Summary steps to generating/obtaining an SSL certificate

(i) Create your domain zone on the CA certificate manager
-Add domain on the CA certificate manager
-Delegate domain to a registrar (KENET)

(ii) Domain Control Validation (DCV)
-CNAME record based DCV
-eMail-based DCV
-HTTP(S)-based DCV

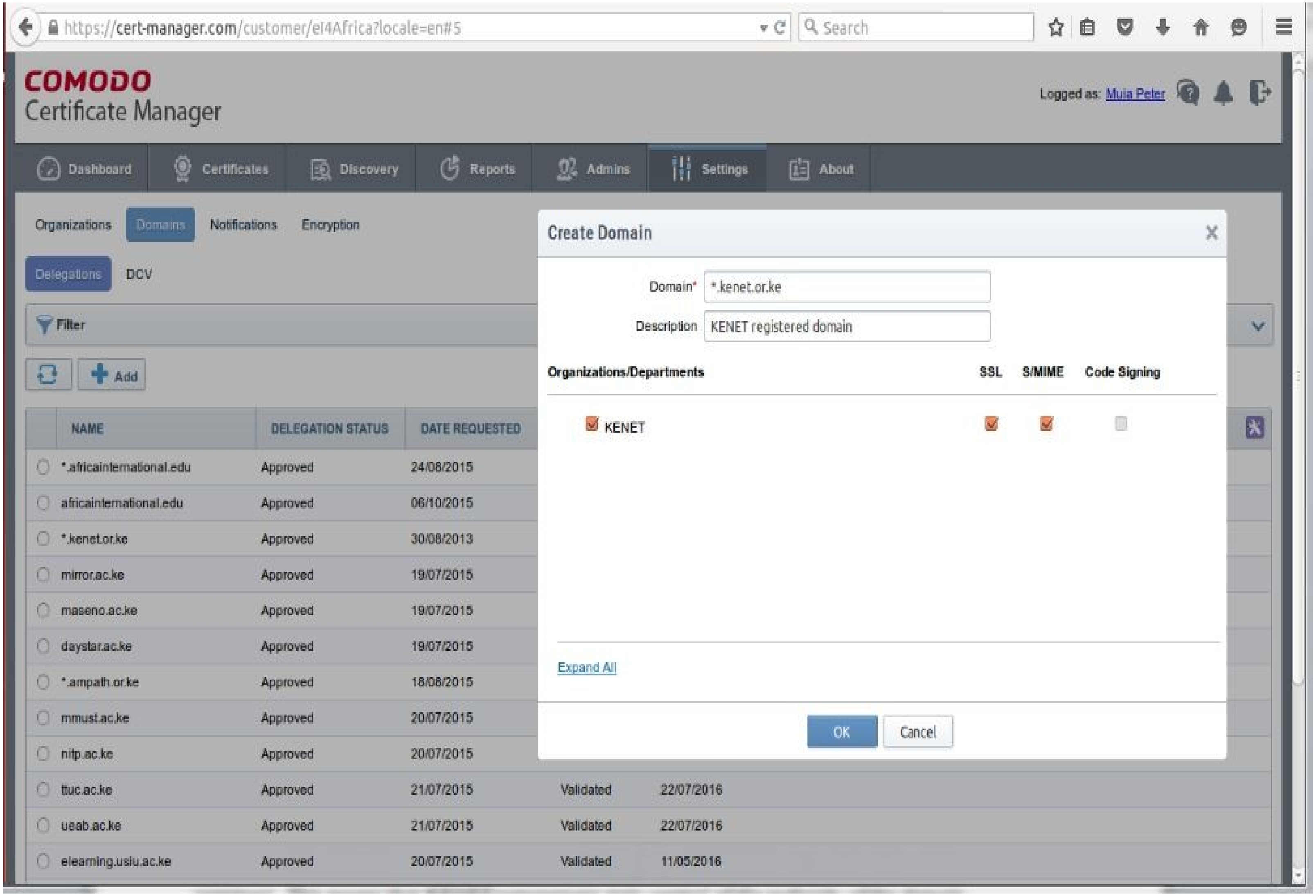
(iii) Submit your CSR (Certificate Signing Request)

(iv) Generate your SSL certificate

1. Create your domain zone on the CA (Certification Authority) certificate manager

-Add the domain on the Certification Authority portal.

