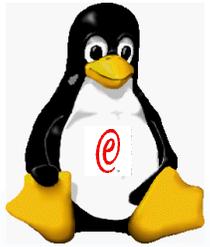# System Installation Suite
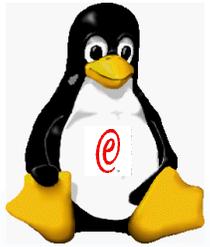
Sean Dague
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Software Engineer
IBM Linux Technology Center

Automated Installation Solutions

- Many One Off Solutions

  - Kickstart – Redhat

  - FAI – Debian

  - LUI – Redhat (later Turbo and Connectiva)

  - SystemImager – Redhat and Debian

  - Autoyast – SuSE

  - many, many more...

- There exists no unified installation and maintenance stack which can work on multiple distributions and architectures

The Solution... combine forces

- LUI – Linux Utility for Cluster Installation

  - Resource based installation (based on NIM from AIX)

  - Open Source project from IBM LTC

  - Released as 1.0 April 2000

- SystemImager

  - Image based installation

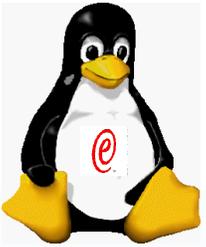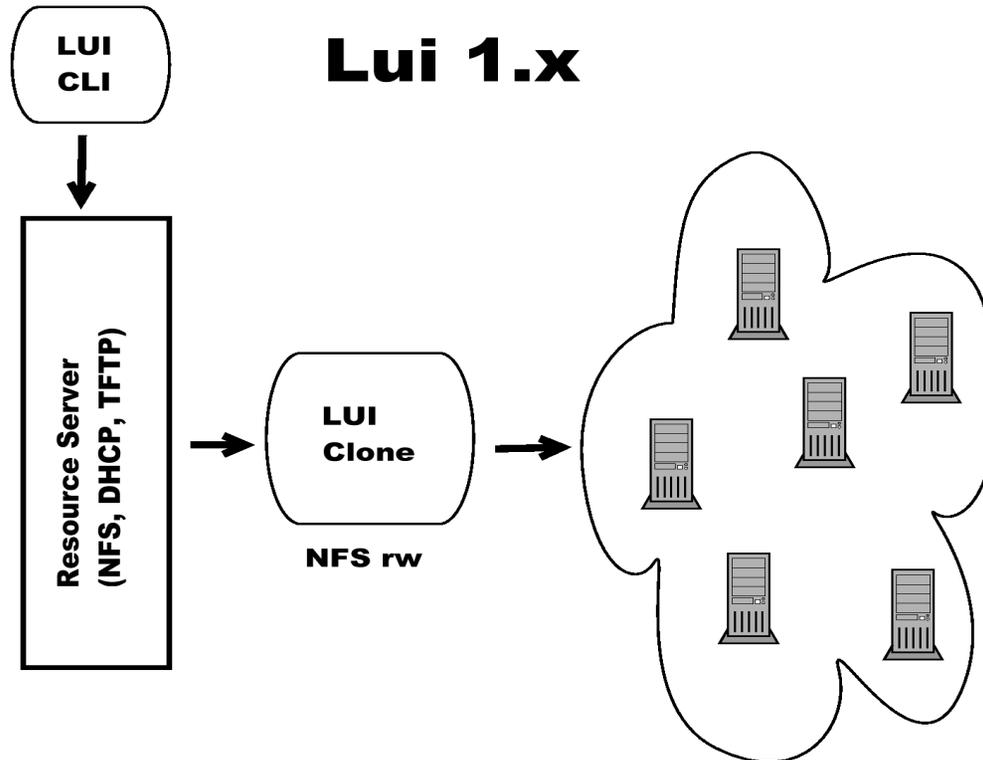 - Open Source project funded by VA Linux

