



The first 500 servers: Our DevOpsish* journey at a Microsoft Enterprise

@scottnasello | @devopsdaysbna

Etsy Day One Deploy

<https://codeascraft.com/2012/03/13/making-it-virtually-easy-to-deploy-on-day-one/>



Live demos are
awesome



A close-up portrait of a man with short dark hair and a light beard, smiling at the camera.

1st

Scott Nasello

HIRING: IT Infrastructure Engineer

Portland, Oregon Area | Apparel & Fashion

Current Columbia Sportswear

Previous Columbia Sportswear, Viasystems (Merix Corporation), Intel Corporation

Education Carnegie Mellon University

[Send a message](#)

500+
connections

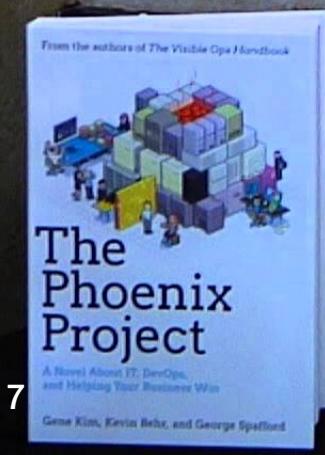
Senior Manager Platforms and Systems Engineering

Columbia Sportswear

January 2015 – Present (1 year 11 months)



- Helping engineers to reach their full potential
- Passionately building a high performance learning organization with a focus on infrastructure as code
- Responsible for leading several IT engineering areas including: orchestration, virtualization, databases, storage, server, desktop and mobile compute.



Gene Kim: A Study of High Performing IT Organizations



Changing an enterprise is hard.

And that is ok, it is supposed to be.
(an exercise in empathy)



chefconf.com
#chefconf

A small rectangular video thumbnail showing a man with glasses and a beard, wearing a plaid shirt, standing behind a podium with a laptop on it. He appears to be speaking at a conference. To the left of the thumbnail, there is some text that is partially cut off: 'hard.' and 'be.'

8

Rob Cummings, ChefConf 2014: DevOps Roller Coaster



Jeffrey Snover

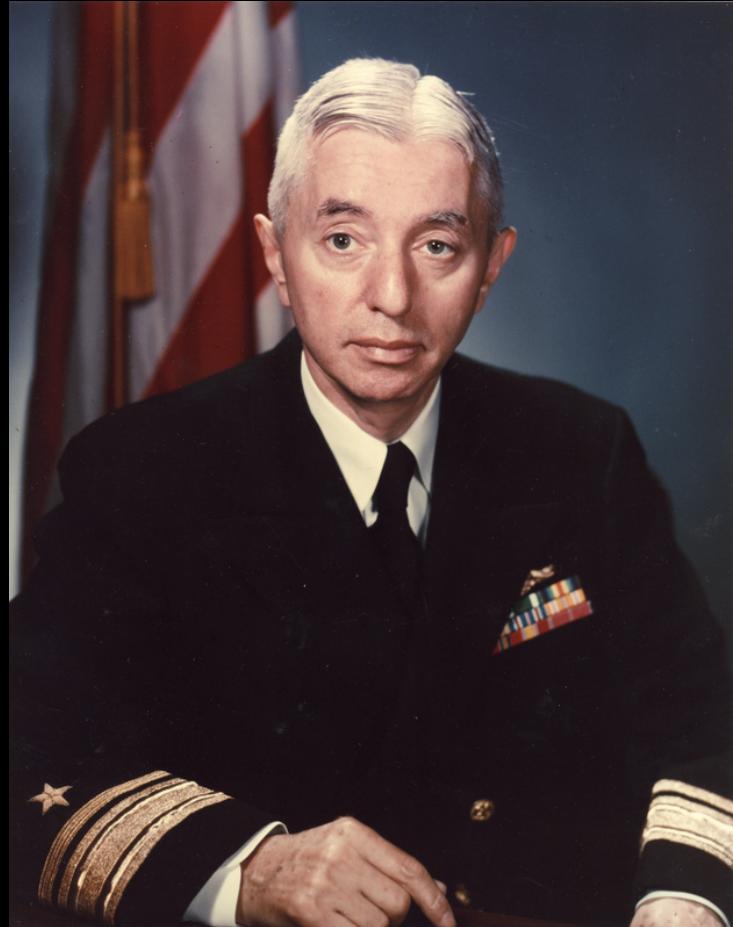
- The **NEXT** button is a fast-track to IT Pro irrelevancy. Become a Differentiated IT Pro by using automation
- If the only admin value you add is the ability to click next, things are going to get tough
- When you click a GUI – you have nothing to share. Powershell creates artifacts which enables a community of sharing
- The secret is that the best engineers are lazy. They love automation & will spend days to automate something
- If you want to be done with learning, get into forestry. If you are in IT, you are riding the tiger and it is constant renewal

MONDAY'S
~AIN'T SO
BAD!

