



## *openmul – HOWTO-SSL*

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# Contents

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1	Creating Controller CA Certificate.....	3
2	Creating Controller Certificate and Private Key .....	3
3	Running Controller with Switch CA Certificate .....	3
4	Running Switch with Controller CA Certificate .....	3
5	Running MuL with OpenSSL.....	4
5.1	Without switch CA certificate .....	4
5.2	With switch CA certificate.....	4

# 1 Creating Controller CA Certificate

Controller CA certificate can be created by using the following command:

```
root@sdn-server:~# cd utils/ssl-cert
root@sdn-server:~# sudo ./mul-pki-cmd init
```

This command will create the Controller CA certificate and initializes the PKI infrastructure to create the controller certificate and controller private key.

# 2 Creating Controller Certificate and Private Key

This command will generate and install the Controller Certificate and Controller private key to /etc/mul/.

Example:

```
root@sdn-server:~# sudo ./mul-pki-cmd req+sign+install ctl controller
```

# 3 Switch CA Certificate for Controller usage (Optional)

If vendor wants to run Mul Controller with strict Switch CA certificate validation then vendor should copy switch CA certificate to /etc/mul/switch\_ca.crt

Note: This is an optional step. MuL controller can run with or without switch CA certificate. For options of running MuL with or without Switch CA certificate, refer [section 5](#).

# 4 Controller CA Certificate for Switch usage

If vendor needs Mul Controller CA certificate then vendor should copy controller CA certificate from /etc/mul/pki/controllerca/cacert.pem to the switch location.

## 5 Running MuL with OpenSSL

### 5.1 Without switch CA certificate

```
root@sdn-server:~# sudo ./mul -s
2014/02/06 15:41:28 MUL: [THREAD] INIT |4| switch-threads |2| app-threads
2014/02/06 15:41:28 MUL: [HA] Init
2014/02/06 15:41:28 MUL: [APP] mul-vty registered
2014/02/06 15:41:42 MUL: [SWITCH] Pinned to thread |1|
```

### 5.2 With switch CA certificate

```
root@sdn-server:~# sudo ./mul -s -x
2014/02/06 15:41:28 MUL: [THREAD] INIT |4| switch-threads |2| app-threads
2014/02/06 15:41:28 MUL: [HA] Init
2014/02/06 15:41:28 MUL: [APP] mul-vty registered
2014/02/06 15:41:42 MUL: [SWITCH] Pinned to thread |1|
```

Note: Option '-x' is used to by MuL to validate switch CA certificate.