NB: Inorder to generate a wildcard certificate, the domain is created with the following convention. e.g. for domain kenet.or.ke add as *.kenet.or.ke



	NAME	DELEGATION STATUS	DATE REQUESTED		
○	*.africainternational.edu	Approved	24/08/2015		
○	africainternational.edu	Approved	06/10/2015		
○	*.kenet.or.ke	Approved	30/08/2013		
○	mirror.ac.ke	Approved	19/07/2015		
○	maseno.ac.ke	Approved	19/07/2015		
○	daystar.ac.ke	Approved	19/07/2015		
○	*.ampath.or.ke	Approved	18/08/2015		
○	mmust.ac.ke	Approved	20/07/2015		
○	nitp.ac.ke	Approved	20/07/2015		
○	tuc.ac.ke	Approved	21/07/2015	Validated	22/07/2016
○	ueab.ac.ke	Approved	21/07/2015	Validated	22/07/2016
○	elearning.usiu.ac.ke	Approved	20/07/2015	Validated	11/05/2016

Create Domain

Domain*: *.kenet.or.ke

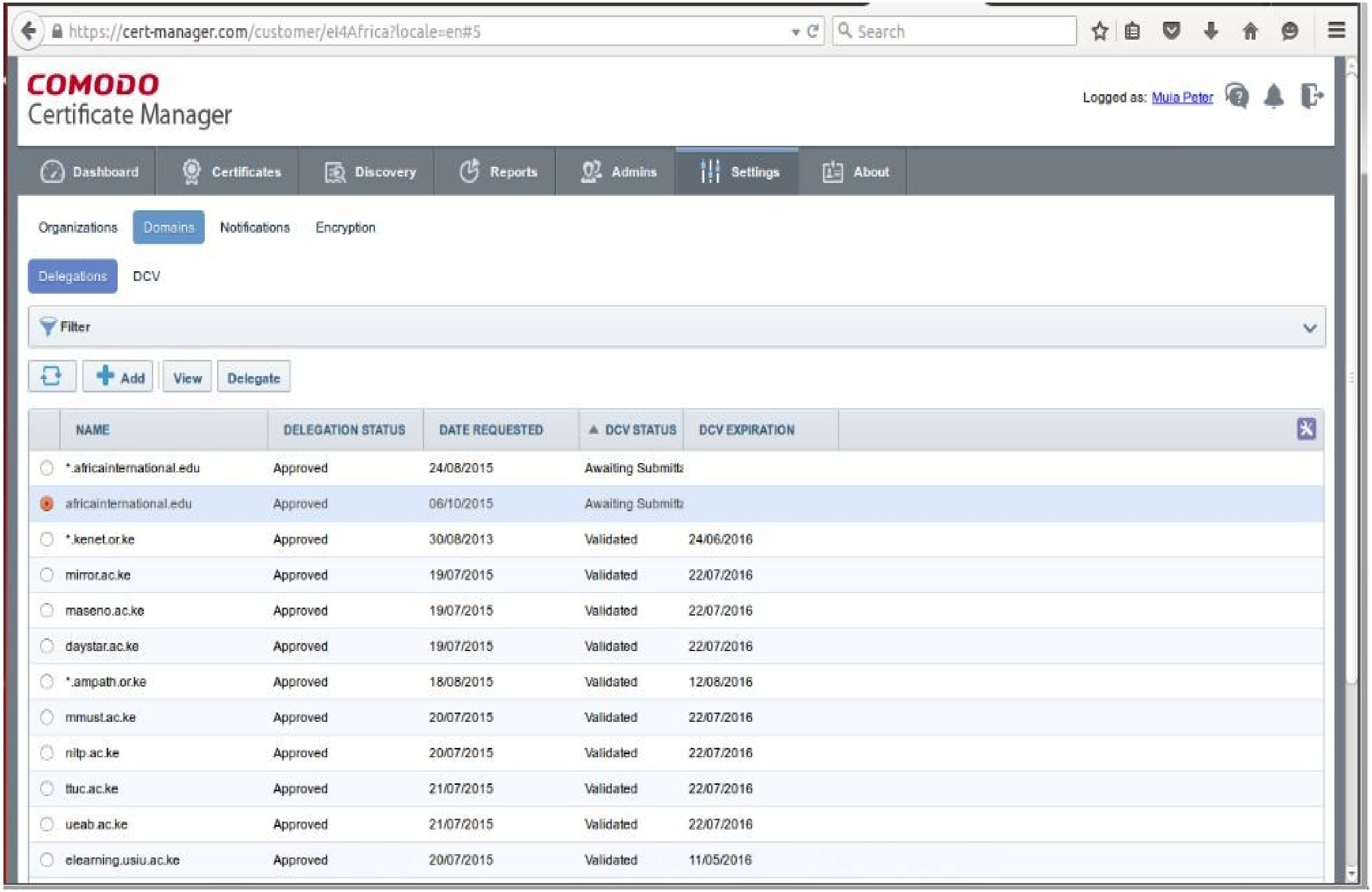
Description: KENET registered domain

Organizations/Departments	SSL	S/MIME	Code Signing
☑ KENET	☑	☑	☐

Perform domain delegation

-Perform domain delegation: In this case, the domain will be delegated to KENET (an authorized registrar). This means that KENET name-servers gain control of the authority of the domain.

