SFU SIMON FRASER UNIVERSITY
ENGAGING THE WORLD

Automation and Orchestration:
The key to delivering agile infrastructure and application services

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Agenda

- Introduction
- Platform
- Tasks & Events
- Teams & Tickets
- Server Provisioning & Automation
- Service Catalog
- Lessons Learned
- Q&A

Introduction

- Automation
  - The delivery of a task or a function without human intervention.

- Orchestration
  - The coordination of automated tasks in such a way that the end result is a consolidated process.

Platform

- Automation
    - VMWare vRealize Automation
- Orchestration
    - VMWare vRealize Orchestrator
- Configuration Management Tools
    - Puppet
    - Ansible
    - PowerShell

Tasks & Events

Provisioning Tasks

- Preconfigured
  - Limited Scalability
- Dynamic
  - Greater flexibility
- Manual to Automated processes
  - Scripting
  - Actions
  - Workflows

Lifecycle Events

- Requested
  - Customization of Attributes
- Building
  - Validation and Sanity checks
- Provisioned
  - Join Directory Services, update DNS
- Disposing
  - Clean up

Teams & Tickets

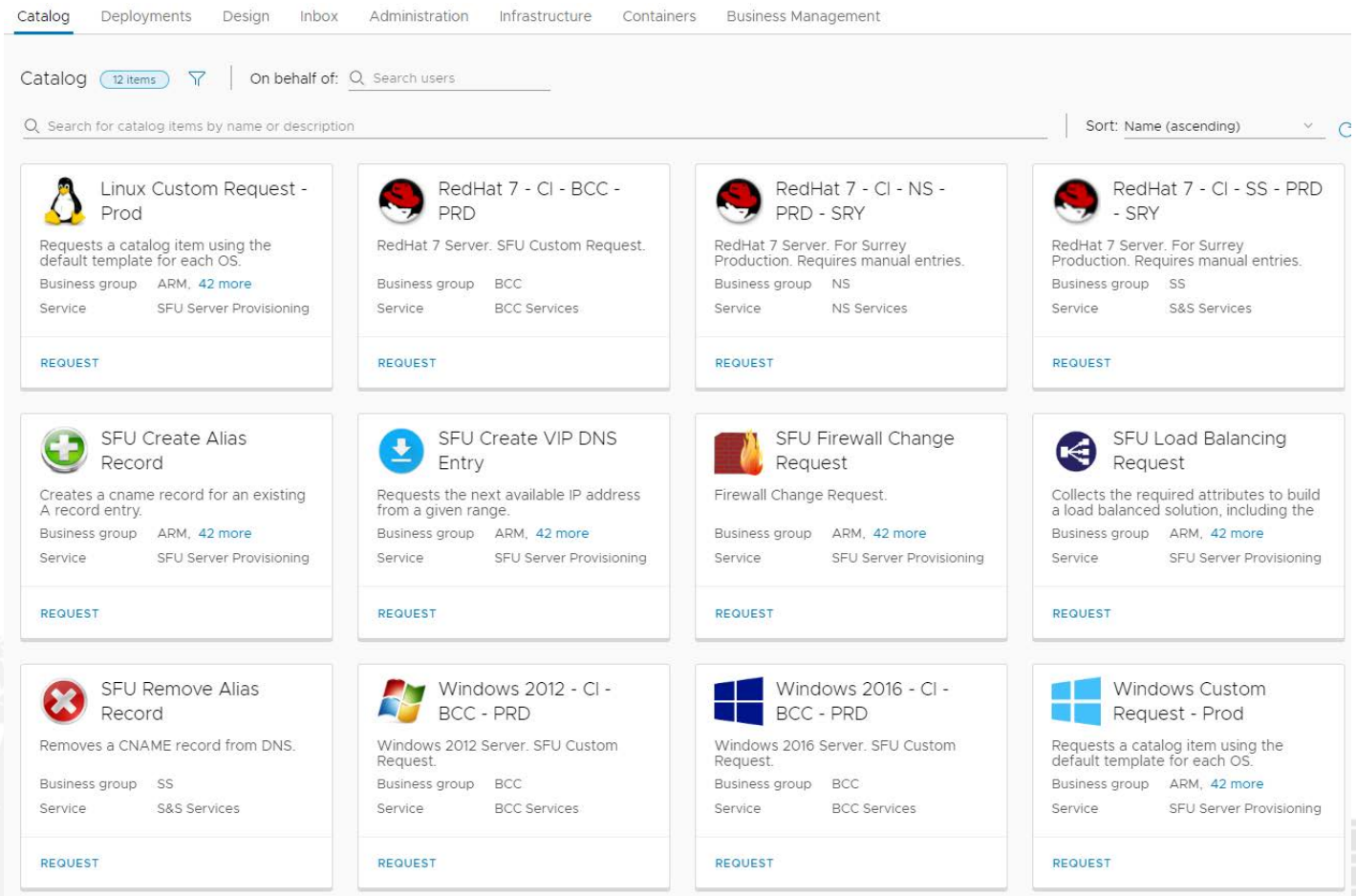
- Application Services
  - Requirements and Specs
- Network Services
  - IP & DNS
  - Firewall
  - Alias
- Servers & Storage
  - OS
  - Active Directory
  - Monitoring Systems
  - Load Balancing
  - Mail lists & Communication

