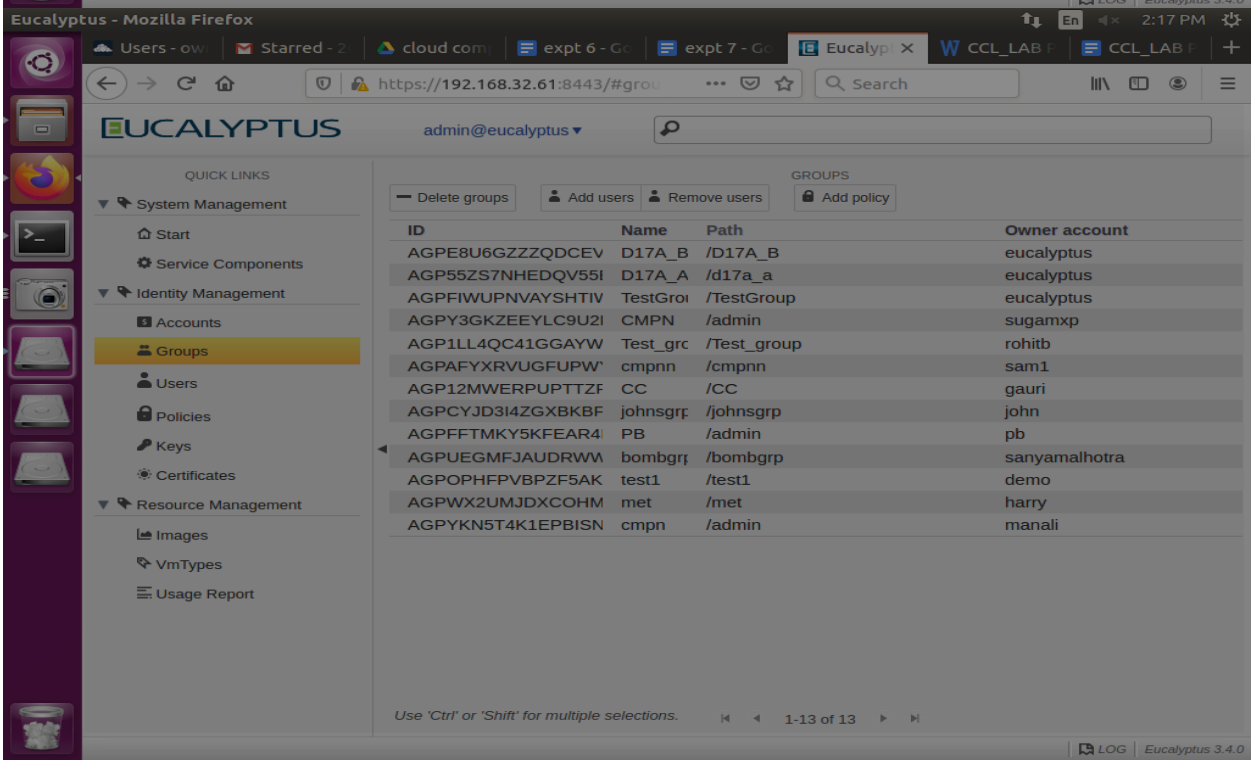

Users - ownCloud - Mozilla Firefox
1:17 PM
Users
Gmail - E
Starred -
cloud co
expt 6 - C
expt 7 - C
Lesson a
CCL_LAB
CCL_LAB
192.168.3
Recommendation
Search
Users
Pallavib
Group...
Everyone 29
Admins 1
D17A_B 9
D17A_A 9
CMPN 2
D17A_C 2
group1 2
D17A 1
d17a_c 1
groupTest 1
kamlesh TCS
D17A_A
Create
Username
Full Name
Password
Groups
Group Ad
AniBoi AniBoi D17A_B D17A_B
ask ask no group no group
boy1 boy1 d17a_c d17a_c
chandan chandan D17A_A D17A_A
dinesh dinesh D17A_C D17A_C
dkhiani dkhiani D17A_B D17A_B
Gauri Gauri D17A_A D17A_A
gautam gautam D17A_B D17A_B
hackerboi hackerboi D17A_A D17A_A
kamlesh TCS kamlesh TCS D17A_A D17A_A
ketaki ketaki D17A no group
khushi khushi D17A_B no group
Manali Manali D17A_A no group
nitin D17A_C no group
192.168.37.22/owncloud/index.php/settings/users#

