

# FlowScale

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# FlowScale

- Traffic load balancer using OpenFlow
- Replicating commercial/open-source interfaces
- Use existing hardware instead of a dedicated load balancer

# FlowScale

- Experimenter demo but not an experiment
- Provide incentives for GENI compatible deployment
- Built for production use
  - Campus IDS system first deployment
- Provide “Spyware” diffusion strategy

# Concepts

- Load balancer as a service
- Distributed deployments
- Integration with other OpenFlow tools
  - L2 Provisioning, VM Migration
- Simplicity

# How it works

- Hash based on OpenFlow fields (IP src/dst)
- Rotate through available ports
- Application layer tests
- Failover/Redundancy
- Web UI for admin

# Deployment

- IDS Cluster
  - 2 Campuses
  - 12 Sensor hosts per campus
  - 10Gb/sec on all links
  - 480Gb/sec total capacity
  - Bloomington cluster passing traffic

# Demo

# Future Directions

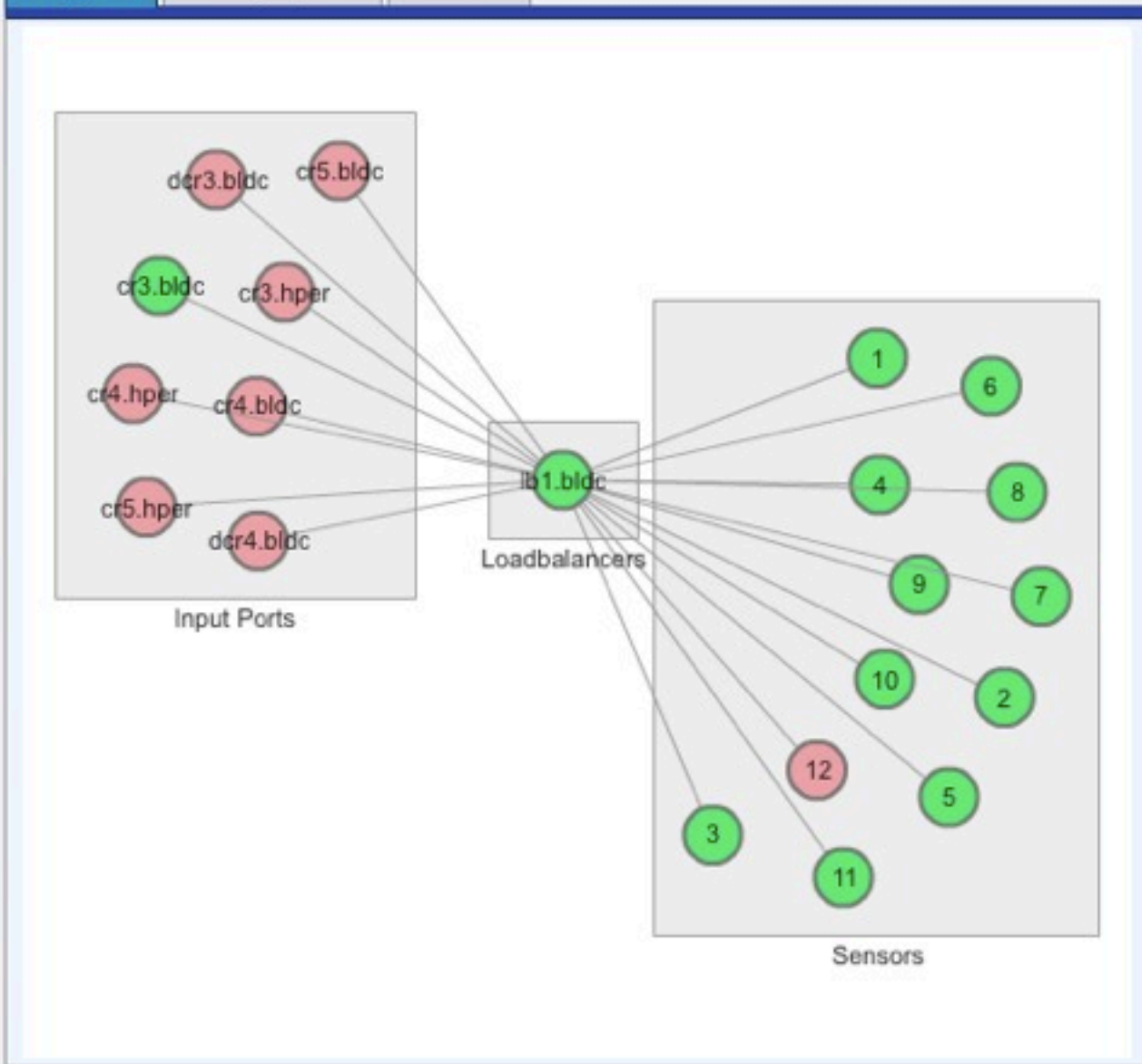
- OpenFlow improvements
- Code release
- Distributed demo at SC
- Research ideas
  - Plug-In Modules
  - Integration with other tools