IT'S YOUR JOB
THAT SUCKS!

169 HGJ





Good ideas are not adopted automatically.

They must be driven into practice with courageous impatience.

(Hyman Rickover)

Minimum Viable Process

13 @scottnasello | @devopsdaysbna

Version Control Everything

14 @scottnasello | @devopsdaysbna

Puppet Labs, State of DevOps Report 2014

Visualize Work : Kanban

15 @scottnasello | @devopsdaysbna

3 Tier Business App

DSC Server Provisioning | 60 Servers in 6 Env. | Bootstrap Chef
Install : Ant | Apache | Eclipse | Firefox | Java | Tomcat | SQL Server

Scaling

Building curious people



Hiring

Requirements

- You are a collaborative team player with the ability to build high quality relationships
- You are a curious engineer that is always learning and growing
- You have experience in systems engineering
- You are interested in Infrastructure as Code
- Bachelor's degree or equivalent experience
- 3+ years of engineering experience

Bonus Points

- Previous experience with Orchestration (CHEF, Puppet, Ansible, Salt, DSC, etc.)
- Experience operating public cloud infrastructure (AWS, Azure, etc.)
- Experience in multiple engineering disciplines (development, networking, storage, databases, applications)

O'REILLY

Velocity

BUILD RESILIENT SYSTEMS AT SCALE



JUNE 20–23, 2016
SANTA CLARA, CA

velocityconf.com
#VelocityConf

20

A collage of three photographs. The first image shows a woman with long brown hair smiling. The second image shows two construction workers wearing hard hats; one has a yellow hard hat with blue markings and the other has a blue hard hat. The third image shows a person wearing a wide-brimmed straw hat and a blue uniform, pushing a cart filled with cleaning supplies and a broom, identified as a janitor.

Rockstars

Work distribution in engineering orgs

Builders

Janitors

@alicegoldfuss

Full-er Stack Team

Platform Eng Manager

- Storage Engineer
- 2 x Database Engineer
- 2 x Virtualization Engineer
- 2 x Microsoft Engineer
- Backup & Recovery Engineer
- Collaboration Engineer

X2

ChatOps all the things!

Client Mgmt | Active Directory | ChatOps Mgmt | Server Mgmt | CHEF | Kanban |
Environment Mgmt | IT Service Mgmt | Backup & Recovery | Team Jukebox | Git
Repo Mgmt | Retail Mgmt | AV | Load Balancing | Printers

22 @scottnasello | @devopsdaysbna

10:14 ☆ **ryu** BOT ryu bna00 - Returns the Cafe menu and Lillehammer special
ryu bna01 - Gets today/tonight's weather report from NOAA.
ryu bna02 - Gets retail server location info
ryu bna03 - Displays computer account information
ryu bna04 - Tests connection to a given system
ryu bna05 - Gets AD user property information.
ryu bna06 - Gets VDI VMs assigned to a user
ryu bna07 - Lists the status of all packages at a given Distribution Point.
ryu bna08 - Checks to see if the end of day process is complete on a retail server.
ryu bna09 - BNA demo showing ITSM report
ryu bna10 - Remedy tickets closed in last 7 days
ryu bna11 - Lists the disk usage for a given system
ryu bna12 - Restart a service
ryu bna13 - SQL Install & Upgrade report
ryu bna14 - TFS Tasks completed for a given person
ryu bna15 - Lists all backup jobs for client
ryu bna16 - Backs up a specified NetScaler to \\us-sideswipe\backup\citrix-netscalers