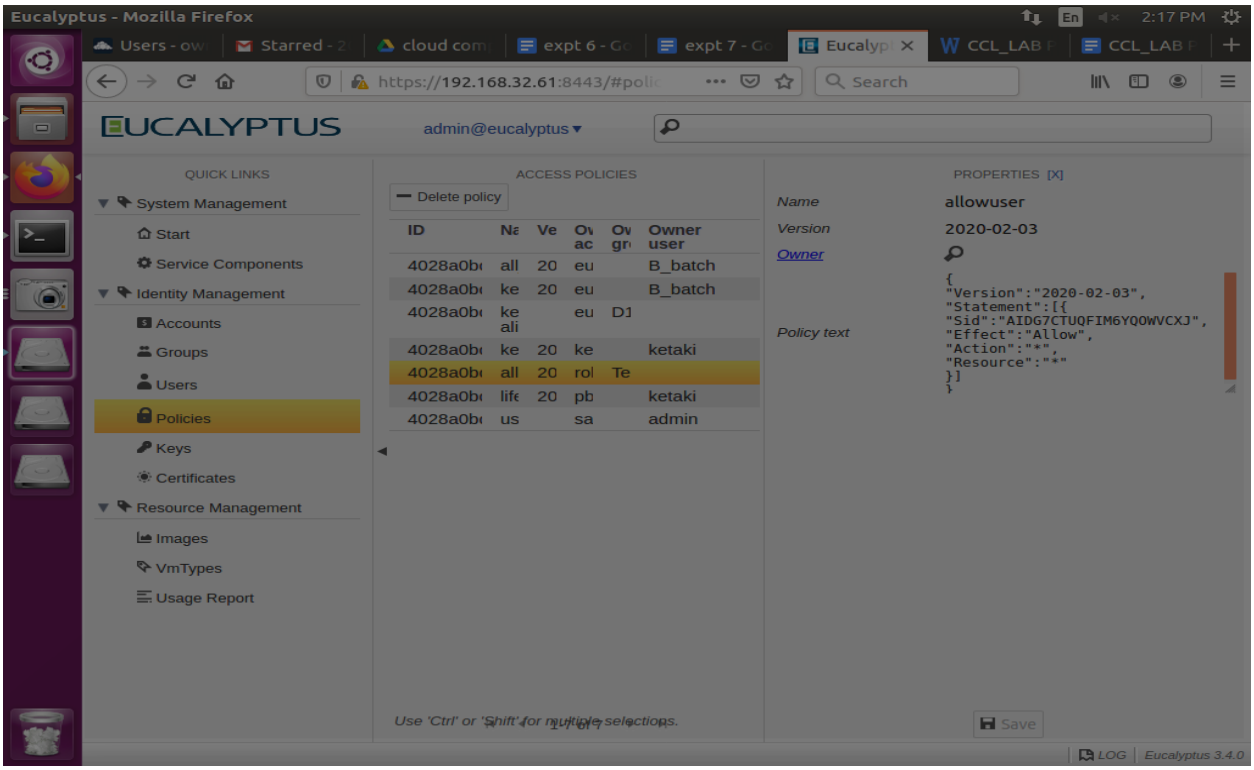

Files - ownCloud - Mozilla Firefox
1:24 PM
Files -
Gmail - E
Starred -
cloud co
expt 6 - C
expt 7 - C
Lesson a
CCL_LAB
CCL_LAB
192.168.37.22/owncloud/inc
Search
Files
root
All files
Favorites
Shared with you
Shared with others
Shared by link
Tags
Deleted files
Settings
Name
ownCloud Manual.pdf
Photos Shared
Screenshot from 2020-02-04 13-14-33 Shared
OS1.png
6.png rishikeshk
Documents
exp7 Shared
hackertext.txt Shared
test2
abc.txt user2
exp7
< 1 KB, 9 minutes ago
Collaborative tags
Activities Comments Sharing Versions
Share with users, groups or remote
Udit can share
can edit
Share link
http://192.168.37.22/owncloud/index.php/
Password protect
Set expiration date