NB: The delegation request has to be approved by the CA as shown by the delegation status in the screen-shot below



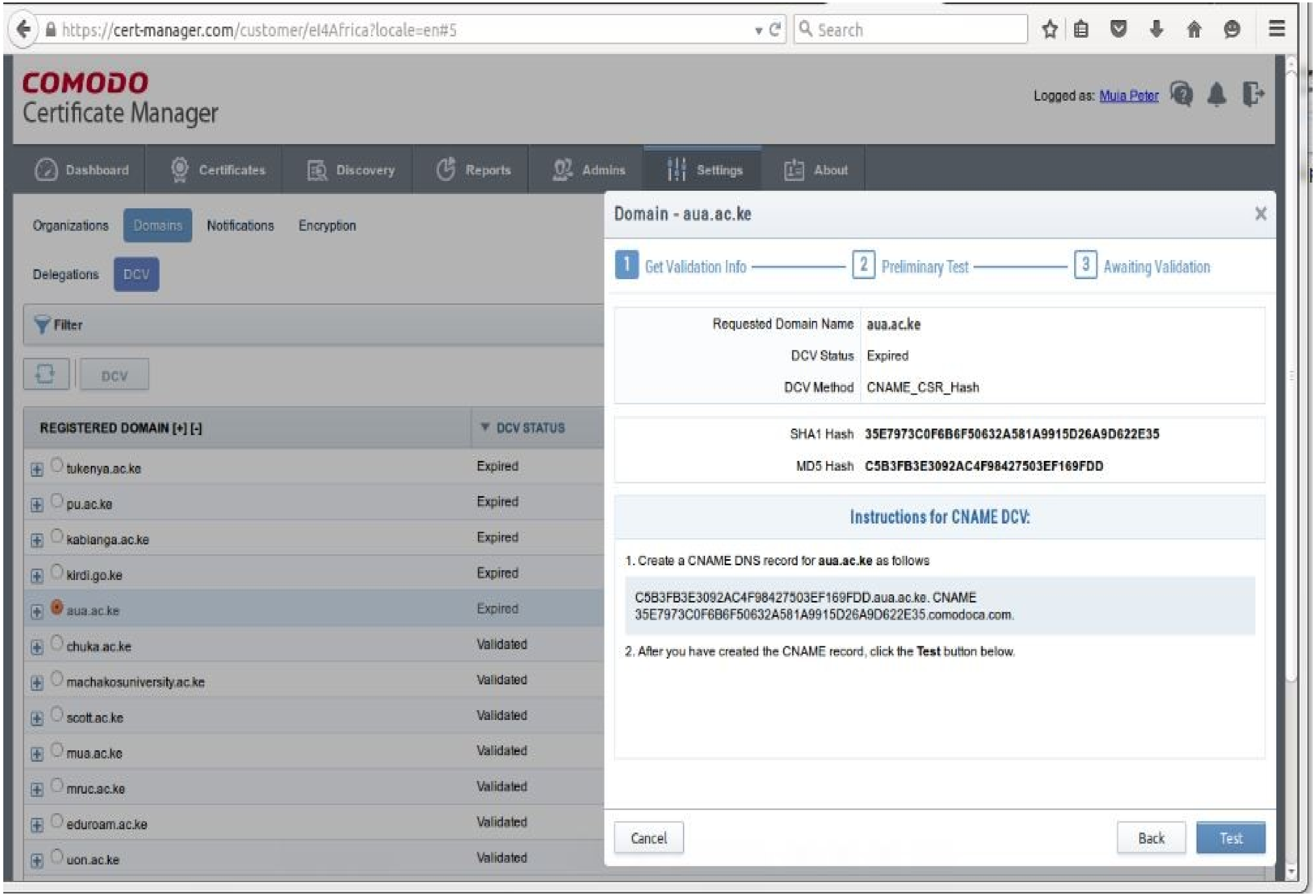
	NAME	DELEGATION STATUS	DATE REQUESTED	▲ DCV STATUS	DCV EXPIRATION
○	*.africainternational.edu	Approved	24/08/2015	Awaiting Submitt	
●	africainternational.edu	Approved	06/10/2015	Awaiting Submitt	
○	*.kenet.or.ke	Approved	30/08/2013	Validated	24/06/2016
○	mirror.ac.ke	Approved	19/07/2015	Validated	22/07/2016
○	maseno.ac.ke	Approved	19/07/2015	Validated	22/07/2016
○	daystar.ac.ke	Approved	19/07/2015	Validated	22/07/2016
○	*.ampath.or.ke	Approved	18/08/2015	Validated	12/08/2016
○	mmust.ac.ke	Approved	20/07/2015	Validated	22/07/2016
○	nitp.ac.ke	Approved	20/07/2015	Validated	22/07/2016
○	ttuc.ac.ke	Approved	21/07/2015	Validated	22/07/2016
○	ueab.ac.ke	Approved	21/07/2015	Validated	22/07/2016
○	elearning.usiu.ac.ke	Approved	20/07/2015	Validated	11/05/2016

