Cloud Hosted Network Monitoring and Authentication.

Simple Solution using MikroTik RouterOS

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NISTechLtd

NISTech LTD

- Established in 2007
- Certified MikroTik Consultants
- Certified MikroTik Training partner
- Certified to conduct ALL MikroTik courses
- Certified MikroTik Academy coordinator
- Cisco Certified Inter-networking Experts
- Network Integration experts

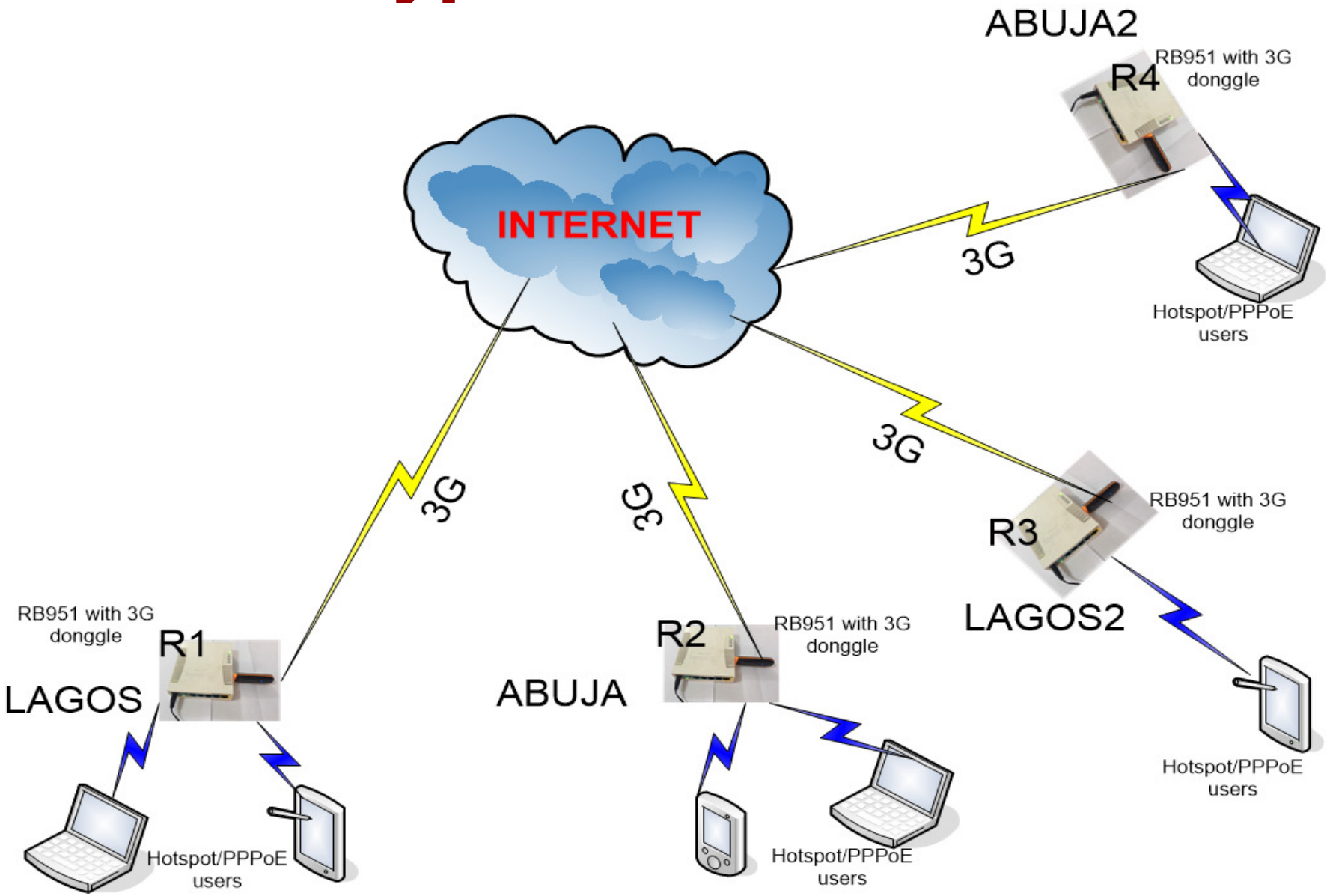
NISTech Ltd

- Conduct Trainings, setup Networks and Consults in 12 African Countries
- Design, implement and maintain IP Networks
- Experts with Voice Over IP solutions, Network Security, QoS control, Wireless & Fiber Optic
- Integrates Multi-vendor solutions
- Experts with Cisco Identity Service Engine, Mobility Service Engine and Cisco Prime

Introduction

- Monitoring multiple remote networks where users are also required to be Authenticated can be a simple and straight forward task if all the remote networks and the Authentication server have **Static Public** WAN IP address.
- But issue arises if the WAN IP address of the remote networks is **NOT fixed** or if it is **private IP address** from 3G connection to a telco
- So sure that this second scenario is common

Typical scenario



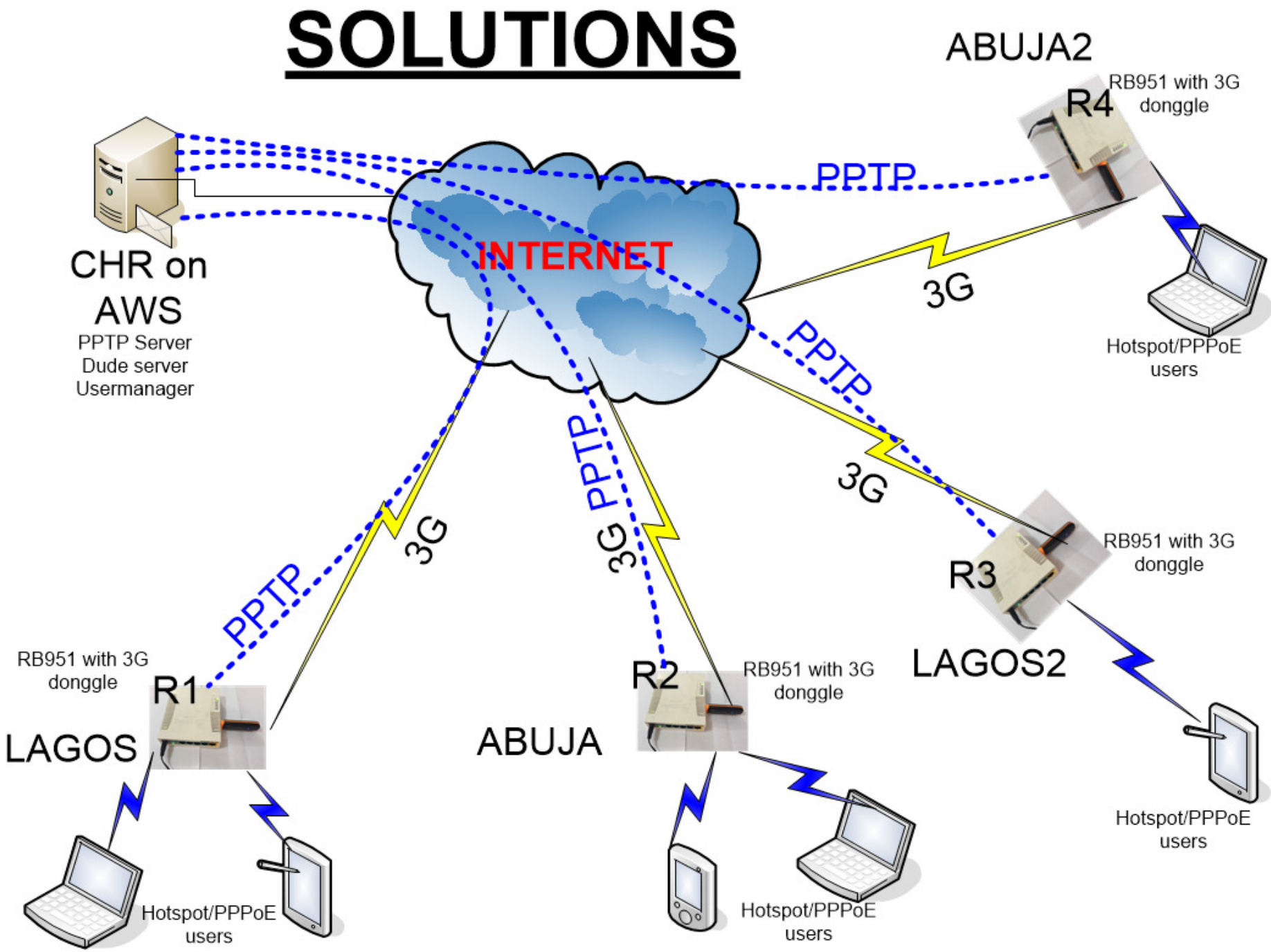
Simple Solution

- **Using Mikrotik RouterOS on CHR**
  - **With PPTP for VPN**
  - **With User-manager for AAA**
  - **With Dude for Network Monitoring**

- Centralized AAA service and Monitoring is achieved for remote networks without the stress of keeping an elaborate physical NOC

Steps to the solution

- Launch CHR on AWS
  - Setup PPTP Server on CHR
    - Create user /ppp secret for each remote router with necessary routes
  - Setup Dude to monitor remote sites infrastructure
  - Install User-manager package and configure it
    - Create users (for Hotspot, PPPoe etc clients)
- Setup PPTP-clients on remote routers
  - Configure CHR as radius server
- Install dude client on any workstation to connect to Dude server on CHR


SOLUTIONS
ABUJA2
R4
RB951 with 3G donggle
PPTP
INTERNET
3G
Hotspot/PPPoE users
CHR on AWS
PPTP Server
Dude server
Usermanager
PPTP
3G
PPTP
3G
3G PPTP
R3
RB951 with 3G donggle
LAGOS2
RB951 with 3G donggle
R1
LAGOS
R2
RB951 with 3G donggle
ABUJA
Hotspot/PPPoE users
Hotspot/PPPoE users
Hotspot/PPPoE users

CHR IMPEMENTATION

* MikroTik Cloud Hosted Router (CHR)

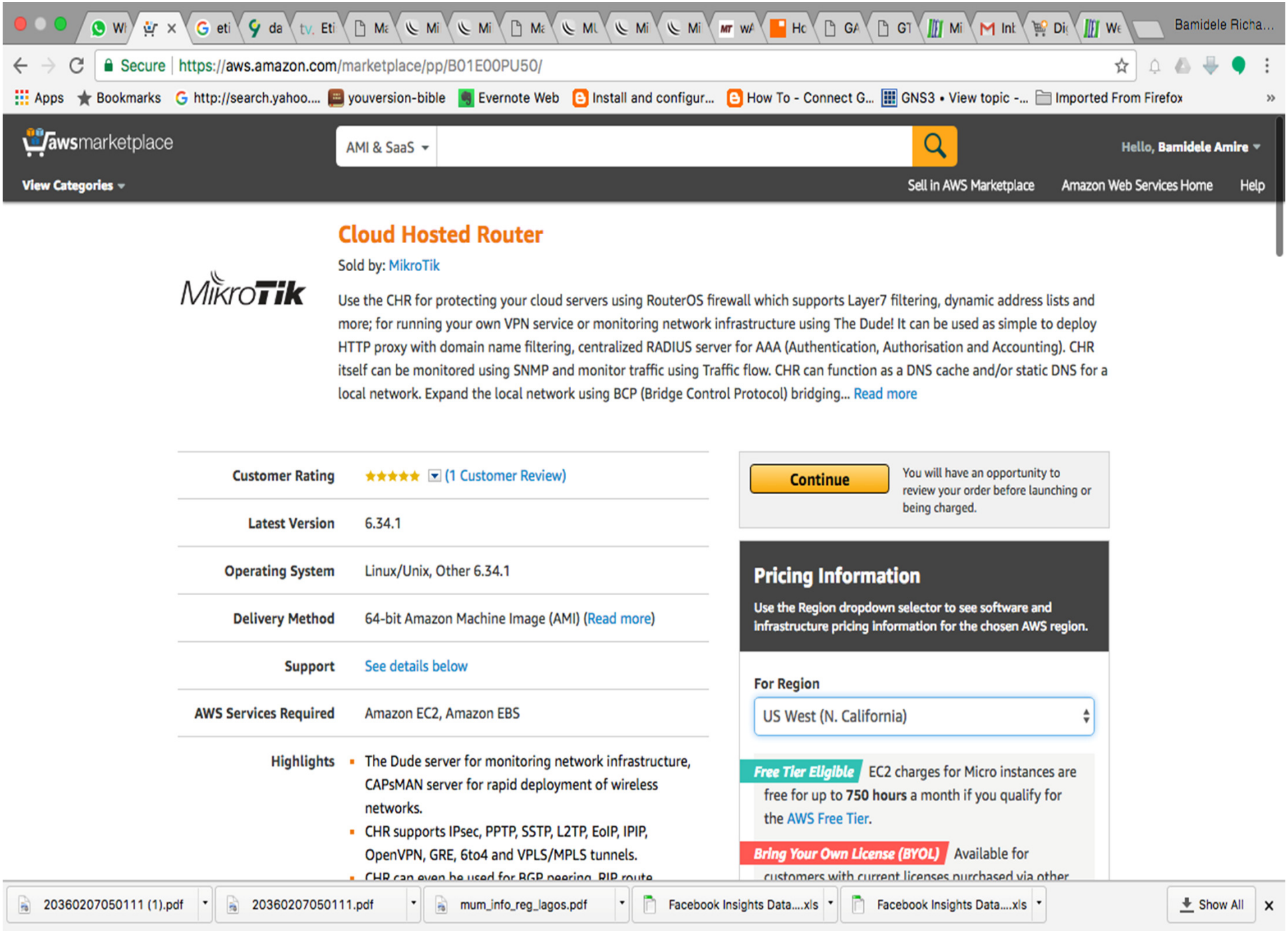
- Basically a RouterOS version intended for running as virtual machine and supports x86 64-bit architecture
- Can be used on most hypervisors such as vmware, Hyper-V, VirtualBox, KVM etc.
- I will be looking at the implementation on Amazon Web Services (AWS)

Implementation on AWS

- Implementation of CHR on AWS is one of the easiest and cheap ways of implementing CHR in the cloud with very High availability level
- There are few steps necessary to launch CHR on AWS. By default only SSH and SSH keys is allowed to amazon instance
- Let us take a look at a quick start to it