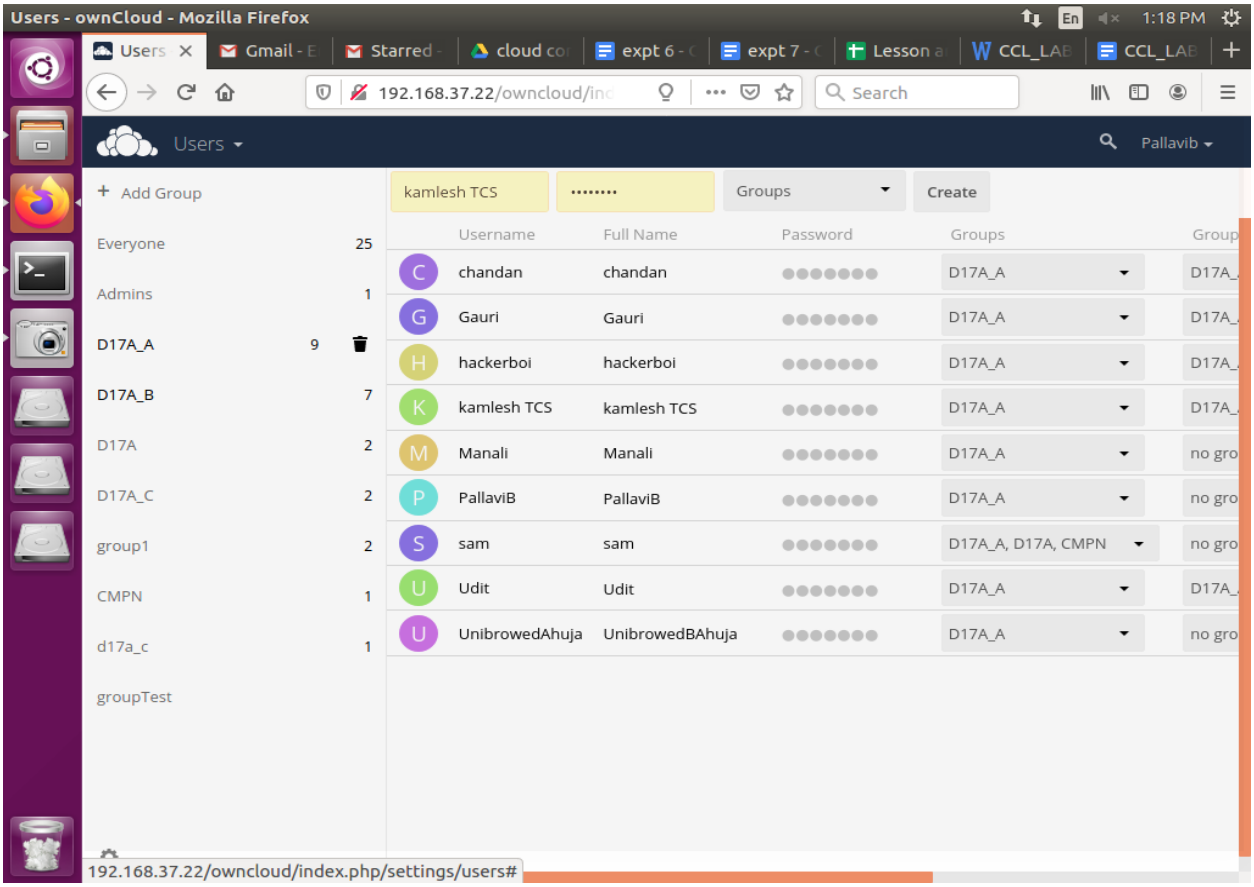

Eucalyptus - Mozilla Firefox
2:16 PM
https://192.168.32.61:8443/#vmty
Search
EUCALYPTUS
admin@eucalyptus
QUICK LINKS
System Management
Start
Service Components
Identity Management
Accounts
Groups
Users
Policies
Keys
Certificates
Resource Management
Images
VmTypes
Usage Report
VIRTUAL MACHINE TYPES
Name CF Mc (M Disk (GB)
m1.sm 1 25 5
t1.micr 1 25 5
m1.me 1 51 10
c1.mec 2 51 10
m1.larg 2 51 10
m1.xla 2 10 10
c1.xlar 2 20 10
m2.xla 2 20 10
m3.xla 4 20 15
m2.2xl 2 40 30
m3.2xl 4 40 30
cc1.4xl 8 30 60
m2.4xl 8 40 60
hi1.4xl 8 61 120
cc2.8xl 16 61 120
cg1.4xl 16 12 200
cr1.8xl 16 16 240
hs1.8xl 48 11 24000
1-18 of 18
PROPERTIES [X]
Name hs1.8xlarge
CPUs 48
Memory (MB) 119808
Disk (GB) 24000
Save
LOG
Eucalyptus 3.4.0

