Jenkins for Smarter Operations

Christian McHugh & Curry Searle

#JenkinsWorld

Jenkins for Smarter Operations

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Operations?

- Set of all processes and services that are both provisioned by an IT staff to their internal or external clients and used by themselves, to run

- Responsible for the smooth functioning of the infrastructure and operational environments that support application deployment, including the network infrastructure; server and device management; computer operations; IT infrastructure library (ITIL) management; and help desk services for an organization. ~ Wikipedia

Smarter?

- Reliable
  - The service must be up
- Consistent
  - Provide the same experience regardless of instance
- Reproducible
  - Allows for scalability and disaster recovery
- Automated
  - The service takes care of itself; all you do is monitor for health and growth
- Traceable
  - Well, not always good care. Sometimes you need to debug, audit, log, and verify

Operations as Code

- Even the best planned and implemented systems occasionally need humans
- Keep it simple and give them a Jenkins button

Jenkins Ops Feedback

"It doesn't feel right"

Complaints about the "build" button

"It's a hack"

"We don't do development"

"Not the intended use"

"Brillant!" <3 Thanks Scotty!

Requirements

- Interface to script processes across machines/environments
- Activity/Audit logs
- Output logs
- Interface with source code revisioning
- Rest API

Requirements - Satisfied

- Interface to script processes across machines/environments
  - Distributed builds, SaltStack/Ansible plugin
- Activity/Audit logs
  - Built in / logstash
- Output logs
  - Built in / logstash
- Interface with source code revisioning
  - Built in
- Rest API
  - Often called from external interface: Service Catalog (ServiceNow), Jira, etc.
- BONUS: Plugins
  - AWS, Docker, ChatOps, Alerting, that one thing by that one guy that runs everything

Example 1: Hadoop/HBase

- Scheduling compactions
- Running Ad-Hoc jobs
- On-going management

Example 2: Identity Management

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- On-boarding
- PeopleSoft
- Identity Manager
- Active Directory
- Office 365
- On-going management
- Off-boarding

Example 3: Enterprise Applications

- Automated weekly, monthly & quarterly maintenance tasks
- Replaced 20+ hour maintenance window with component Jenkins jobs (Step1, Step2..)
- Push-button steps now run by ops desk
- Only 1 person from each team on call

Don’t aim for runbooks, hand-off proper automation and a Jenkins button!

Example 4: Monitoring

- Task scheduling
  - Custom checks (shell, python, selenium, proprietary tool)
  - Service owner's code stored in Git
  - Jenkins runs the monitoring job on proxy host
- Database Maintenance
  - Zabbix down/up bug
  - Button to find the mixed entries
  - Button to fix it

Example 5: Dell CFI & SCCM

- Machine purchased
  - Email received (MAC Address, Service Tag, Purchase Order)
  - Determine purchasing department
    - Subnet, AD OU, Required software, Printers, etc.
  - Create SCCM workstation object and target force-run Task Sequence
- Machine arrives
  - Un-box & plug in
  - SCCM takes over
  - Jenkins facilitates unattended BitLocker drive encryption

Example 6: Central Web Services

- Request new web site
  - OTRS service ticket
  - Pipeline
- Site owner maintenance
  - WebAdmin front-end to Jenkins