CHR Launch on AWS

- Create an AWS account. (your regular amazon account should work)
- Search for CHR or Mikrotik on Amazon marketplace
- Create an instance
- Set additional security policy to permit winbox, Dude, http and PPTP
- Connect to your instance via SSH or winbox.
- continue your configurations via winbox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Cloud Hosted Router
Sold by: MikroTik
MikroTik
Use the CHR for protecting your cloud servers using RouterOS firewall which supports Layer7 filtering, dynamic address lists and more; for running your own VPN service or monitoring network infrastructure using The Dude! It can be used as simple to deploy HTTP proxy with domain name filtering, centralized RADIUS server for AAA (Authentication, Authorisation and Accounting). CHR itself can be monitored using SNMP and monitor traffic using Traffic flow. CHR can function as a DNS cache and/or static DNS for a local network. Expand the local network using BCP (Bridge Control Protocol) bridging... Read more
Customer Rating
(1 Customer Review)
Latest Version
6.34.1
Operating System
Linux/Unix, Other 6.34.1
Delivery Method
64-bit Amazon Machine Image (AMI) (Read more)
Support
See details below
AWS Services Required
Amazon EC2, Amazon EBS
Highlights
The Dude server for monitoring network infrastructure, CAPsMAN server for rapid deployment of wireless networks.
CHR supports IPsec, PPTP, SSTP, L2TP, EoIP, IPIP, OpenVPN, GRE, 6to4 and VPLS/MPLS tunnels.
Continue
You will have an opportunity to review your order before launching or being charged.
Pricing Information
Use the Region dropdown selector to see software and infrastructure pricing information for the chosen AWS region.
For Region
US West (N. California)
Free Tier Eligible
EC2 charges for Micro instances are free for up to 750 hours a month if you qualify for the AWS Free Tier.
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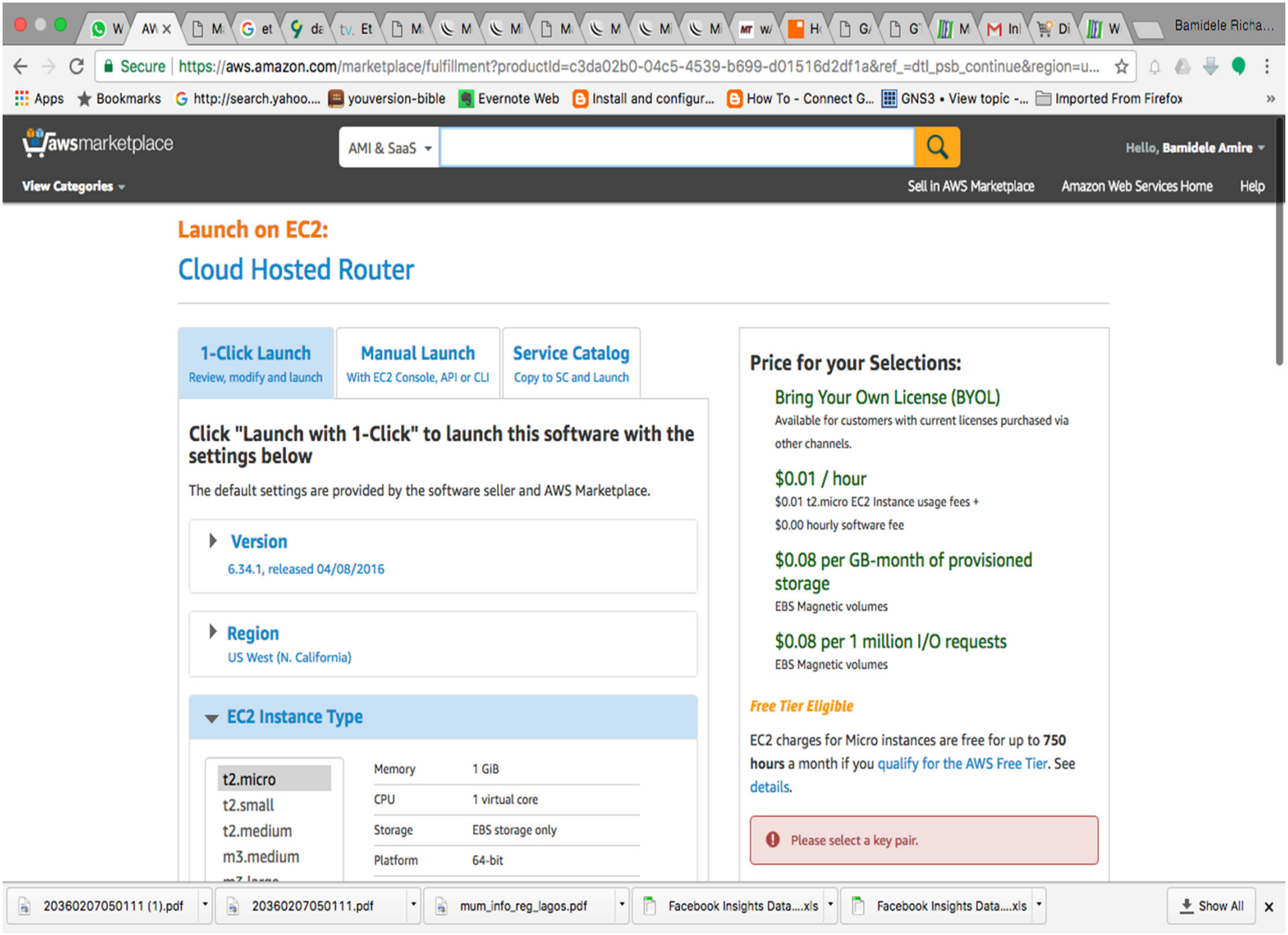
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With EC2 Console, API or CLI
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The default settings are provided by the software seller and AWS Marketplace.
Version
6.34.1, released 04/08/2016
Region
US West (N. California)
EC2 Instance Type
t2.micro
t2.small
t2.medium
m3.medium
Memory 1 GiB
CPU 1 virtual core
Storage EBS storage only
Platform 64-bit
Price for your Selections:
Bring Your Own License (BYOL)
Available for customers with current licenses purchased via other channels.
$0.01 / hour
$0.01 t2.micro EC2 Instance usage fees +
$0.00 hourly software fee
$0.08 per GB-month of provisioned storage
EBS Magnetic volumes
$0.08 per 1 million I/O requests
EBS Magnetic volumes
Free Tier Eligible
EC2 charges for Micro instances are free for up to 750 hours a month if you qualify for the AWS Free Tier. See details.
Please select a key pair.
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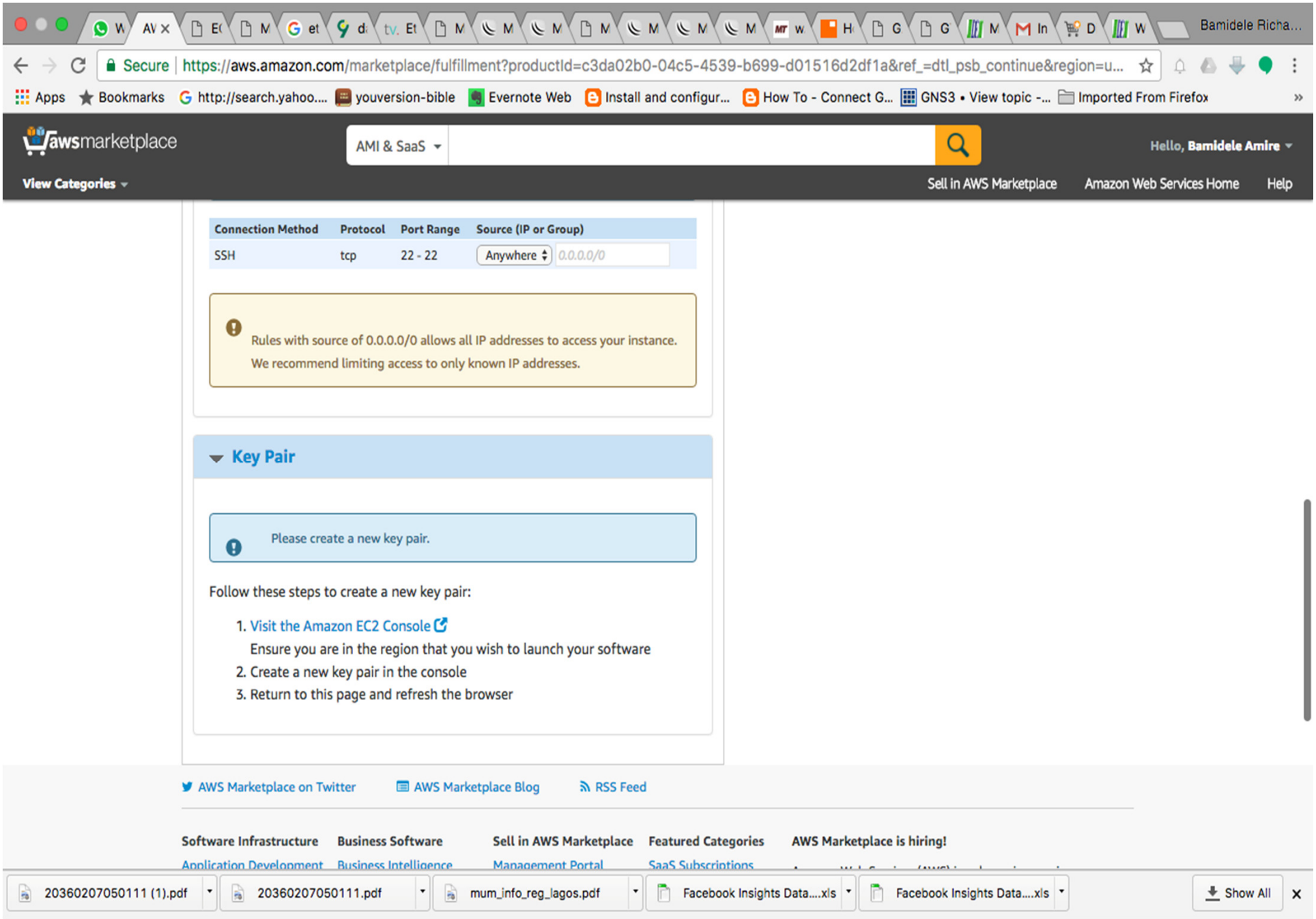
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Connection Method
Protocol
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Source (IP or Group)
SSH
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Anywhere
0.0.0.0/0
Rules with source of 0.0.0.0/0 allows all IP addresses to access your instance.
We recommend limiting access to only known IP addresses.
Key Pair
Please create a new key pair.
Follow these steps to create a new key pair:
1. Visit the Amazon EC2 Console
Ensure you are in the region that you wish to launch your software
2. Create a new key pair in the console
3. Return to this page and refresh the browser
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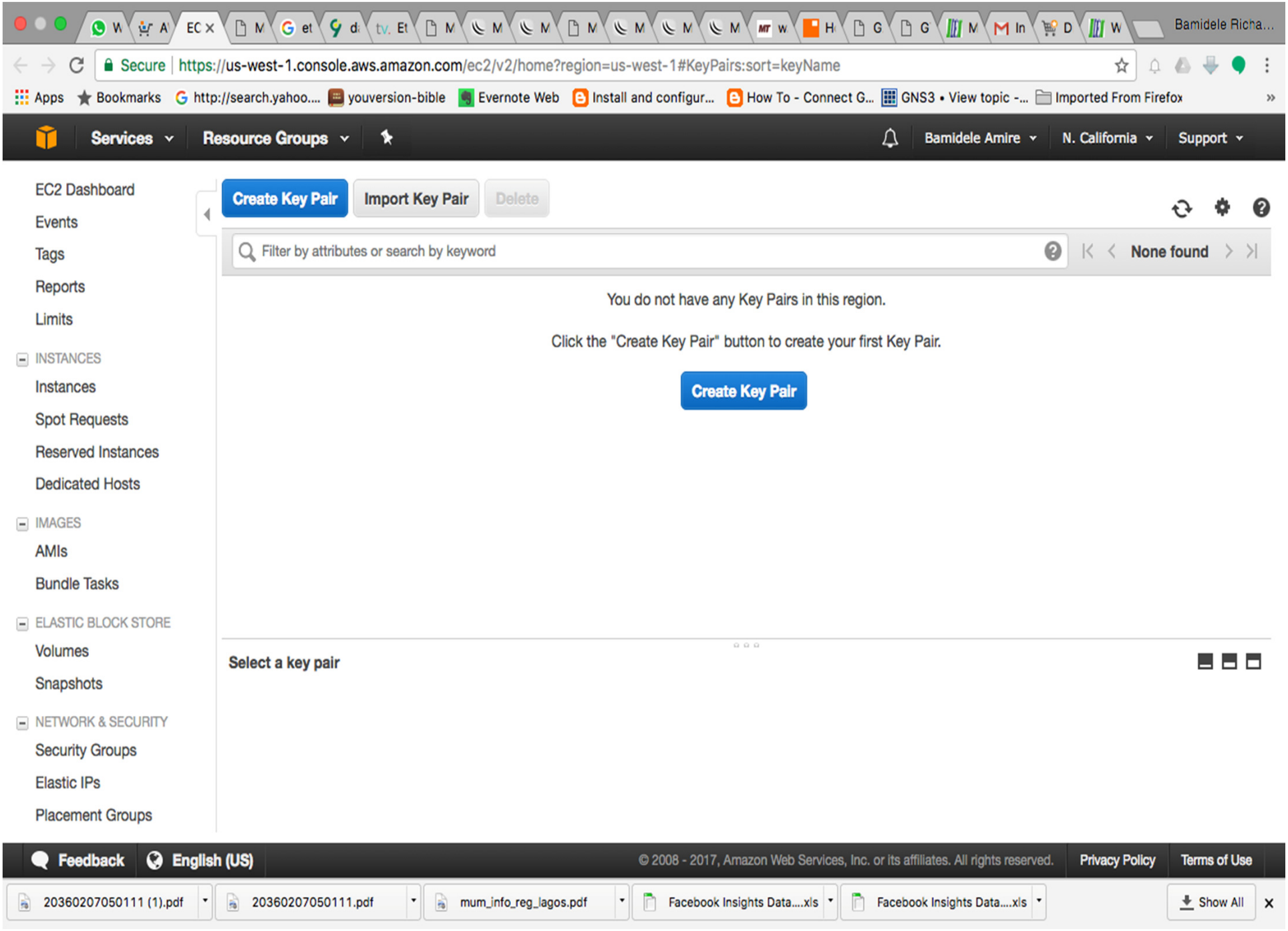
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Create Key Pair
Import Key Pair
Delete
Filter by attributes or search by keyword
None found
You do not have any Key Pairs in this region.
