

CHICAGO

INTERNATIONAL
SOFTWARE DEVELOPMENT
CONFERENCE 2016

goto;
conference

BARE METAL DEVOPS

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@cread





CORE PRINCIPLES

- “Agile” Infrastructure
- Machines as Cattle
- Automation
- Communication

AGILE INFRASTRUCTURE

- Use configuration management!
- Test
- Rebuild
- Repurpose



MACHINES AS CATTLE

- iPXE
- OS Image management
- Bootstrapping the boot server...



https://upload.wikimedia.org/wikipedia/commons/f/f2/Greenland-musk-ox_hg.jpg

BOOT PROCESS

- PXE
- iPXE
- HTTP call to config service
- Kernel and VLAN specified
- Debian live-boot
- Load squashfs as root filesystem
- bash scripts from git for hostname and network interface config
- chef-client

AUTOMATION

- Bringing up new hardware
- Firmware Upgrades
- Diagnostics



https://upload.wikimedia.org/wikipedia/commons/2/27/Kempelen_chess1.jpg

COMMUNICATION

- Data Center
- Networks
- Security
- Purchasing
- Vendors



ADDITIONAL CONSIDERATIONS

- Mechanical Sympathy
- Networking
- Monitoring
- Forecasting

MECHANICAL SYMPATHY

- Scaling writes on spinning drives
- Gratuitous threading
- Maintaining high availability



https://upload.wikimedia.org/wikipedia/commons/6/65/Seagate_ST-225.jpg

NETWORKING

- Topologies
- Cabling
- Protocols
- Scaling



https://upload.wikimedia.org/wikipedia/commons/d/d1/IBM_hermaphroditic_connector.JPG

MONITORING

- ECC (Memory)
- S.M.A.R.T. (Hard Drives)
- Fans
- Environment



https://upload.wikimedia.org/wikipedia/commons/3/3e/FM200_Three.jpg

FORECASTING

- Purchasing lead time
- Supply chain disruption
- Safe experiments



<https://www.flickr.com/photos/april-mo/11618701545>



amazon
web services™

GOTCHAS

- Variable Quality Hardware
- Quantum State of Old Machines
- Depreciated Hardware IS NOT FREE!
- Platform/Vendor Changes

DEVOPS IS NOT:

- Only deploying to the “Cloud”/ Containers/VM’s
- Limited to web sites or services
- Just another name for your {Sys,Net,DB} Admins!





THANK YOU



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Please

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Thank you!