Web Portal

IT | SHARED SERVICES WebAdmin Dashboard

cls0055

- DASHBOARD
- MY SITES
- SUPPORT
- DOCUMENTATION
- EXTRA LINKS

Website Overview

Live **Production** Site

Aliases

- www.sla.untsystem.edu

Docroot

- /export/web/virtual/sla_untsystem_edu

Site Administration

Clear Varnish Cache

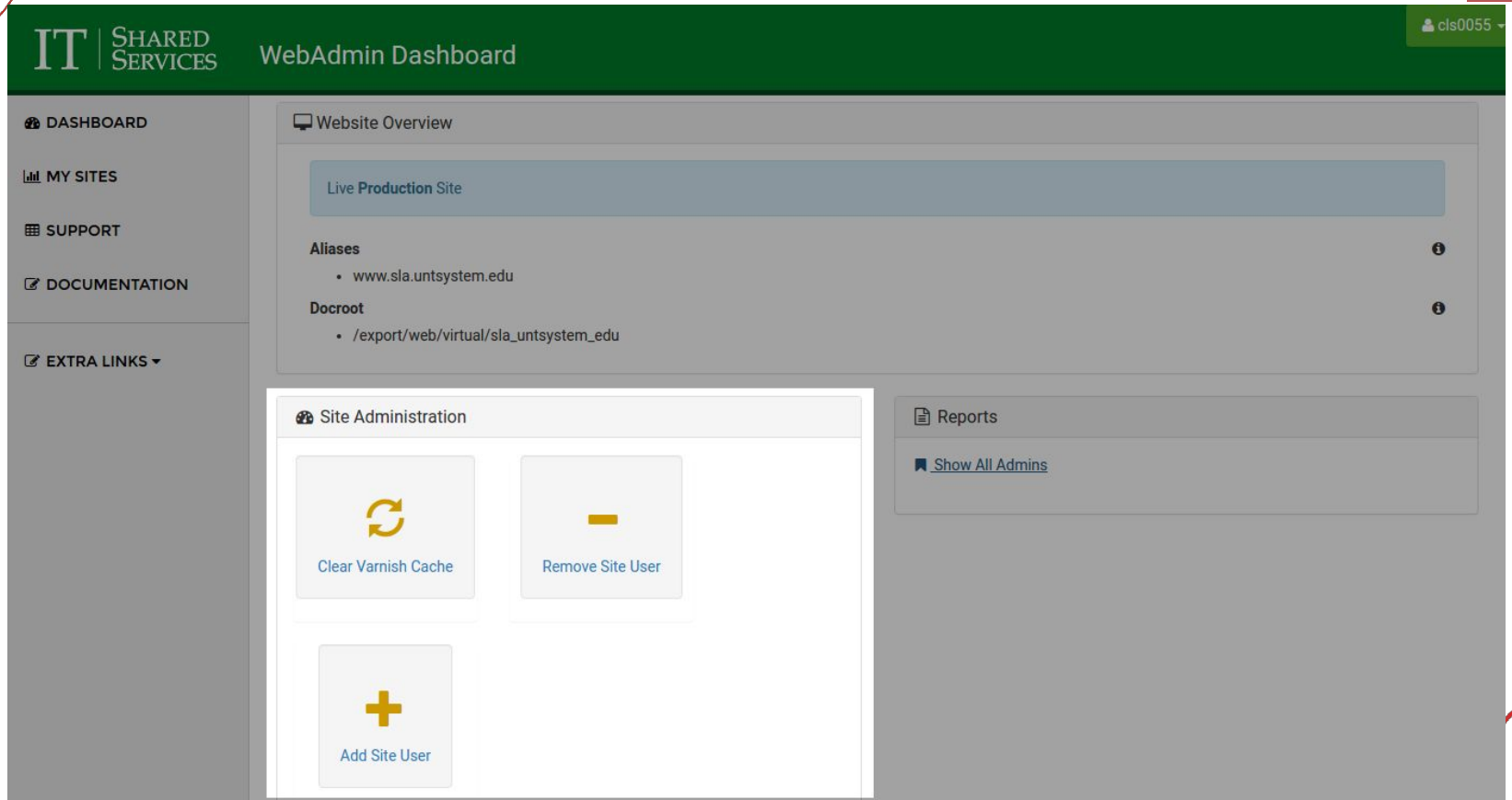
Remove Site User

Add Site User

Reports

Show All Admins

Web Portal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Web Portal

IT | SHARED SERVICES WebAdmin Dashboard

- DASHBOARD
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- DOCUMENTATION
- EXTRA LINKS