Click the "Create Key Pair" button to create your first Key Pair.
Create Key Pair
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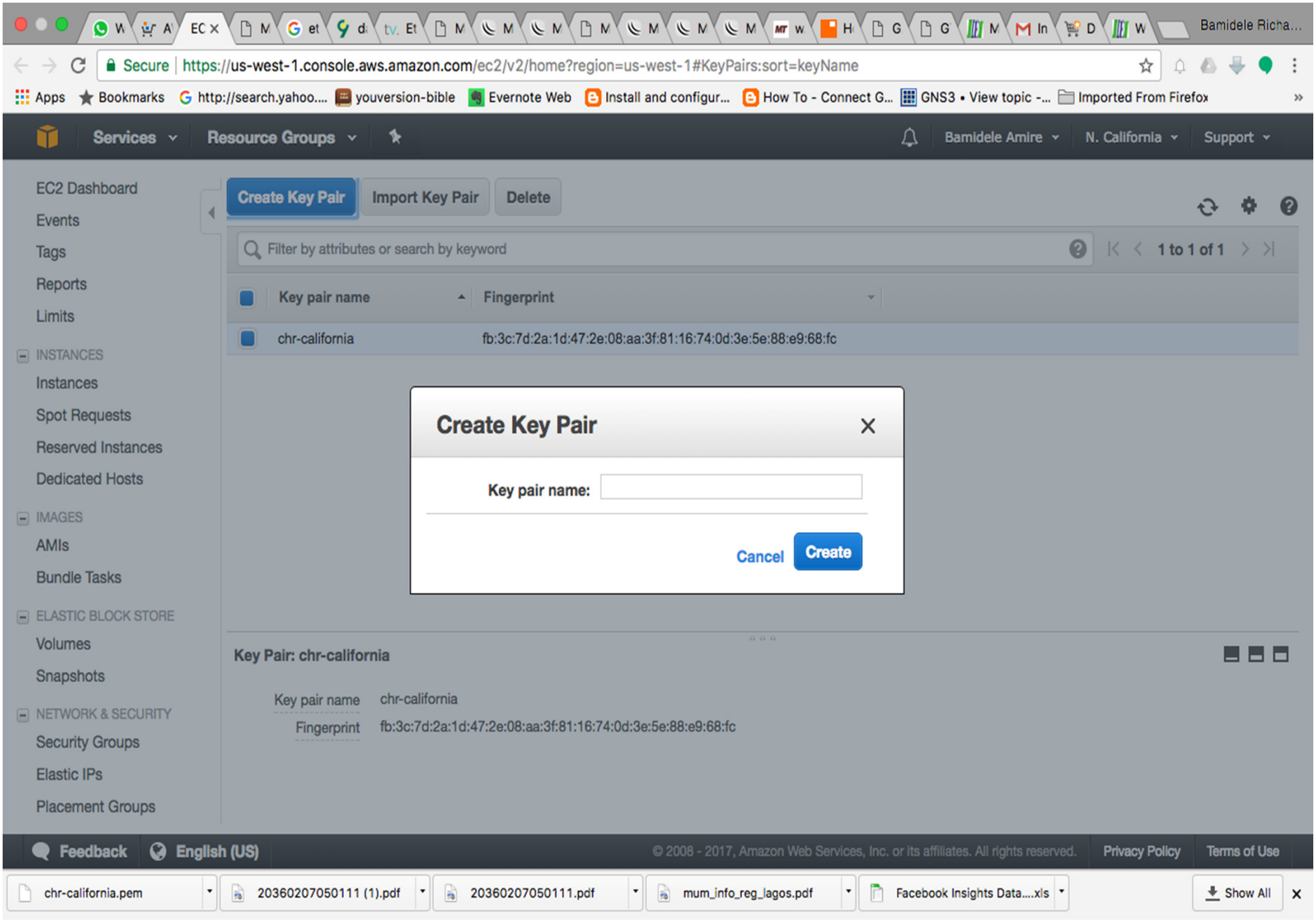
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Key pair name
Fingerprint
chr-california
fb:3c:7d:2a:1d:47:2e:08:aa:3f:81:16:74:0d:3e:5e:88:e9:68:fc
Create Key Pair
Key pair name:
Cancel
Create
Key Pair: chr-california
Key pair name chr-california
Fingerprint fb:3c:7d:2a:1d:47:2e:08:aa:3f:81:16:74:0d:3e:5e:88:e9:68:fc
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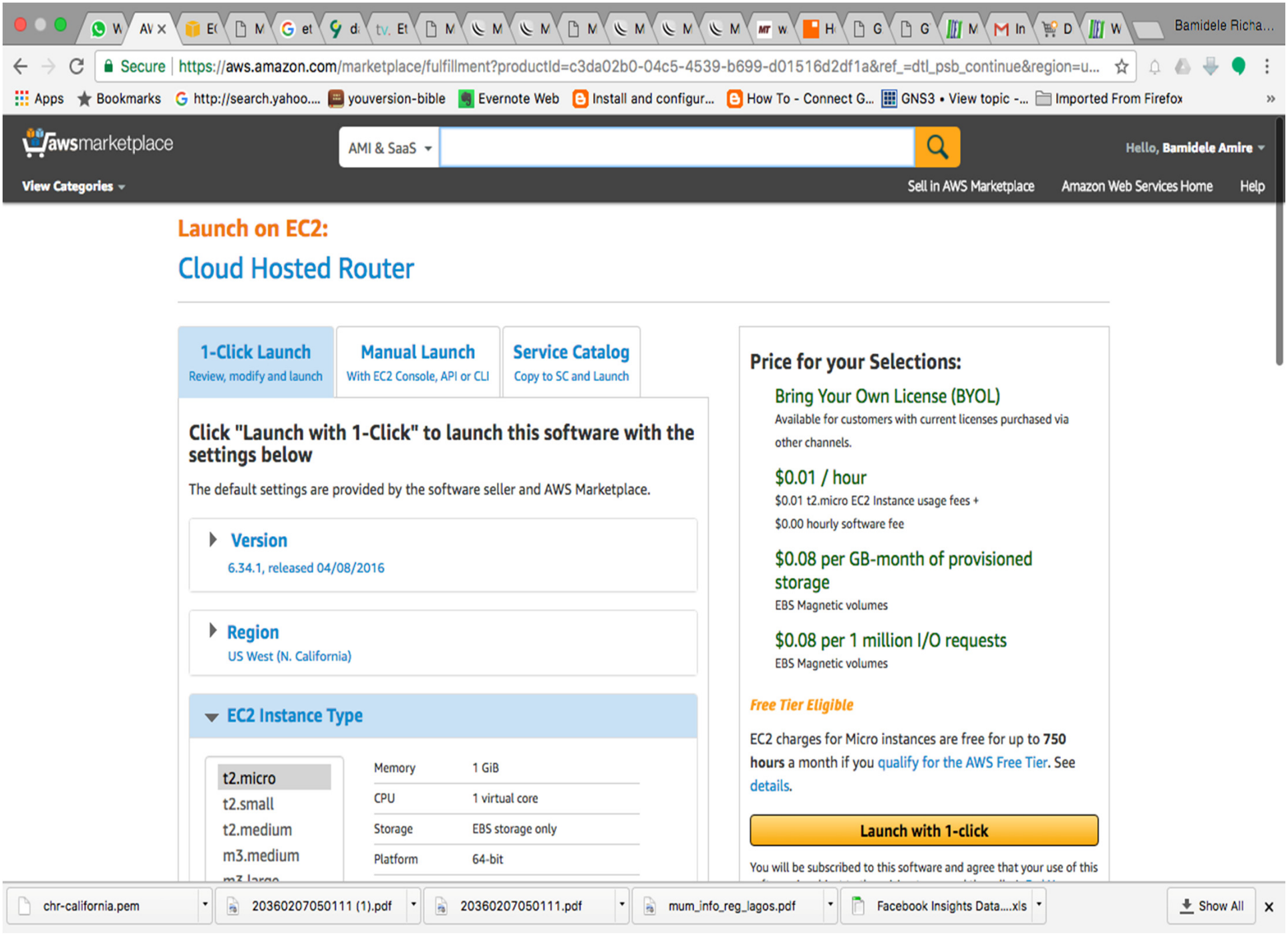
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Region
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EC2 Instance Type
t2.micro
t2.small
t2.medium
m3.medium
Memory 1 GiB
CPU 1 virtual core
Storage EBS storage only
Platform 64-bit
Price for your Selections:
Bring Your Own License (BYOL)
Available for customers with current licenses purchased via other channels.
$0.01 / hour
$0.01 t2.micro EC2 Instance usage fees +
$0.00 hourly software fee
$0.08 per GB-month of provisioned storage
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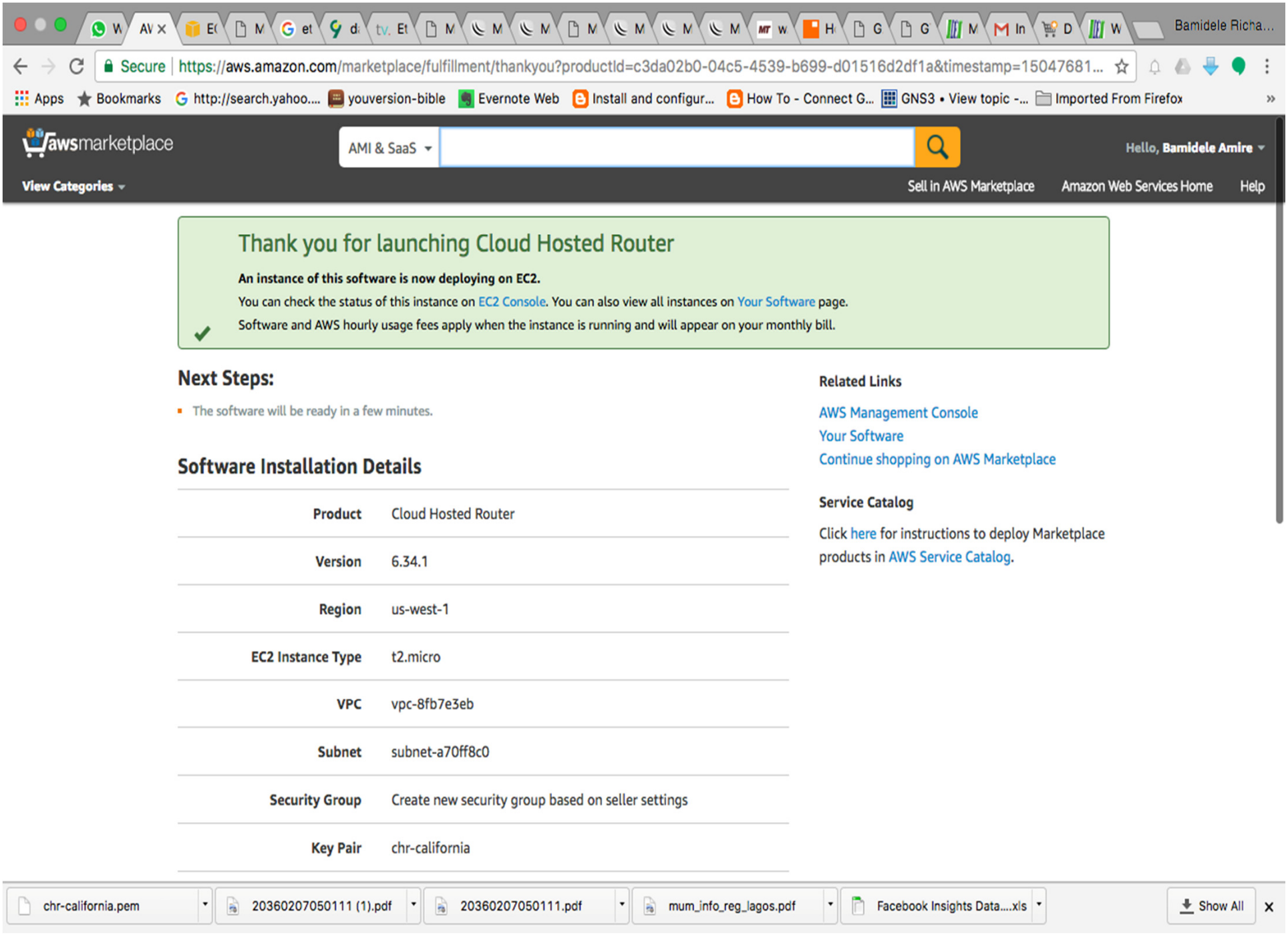
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Help
Thank you for launching Cloud Hosted Router
An instance of this software is now deploying on EC2.
You can check the status of this instance on EC2 Console. You can also view all instances on Your Software page.
Software and AWS hourly usage fees apply when the instance is running and will appear on your monthly bill.
Next Steps:
The software will be ready in a few minutes.
Software Installation Details
Product Cloud Hosted Router
Version 6.34.1
Region us-west-1
EC2 Instance Type t2.micro
VPC vpc-8fb7e3eb
Subnet subnet-a70ff8c0
Security Group Create new security group based on seller settings
Key Pair chr-california
Related Links
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Your Software
Continue shopping on AWS Marketplace
Service Catalog
Click here for instructions to deploy Marketplace products in AWS Service Catalog.
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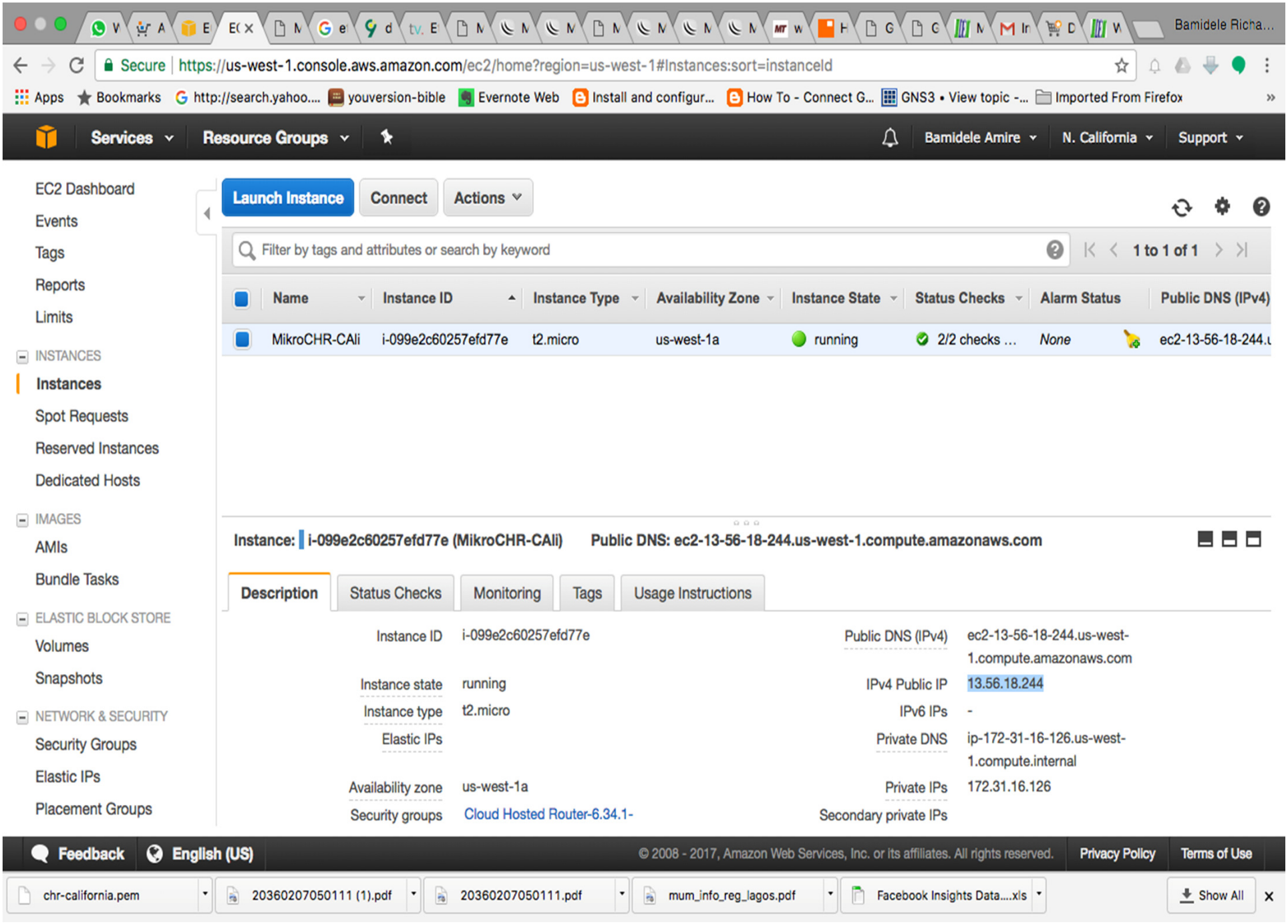
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Actions
Filter by tags and attributes or search by keyword
1 to 1 of 1
Name
Instance ID
Instance Type
Availability Zone
Instance State
Status Checks
Alarm Status
Public DNS (IPv4)
MikroCHR-CAli
i-099e2c60257efd77e
t2.micro
us-west-1a
running
2/2 checks ...
None
ec2-13-56-18-244.u
Instance: i-099e2c60257efd77e (MikroCHR-CAli)
Public DNS: ec2-13-56-18-244.us-west-1.compute.amazonaws.com
Description
Status Checks
Monitoring
Tags
Usage Instructions
Instance ID
i-099e2c60257efd77e
Instance state
running
Instance type
t2.micro
Elastic IPs
Availability zone
us-west-1a
Security groups
Cloud Hosted Router-6.34.1-
Public DNS (IPv4)
ec2-13-56-18-244.us-west-1.compute.amazonaws.com
IPv4 Public IP
13.56.18.244
IPv6 IPs
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Private DNS
ip-172-31-16-126.us-west-1.compute.internal
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172.31.16.126
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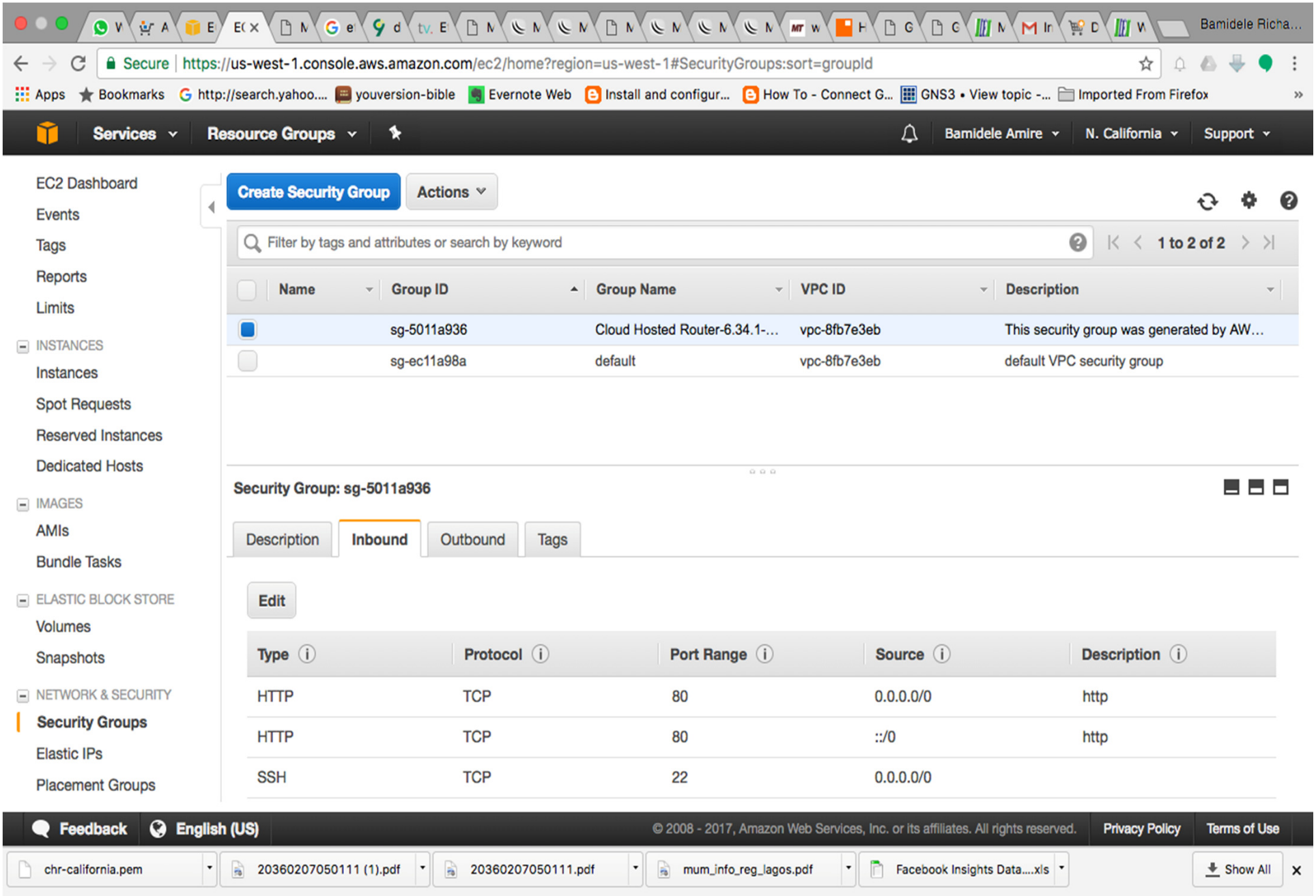
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Actions
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1 to 2 of 2
Name
Group ID
Group Name
VPC ID
Description
sg-5011a936
Cloud Hosted Router-6.34.1-...
vpc-8fb7e3eb
This security group was generated by AW...
sg-ec11a98a
default
vpc-8fb7e3eb
default VPC security group
Security Group: sg-5011a936
Description
Inbound
Outbound
Tags
Edit
Type
Protocol
Port Range
Source
Description
HTTP
TCP
80
0.0.0.0/0
http
HTTP
TCP
80
::/0
http
SSH
TCP
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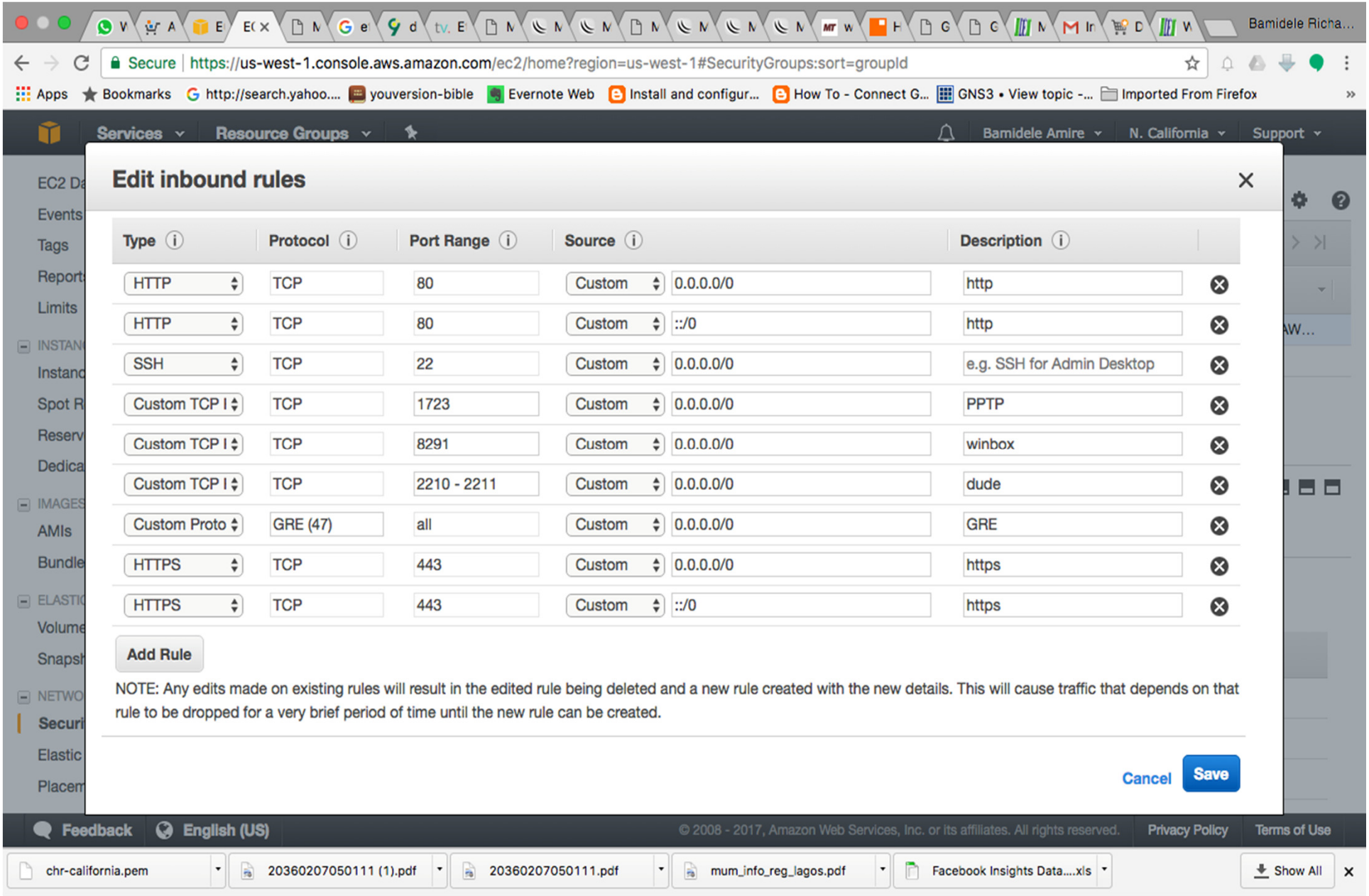
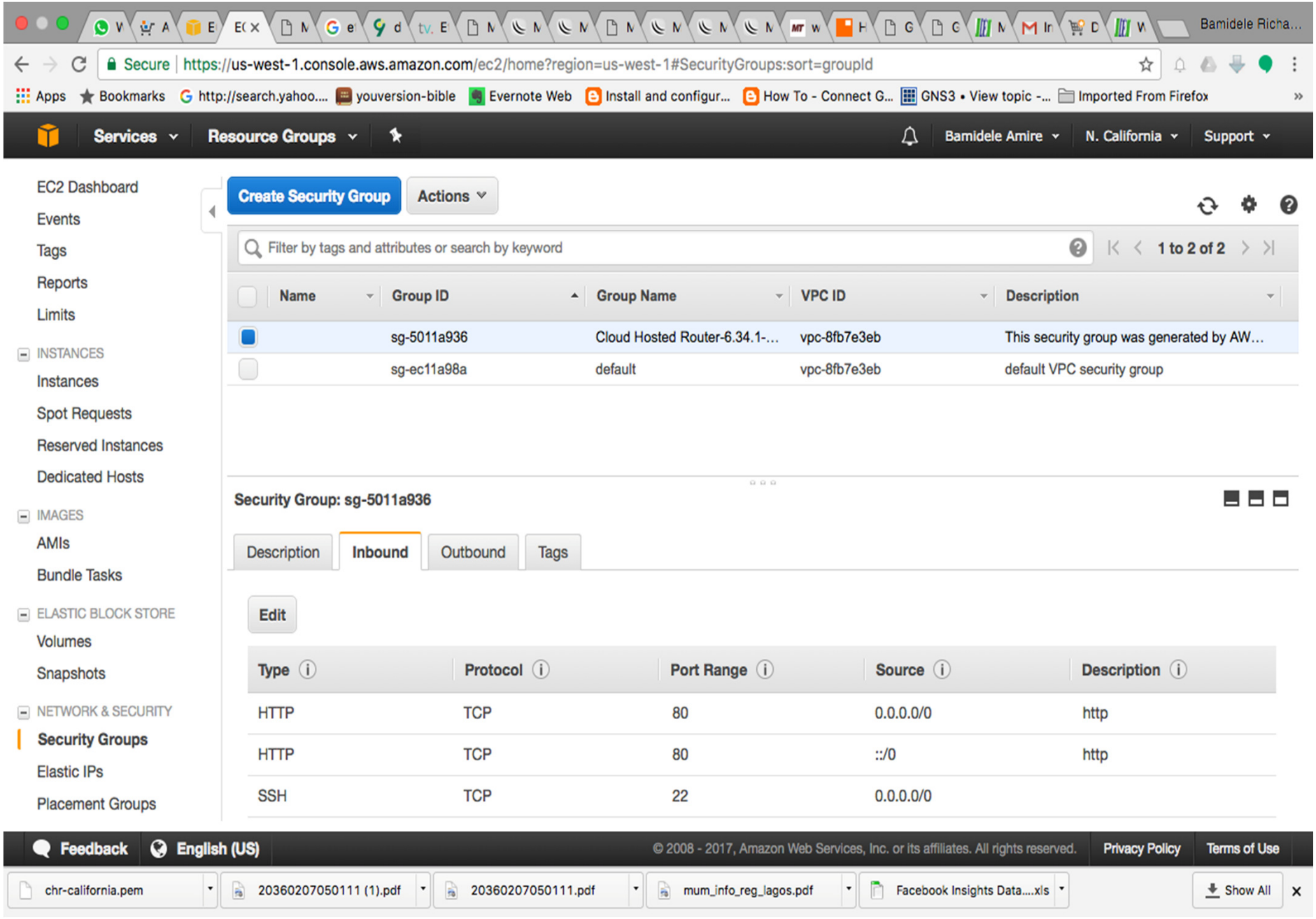