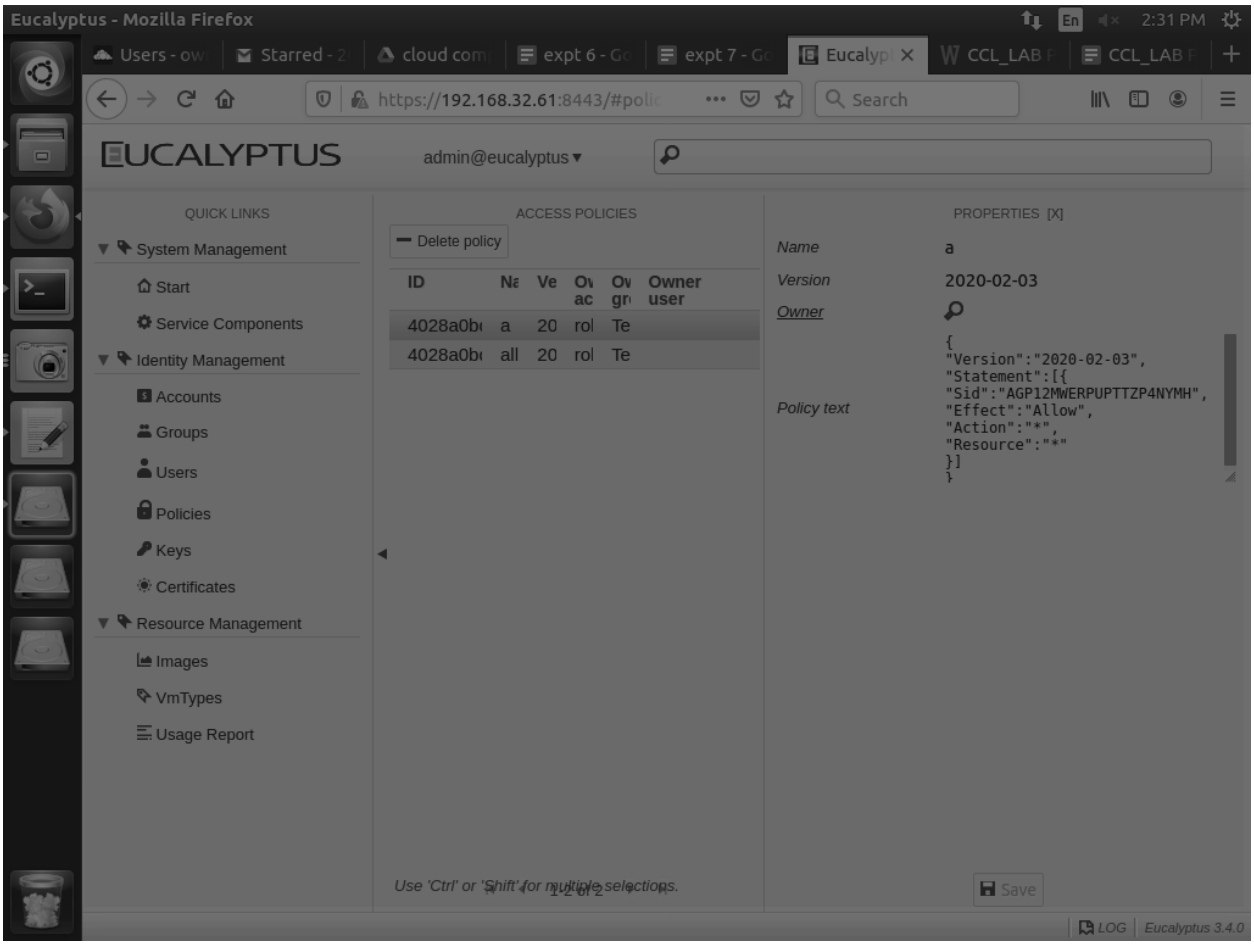

Eucalyptus - Mozilla Firefox
2:18 PM
https://192.168.32.61:8443/#acco
Search
EUCALYPTUS
admin@eucalyptus
QUICK LINKS
System Management
Start
Service Components
Identity Management
Accounts
Groups
Users
Policies
Keys
Certificates
Resource Management
Images
VmTypes
Usage Report
ACCOUNTS
New account
Delete accounts
New users
New groups
Add policy
Approve
Reject
ID Name Registration status
874337732029 eucalypt CONFIRMED
022101684573 coronavi CONFIRMED
303156450552 ketaki CONFIRMED
Create a new account
Enter information to create a new account:
Account name
Admin password
Type again
Cancel
OK
279338514169 suggii CONFIRMED
167305227496 manali CONFIRMED
Use 'Ctrl' or 'Shift' for multiple selections.
1-16 of 16
LOG
Eucalyptus 3.4.0


Eucalyptus - Mozilla Firefox
2:17 PM
https://192.168.32.61:8443/#user:
Search
EUCALYPTUS
admin@eucalyptus
QUICK LINKS
System Management
Start
Service Components
Identity Management
Accounts
Groups
Users
Policies
Keys
Certificates
Resource Management
Images
VmTypes
Usage Report
USERS
Delete users
Add to groups
Remove from groups
Add policy
Add key
Add certificate
Approve
ID
Name
Path
Owner account
