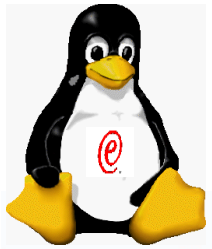


# OSCAR

## Open Source Clustering

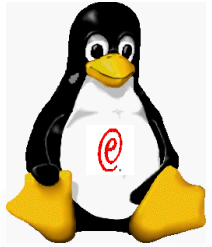
Michael Chase-Salerno  
Sean Dague  
IBM Linux Technology Center  
Supercomputing 2001



## What is OSCAR?

- Besides being the name of a very grouchy Sesame Street character, OSCAR is the Open Source Cluster Application Resource.
- Intended as a complete cluster solution.
  - ◆ Includes well known and widely used open source software.
  - ◆ Employ “best known methods”.
  - ◆ Eliminate repetitive configuration of individual components.
- Several main goals:
  - ◆ Make clusters broadly accepted.
  - ◆ Make clusters easy to build.
  - ◆ Bring some uniformity to clusters.

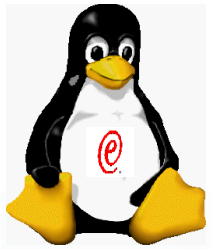




## Who is behind OSCAR?

- OSCAR is a project of the Open Cluster Group, a consortium of corporations, national labs and universities including:
  - IBM, Intel, Dell, MSC.software, SGI
  - LNNL, ORNL, NCSA, IU
- All of these groups work together to develop the project.
- Various forms of submissions including design, software, testing, hardware.
- The Open Cluster Group is not intended to be only OSCAR, other projects will be undertaken.

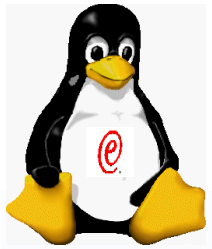




## OSCAR components

- C3: Cluster management tools
- LUI: Linux Utility for Installation
- MPI-CH: Message passing interface
- OpenSSH/OpenSSL: Secure transactions
- PBS: Job queuing system
- PVM: Parallel Virtual Machine
- MAUI: Job scheduler
- LAM/MPI: Message passing interface

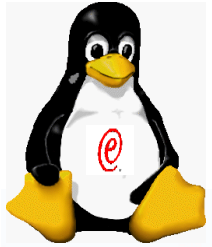




## Where is OSCAR going?

- Version 1.2 of OSCAR is in development now.
  - ◆ Rebase of installation to System Installation Suite for greater reliability and simplicity.
  - ◆ Available in the coming weeks.
- Several version 1.x releases expected to follow.
- OSCAR v2.0 in design
  - ◆ Greater modularity.
  - ◆ Easier integration of new packages.
  - ◆ Available in mid 2002.

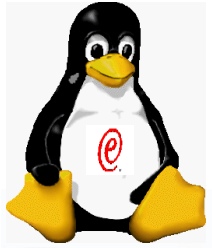




## What is IBM doing for OSCAR?

- IBM's major contribution for OSCAR has been the installation method.
- Current version (1.1.1) uses the Linux Utility for cluster Installation(LUI)
  - Resource based.
  - Architecture and distribution dependent.
- Version 1.2 will be using the System Installation Suite(SIS).
  - Image based.
  - Architecture and distribution independent.
  - Simpler to use and administer

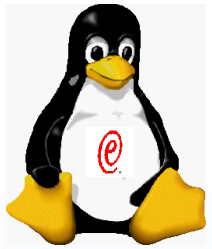




## What is SIS?

- The System Installation Suite (SIS) is a tool to remotely install Linux machines.
- It is a collaborative project between the team that developed SystemImager and the team that developed LUI.
- It consists of 3 major components:
  - ♦ SystemInstaller
  - ♦ SystemImager
  - ♦ SystemConfigurator
- Image based installation and maintenance.
- Simple to use, distribution and architecture independent.



