Introduction to Automating vSphere Infrastructure

Conceptual
- **Aims**
  - Make it safe for your data
  - Predictable and consistent
  - Concentrate on the applications
  - Work in a cloud like manner
- **Remove one time or custom tasks**
  - Easy to update
  - Easy to Understand

Business Models to consider
- **Transformation**
  - Standardise
  - Make sense of what's there
    - Rationalise
    - Secure
  - Modernise
    - vSphere
      - 6 — March 12 2020 — End of general support
      - 5.5 — Sep 19, 2018
    - Migrate workloads
    - Create new ones
- **Portal and net-new apps**
  - Goverance
  - vRA
    - Under vRLCM — Separate or SDDC Manager
    - Connect to VMC on AWS
  - Lifecycle
- **Hybrid Cloud**
  - Similar processes
    - Hybrid linked mode
      - Different SSO domain
      - Powered by VCF
    - Same tooling
  - Less refactoring
    - Migration of workloads
    - HCX for mass migration

DIY
- **vSphere**
  - Management — VCSA deploy
    - ISO
    - JSON
  - Virtual Machine
    - Templates
    - Content libraries
    - Placeholder shell — 3rd party auto build
  - Compute
    - Scripted ESXi
    - Auto Deploy
    - Host profiles — Scripting
  - Network — vDS Centralised — Export vDS
    - Restore
    - Back up
  - Storage — SPBM
    - Object based
    - TAGS
    - vVOLS
    - vSAN
- **Thoughts**
  - Requires a custom design
    - Lead time
    - Skills
    - Support
  - Allows for a repeatable deployment using lite touch vSphere features
  - Can extend with
    - PowerCLI
    - vRO
    - Terraform

VCF
- **Builds upon VVD**
  - Aligned with VVD design
  - Same BOM concept
- **Turnkey deploy**
  - Same VVD like deployment
  - Core vSphere
  - Operations
  - SDDC
- **Concept of Management and workload**
  - 4 Ready Nodes for management
  - vSAN
- **Lifecycle management**
  - Change request and scale
  - Public API
    - Certs
    - Passwords
    - Lifecycle of a host
    - Reporting

Next Steps
- **Review VVD**
  - Understand the logical design
  - Guard Rails
- VCF lab tools
- VMC on AWS Skill badge

VVD
- **Architect Thoughts**
  - Answers a common question from customers
    - What does VMware say?
      - What is a best practice
      - Process of validation
      - Rubber stamp
    - Is it complete?
      - Yes its complete, but
  - Skills — Simplify the running of a SDDC
    - Design of NSX
    - Upgrade of vRealize
    - Design & build of vSAN
  - Reduce risk to your business
  - What should I do?
    - Review your design with the design decisions excel spread sheet
    - Terms and approach useful for cloud certs and skill upskiling
    - Consider pushing out next deployment with VVD approach
  - Ease of management
    - Hardware
    - Deploy standard pods
    - BOM
  - Validated testing
    - Scale
    - Churn rate
    - Tested upgrade process
- **Terms**
  - Regions
    - Geographical site
      - Higher latency
      - Standalone SDDC
    - Active / Passive
  - Availability Zone
    - Lower latency sites — <10ms
    - Active / active
    - lower distances between sites
  - Workload Domain
    - Discrete area of compute and management for workloads
    - Types
      - Management
      - Compute — workloads
- **Review and amend documentation**
  - Review the Design Decisions
  - Good place to begin with documentation
  - Docs
    - Install Guide
    - Verification — Testing plan
    - Upgrade
  - Consider the automation tools
- **Consider Support**
  - Using the BOM
  - People like us can download and understand the VVD
  - GSS Can too
- **Cloud Builder Process**
  - Prep
    - Deploy Appliance
    - Login to appliance using winSCP
      - admin username
      - upload bundle location — /mnt/hgfs
      - CertGenVVD location — /opt/vmware/vvd/certificates
  - Mount bundle Process
    - Login Using SSH
    - run /opt/vmware/vvd/cloud-builder/install/reconfigure.sh
  - Deploy
    - Login to web portal
      - https://<fqdn>
      - admin username
    - Upload prepared config file using GUI
    - Generate JSON files
      - Management
      - Workload
    - Validate Files — Web portal — Click validate
    - Run deploy process — Management cluster
  - Post Deploy Tasks
    - Base VI
      - Host profiles
      - dFW lock down
      - PSC DNS records
    - vRealize
      - OPS
      - vRA