Enabled
Registration status
AIDNR6ZGTIKCM7QS7 admin / eucalyptus true CONFIRMED
AIDG7CTUQFIM6YQOV B_batch /B_batch eucalyptus true CONFIRMED
AID7TNGBEHVBFLOG tarun /tarun eucalyptus false CONFIRMED
AIDYHXJ0RN9HYOAK/ TestUse /TestUser eucalyptus true CONFIRMED
AIDEOFFEKL7MJ5ION hackerb /hackerpath eucalyptus true CONFIRMED
AIDUFHJZOLVTLHA6B uddd /uddd eucalyptus true CONFIRMED
AIDYUTG3LRZ3SDGU( admin / coronavirus true CONFIRMED
AIDPFCSBOLYYPN2ZI admin / ketaki true CONFIRMED
AIDVANZGWUWLNAZ1 ketaki /ketaki ketaki true CONFIRMED
AIDMFWJVTXRCBVAI admin / sugamxp true CONFIRMED
AIDEAWRZLWZKS43SI trunn /sugam sugamxp true CONFIRMED
AID2ZW4XQYFWGFL2 bhavvv /sugamxp sugamxp true CONFIRMED
AID21UDDXCXFESO5I admin / rohitb true CONFIRMED
AID93GJNV6ROFZJPB rohitb /rohitb rohitb true CONFIRMED
AID58C4BERA2AXOAZ admin / sam1 true CONFIRMED
AIDFANJI7RYDTITIAGS sam1 /sam1 sam1 true CONFIRMED
AIDLCBXAZB45QVNC\ admin / gauri true CONFIRMED
AIDWHMESH4RGRLJS udit /udit gauri true CONFIRMED
AIDMJT8W1VHFEPKNI admin / hackerman true CONFIRMED
AIDSMK59YMZVHHL7I hackerb /hackerbaby hackerman true CONFIRMED
Use 'Ctrl' or 'Shift' for multiple selections.
1-20 of 38
LOG
Eucalyptus 3.4.0