Edit inbound rules
Type
Protocol
Port Range
Source
Description
HTTP TCP 80 Custom 0.0.0.0/0 http
HTTP TCP 80 Custom ::/0 http
SSH TCP 22 Custom 0.0.0.0/0 e.g. SSH for Admin Desktop
Custom TCP I TCP 1723 Custom 0.0.0.0/0 PPTP
Custom TCP I TCP 8291 Custom 0.0.0.0/0 winbox
Custom TCP I TCP 2210 - 2211 Custom 0.0.0.0/0 dude
Custom Proto GRE (47) all Custom 0.0.0.0/0 GRE
HTTPS TCP 443 Custom 0.0.0.0/0 https
HTTPS TCP 443 Custom ::/0 https
Add Rule
NOTE: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.
Cancel
Save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Security Groups
Elastic IPs
Placement Groups
Create Security Group
Actions
Filter by tags and attributes or search by keyword
1 to 2 of 2
Name
Group ID
Group Name
VPC ID
Description
sg-5011a936
Cloud Hosted Router-6.34.1-...
vpc-8fb7e3eb
This security group was generated by AW...
sg-ec11a98a
default
vpc-8fb7e3eb
default VPC security group
Security Group: sg-5011a936
Description
Inbound
Outbound
Tags
Edit
Type
Protocol
Port Range
Source
Description
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Facebook Insights Data....xls
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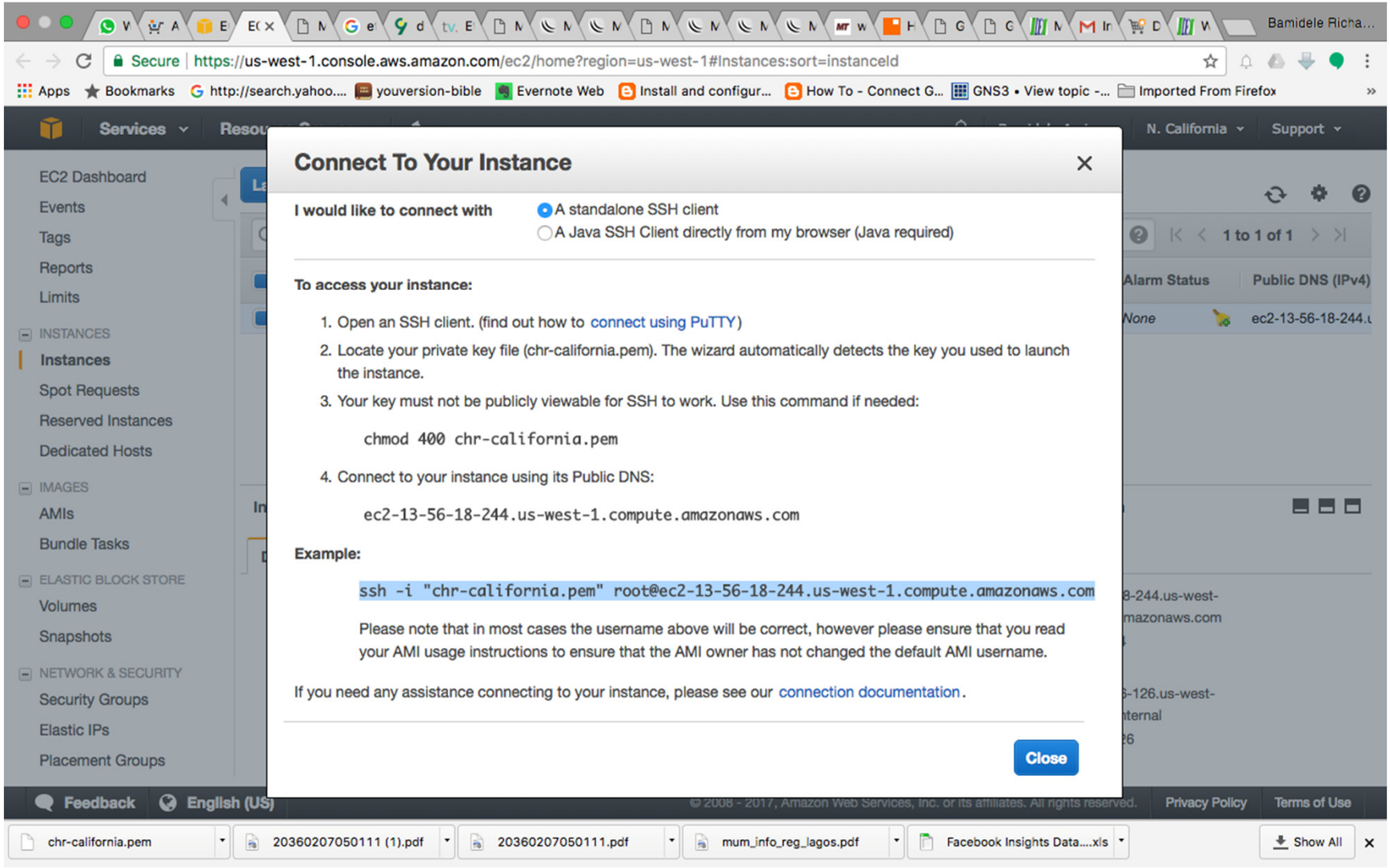
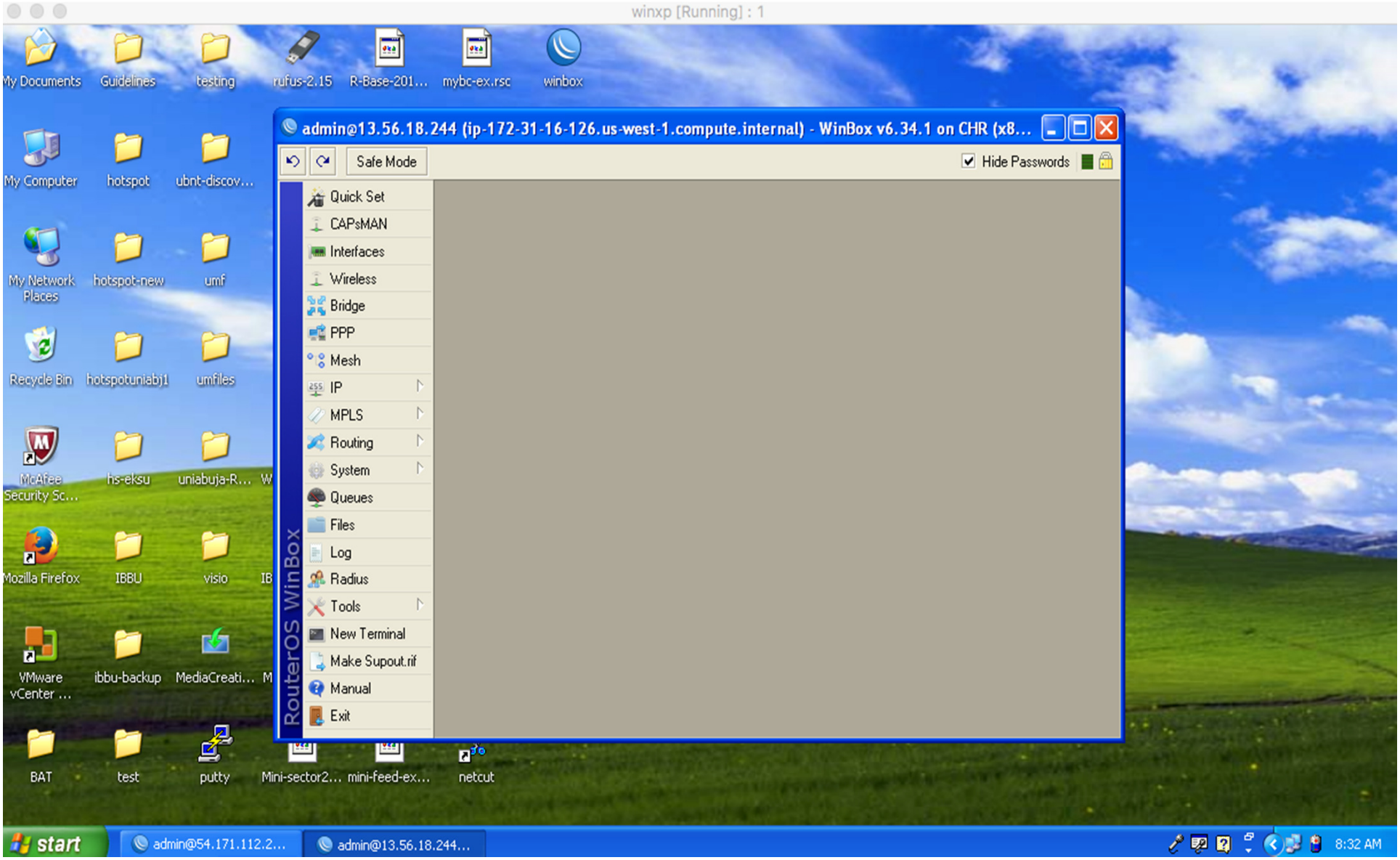