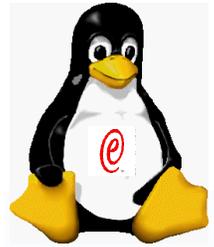 - Released as 1.0 May 2000

Strengths of each project

- LUI – Linux Utility for Cluster Installation

  - Includes a database of cluster information

  - Scriptable bottom line commands

  - Supports building a machine from a description of that machine

- SystemImager

  - Images are live filesystems

  - Transport mechanism is rsync

  - Provides maintenance method

  - Can use floppy, cd, or network to install nodes (no reliance on network boot)
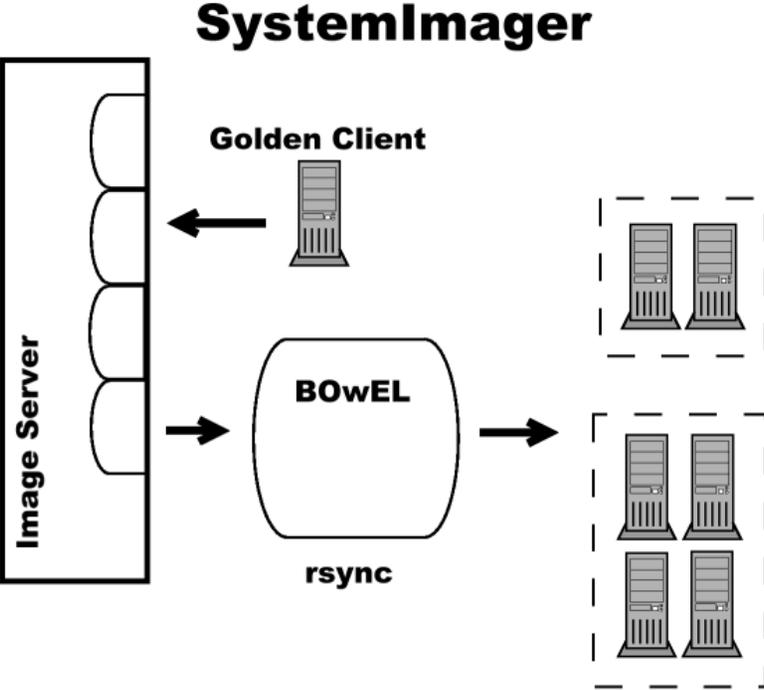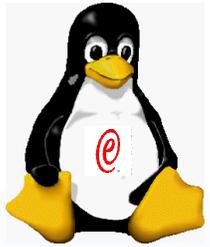
LUI 1.x at a glance

Lui 1.x

SystemImager Overview

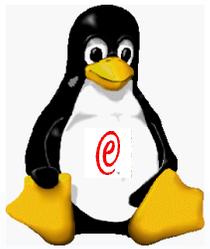**SystemImager**

Image Server
Golden Client
BOwEL
rsync

System Installation Suite

- A Collection of Three Projects:

