

OSCARS Notes

OSCARS (On-demand Secure Circuits and Advance Reservation System) is the software used to create dynamic circuits. An OSCARS instance on each IDC communicates with upstream OSCARS instances as part of the circuit creation process.

From the OSCARS [web page](#):

ESnet's On-Demand Secure Circuits and Advance Reservation System (OSCARS) provides multi-domain, high-bandwidth virtual circuits that guarantee end-to-end network data transfer performance. Originally a research concept, OSCARS has grown into a robust production service. Currently OSCARS virtual circuits carry fifty percent of ESnet's annual 60 petabytes of traffic. As of November 2010, ESnet traffic topped 10 petabytes a month. In 2010, ESnet operated over 30 (up from 26 in October 2009) long-term production OSCARS virtual circuits supporting scientific areas including High Energy Physics: ([Large Hadron Collider](#)) Computational Astrophysics (OptiPortal) Biological and Environmental Research, Genomics, Climate (GFD and Earth Sciences Grid). Approximately 5000 in total OSCARS virtual circuit reservations have been created for demos, transient experiments, and projects, ect. but 5000 are not all currently in use today.

OSCARS gives ESnet the ability to engineer, manage and automate the network according to user-specified requirements for using scientific instruments, computation, and collaborations. OSCARS software was initially developed by ESnet under funding by the DOE Office of Science. Now open to the community, development of its open source code is conducted by multiple international collaborations.

OSCARS open source software is the most widely adopted inter-domain dynamic circuit services application within the global research and networking community. Its open and evolving framework is inspiring and inspired by global organizations like the [Open Grid Forum](#) (OGF) standards body and Global Lambda Integrated Facility ([GLIF](#)), as well as the global networking community.

OSCARS software works as both a framework for research innovation and as a reliable production level service for ESnet users. While ESnet offers a menu of service components to novice users, ESnet is exploring a composable services framework to assist experienced users to configure highly modular atomic services as desired and for network researchers to customize according to experimental parameters.

OSCARS Documentation

Can be found [here](#).

- [OSCARS User Manual](#)
- [OSCARS Web UI Interface \(WBU\)](#)
- [OSCARS Client API Documentation](#)
- [OSCARS Web Service Interface \(API\)](#)

A local (to your IDC version of the OSCARS documentation can be found using the OSCARS Web user interface at: dynes:insert_idc_name (https://dynes:insert_idc_name:8443/OSCARS/docs/UserManual.html" originalalias="https://dynes:insert_idc_name:8443/OSCARS/docs/UserManual.html" >dynes:insert_idc_name (https://dynes:insert_idc_name:8443/OSCARS/docs/UserManual.html" originalalias="https://dynes:insert_idc_name:8443/OSCARS/docs/UserManual.html" >dynes:insert_idc_name:8443/OSCARS/docs/UserManual.html" class="external-link">https://dynes:insert_idc_name:8443/OSCARS/docs/UserManual.html

Steps to run on an IDC to add a new Peering IDC

Local IDC Configurations

-the below commands should be run as user root

1) Using the OSCARS GUI, do the following:

- "Institutions" tab, create an Institution "<peering-domain-sitename>" for the peering IDC
 - "Add User" tab, create an account "<peering-domain-sitename>-idc", with role of "OSCARS-service --> make reservations and view topology"
 - fill in X.509 subject name with subject from <peering-domain-name>
- **Note:** you will have to get X.509 subject name from the peering domain personnel

2) Edit the topology xml file (/etc/oscars/TopoBridgeService/conf/<your-domain>.xml) for any changes associated with the peering link configurations. This will include a linkId element with an associated remoteLinkId element which defines the peering link

key information is:

LinkIds:

urn:ogf:network:domain=<local-domain-name>:node=x:port=x-x-x:link=x

urn:ogf:network:domain=<peering-domain-name>=rtr.xxx:port=xx-x/x/x:link=x

Vlan Range:

xxx-xxx

Bandwidth:

x Gbps

3) Run /opt/oscars/lookup/bin/oscars-idclist and verify

<peering-domain-name> domain is *NOT* listed

4) Adding an OSCARS 0.6 peer

cd /opt/oscars/lookup/bin

./oscars-idcadd -d <peer-domain> -p http://oscars.es.net/OSCARS/06 -l https://<peering-idc-name>:9001/OSCARS

Verify it was added: ./oscars-idclist

5) Add any needed CA Certs to the oscars.jks and localhost.jks - password: changeit

View the keystore (-v for verbose)-

keytool -list -keystore /etc/oscars/keystores/(oscars.jks | localhost.jks)

Add CA cert-

keytool -importcert -file <CAcertificate.crt> -alias <CA-name> -keystore /etc/oscars/keystores/(oscars.jks | localhost.jks)

6) Restart OSCARS

/etc/init.d/oscars restart