Connect To Your Instance
I would like to connect with
A standalone SSH client
A Java SSH Client directly from my browser (Java required)
To access your instance:
1. Open an SSH client. (find out how to connect using PuTTY)
2. Locate your private key file (chr-california.pem). The wizard automatically detects the key you used to launch the instance.
3. Your key must not be publicly viewable for SSH to work. Use this command if needed:
chmod 400 chr-california.pem
4. Connect to your instance using its Public DNS:
ec2-13-56-18-244.us-west-1.compute.amazonaws.com
Example:
ssh -i "chr-california.pem" root@ec2-13-56-18-244.us-west-1.compute.amazonaws.com
Please note that in most cases the username above will be correct, however please ensure that you read your AMI usage instructions to ensure that the AMI owner has not changed the default AMI username.
If you need any assistance connecting to your instance, please see our connection documentation.
Close

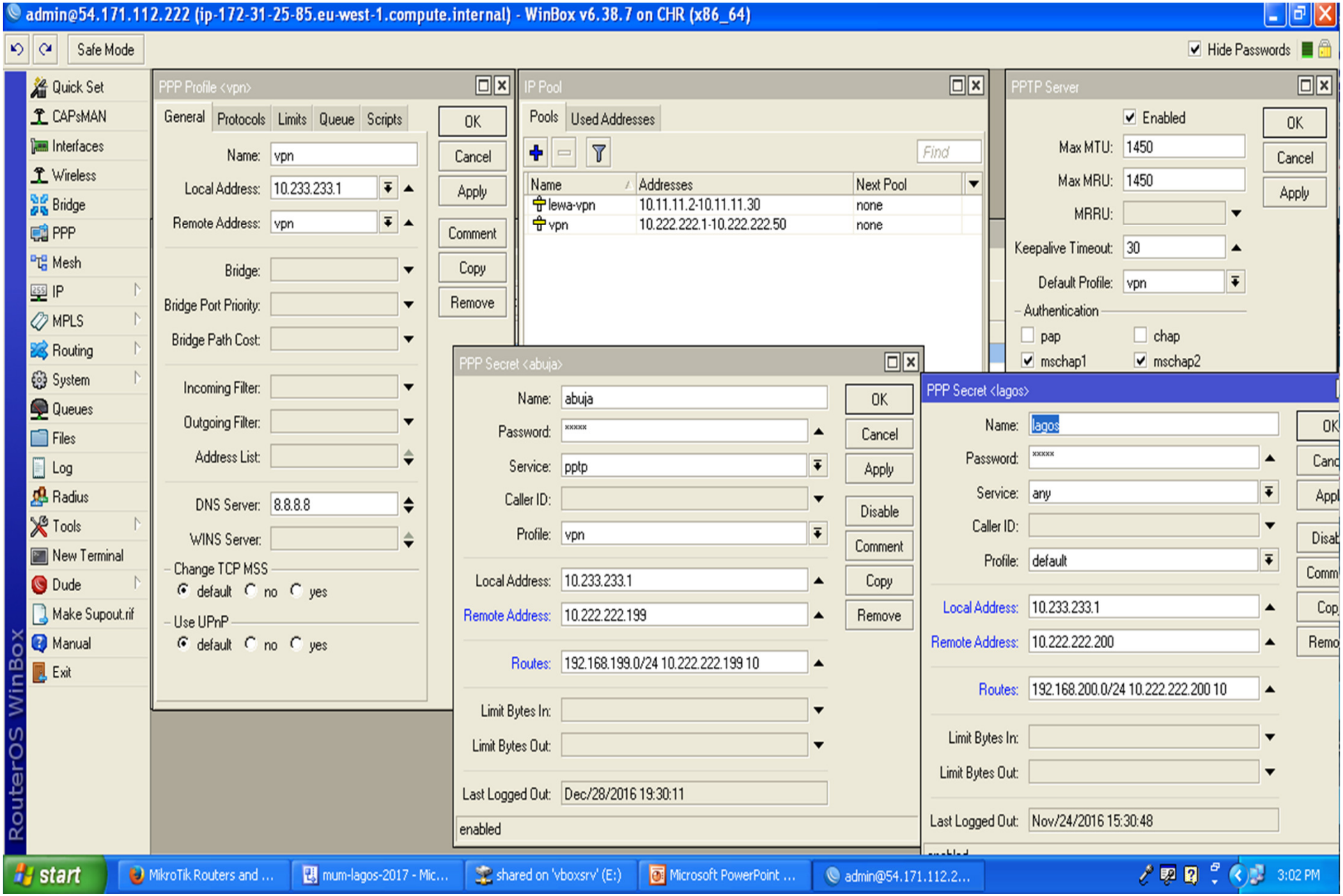

winxp [Running] : 1
My Documents
Guidelines
testing
rufus-2.15
R-Base-201...
mybc-ex.rsc
winbox
My Computer
hotspot
ubnt-discov...
My Network Places
hotspot-new
umf
Recycle Bin
hotspotuniabj1
umfiles
McAfee Security Sc...
hs-eksu
uniabuja-R...
Mozilla Firefox
IBBU
visio
VMware vCenter ...
ibbu-backup
MediaCreati...
BAT
test
putty
Mini-sector2...
mini-feed-ex...
netcut
admin@13.56.18.244 (ip-172-31-16-126.us-west-1.compute.internal) - WinBox v6.34.1 on CHR (x8...
Safe Mode
Hide Passwords
RouterOS WinBox
Quick Set
CAPsMAN
Interfaces
Wireless
Bridge
PPP
Mesh
IP
MPLS
Routing
System
Queues
Files
Log
Radius
Tools
New Terminal
Make Supout.rif
Manual
Exit
start
admin@54.171.112.2...
admin@13.56.18.244...
8:32 AM

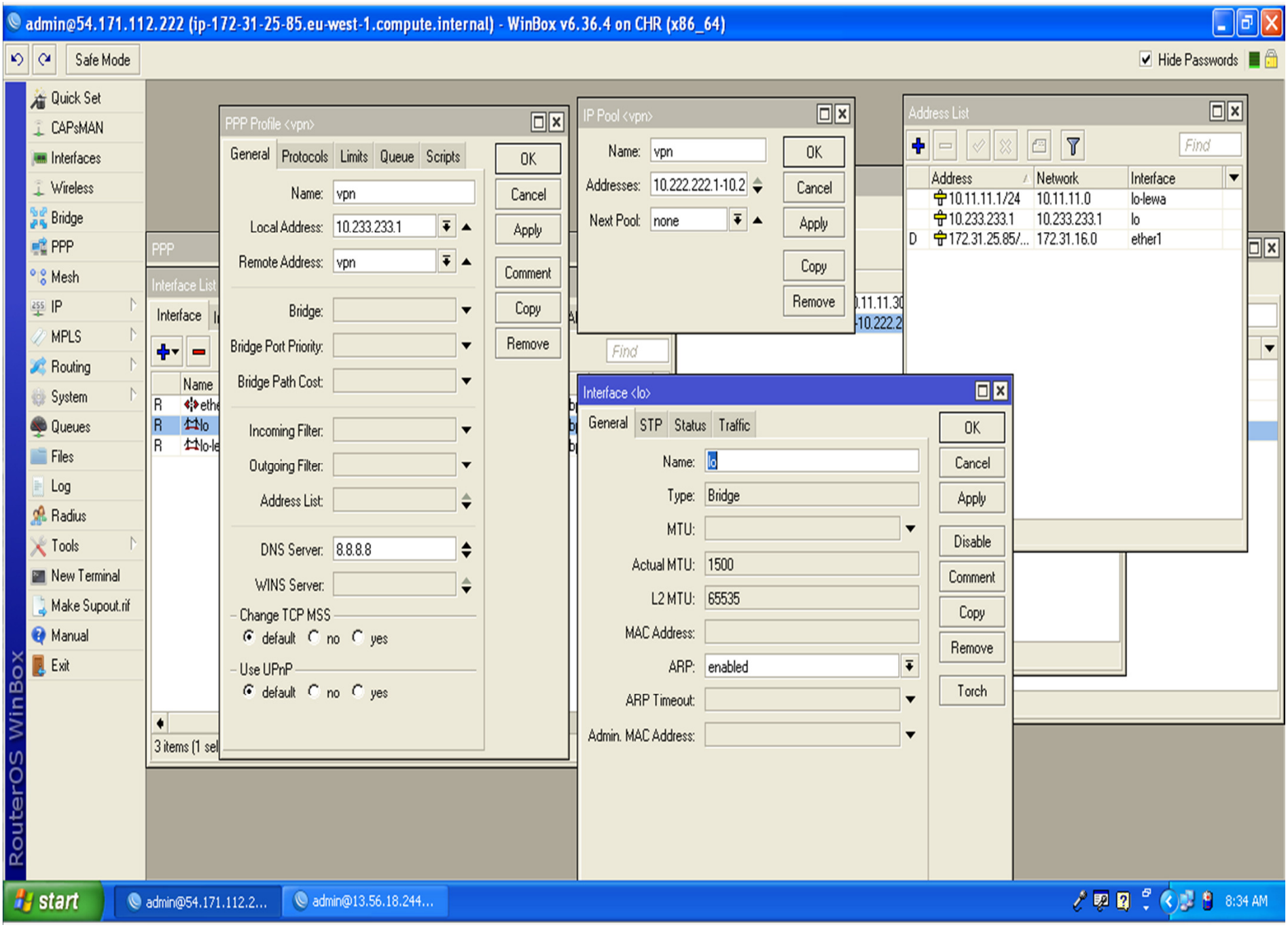
Setup PPTP Server on The CHR

Basic Steps

- Create or modify a ppp profile
- Create users /ppp secret:
  - Attach specific remote address to each user and indicate the route for their LAN
- Enable the server
  - Set the appropriate profile
- ***Optional:*** *create an empty bridge and attach local address to it*