Server Provisioning &

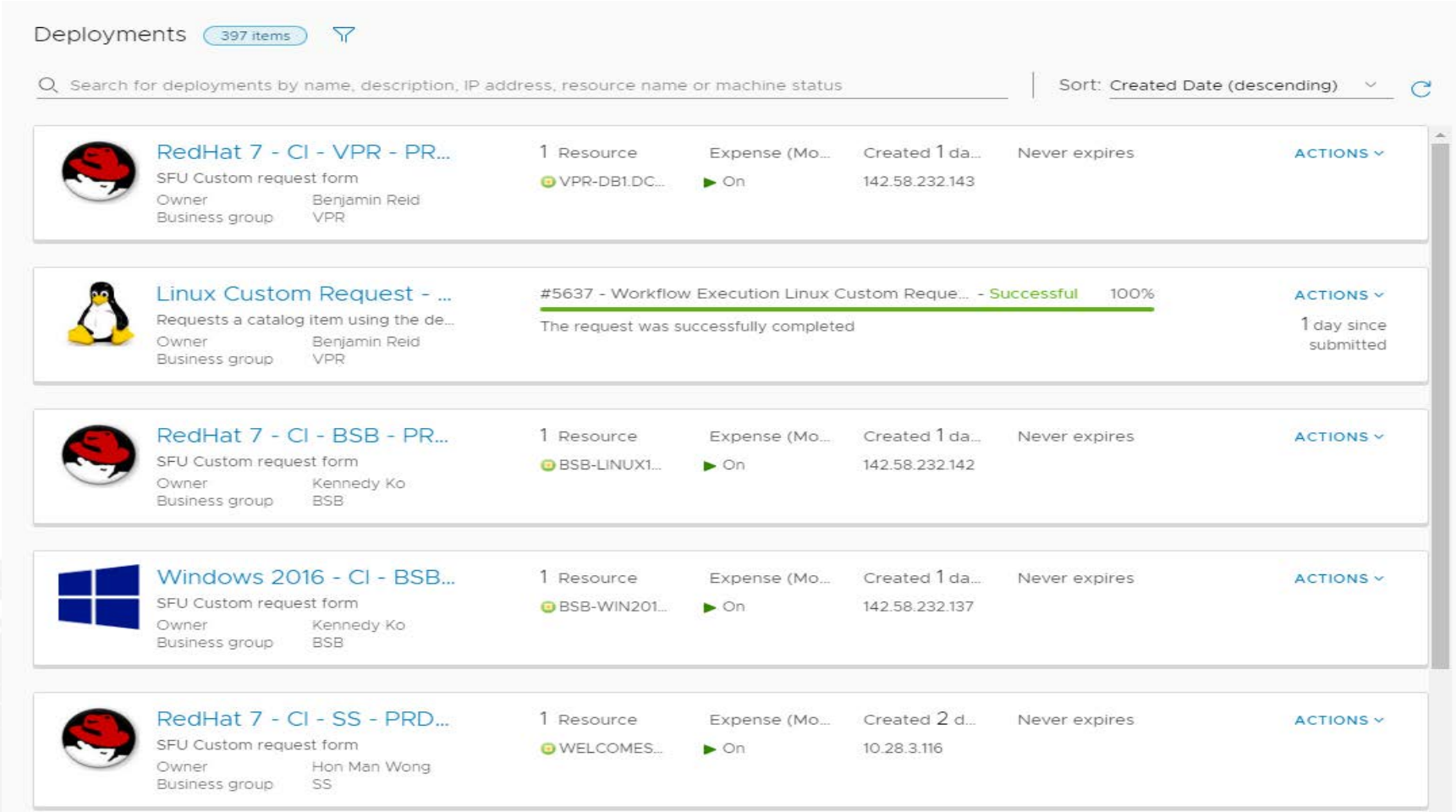
- Portal
  - Multi-tenancy
  - Self-provisioning
  - Governance
  - Access to console

- Orchestration
  - Integration with various vendor plugins
  - Integration with SOAP
  - Code based blueprints
  - OOTB workflows for management and maintenance.