- System Installer

    - Front end image building tool

    - Can be thought of as LUI for images

- SystemImager

    - Image propagation method

- System Configurator

    - Installation Configuration API

    - Smoothes over architecture and Linux distribution differences
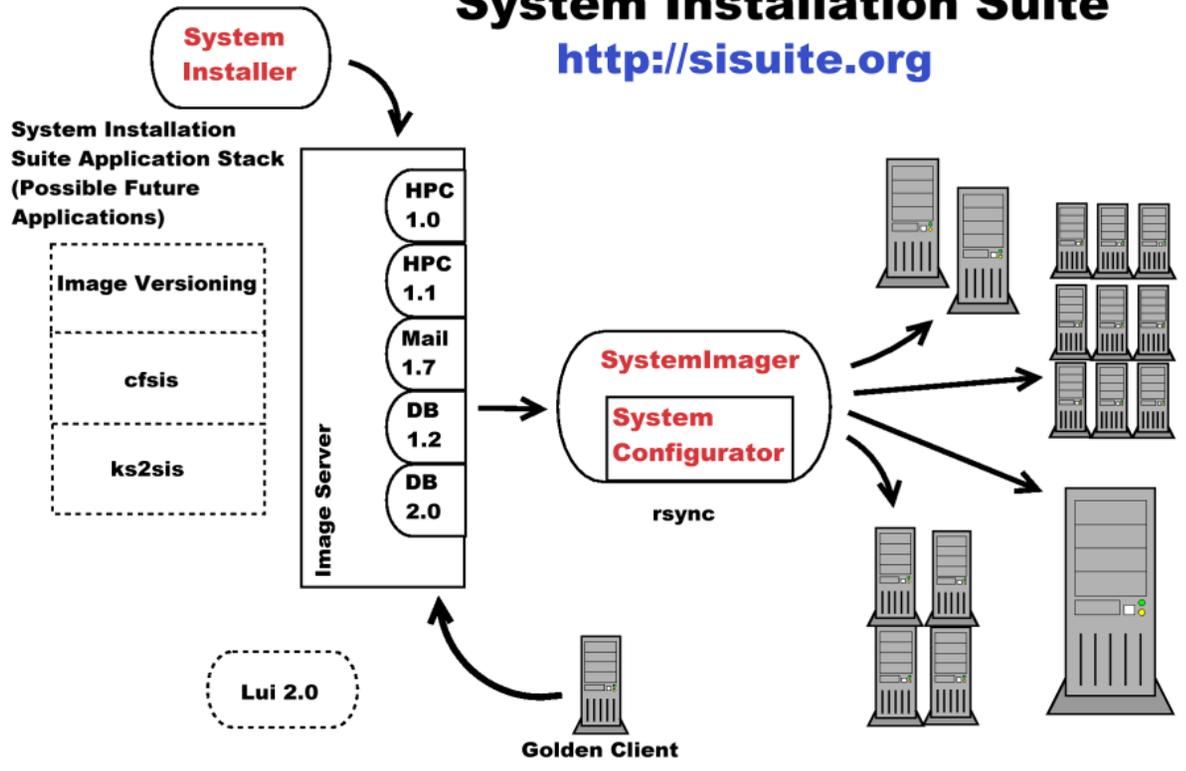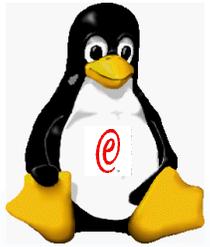
System Installation Suite at a glance

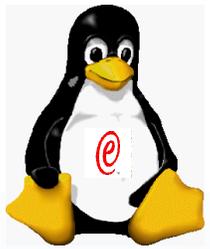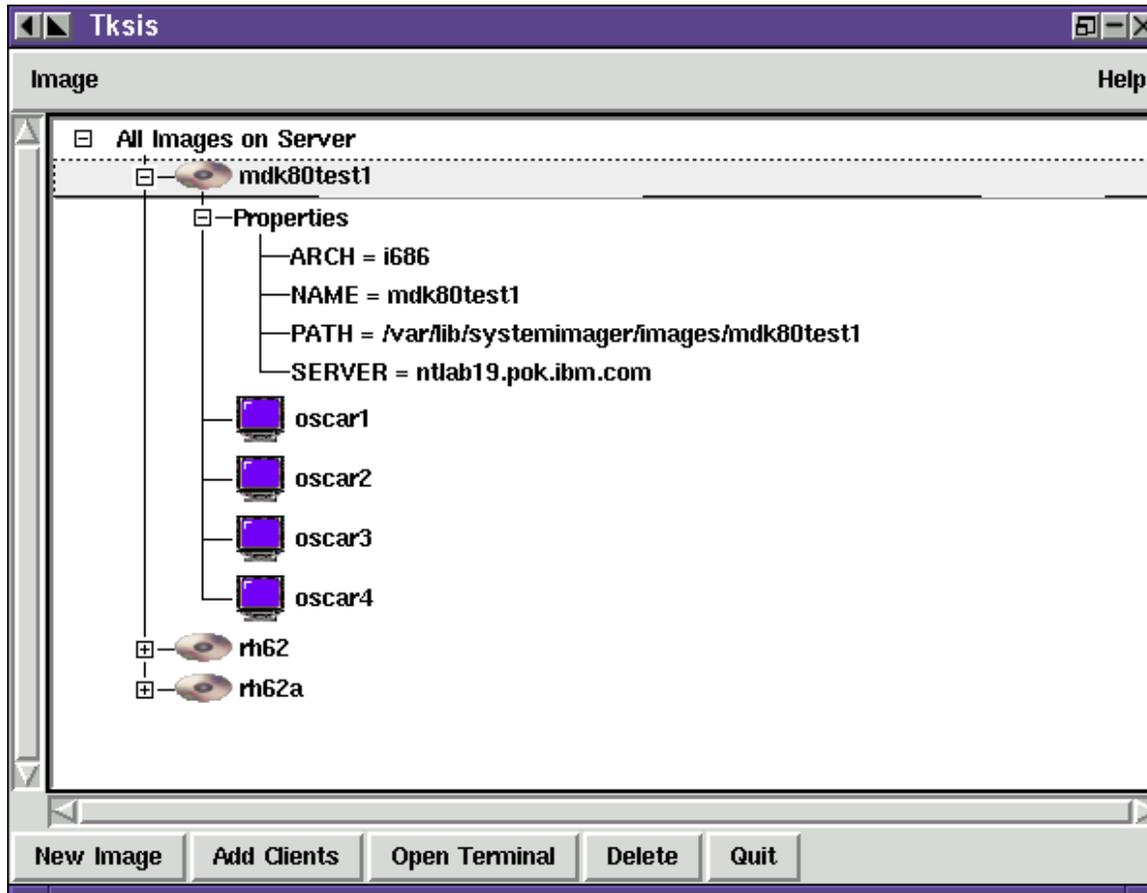
System Installation Suite
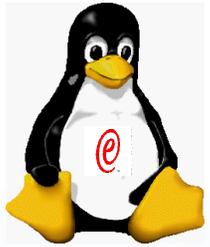
http://sisuite.org