2. Domain Control Validation (DCV)

A domain control validation, or DCV, is used by the CA before issuing an SSL certificate to verify the person making the request is in fact authorized to use the domain related to that request. There are 3 mechanisms for DCV:

a) **DNS CNAME-based-** The CSR you submit to Comodo will be hashed. The hash values are provided to you and must be entered as a DNS CNAME record for your domain.

- The hash values are as shown below:



REGISTERED DOMAIN [+] [-]	▼ DCV STATUS
○ tukenya.ac.ke	Expired
○ pu.ac.ke	Expired
○ kabianga.ac.ke	Expired
○ kirdi.go.ke	Expired
● aua.ac.ke	Expired
○ chuka.ac.ke	Validated
○ machakosuniversity.ac.ke	Validated
○ scott.ac.ke	Validated
○ mua.ac.ke	Validated
○ mruc.ac.ke	Validated
○ eduroam.ac.ke	Validated
○ uon.ac.ke	Validated

Domain - aua.ac.ke

1 Get Validation Info — 2 Preliminary Test — 3 Awaiting Validation

Requested Domain Name	aua.ac.ke
DCV Status	Expired
DCV Method	CNAME_CSR_Hash
SHA1 Hash	**35E7973C0F6B6F50632A581A9915D26A9D622E35**
MD5 Hash	**C5B3FB3E3092AC4F98427503EF169FDD**

Instructions for CNAME DCV:

1. Create a CNAME DNS record for **aua.ac.ke** as follows

```
C5B3FB3E3092AC4F98427503EF169FDD.aua.ac.ke. CNAME
35E7973C0F6B6F50632A581A9915D26A9D622E35.comodoca.com.
```

2. After you have created the CNAME record, click the **Test** button below.

(b) eMail-based DCV - an email is sent to an administrative contact for your domain. The email will contain a unique validation code and link. Clicking the link and entering the code will prove domain control.
NB: Valid email addresses would include admin@, administrator@, postmaster@, hostmaster@, and webmaster@kenet.or.ke where kenet.or.ke is the domain for which the certificate is being applied

(c)HTTP(S)-based DCV
The CSR you submit to Comodo will be hashed. The hash values are provided to you and you must create a simple plain-text file and place this in the root of your webserver and served over HTTP-only!
The file and it's content should be as follows:
http://*yourdomain.com*/<Upper case value of MD5 hash of

3. Generating CSR using openssl

Refer to the link below for a step-by-step procedure of generating a CSR
http://www.rackspace.com/knowledge_center/article/generate-a-csr-with-openssl

Steps can be summarized as follows:
(a) Create a new directory and switch to it

```
> mkdir conf
> cd conf
```