Add Site User

My Sites / sla.untsystem.edu / Add Site User

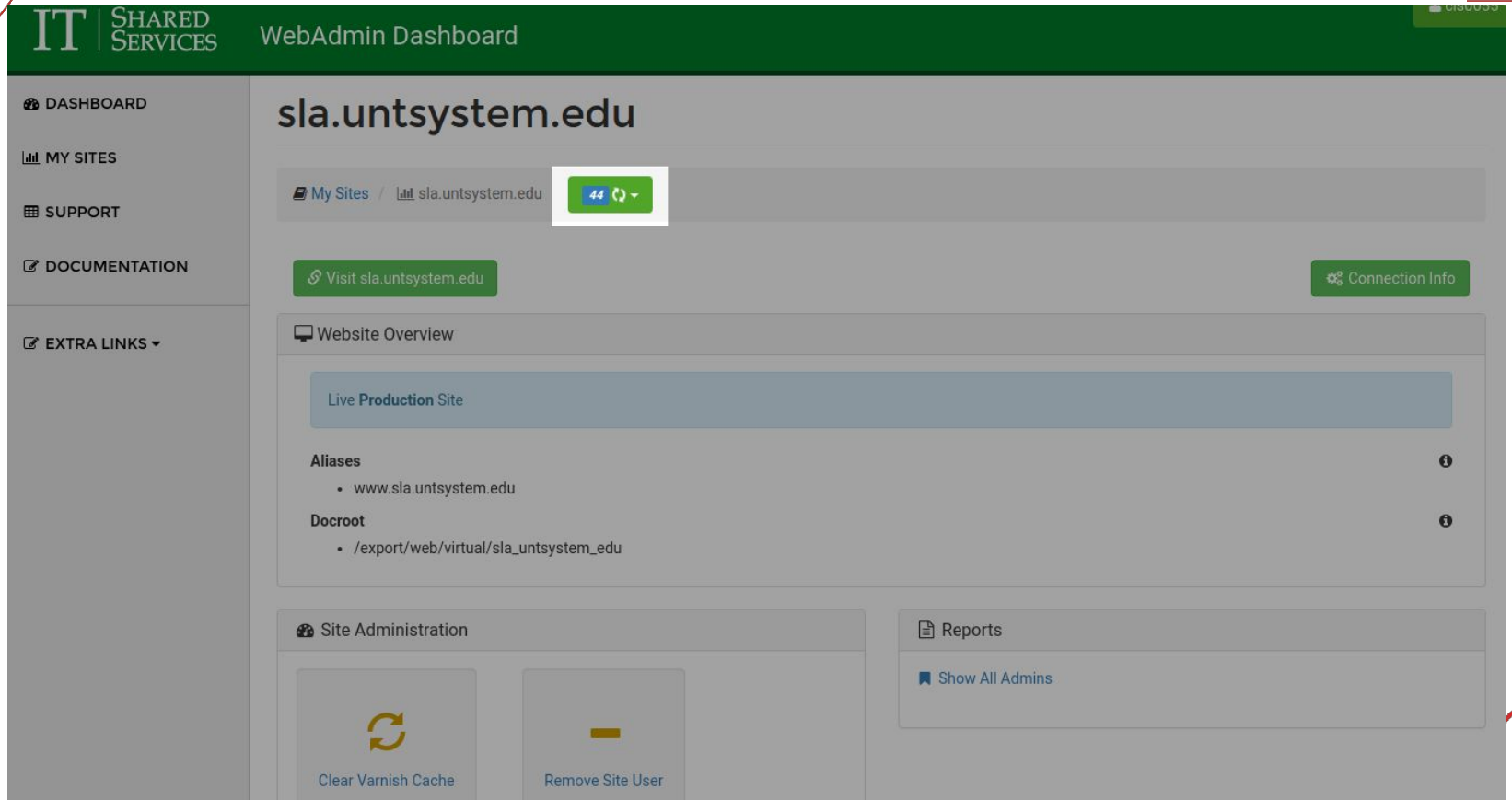
This form will grant a user admin access to this site. Note: This will **not** grant WebDAV access.