What does it do for me?

- System Installation

  - Fast and efficient way to install machines

- System Maintenance

  - Rsync only propagates the changes between client and image

- File System Migration

  - Image an ext2 machine, image back as ext3 or reiserfs (XFS and JFS coming soon)

- Easy Machine Backup

  - Build replicants of machines

Tksis – the SystemInstaller GUI

Tksis

Image   Help

```
⊟  All Images on Server
   ⊟─⊙ mdk80test1
       ⊟─Properties
              ├─ARCH = i686
              ├─NAME = mdk80test1
              ├─PATH = /var/lib/systemimager/images/mdk80test1
              └─SERVER = ntlab19.pok.ibm.com
       ├─ oscar1
       ├─ oscar2
       ├─ oscar3
       └─ oscar4
   ⊞─⊙ rh62
   ⊞─⊙ rh62a
```

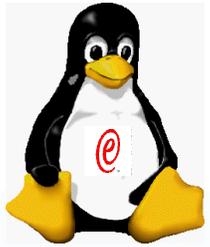New Image   Add Clients   Open Terminal   Delete   Quit

System Installation Suite – Status

- System Installer – 0.5

  - Supports RedHat, Mandrake, and SuSE RPM installation

  - Supports x86 and IA64 image building

- SystemImager - 2.0.0

  - X86 released in tree

  - Experimental IA64 and PPC versions working

- System Configurator – 1.0

  - Support for x86 and IA64

  - Experimental support for PPC and HPARISC

  - Works with RedHat, SuSE, Debian, Mandrake, Turbo, Connectiva
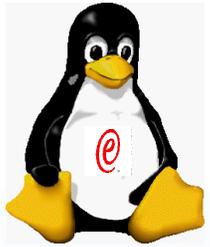
A clustering we go...

- OSCAR 1.2
  - SIS integration underway for OSCAR 1.2
  - Demo available Super Computing 2001
- Clubmask
  - University of Pennsylvania cluster setup project
  - Will be meeting with team at Super Computing
- CSM
  - IBM proprietary cluster offering
  - SIS will be one possible installation method

Future Directions

- Ports, ports, ports
  - pSeries underway, zSeries in planning
- The Image Proliferation Problem
  - cfengine
- Integration with more clustering projects
  - SCE, MSC.Linux
- CLIG
- World Domination!