

Grid

Kerberos

X.509

# Scientific Computer Security Info Sheet

VOMS  
Certificate  
Proxy

## What is ...

### A ticket?

Proof of your identity stored on your local machine for you to login into other machines (SSH). FNAL users use Kerberos for ticket generation.

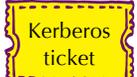
### A certificate?

Standard way of expressing the identity of a user, a machine or a service. It acts like an online ID card to access other services. FNAL users can use CILogon Basic CA (*Certificate Authority*) to obtain certificates.

### A VOMS proxy?

Temporary certificate derived from an existing certificate and based on your experiment.

## Some info about...



```
:$ klist
```

gives you details about your Kerberos ticket.



```
:$ openssl x509 <options>
```

OpenSSL command line tool gives you details about your certificate.

- ✓ [ X.509 ] is a standard that specifies formats for public key certificates used for secure communication.
- ✓ Kerberos is an authentication protocol.



```
:$ voms-proxy-info
```

gives you details about your VOMS proxy, such as your experiment affiliation.

## Why do I need..

### A ticket?

- To SSH into FNAL nodes.
- To generate certificates.

### A certificate?

- To generate proxies.
- To access web services in your browser, such as DocDb.

### A VOMS proxy?

- To run grid jobs.
- To transfer data.

## How do I get...

```
:$ kinit
```

creates a Kerberos ticket.

1

```
:$ kx509
```

creates an [ X.509 ] certificate on your local machine based on your Kerberos ticket.

- 2
- a. Go to <https://cilogon.org/>
  - b. Select "Fermi National Accelerator Laboratory" as Identity Provider.
  - c. Provide your SERVICES account and password.
  - d. Import the certificate into your browser.

```
:$ voms-proxy-init <options>
```

creates an [ X.509 ] proxy with VOMS extensions (your role within your experiment) according to the options passed to the command.

## How long does ... live?

### A ticket?

A ticket is valid for 26 hours. Use `klist` to get details about your ticket.

### A certificate?

- A certificate issued by using `kx509` command is valid for 1 week.
- A certificate issued at CILogon <https://cilogon.org> website is valid for 13 months.

### A VOMS proxy?

The default validity time is 12 hours. You can extend this time up to 196 hours at the time of generating the proxy:

```
:$ voms-proxy-init -valid HH:MM
```