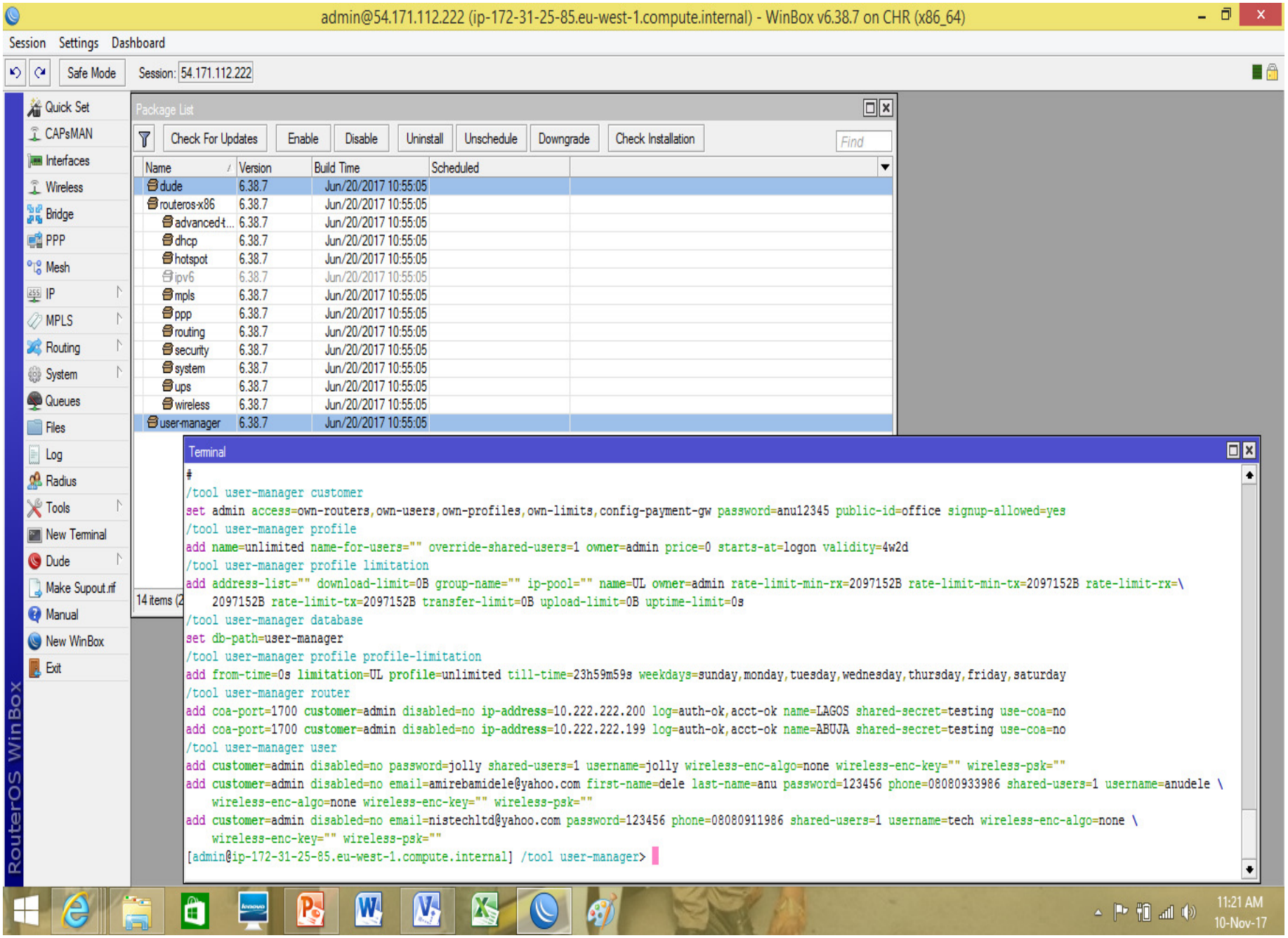
PPTP SERVER SETUP




admin@54.171.112.222 (ip-172-31-25-85.eu-west-1.compute.internal) - WinBox v6.36.4 on CHR (x86_64)
Safe Mode
Hide Passwords
Quick Set
CAPsMAN
Interfaces
Wireless
Bridge
PPP
Mesh
IP
MPLS
Routing
System
Queues
Files
Log
Radius
Tools
New Terminal
Make Supout.rif
Manual
Exit
RouterOS WinBox
PPP Profile <vpn>
General
Protocols
Limits
Queue
Scripts
Name: vpn
Local Address: 10.233.233.1
Remote Address: vpn
Bridge:
Bridge Port Priority:
Bridge Path Cost:
Incoming Filter:
Outgoing Filter:
Address List:
DNS Server: 8.8.8.8
WINS Server:
Change TCP MSS
default
no
yes
Use UPnP
default
no
yes
OK
Cancel
Apply
Comment
Copy
Remove
IP Pool <vpn>
Name: vpn
Addresses: 10.222.222.1-10.2
Next Pool: none
OK
Cancel
Apply
Copy
Remove
Address List
Find
Address
Network
Interface
10.11.11.1/24
10.11.11.0
lo-lewa
10.233.233.1
10.233.233.1
lo
D
172.31.25.85/...
172.31.16.0
ether1
PPP
Interface List
Interface
Name
3 items (1 sel
Interface <lo>
General
STP
Status
Traffic
Name: lo
Type: Bridge
MTU:
Actual MTU: 1500
L2 MTU: 65535
MAC Address:
ARP: enabled
ARP Timeout:
Admin. MAC Address:
OK
Cancel
Apply
Disable
Comment
Copy
Remove
Torch
start
admin@54.171.112.2...
admin@13.56.18.244...
8:34 AM

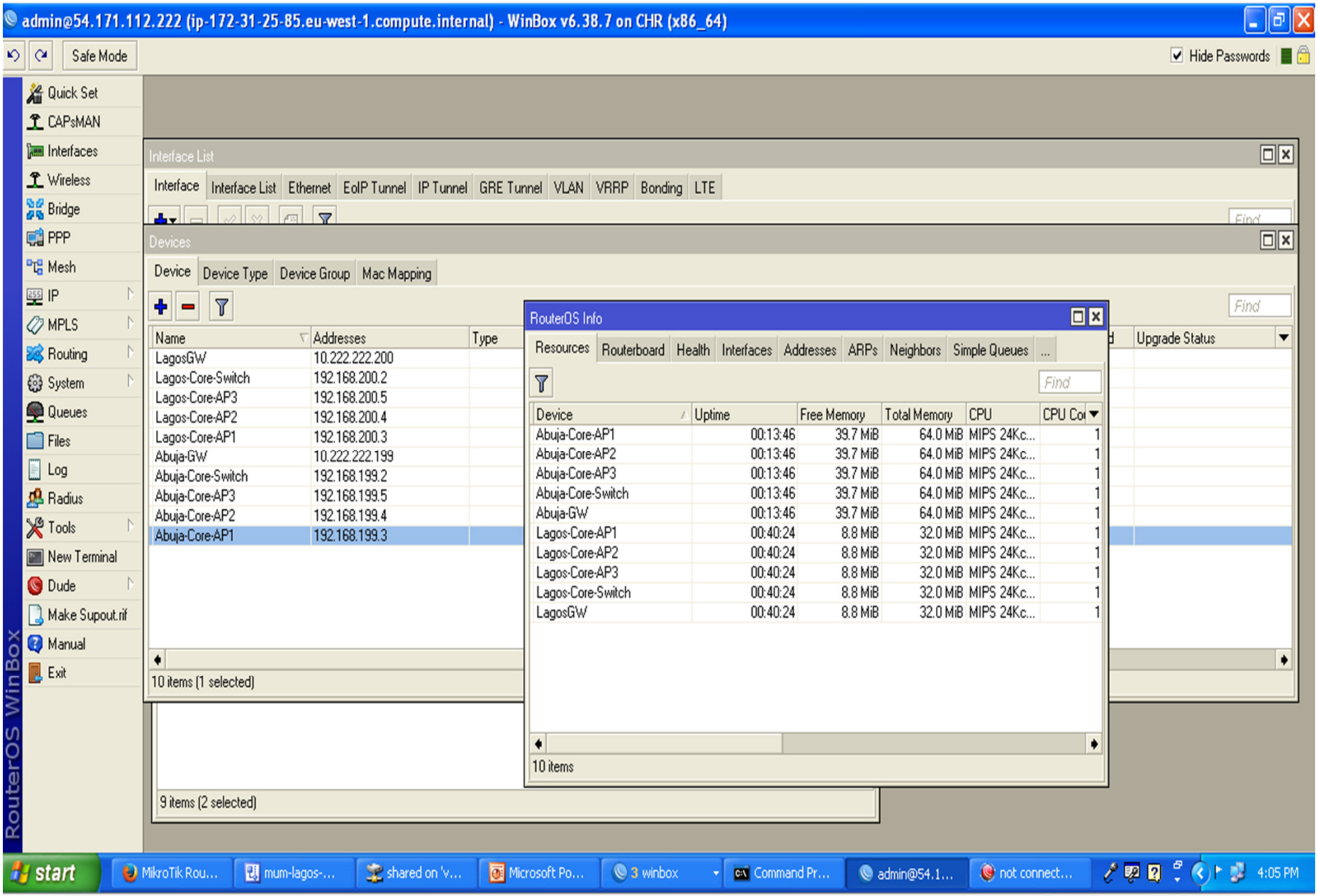
Install and setup User-manager

- Install user-manager package if it is not already install. You might need to upgrade the RouterOS on the CHR.
- Configure the user-manager as appropriate for your users/clients and billing scheme
- Add the remote site routers to user-manager with the IP address specified in their PPP secret


admin@54.171.112.222 (ip-172-31-25-85.eu-west-1.compute.internal) - WinBox v6.38.7 on CHR (x86_64)
Session Settings Dashboard
Safe Mode
Session: 54.171.112.222
Quick Set
CAPsMAN
Interfaces
Wireless
Bridge
PPP
Mesh
IP
MPLS
Routing
System
Queues
Files
Log
Radius
Tools
New Terminal
Dude
Make Supout.rif
Manual
New WinBox
Exit
RouterOS WinBox
Package List
Check For Updates
Enable
Disable
Uninstall
Unschedule
Downgrade
Check Installation
Find
Name
Version
Build Time
Scheduled
dude 6.38.7 Jun/20/2017 10:55:05
routeros-x86 6.38.7 Jun/20/2017 10:55:05
advanced-t... 6.38.7 Jun/20/2017 10:55:05
dhcp 6.38.7 Jun/20/2017 10:55:05
hotspot 6.38.7 Jun/20/2017 10:55:05
ipv6 6.38.7 Jun/20/2017 10:55:05
mpls 6.38.7 Jun/20/2017 10:55:05
ppp 6.38.7 Jun/20/2017 10:55:05
routing 6.38.7 Jun/20/2017 10:55:05
security 6.38.7 Jun/20/2017 10:55:05
system 6.38.7 Jun/20/2017 10:55:05
ups 6.38.7 Jun/20/2017 10:55:05
wireless 6.38.7 Jun/20/2017 10:55:05
user-manager 6.38.7 Jun/20/2017 10:55:05
14 items (2
Terminal
#
/tool user-manager customer
set admin access=own-routers,own-users,own-profiles,own-limits,config-payment-gw password=anu12345 public-id=office signup-allowed=yes
/tool user-manager profile
add name=unlimited name-for-users="" override-shared-users=1 owner=admin price=0 starts-at=logon validity=4w2d
/tool user-manager profile limitation
add address-list="" download-limit=0B group-name="" ip-pool="" name=UL owner=admin rate-limit-min-rx=2097152B rate-limit-min-tx=2097152B rate-limit-rx=\
2097152B rate-limit-tx=2097152B transfer-limit=0B upload-limit=0B uptime-limit=0s
/tool user-manager database
set db-path=user-manager
/tool user-manager profile profile-limitation
add from-time=0s limitation=UL profile=unlimited till-time=23h59m59s weekdays=sunday,monday,tuesday,wednesday,thursday,friday,saturday
/tool user-manager router
add coa-port=1700 customer=admin disabled=no ip-address=10.222.222.200 log=auth-ok,acct-ok name=LAGOS shared-secret=testing use-coa=no
add coa-port=1700 customer=admin disabled=no ip-address=10.222.222.199 log=auth-ok,acct-ok name=ABUJA shared-secret=testing use-coa=no
/tool user-manager user
add customer=admin disabled=no password=jolly shared-users=1 username=jolly wireless-enc-algo=none wireless-enc-key="" wireless-psk=""
add customer=admin disabled=no email=amirebamidele@yahoo.com first-name=dele last-name=anu password=123456 phone=08080933986 shared-users=1 username=anudele \
wireless-enc-algo=none wireless-enc-key="" wireless-psk=""
add customer=admin disabled=no email=nistechltd@yahoo.com password=123456 phone=08080911986 shared-users=1 username=tech wireless-enc-algo=none \
wireless-enc-key="" wireless-psk=""
[admin@ip-172-31-25-85.eu-west-1.compute.internal] /tool user-manager>
11:21 AM
10-Nov-17

Install and setup dude server

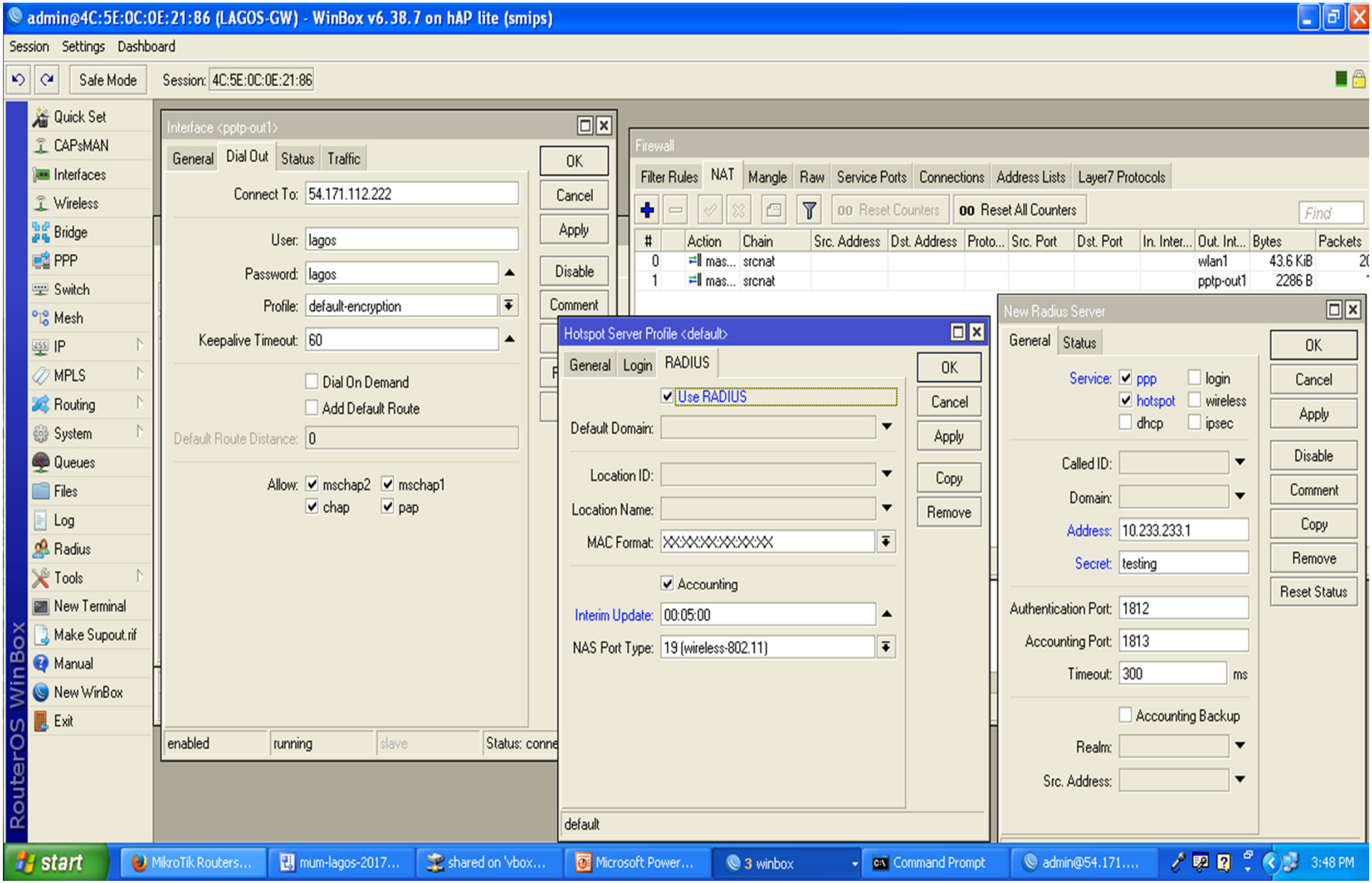
- Install dude server
- Configure Dude to accept remote connection
- Connect to Dude from any client using the public Assigned IP address of the AWS .
- Add devices to dude using the PPTP assigned addresses and the remote LAN addresses


