Troubleshooting

- Cluster networks typically robust
- Most network problems due to improper software configuration or data corruption
- To diagnose problem
  - Start at application (incorrect hostname or port)
  - then kernel (configuration or driver problems)
  - and logical network (improper firewall or routing rules)
  - then hardware (bad cables, NICs, switch ports)

Rsh/ssh to remote machine fails

- Likely improper software configuration
  - Check config files
  - If OK, use ping/telnet to check if machine is visible and one can make connection
    - Ping in both directions
  - If OK, telnet to appropriate port, 514 for rshd, 22 for sshd
    - If fails one gets “Connection refused”
  - If OK, likely a configuration file problem

Tools

- Ping
  - Uses ICMP to request echo packet
  - Check if host is alive
- Netstat
  - Check state of network connection, ports open, machines connected, connection state, etc.
- Iperf
  - Network performance testing suite
  - Has comprehensive protocol support (multicast, IPv6, etc)
- Nmap
  - Probe network accessibility of hosts, ports open, etc
- Telnet
  - Can be used to make connection to any port on a remote machine
  - Useful for checking connectivity on the port
- User Application

Ping does not work

- Either
  1. Machines not configured properly
  2. Name resolution not working
  3. Firewall incorrectly configured
  4. Hardware problems
- To check 1 try pinging external machine
- If both can ping, try ping with IP address not name
  - If works then name resolution problem
  - Check configuration files
- If ping IP address does not work probably a router or firewall issue
Other Problems

- User application appears slowed by network
  - Use iperf (or netpipe) to check performance
- Nothing works
  - Go through above process!!