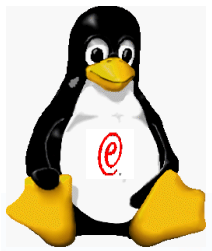


## SIS components

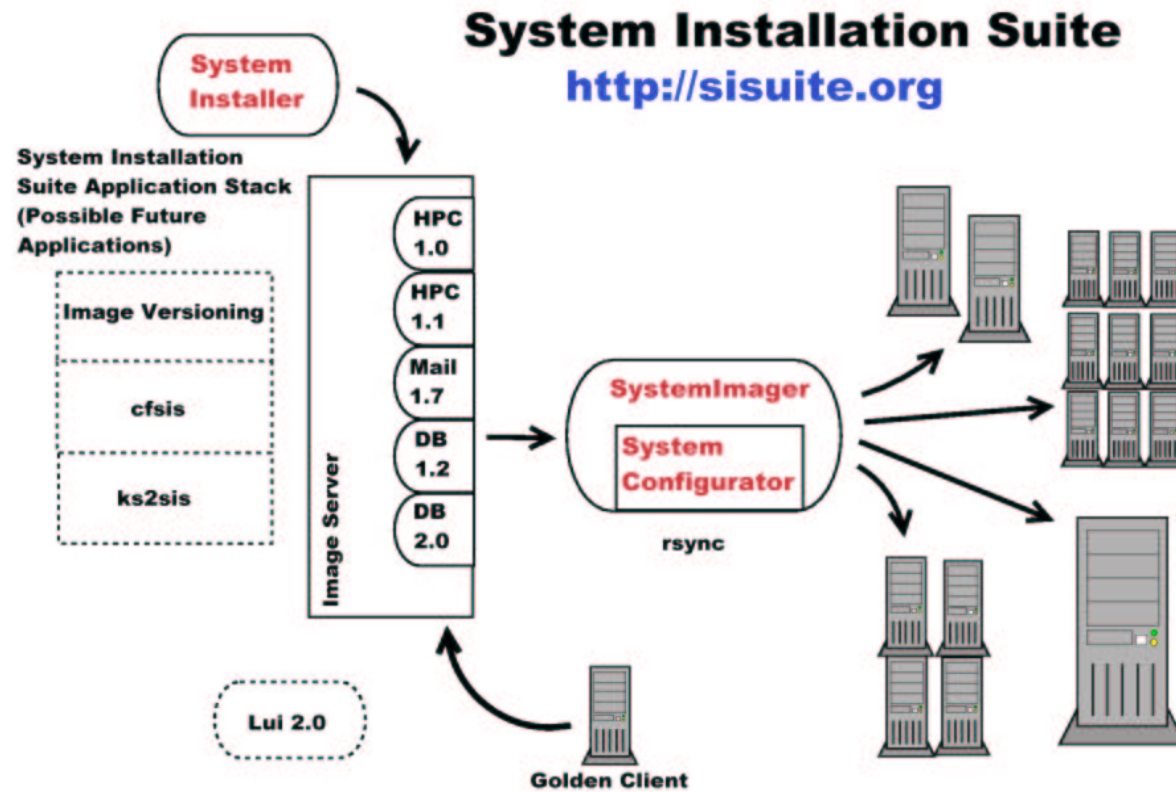
- **SystemInstaller**
  - ♦ Builds Linux images on server.
  - ♦ Serves as front end to SIS.
- **SystemImager**
  - ♦ Propagates images to remote machines.
  - ♦ Updates machines by syncing to image.
- **System Configurator**
  - ♦ Customizes installed image to match machines hardware.
  - ♦ Configures networking and boot loader.

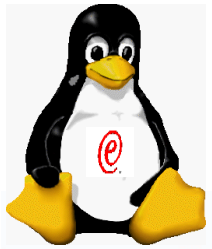






# System Installation Suite at a glance

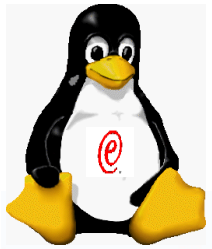




## Where is SIS?

- SystemInstaller
  - ◆ Current release: 0.5.
  - ◆ Supports RPM based distros(RedHat, Suse, Mandrake).
  - ◆ Debian support somewhat functional
- SystemImager
  - ◆ Release 2.0 available VERY soon.
  - ◆ Integrated with the rest of SIS.
- System Configurator
  - ◆ Current release: 1.0.
  - ◆ Supports several distributions and architectures.





## Where to get info...

- ORNL booth at SC2001.
- NCSA booth at SC2001.
- Open Cluster Group website
  - ◆ <http://openclustergroup.org>
- System Installation Suite website
  - ◆ <http://sisuite.org>