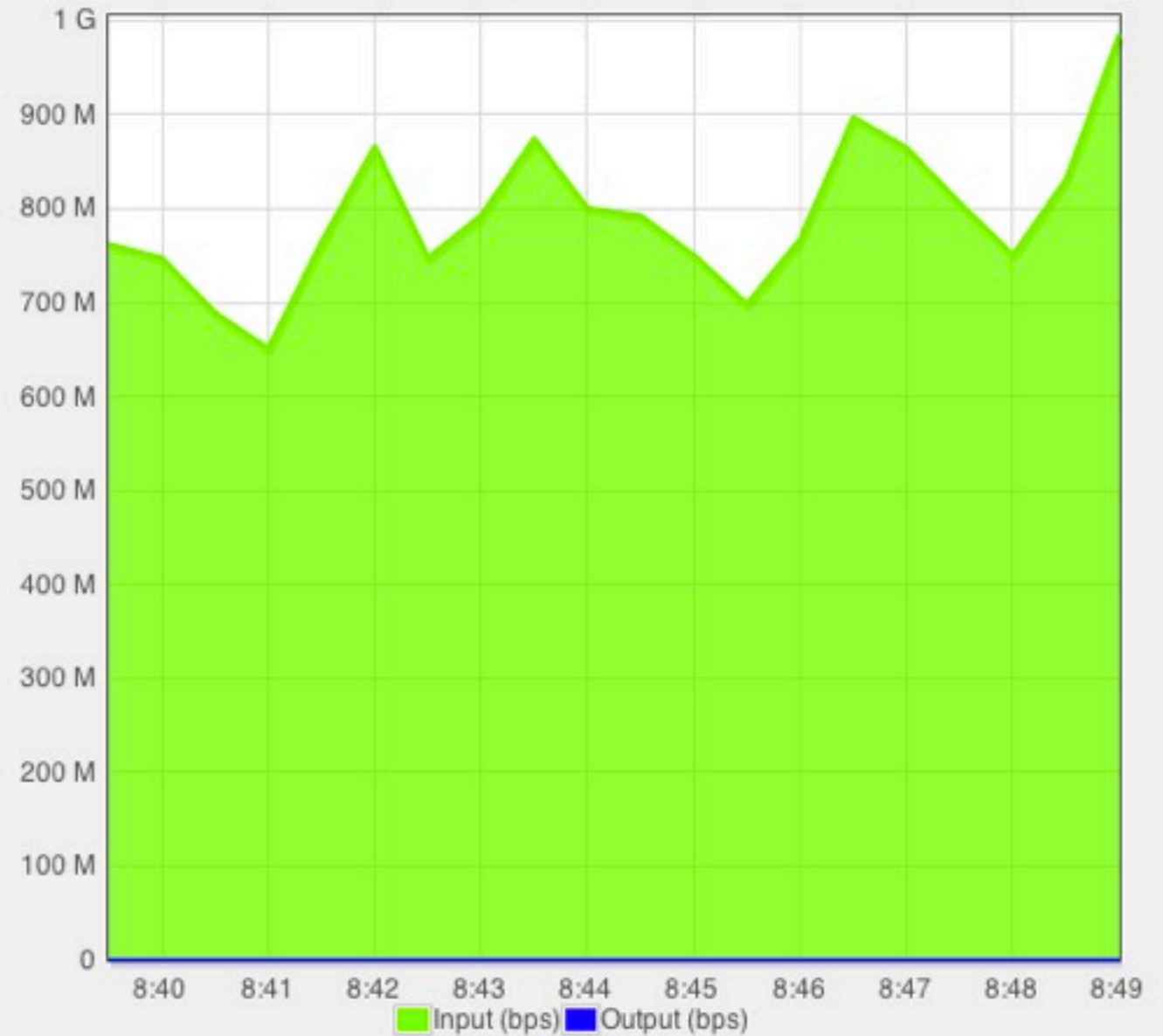
# FlowScale

Status ▾ Statistics ▾ Admin ▾ Help

Logical Geographic Nodes



Total Traffic



Past 10 Minutes ▾



# FlowScale

Status ▾ Statistics ▾ Admin ▾ Help

test

ipv4

Edit Delete

Priority: 90  
Input Switch: pronto3780

Input ports:

| Port | Port Address |
|------|--------------|
| 3    | 00:AA:DD     |

Output Switch: pronto3780

Output Ports:

| Port | Port Address |
|------|--------------|
| 3    | 00:AA:DD     |

Rules:

| Rules |
|-------|
| 0800  |

ipv6

Add group

Edit Group Panel

X

Group Name :

Input Switch : pronto3780 ▾

Input Ports : 

| Port |
|------|
|------|

|   |                   |
|---|-------------------|
| 1 | 00:26:e1:f0:36:01 |
| 2 | 00:26:e1:b0:5a:02 |
| 3 | 00:26:e1:62:94:03 |
| 4 | 00:26:e1:07:d0:04 |
| 5 | 00:26:e1:b1:55:05 |
| 6 | 00:26:e1:92:6a:06 |
| 7 | 00:26:e1:64:54:07 |

Output Switch : pronto3780 ▾

Output Ports : 

| Port |
|------|
|------|

|   |                   |
|---|-------------------|
| 1 | 00:26:e1:f0:36:01 |
| 2 | 00:26:e1:b0:5a:02 |
| 3 | 00:26:e1:62:94:03 |
| 4 | 00:26:e1:07:d0:04 |
| 5 | 00:26:e1:b1:55:05 |
| 6 | 00:26:e1:92:6a:06 |
| 7 | 00:26:e1:64:54:07 |

Group Type: IP Address ▾

| Value | Delete |
|-------|--------|
| 0800  | Delete |

Group Value[enter subnet or port or Ethernet type here]:  Add Rule

Priority : 90

Edit Clear