admin@54.171.112.222 (ip-172-31-25-85.eu-west-1.compute.internal) - WinBox v6.38.7 on CHR (x86_64)
Safe Mode
Hide Passwords
Quick Set
CAPsMAN
Interfaces
Wireless
Bridge
PPP
Mesh
IP
MPLS
Routing
System
Queues
Files
Log
Radius
Tools
New Terminal
Dude
Make Supout.rif
Manual
Exit
RouterOS WinBox
Interface List
Interface
Interface List
Ethernet
EoIP Tunnel
IP Tunnel
GRE Tunnel
VLAN
VRRP
Bonding
LTE
Devices
Device
Device Type
Device Group
Mac Mapping
Name
Addresses
Type
LagosGW 10.222.222.200
Lagos-Core-Switch 192.168.200.2
Lagos-Core-AP3 192.168.200.5
Lagos-Core-AP2 192.168.200.4
Lagos-Core-AP1 192.168.200.3
Abuja-GW 10.222.222.199
Abuja-Core-Switch 192.168.199.2
Abuja-Core-AP3 192.168.199.5
Abuja-Core-AP2 192.168.199.4
Abuja-Core-AP1 192.168.199.3
10 items (1 selected)
9 items (2 selected)
RouterOS Info
Resources
Routerboard
Health
Interfaces
Addresses
ARPs
Neighbors
Simple Queues
Device
Uptime
Free Memory
Total Memory
CPU
Abuja-Core-AP1 00:13:46 39.7 MiB 64.0 MiB MIPS 24Kc... 1
Abuja-Core-AP2 00:13:46 39.7 MiB 64.0 MiB MIPS 24Kc... 1
Abuja-Core-AP3 00:13:46 39.7 MiB 64.0 MiB MIPS 24Kc... 1
Abuja-Core-Switch 00:13:46 39.7 MiB 64.0 MiB MIPS 24Kc... 1
Abuja-GW 00:13:46 39.7 MiB 64.0 MiB MIPS 24Kc... 1
Lagos-Core-AP1 00:40:24 8.8 MiB 32.0 MiB MIPS 24Kc... 1
Lagos-Core-AP2 00:40:24 8.8 MiB 32.0 MiB MIPS 24Kc... 1
Lagos-Core-AP3 00:40:24 8.8 MiB 32.0 MiB MIPS 24Kc... 1
Lagos-Core-Switch 00:40:24 8.8 MiB 32.0 MiB MIPS 24Kc... 1
LagosGW 00:40:24 8.8 MiB 32.0 MiB MIPS 24Kc... 1
10 items
Upgrade Status
start
MikroTik Rou...
mum-lagos-...
shared on 'v...
Microsoft Po...
3 winbox
Command Pr...
admin@54.1...
not connect...
4:05 PM

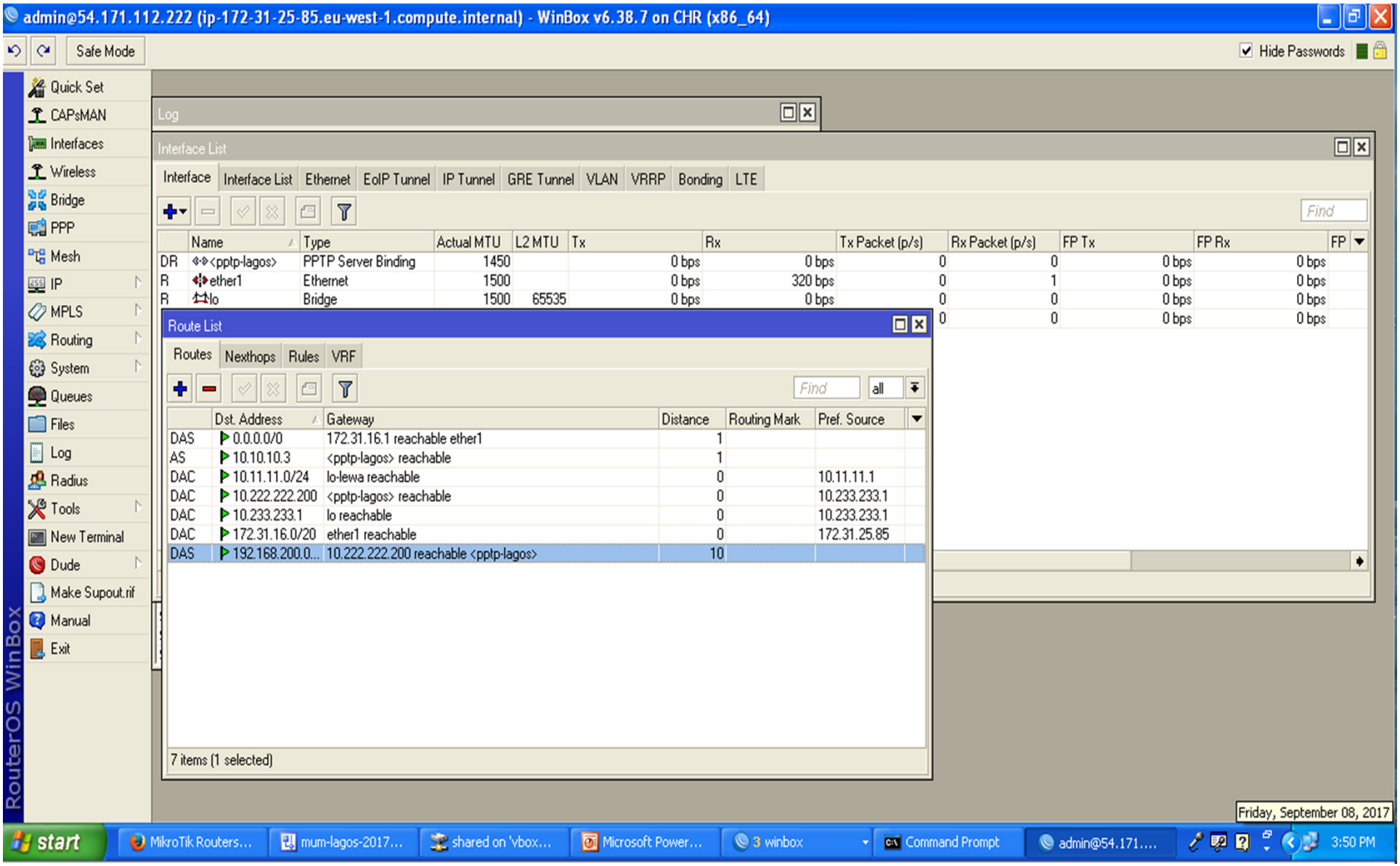
Setup remote site Router

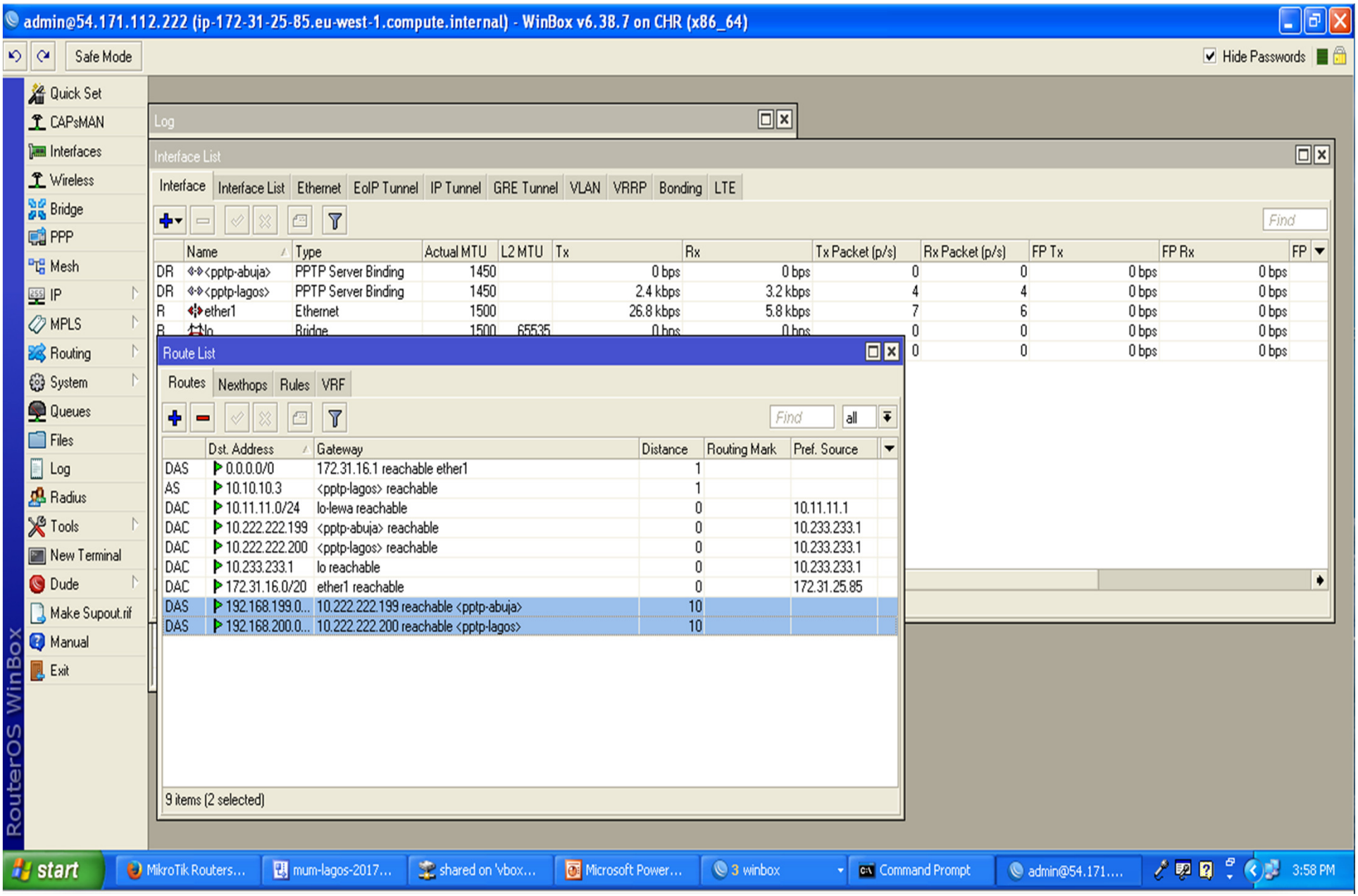
- Setup Connection to internet on remote site router
- Setup hotspot or PPPoE as required
- Configure PPTP-client
- Setup radius client to connect to server over PPTP link IP address
- Configure Hotspot/PPPoE to use-radius. Set interim update.