Eucalyptus - Mozilla Firefox
2:17 PM
https://192.168.32.61:8443/#grou
Search
EUCALYPTUS
admin@eucalyptus
QUICK LINKS
System Management
Start
Service Components
Identity Management
Accounts
Groups
Users
Policies
Keys
Certificates
Resource Management
Images
VmTypes
Usage Report
GROUPS
Delete groups
Add users
Remove users
Add policy
ID
Name
Path
Owner account
AGPE8U6GZZZQDCEV D17A_B /D17A_B eucalyptus
AGP55ZS7NHEDQV55I D17A_A /d17a_a eucalyptus
AGPFIWUPNVAYSHTIV TestGro /TestGroup eucalyptus
AGPY3GKZEEYLC9U2I CMPN /admin sugamxp
AGP1LL4QC41GGAYW Test_grc /Test_group rohitb
AGPAFYXRVUGFUPW' cmpnn /cmpnn sam1
AGP12MWERPUPTTZF CC /CC gauri
AGPCYJD3I4ZGXBKBF johnsgrp /johnsgrp john
AGPFFTMKY5KFEAR4I PB /admin pb
AGPUEGMFJAUDRWW bombgrp /bombgrp sanyamalhotra
AGPOPHFPVBPZF5AK test1 /test1 demo
AGPWX2UMJDXCOHM met /met harry
AGPYKN5T4K1EPBISN cmpn /admin manali
Use 'Ctrl' or 'Shift' for multiple selections.
1-13 of 13
LOG
Eucalyptus 3.4.0


Eucalyptus - Mozilla Firefox
2:17 PM
https://192.168.32.61:8443/#polic
Search
EUCALYPTUS
admin@eucalyptus
QUICK LINKS
System Management
Start
Service Components
Identity Management
Accounts
Groups
Users
Policies
Keys
Certificates
Resource Management
Images
VmTypes
Usage Report
ACCESS POLICIES
Delete policy
ID
Owner user
4028a0b( all 20 eu B_batch
4028a0b( ke 20 eu B_batch
4028a0b( ke ali 20 eu D1
4028a0b( ke 20 ke ketaki
4028a0b( all 20 rol Te
4028a0b( life 20 pb ketaki
4028a0b( us sa admin
Use 'Ctrl' or 'Shift' for multiple selections.
PROPERTIES [X]
Name allowuser
Version 2020-02-03
Owner
Policy text
{
"Version":"2020-02-03",
"Statement":[{
"Sid":"AIDG7CTUQFIM6YQOWVCXJ",
"Effect":"Allow",
"Action":"*",
"Resource":"*"
}]
}
Save
LOG
Eucalyptus 3.4.0


Users - ownCloud - Mozilla Firefox
1:18 PM
Users
Gmail - E
Starred
cloud co
expt 6 - C
expt 7 - C
Lesson a
CCL_LAB
CCL_LAB
192.168.37.22/owncloud/inc
Search
Users
Pallavib
Add Group
Everyone 25
Admins 1
D17A_A 9
D17A_B 7
D17A 2
D17A_C 2
group1 2
CMPN 1
d17a_c 1
groupTest
kamlesh TCS
Groups
Create
Username
Full Name
Password
Groups
chandan chandan D17A_A
Gauri Gauri D17A_A
hackerboi hackerboi D17A_A
kamlesh TCS kamlesh TCS D17A_A
Manali Manali D17A_A
PallaviB PallaviB D17A_A
sam sam D17A_A, D17A, CMPN
Udit Udit D17A_A
UnibrowedAhuja UnibrowedBAhuja D17A_A
192.168.37.22/owncloud/index.php/settings/users#


Eucalyptus - Mozilla Firefox
2:31 PM
https://192.168.32.61:8443/#polic
Search
EUCALYPTUS
admin@eucalyptus
QUICK LINKS
System Management
Start
Service Components
Identity Management
Accounts
Groups
Users
Policies
Keys
Certificates
Resource Management
Images
VmTypes
Usage Report
ACCESS POLICIES
Delete policy
ID
Owner user
4028a0b
a
20
rol
Te
4028a0b
all
20
rol
Te
Use 'Ctrl' or 'Shift' for multiple selections.
1-2 of 2
PROPERTIES [X]
Name
a
Version
2020-02-03
Owner
Policy text
{
"Version":"2020-02-03",
"Statement":[{
"Sid":"AGP12MWERPUPTTZP4NYMH",
"Effect":"Allow",
"Action":"*",
"Resource":"*"
}]
}
Save
LOG
Eucalyptus 3.4.0