10:20 **snasello** bna00

10:20 **ryu** BOT Hadoukening request: **ryu bna00**

10:20 ★ ✓

BREAKFAST GRILL
Assorted Breakfast Quiche
.37/oz

SOUPS ~ STEWS ~ CHILIS
Chicken and Rice
1.20/2.10/2.35

VEGETARIAN SOUP
Vegan Lentil
1.20/2.10/2.35

INSIDEOUT FEATURE
Asian Chicken Salad with Peppers, Carrots, Pineapple, Green Onion and Sesame Dressing
6.25

ENTREE FEATURE
Teriyaki Chicken Thigh, White or Brown Rice and Potstickers Garnished with Beansprout Salad
6.50

VEGETARIAN FEATURE
Teriyaki Tofu, White or Brown Rice and Vegetable Potstickers Garnished with Beansprout Salad
6.50

10:20 **snasello** bna01

10:20 **ryu** BOT Hadoukening request: ryu bna01



NWS Forecast for: Nashville TN Issued by: National Weather Service Nashville, TN

Tonight: Mostly clear, with a low around 42. West northwest wind around 5 mph becoming calm.

Last Update: 11:35 am CST Nov 15, 2016 Air Quality Alert

10:21 ★ **snasello** bna02

10:21 **ryu** BOT Hadoukening request: ryu bna02



Store Location

Contact

----- -----

us-470 18 W Lightcap Road #0601, Pottstown, PA 19464 610-326-8482

10:22 **snasello** bna03
10:22 **ryu** BOT Hadoukening request: **ryu bna03**
10:22 ★ ✓

ipv4address	:	10.45.██████
name	:	USH-D-WORK1
dnshostname	:	USH-D-WORK1.██████
distinguishedname	:	CN=USH-D-WORK1,OU=PC,DC=1,DC=1,DC=1
objectclass	:	computer
created	:	11/8/2016 4:28:17 PM
lastlogondate	:	11/8/2016 4:28:17 PM
operatingsystem	:	Windows Server 2012 R2 Standard

10:22 **snasello** bna04
10:22 ★ **ryu** BOT Hadoukening request: **ryu bna04**
✓

Address	ProtocolAddress	ResponseTime
ush-d-work1	10.45.██████	0

10:27 **sneasello** bna11
10:27 **ryu** BOT Hadoukening request: ryu bna11

10:28 ☆ 

Free Space (GB) Drive Size (GB)

Free Space (GB)	Drive Size (GB)
39.7	C: 71.66
67.26	D: 120
462.53	E: 545
47.84	G: 60
48.01	H: 60
51.48	I: 60
36.33	L: 100
15.62	M: 40
11.62	N: 40
77.6	S: 99.87
53.11	T: 60
53.62	U: 60
38.64	V: 40

Path Size

Path	Size
---	----
C:\Temp	9.24 m
C:\Users	977.90 m
C:\Windows\ccmcache	581.52 m
C:\Windows\Temp	73.35 m
C:\Windows\winsxs	15.773 g

10:30 **snasello** bna15

10:30 **ryu** BOT Hadoukening request: ryu bna15

10:31 ☆ ✓

(1 rows affected)