Remote site router

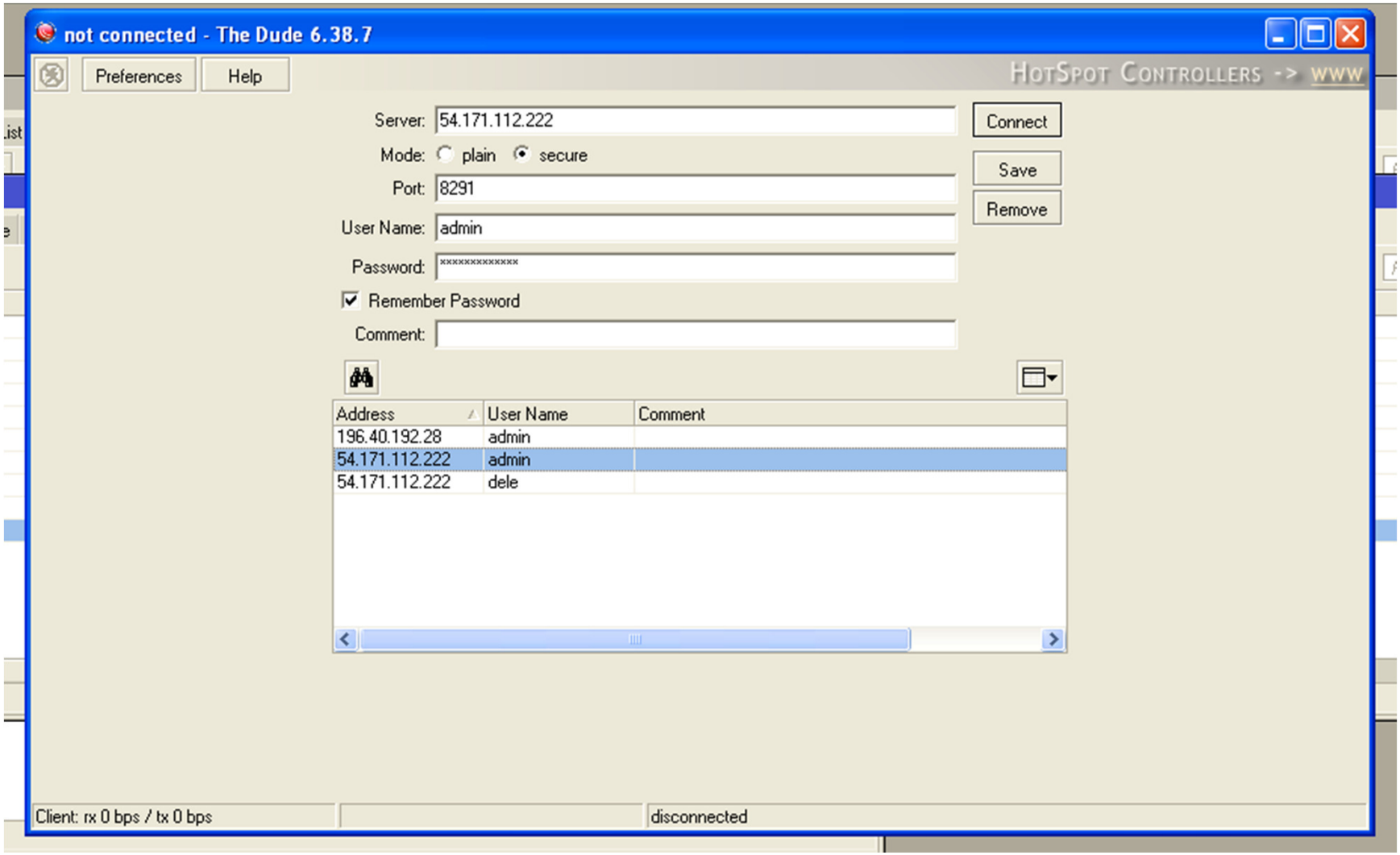


Pptp-clients connect

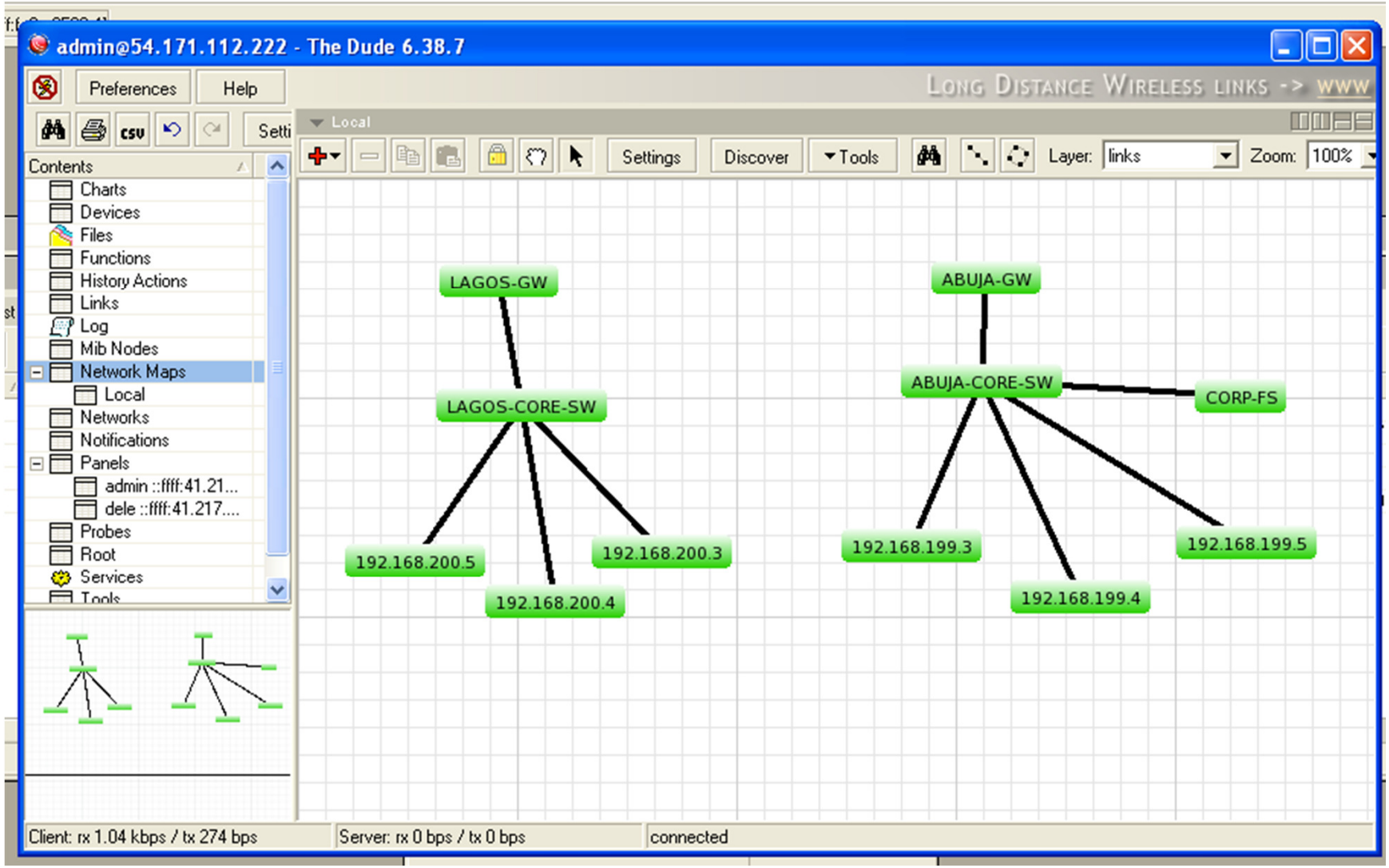



admin@54.171.112.222 (ip-172-31-25-85.eu-west-1.compute.internal) - WinBox v6.38.7 on CHR (x86_64)
Safe Mode
Hide Passwords
Quick Set
CAPsMAN
Interfaces
Wireless
Bridge
PPP
Mesh
IP
MPLS
Routing
System
Queues
Files
Log
Radius
Tools
New Terminal
Dude
Make Supout.rif
Manual
Exit
RouterOS WinBox
Log
Interface List
Interface
Interface List
Ethernet
EoIP Tunnel
IP Tunnel
GRE Tunnel
VLAN
VRRP
Bonding
LTE
Find
Name
Type
Actual MTU
L2 MTU
Tx
Rx
Tx Packet (p/s)
Rx Packet (p/s)
FP Tx
FP Rx
FP
DR <pptp-abuja> PPTP Server Binding 1450 0 bps 0 bps 0 0 0 bps 0 bps
DR <pptp-lagos> PPTP Server Binding 1450 2.4 kbps 3.2 kbps 4 4 0 bps 0 bps
R ether1 Ethernet 1500 26.8 kbps 5.8 kbps 7 6 0 bps 0 bps
R Bridge 1500 65535 0 bps 0 bps 0 0 0 bps 0 bps
0 0 0 bps 0 bps
Route List
Routes
Nexthops
Rules
VRF
Find
all
Dst. Address
Gateway
Distance
Routing Mark
Pref. Source
DAS 0.0.0.0/0 172.31.16.1 reachable ether1 1
AS 10.10.10.3 <pptp-lagos> reachable 1
DAC 10.11.11.0/24 lo-lewa reachable 0 10.11.11.1
DAC 10.222.222.199 <pptp-abuja> reachable 0 10.233.233.1
DAC 10.222.222.200 <pptp-lagos> reachable 0 10.233.233.1
DAC 10.233.233.1 lo reachable 0 10.233.233.1
DAC 172.31.16.0/20 ether1 reachable 0 172.31.25.85
DAS 192.168.199.0... 10.222.222.199 reachable <pptp-abuja> 10
DAS 192.168.200.0... 10.222.222.200 reachable <pptp-lagos> 10
9 items (2 selected)
start
MikroTik Routers...
mum-lagos-2017...
shared on 'vbox...
Microsoft Power...
3 winbox
Command Prompt
admin@54.171....
3:58 PM

Install Dude client locally



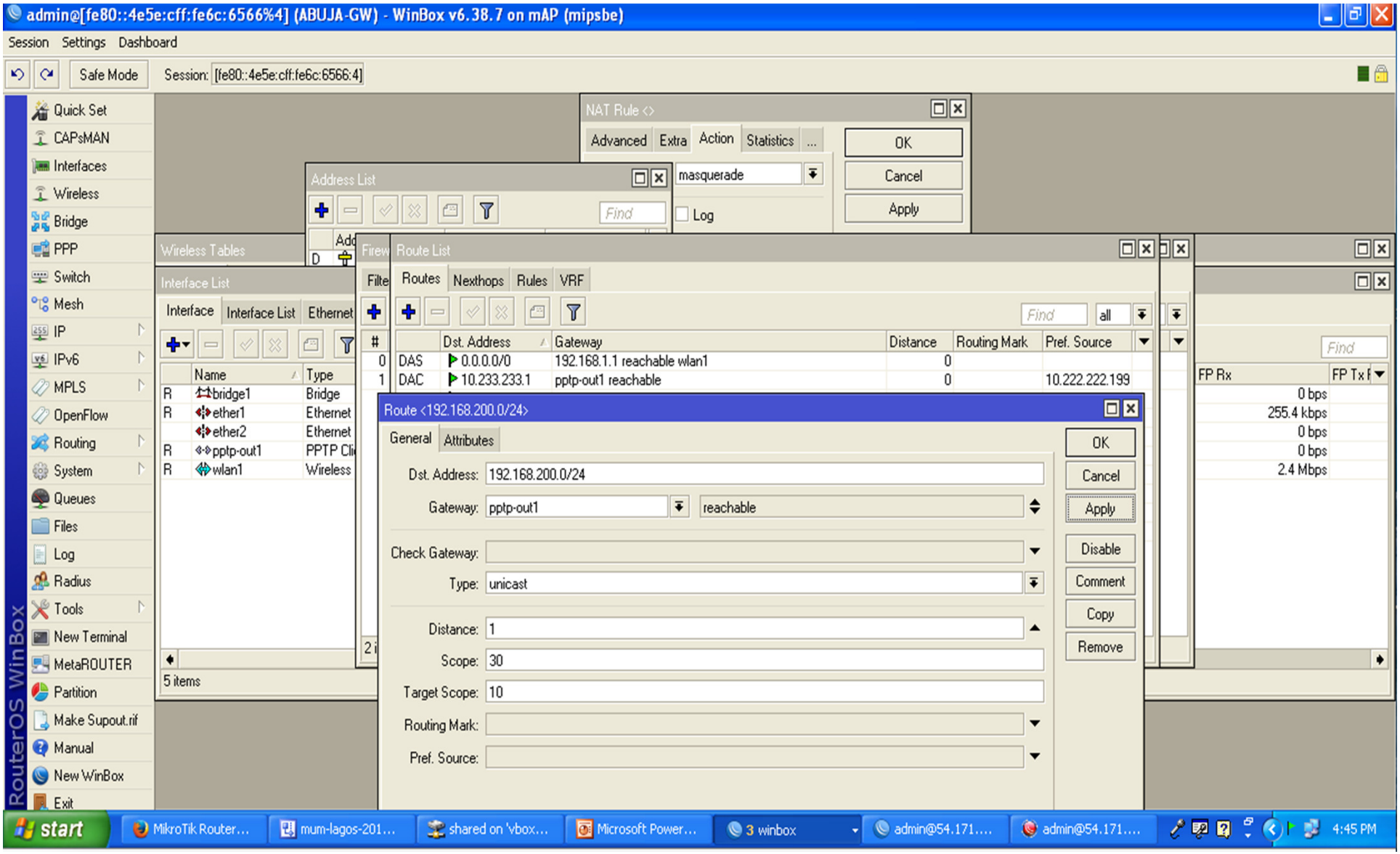
Dude client


admin@54.171.112.222 - The Dude 6.38.7
Preferences
Help
LONG DISTANCE WIRELESS LINKS -> WWW
Local
Settings
Discover
Tools
Layer:
links
Zoom:
100%
Contents
Charts
Devices
Files
Functions
History Actions
Links
Log
Mib Nodes
Network Maps
Local
Networks
Notifications
Panels
admin ::ffff:41.21...
dele ::ffff:41.217....
Probes
Root
Services
Tools
LAGOS-GW
LAGOS-CORE-SW
192.168.200.5
192.168.200.4
192.168.200.3
ABUJA-GW
ABUJA-CORE-SW
CORP-FS
192.168.199.3
192.168.199.4
192.168.199.5
Client: rx 1.04 kbps / tx 274 bps
Server: rx 0 bps / tx 0 bps
connected

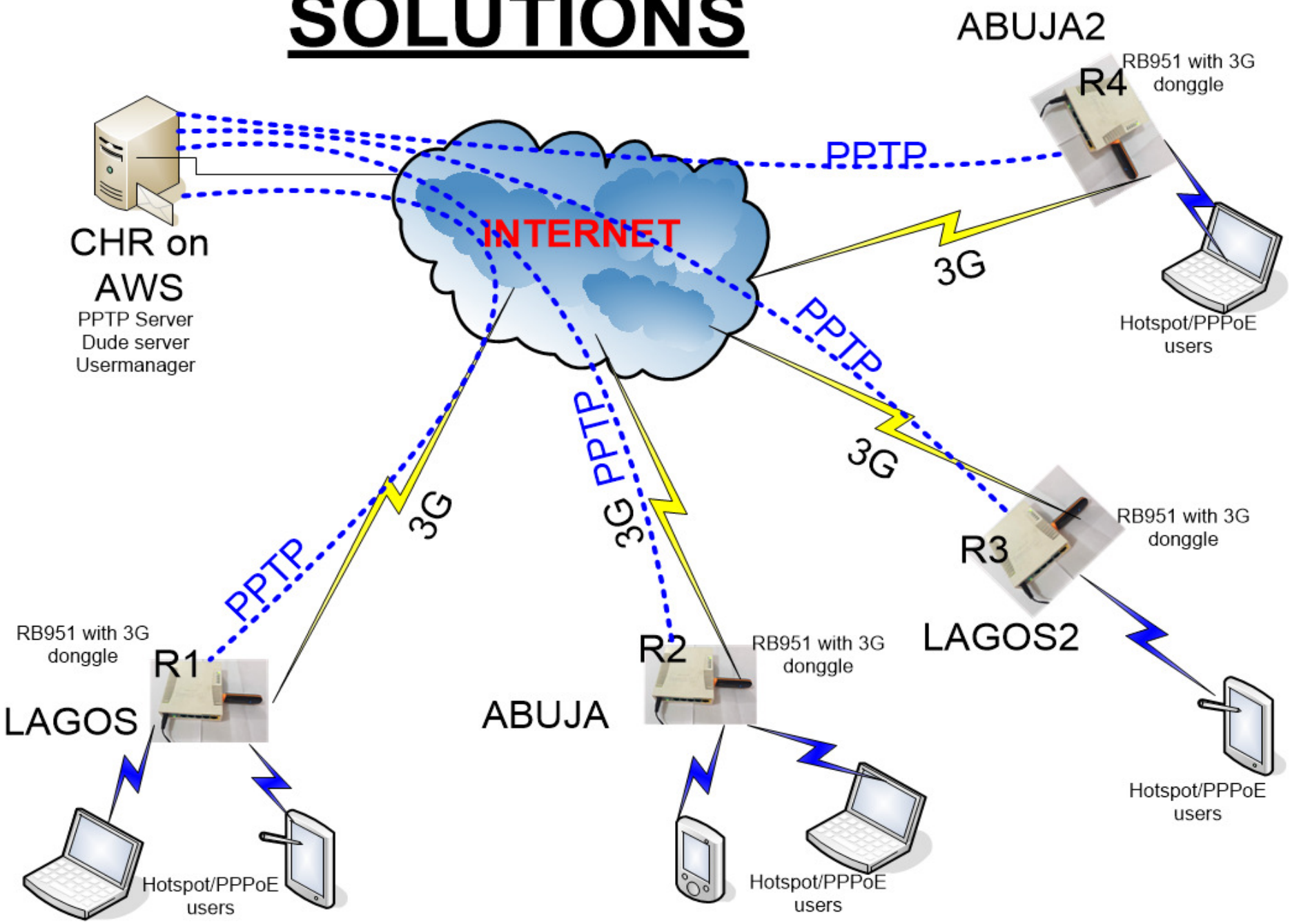
Access corporate file server from another remote site

- Add a route to the remote site router for the corporate LAN via the pptp tunnel
- Also add a route to the corporate office router for the remote Site LAN via the pptp tunnel
- *If there is nothing to access on the remote site LAN, you can simply masquerade everything going out through the pptp-client interface of the remote site router hence the route from corprate router will not be required.*

Accessing corp-FS



SOLUTIONS


ABUJA2
R4
RB951 with 3G donggle
PPTP
INTERNET
CHR on AWS
PPTP Server
Dude server
Usermanager
3G
Hotspot/PPPoE users
PPTP
3G
3G PPTP
RB951 with 3G donggle
R3
LAGOS2
RB951 with 3G donggle
R1
LAGOS
PPTP
3G
R2
RB951 with 3G donggle
ABUJA
Hotspot/PPPoE users
Hotspot/PPPoE users

Thank you

- Questions ??
- Comments ??

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