EUID	Role
	Administrator

Add User

About CWS Sensitive Data Policy Privacy Policy

Web Portal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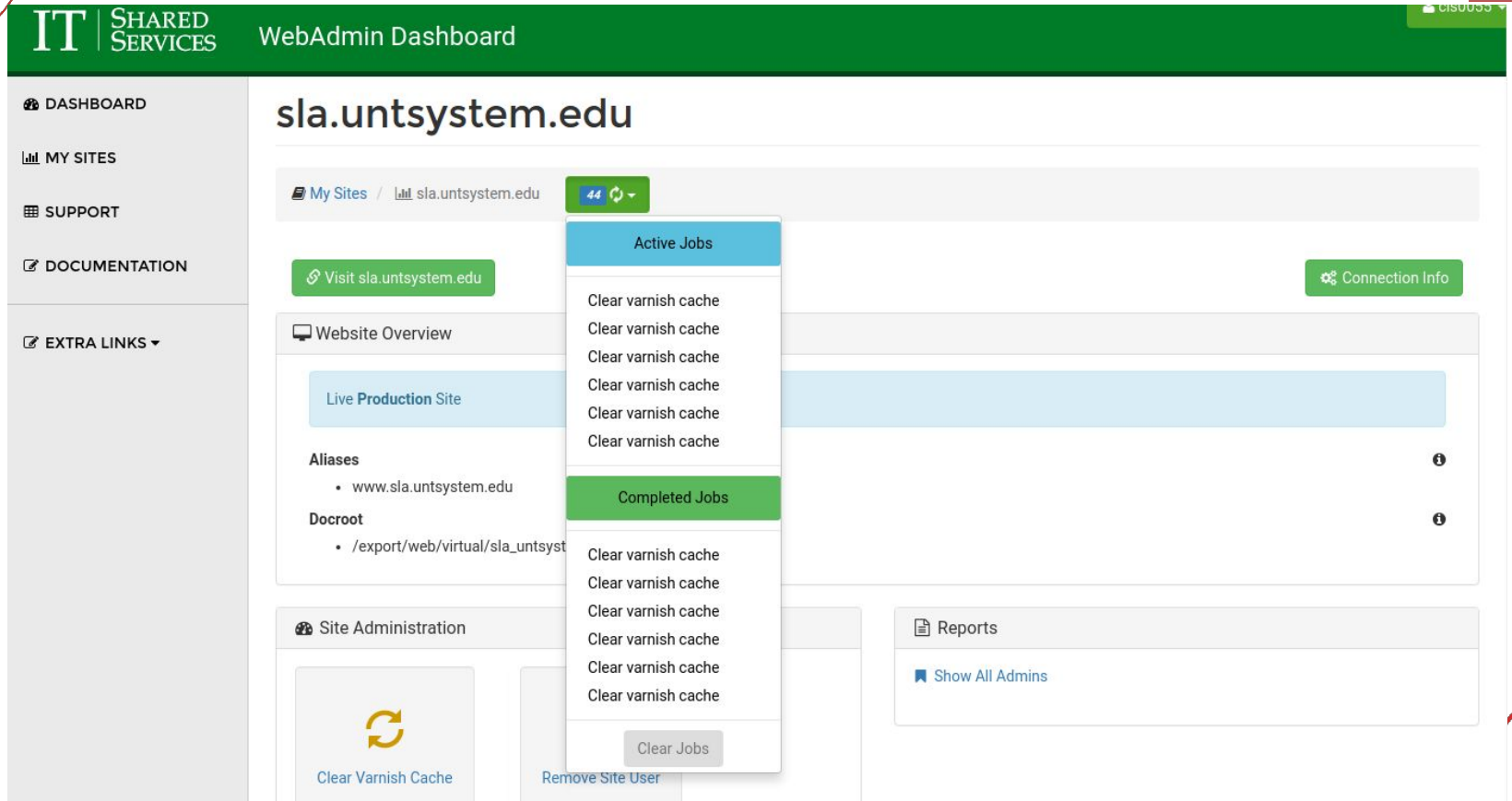
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Clear varnish cache
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Painpoints

Job creation/backup/storage

- solved with pipeline (or job-dsl/groovy)

UI scalability issues

- WIP blue ocean

Job plugin dependency

- solved with groovy script replacement

Thanks Everyone!

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