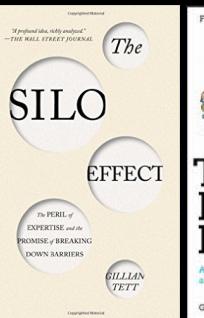
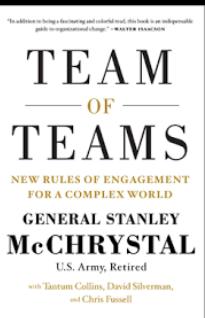
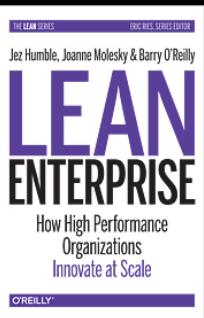
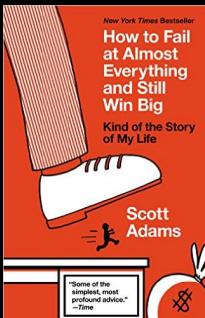
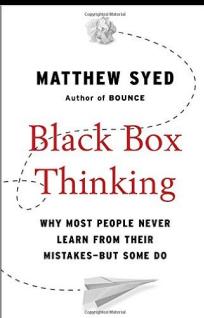
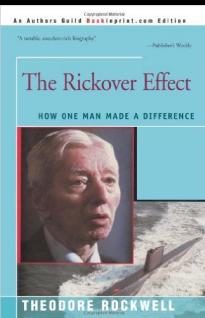
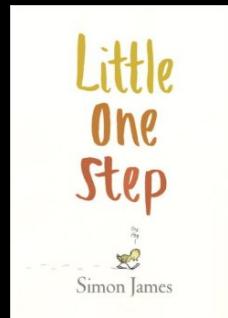
jobID	Level	Status	StoragePolicyName	RetentionDays	AppTypeName	SubclientName	StartTime/EndTime	Active
3642774	Full	Success	USEN-SQL-7YEAR	60	SQL Server	default	2016-10-27 02:52:12.000	No
3642779	Full	Success	USEN-SQL-7YEAR	60	SQL Server	PlanningOutBoundStaging	2016-10-27 01:03:07.000	No
3637920	Full	Success	USEN-SQL-7YEAR	60	SQL Server	default	2016-10-26 02:35:15.000	No
3637922	Full	Success	USEN-SQL-7YEAR	60	SQL Server	PlanningOutBoundStaging	2016-10-26 01:03:09.000	No
3633035	Full	Success	USEN-SQL-7YEAR	60	SQL Server	default	2016-10-25 02:36:25.000	No
3633038	Full	Success	USEN-SQL-7YEAR	60	SQL Server	PlanningOutBoundStaging	2016-10-25 01:03:31.000	No
3627957	Full	Success	USEN-SQL-7YEAR	60	SQL Server	default	2016-10-24 02:38:30.000	No
3627963	Full	Success	USEN-SQL-7YEAR	60	SQL Server	PlanningOutBoundStaging	2016-10-24 01:03:14.000	No
3621294	Full	Success	USEN-SQL-7YEAR	60	SQL Server	default	2016-10-22 23:16:43.000	No
3621215	Full	Success	USEN-FILE-VM-7YEAR	60	Windows File System	default	2016-10-22 21:51:03.000	No

Notable Milestones

- 2/2015: Standups, TFS Kanban, TFS Version Control
- 9/2015: Server Provisioning via VMware PowerCLI
- 9/2015: 250 Artifacts in version control
- 2/2016: 3 Tier Business App Delivery
- 6/2016: Slack & Hubot for ChatOps
- 6/2016: Reorganization for “fuller stack” focus
- 7/2016: GitLab Version Control

Thank You

- Minimum Viable Process (apply PDSA! Plan-Do-Study-Act)
- Find the win-win: good for the enterprise & good for team
- Make it easy for new adopters to join



Timeline & Milestones - tl;dr

- 1/2014: SIM Portland – Gene Kim
- 10/2014: DevOps Enterprise Summit + CHEF intro
- 2/2015: Arrested DevOps #30
- 2/2015: Weekly Standups, TFS Kanban
- 3/2015: Primary & Alternate responsibility flip
- 3/2015: TFS Version Control
- 4/2015: ChefConf 2015 & Phoenix Project assigned
- 5/2015: Low WIP experiment
- 6/2015: Onsite CHEF training
- 9/2015: TFS PowerShell utilities & Sprint Automation
- 9/2015: Server Provisioning via VMware PowerCLI
- 9/2015: Provisioning Working Group
- 9/2015: 250 Artifacts in version control
- 9/2015: PowerShell onsite training
- 10/2015: First Server Environment w/ PoshOrigin
- 10/2015: First 50 CHEF Nodes
- 11/2015: Prepare Workspace Module (TFS, Git, Chef Dk, etc.)
- 12/2015: Distribution of PowerShell Modules to Ops teams
- 1/2015: 150 CHEF Nodes
- 2/2016: 3 Tier Business App Delivery
- 5/2016: Artifactory for artifacts
- 6/2016: Velocity Conference
- 6/2016: Slack & Hubot for ChatOps
- 6/2016: Reorganization for “fuller stack” focus
- 6/2016: Data Center move Stretched vSAN & Automation
- 7/2016: GitLab Version Control
- 8/2016: Collapse ITSM Queues
- 9/2016: ~5 new ChatOps scripts committed per week
- 9/2016: Rockstars, Builders, Janitors Experiments
- 10/2016: SAP non-prod refresh via ChatOps
- 10/2016: 100+ ChatOps scripts