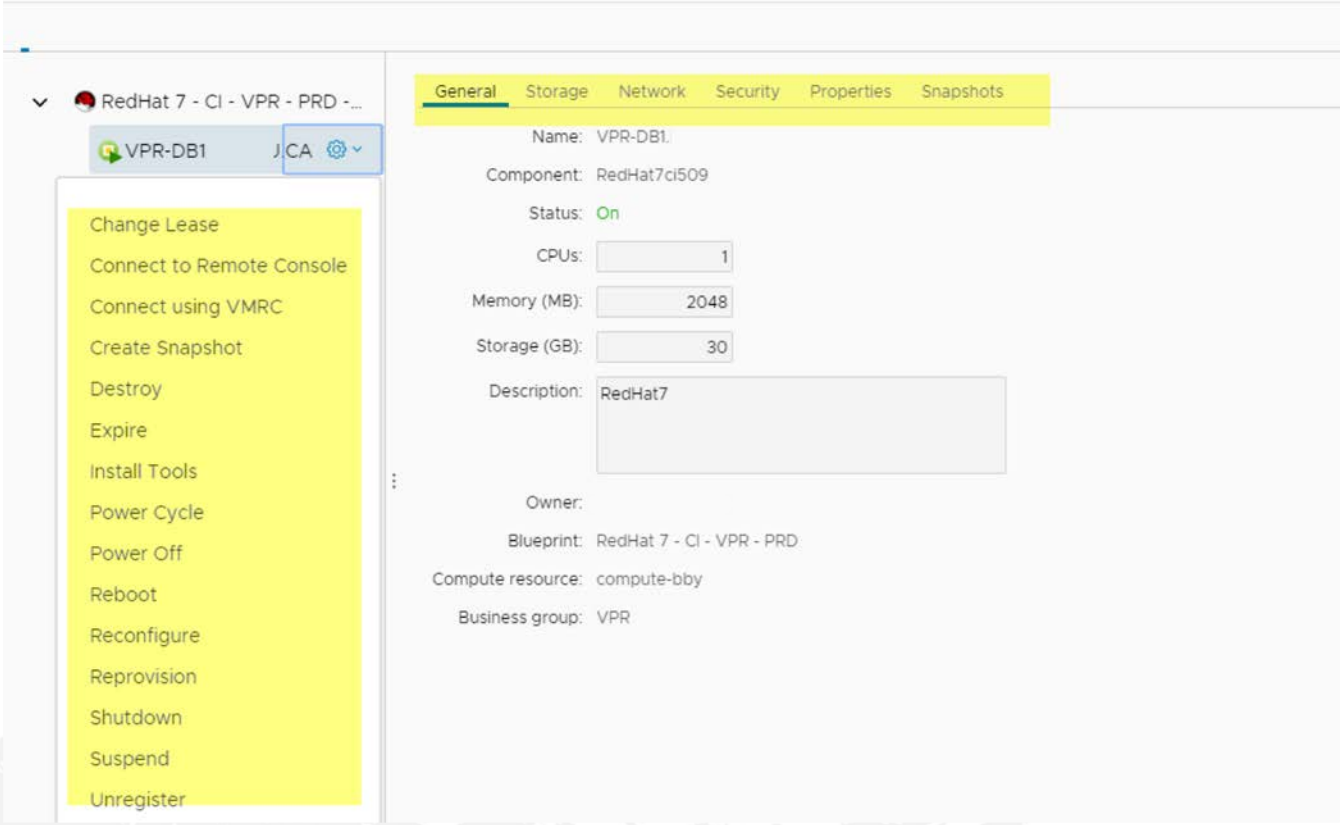
Service Catalog



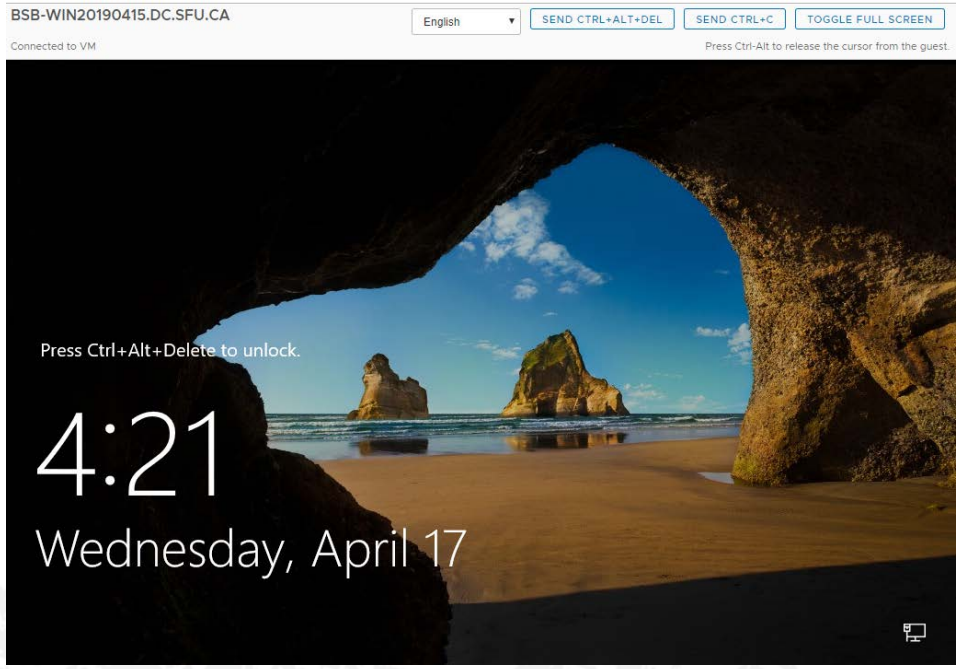
Deployments

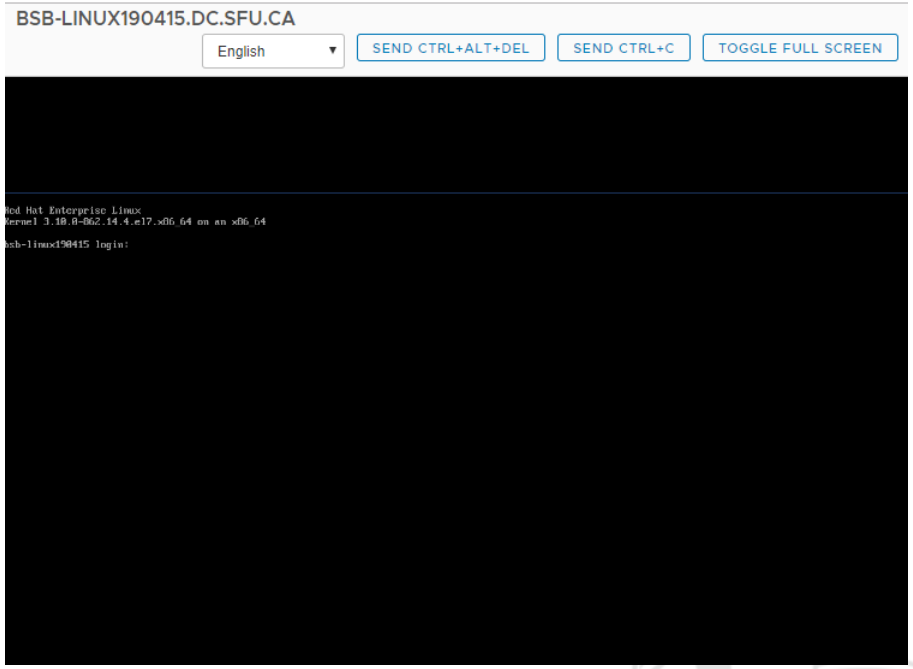


VM Details

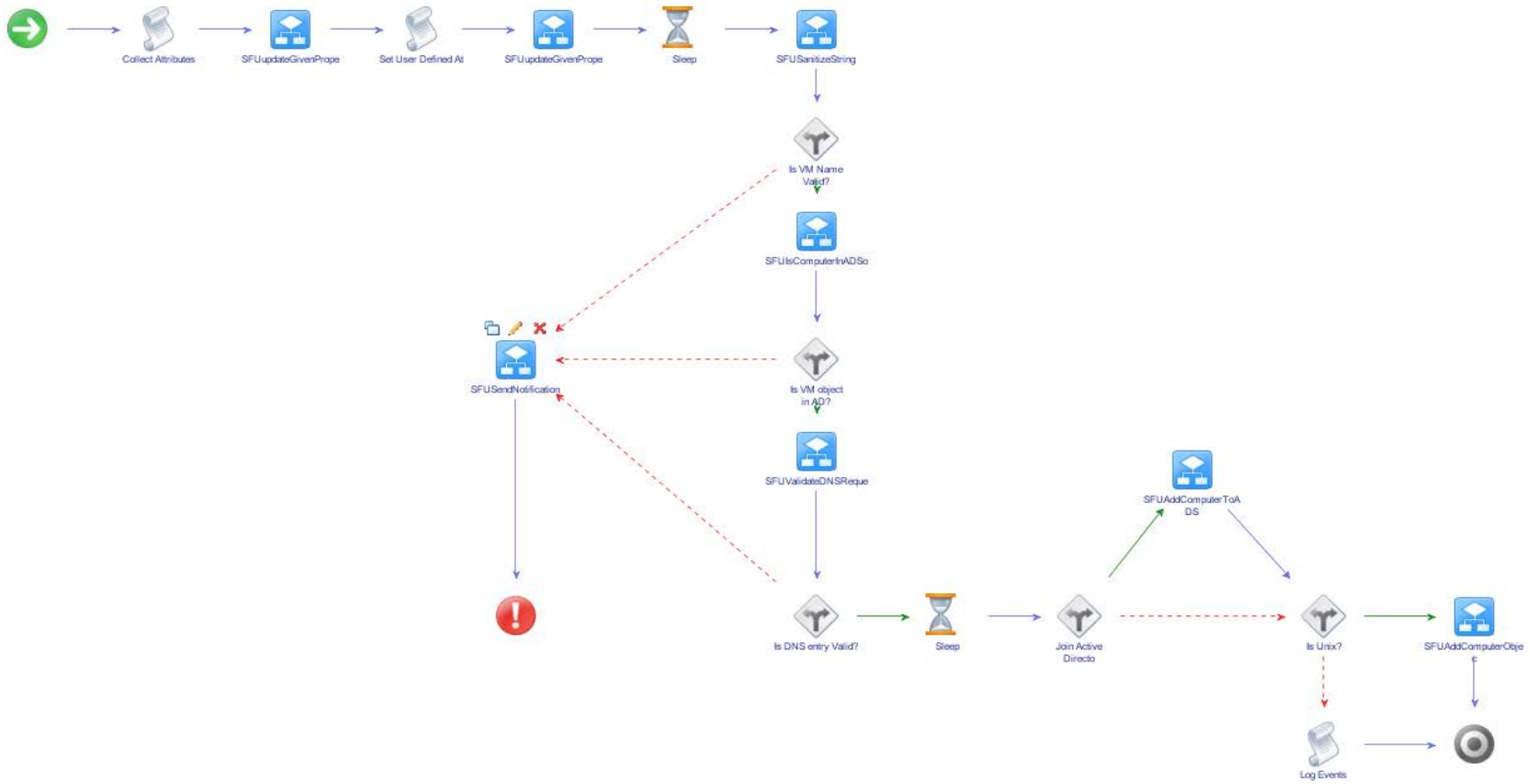

RedHat 7 - CI - VPR - PRD -...
VPR-DB1
Change Lease
Connect to Remote Console
Connect using VMRC
Create Snapshot
Destroy
Expire
Install Tools
Power Cycle
Power Off
Reboot
Reconfigure
Reprovision
Shutdown
Suspend
Unregister
General
Storage
Network
Security
Properties
Snapshots
Name: VPR-DB1
Component: RedHat7ci509
Status: On
CPUs: 1
Memory (MB): 2048
Storage (GB): 30
Description: RedHat7
Owner:
Blueprint: RedHat 7 - CI - VPR - PRD
Compute resource: compute-bby
Business group: VPR

Console Access





Workflows


Collect Attributes
SFUupdateGivenPrope
Set User Defined At
SFUupdateGivenPrope
Sleep
SFUSanitizeString
Is VM Name Valid?
SFUIsComputerInADSc
SFUSendNotification
Is VM object in AD?
SFUValidateDNSReque
SFUAddComputerToA DS
Is DNS entry Valid?
Sleep
Join Active Directo
Is Unix?
SFUAddComputerObje c
Log Events

Lessons Learned

- POC and its benefits
  - Proof of concept helps deliver the pros/cons for the proposed implementation
  - POC results in the ability to get executive support

- Executive support goes a long way to break silos.
  - Use the POC to get your executive team excited about the new technologies

- Collect requirements from the server Provisioning team.
  - Start by finding which of the low hanging fruit items can make the biggest impact on the team's day-to-day life.

- 80/20 rule for automation
  - There is always a percentage of special cases, leave those for last.

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Q&A