



# Network Monitoring and Management

## Presenting Your NOC



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# The Network Operations Center

## **NOC** = Network Operations Center

- Come in many forms and depend on the size of your organization and your goals.
- “One or more locations from which control is exercised over your network.”
- NOCs can be:
  - Virtual
  - Located at the core of your network
  - With your help desk
  - Built in pieces
  - Etc.

# The Network Operations Center

For purposes of this class each of you will create an entry on the classroom NOC wiki pages. You should enter in information about your particular PC, the router in your group, etc.

# A BIG NOC



There are even bigger NOCs out there...

# A small NOC





In the same room there is a desk with a phone, another computer and a monitor. This acted as the group's Help Desk.

Many network problems could be detected and solved on the spot!



# Our Virtual NOC

We are  
working  
towards  
something  
like this...



logged in as hervey | [Logout](#) | [Preferences](#) | [Help/Guide](#) | [About Trac](#)

[Wiki](#) | [Timeline](#) | [Roadmap](#) | [View Tickets](#) | [New Ticket](#) | [Search](#) | [Admin](#)

wiki: WikiStart

[Start Page](#) | [Index](#) | [History](#)

Your changes have been saved in version 24.

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## AfNOG 2011 Network Monitoring and Management Workshop (NM-E)

**Dates:** May 30-June 3 (Monday-Friday), 2011  
**Venue:** [White Sands Hotel](#), Dar es Salaam (25 KM North), Tanzania

### Goal

This workshop is part of the [AfNOG 2011](#) meeting and conference and is designed for engineers and system staffs at ISPs and large networks including academic networks who are involved with system management, network monitoring and management and problem response. The course is for those who need to manage diverse Network and NOC operations. Please review the [Agenda](#) to see the topics to be covered. Labs constitute about 60% of the course.

### Requirements

- A laptop with wireless capability, or notice to instructors that you will need a workstation during class.
- IPv4 addressing and general network concepts.
- Knowledge of UNIX and/or Linux.

### Recommended Software

- [PuTTY SSH client for Windows](#) (SSH)
- Linux, UNIX (Mac OS) already have SSH installed.

### Workshop Items

- [Agenda](#)
- [Instructors](#)
- [Participants](#)
- [Overview of Tools Covered](#)

### Network Operations

- [Network Diagram](#)
- [Configuration Files](#)
- [Software](#)
- [Register](#) for this wiki.

**Software to be installed and available for viewing during the class:**  
(Prior to the workshop some software is available for viewing the virtual lab environment as it is being set up)

- [Cacti](#)
- [MRTG](#)
- [Nagios](#) (Login as user: "guest" password: "guest")
- [NFSen](#)
- [Request Tracker](#)
- [Smokeying](#)


### Help

- [TracGuide](#) -- Built-in Documentation
- [TitleIndex](#) -- Complete list of local wiki pages
- [WikiFormatting](#) -- Trac wiki formatting language

Follow the NSRC on [Facebook](#) and [Twitter](#).

[Edit this page](#) | [Attach file](#) | [Rename page](#) | [Delete this version](#) | [Delete page](#)

Download in other formats:  
Plain Text

 Powered by Trac 0.12.2  
By Edgewall Software.

Questions or assistance send email to  
[nsrc@nsrc.org](mailto:nsrc@nsrc.org)

# Keeping “Trac” of it All

Note that Trac includes a *Timeline* feature.

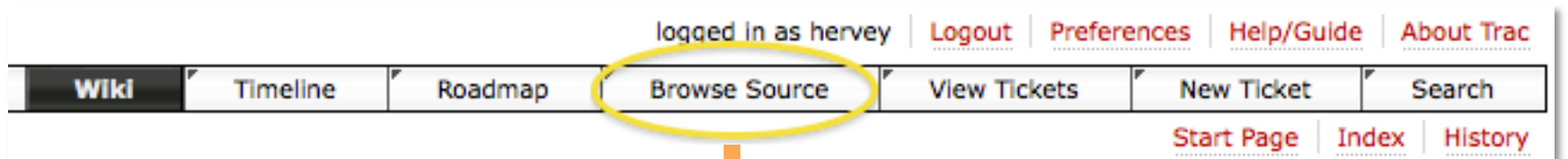
This includes:

- Changes to wiki pages.
  - Updates, creation, deletion and responsible user.
- Ticket history
  - Updates, creation, deletion and responsible user.
- Milestone updates

This is part of the built-in Version Control System (VCS) in Trac. Trac uses the *Subversion* VCS by default.

# Trac and Subversion

You can link trac to Subversion repositories and access them via the Wiki:



## Repository Index

Name ▲	Size	Rev	Age	Author	Last Change
▼ policy_audit_plugin		1	4 days	root	initial import
▶ branches		1	4 days	root	initial import
▶ tags		1	4 days	root	initial import
▶ trunk		1	4 days	root	initial import



# Versioning and Documentation

Version Control Systems are part of any good documentation project.

During the week you will be exposed to this concept several more times.

There are many version control systems:

- CVS
- Subversion
- Mercurial
- git

Wikipedia has a good article on the concepts of “Revision Control”:

[http://en.wikipedia.org/wiki/Revision\\_control](http://en.wikipedia.org/wiki/Revision_control)

# Your Assignment

## Document your network!

- Install some wiki software on your virtual machine.
- After each software install and configuration link to the new software in your wiki.
- Create an entry for your PC, other PCs, routers and switches in the classroom.
- Create or copy a classroom network diagram.
- Add any other useful information (contacts, HOWTOs, etc.) to your wiki.

# Questions

?