(b) Install openssl

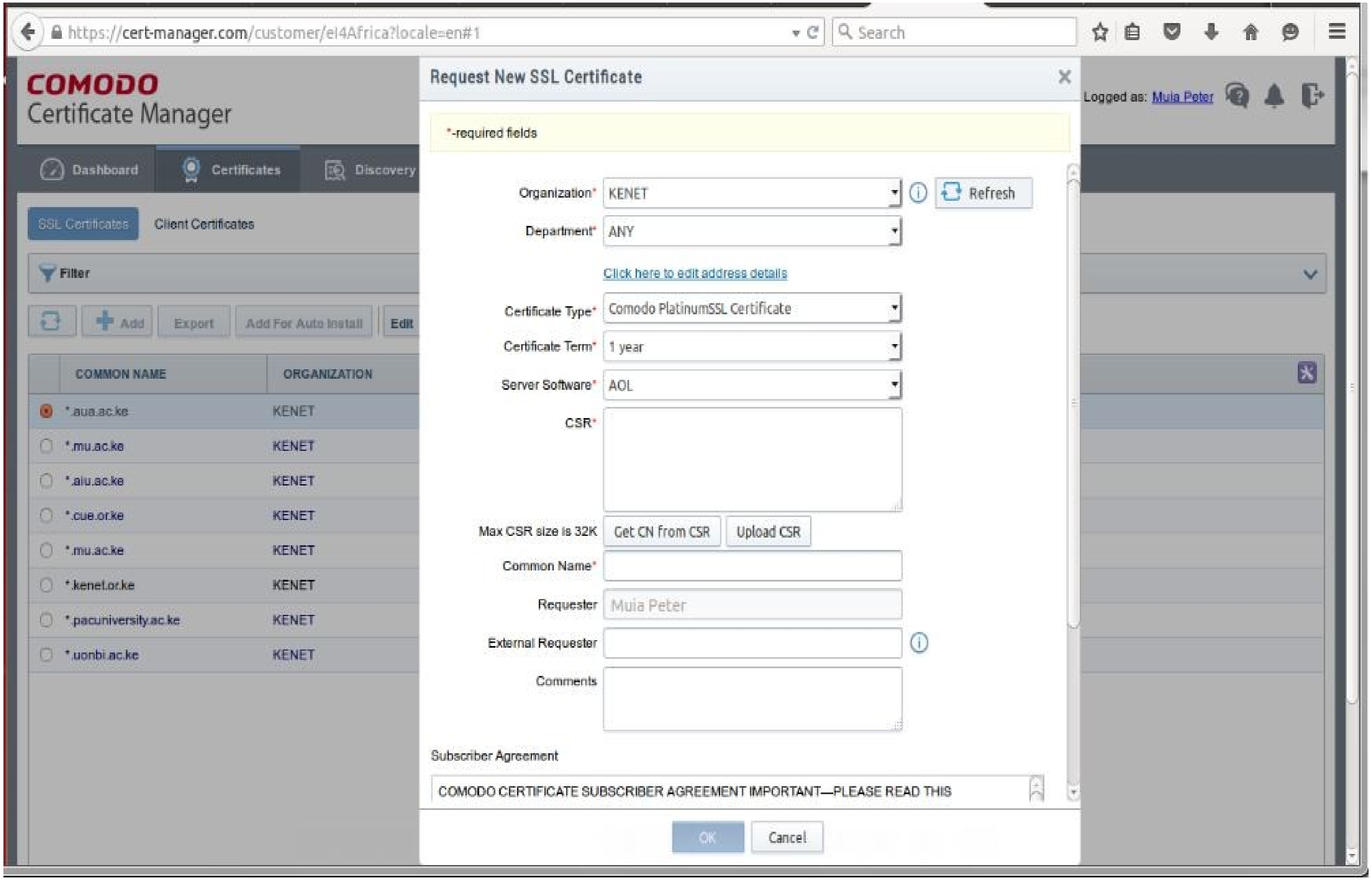
```
> sudo apt-get install openssl
```

(c) Generate the RSA key (private key)

```
> openssl genrsa -out MYSSL.key 2048
```

4. Generate your certificate

-On the certificate manager, select the certificates tab and request for a certificate by providing the CSR and other details required as below:



COMMON NAME	ORGANIZATION
● *.aua.ac.ke	KENET
○ *.mu.ac.ke	KENET
○ *.aiu.ac.ke	KENET
○ *.cue.or.ke	KENET
○ *.mu.ac.ke	KENET
○ *.kenet.or.ke	KENET
○ *.pacuniversity.ac.ke	KENET
○ *.uonbi.ac.ke	KENET

Request New SSL Certificate

*-required fields

Organization* KENET

Department* ANY

Click here to edit address details

Certificate Type* Comodo PlatinumSSL Certificate

Certificate Term* 1 year

Server Software* AOL

CSR*

Max CSR size is 32K

Common Name*

Requester Muia Peter

External Requester

Comments

Subscriber Agreement

COMODO CERTIFICATE SUBSCRIBER AGREEMENT IMPORTANT—PLEASE READ THIS

- After your certificate is issued, download ready for installation. An installation guide can be found at:

http://www.rackspace.com/knowledge_center/article/installing-an-ssl-certificate-on-apache