NexGEN Windows Deployment
CaRS Client Services Innovations
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NexGEN Workgroup & Collaborators
Virtual Machines
Storage
Connect, CQ, and other web services
Research Computing
Managed Print Services
Managed Device Services

ITS Commodity Services
We want it to be this easy....

Register a PC  ➔  Boot and Image  ➔  Get some coffee  ➔  Give PC to client

....across all three campuses.

The Goal
The Philosophy

- **Sane Defaults**: works right out of the box
- **Customizability**: flexible enough for any situation
- **Shared Effort**: no reinventing wheels
The Ingredients

- Windows Enterprise
- Unified Reg + WebWake
- UFDS + WDS
- NexGEN WPKG
• Licensed by IT Services
  – free for all SFU-owned machines
  – upgrade XP, Vista, and 7 Home/Pro
  – will include Windows 8

• Activated against a KMS server
  – secured via IPSEC
  – must check in every 180 days

• Bitlocker encryption for laptops

Windows Enterprise
Process Overview

Register a machine
• select domain and OU
• extra fields populated automatically

Boot it to WDS
• select an image and let it install

NexGEN scripts run
• drivers and windows updates apply
• software packages automatically install
Unified Registration (URS)

- Automated registration for:
  - Men and Mice DHCP
  - Active Directory
  - Managed Mac / Linux (soon)

- Features:
  - Extensible architecture
  - AD OU browser
  - Portable Hostname registration
  - Decommissioning

https://wake.its.sfu.ca/admintools
Windows Deployment Services (WDS)

**Imaging**
- Fully unattended setup
- Stock images provided
- Per-dept image groups

**Active Directory integration**
- Automatic machine rename + domain join

**Features**
- Capture deployed machines
- Multicast support for labs
- Unattend.xml automation
• **UFDS**
  – Brilliant custom network boot system
  – Large selection of utilities
  – Excellent for Linux / BSD / etc
  – In production use for over a year

• **WDS**
  – Microsoft’s official deployment option
  – Hard to chainload from UFDS

• **Solution:**
  – Boot to WDS first to deploy Windows
  – Chainload to UFDS for utilities and other deployment systems

UFDS + WDS integration
Windows Group Policy Set

**Design**
- Targeted at Windows 7 and newer only
- Microsoft SCM baseline + OneUni2
- Wisdom from many different SFU admins

**Features**
- Strong baseline security settings
- Automatic SFUNET-SECURE logon
- Offline Files support + Bitlocker (soon)
- Power Management for Sustainability

**Layers**
- Single unified base policy
- + department-specific preferences
- + layered policy templates for labs, staff
NexGEN Scripts (NGS)

NGS framework
- Federated startup scripts
- Built in PHP-CLI
- Owes much to OneUni2

Structure
- Object-oriented design
- SVN build system
- Inheritance based on OU

Features
- Setup Mode for deployment
- Maintenance Window
- WPKG and WebWake integration

GPOs are nice, but “you’re gonna need scripts!”
Let’s build a WPKG for everyone.

- All stored in Subversion, right next to your scripts
- Common software packages shared for all
- Private packages maintained by departments
- Compiled together by NexGEN scripts
Package Maintainers

• Each package will have an assigned maintainer
• Packages will be thoroughly tested and updated regularly
• Responsive updates will be released to address security concerns

New functionality that builds on stock WPKG

• Supports the use of AD OUs to assign packages
• Log parsing with emailed error reports
• Lots of potential for new features

Builds on common WPKG skill set

• Large variety of software already packaged

You can still capture software inside the image instead.

NexGEN Federated WPKG
WebWake and Sustainability

http://wake.its.sfu.ca/
Summer 2012: beta phase

• Flushing out the bugs that inevitably remain
• Testing WDS performance + scaling up for production
• Assigning WPKG maintainers + building package repos
• Onboarding and training for administrators

Fall 2012: initial deployments

• select labs, pilot groups

Spring 2013: more deployments + new features

• Investigating Windows 8 support
• ServiceNow integration for participating departments

What’s Next
How can I get started?

• Attend an onboarding or demo session
  – We’ll be sending info about these soon
  – Contact Mike Sollanych or Jasper Stoodley if you’d like to be an early adopter

• Read the documentation on Confluence
  https://confluence.its.sfu.ca/atl-conf/display/MDS/NexGEN+Windows+7

• Email its-nexgen-help@sfu.ca to submit incidents, bug reports, or feature requests