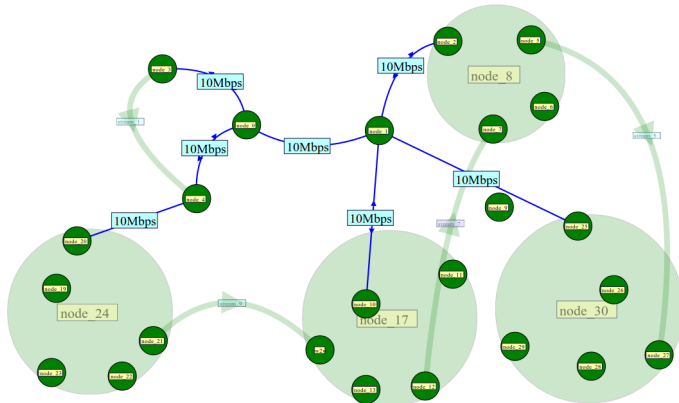


# The Netml System for Analysis, Design, and Simulation of Networks

## Overview

We will create an account on the Netml system, create networks, and then to analyse, design, and simulate them. You can use your laptop to access Netml. It does not work with Internet Explorer. Chrome is best.



# The Netml System for Analysis, Design, and Simulation of Networks

## Summary

- Getting onto the system
- Creating and editing a network
- Using the applications
  - Wavelength Division Multiplexing routing
  - Loss analysis
  - Network dimensioning
  - Availability analysis
  - Layered design
  - Robust network design
  - NS3 simulation
- Cloud File management


# Getting onto the system

## Registration

- Click on registration
- Read and act on email
- Start using Netml

**Netml - Network Modelling Language**

[Home](#)  
[Overview](#)  
[Netml Repository](#)  
[Online Tools](#)  
[Downloads](#)  
[Help](#)  
[Links](#)  
[Contact Us](#)



Enter your details and click on the submit button in order to register for use of this web site. You will receive an email which will enable you to complete registration.

Full Name:

Username\*:

Organisation:

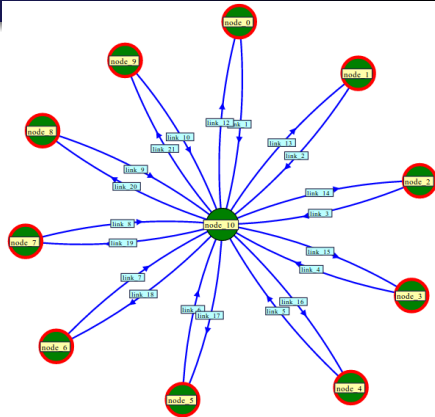
Email address:

Captcha code:

# Applications

## Wavelength Division Multiplexing

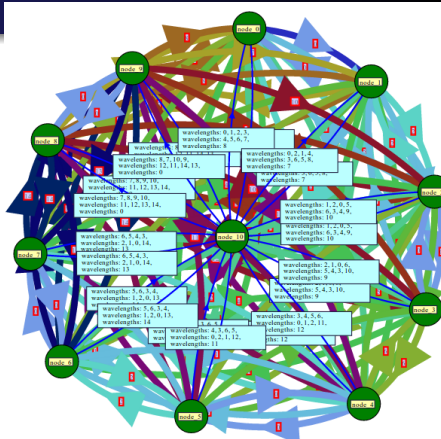
- Make a network like on the right
- Select the ring of nodes, add links
- Simplex links, like a bicycle wheel
- Add traffic between all pairs
- Run the WDM Routing tool



# Applications

## Wavelength Division Multiplexing

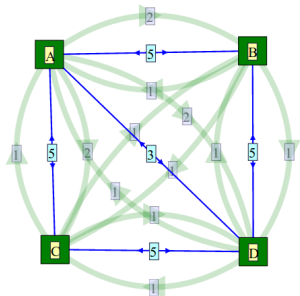
- Make a network like on the right
- Select the ring of nodes, add links
- Simplex links, like a bicycle wheel
- Add traffic between all pairs
- Run the WDM Routing tool



# Applications: Loss in links

Loss using a Gaussian model

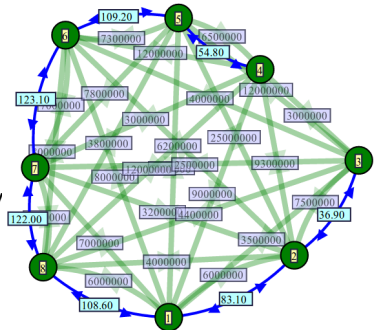
- Reset network
- Draw 4 node network at right
- capacities as shown
- Add traffic, set mean and stdev
- Mean = stdev = 1, except from A
- Mean = stdev = 2, from A
- Analyse with Routing Loss tool
  - unset the set capacities option
- Check mean, stdev, loss on links



# Dimensioning

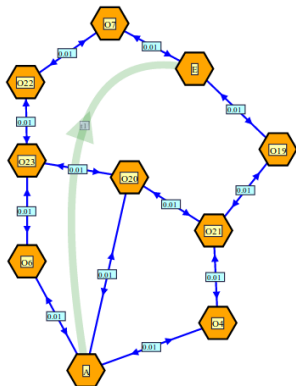
## What capacities for Example1\_1

- Load Example1\_1 from repository
- Use Routing traffic and Loss
- Set checkbox to set capacities
- Think: what is a better design?



# Availability Analysis

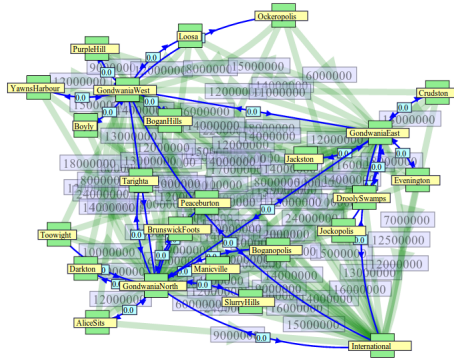
- Load relnet from repository
- use availability tool
- set number of failure states to 20
- view the results network
- display unavailability traffic





# Layered Design

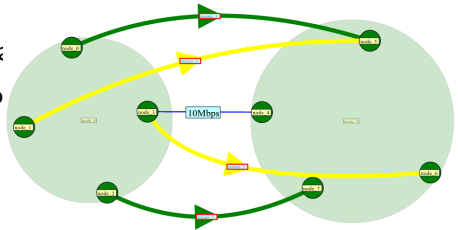
- Load Gondwana network
- display the traffic
- run the layered design tool
- view layer 0
- now view layer 1
- now layer 2



# Simulate a Network

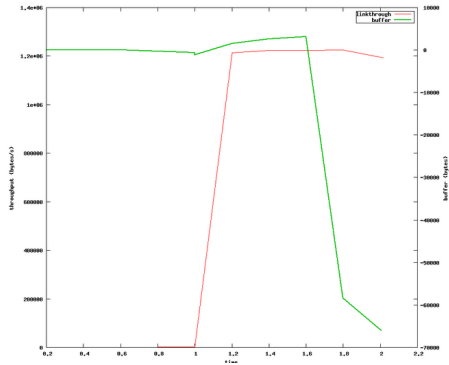
Create a network of your own design with pt-to-pt links, ethernet, and wifi networks

- make 8 nodes
- 4 LHS nodes in wifi dom:
- 4 RHS nodes ethernet do
- join with pt-pt link
- add two ftp flows
- add two udp flows



# Simulate a network

- Add trace of bytes across link
- Add trace of link buffer level
- Add plot of these traces
- Run simulation



# View the your own network of networks

Each user has their own network of networks. You can move them, edit them, and share your networks with other users.

