V2EC POC

PM: Thomas Spinelli (ECSO)

Tech Lead: Robert Guajardo (ECSO)

V2EC Executive Steering Committee

Jan 14, 2019

VA

U.S. Department of Veterans Affairs

Office of Information and Technology

V2EC POC

- COTS –
  - CCOW-Scotti & Adam
  - EPS, FBCS & ICB – Kyle and Noah
  - Back Office – Citrix PVC – Wayland, Chris Matthews, Noah
  - Functional Testing – Combination of site (VCB and Omaha) and
  - Performance Testing - Michael Seaman
- VistA –
  - SAT 6 – John Dellar, Kelly Mullinix
  - Solution Delivery -
  - Service Operations (SO) – Brad & Claude
  - Infrastructure Operations (IO) – Kyle Monsees
  - Security – Joseph Forcade
  - Functional Testing –
  - Performance Testing – Michael Seaman

Top Functional Capabilities to Implement in the Cloud

- No degrade in user experience
- 4 COTS Applications including CCOW
- Active Directory Integration/Access
- PKI Server Integration/Access
- Citrix Server Integration/Access
- Cache Database Encryption
- Backup and Restore of VistA DB
- High Availability of VistA System
- High Availability of COTS System?
- Controlled Substance Order with Multi-Factor

2/5 – 2/7 F2F

- POC effort status / implementation wise by the time F2F kicks off?
  - All VMs deployed for test including COTS VMs moved
  - VistA system functioning with limited interfaces for testing. Backup/Snapshot testing should begin.
- Specific goals for F2F:
  - Review to-be VistA VAEC architecture,
  - Define as-is and to-be architecture for COTS to mirror on-prem capabilities
  - Review migration test plans for VistA and COTS and execute all test steps that can be performed pre-test account data and applications
  - Discuss and Review Security Profile – authorized use of SMS and ATO impacts, database encryption
  - Host VistA site test account in VAEC environment
- Participants:
  - Core team plus expanded group to support COTS architecture design effort and COTS testing

Things to get done by Feb 28 for Go No Go

- Claude – New AMI from Kelly and Adam to set up a mirror configuration and complete testing on native fail-over script method and ELB method for Mirror HA. Test volume backups and snapshots (and restore) with mirror configuration. Also need to configure and test use of multiple interfaces on the backend DB servers in a mirror configuration.
- Evan - At the F2F would like to settle on design approach for shared storage and decide if we will use NetApp CVO or native EBS for VistA pilot. Either will work. Decision will have more relevance on long term deployment assuming we move past the pilot and start discussing supporting 70 plus sites in the VAEC.
- Joe Walker – At F2F review test plans for COTS testing. Have 2 test plans, one for execution prior to getting Omaha test account and another for testing after we get Omaha test account. Joe has identified as part of the test a plan to use his own testing resources to minimize impact to site resources.
- Adam – Need to test visibility to servers and management.
- Noah – Need to complete tests for ICB, FBCS, CCOW and ESB

Things to get done by Feb 28 for Go No Go (Cont.)

- Mike Seaman – Cover creating of the baseline at the F2F and get team engaged in creating an acceptable solution to create a performance baseline.
- ICB Test Plan – Review test plan for COTS ICB and get technical details worked out and assigned to support team. A database is not needed for ICB because the team plans to use consolidated SQL production database at SMO to scan insurance cards.
- CCOW Test Plan – Review test plan for CCOW and get technical details worked out and assigned to support team.
- Evan – Wants to define at F2F the deployment process to support 70 sites.

General POC To Do List

- Add iSCSI package to VA VistA BE Linux server image – EC COMs team, need clarification from Kelly
- Load and test Cache software and configuration with the final VistA BE Linux server image – SD HS team
- Request for approval to load OMA test instance cache database into AWS - SD HS and EC COMs?
- Test the NetApp integrity scripts on EC2 host connecting to CVO storage – SD HS
- Work with EC COMS team to write new scripts to test on EC2 host connecting to native EBS storage – SD HS and COMs.
- Test the integrity check performance on a M5d EC2 instance with ephemeral (instance based) storage including the performance on copying the data from EBS volumes created from S3 snapshots – SD HS and COMs
- Test and compare the integrity check performance on a M5d EC2 instance directly on EBS volumes created from S3 snapshots – SD HS and COMs
- Test and capture the storage requirements on performing snap shot on encrypted CVO and native EBS disks - ALL

General Pilot To Do List (Continued)

- Work with CommVault and backup team to determine the backup process after the integrity check process - ALL
- Discuss with ES COMs team on how to effectively provision EBS volumes to 70 VistA site EC2 instances – ALL
- Prepare and test scripts to provision CVO storage for 70 VistA sites – SD Storage team
- Work with EC COMS team on the AWS orchestration tools to automate the deployment of VistA instances - ALL
- End to end functional and performance test on OMA instance in AWS cloud – All
- Determine to use which backend storage method - ALL

General Pilot To Do List (Continued)

- Review current naming conventions for host names, IP schemes and port assignments and make changes needed for cloud implementation
- Work out implementation of Safenet Key Management system with Cloud appliance for Caché encryption. Also address the VA Certificate authority for necessary certs for use for encryption and mirroring
- Stand-up all servers for VCB future production (use scrambled copy of VCB for testing if available): i.e., Synchronous mirror pairs (Primary and Failover) and Asynchronous mirrors (DR and Reporting) in appropriate availability zones and 4 client frontend servers (2 in each zone)
- Stand-up VCB Pre-prod (Test system) and point VCB users to use it (once VCB is approved)

Top Test Focus Areas for POC and Pre-Prod Prep

- Biggest concern has to do with networking between the VA Network and network resources and the AWS VPC.
- Test PKI Servers, where do these sit?
- Conduct an AD test to make sure that works
- Test the use of SFTP, believe this will work
- Test ability to connect via CPRS shortcut from a user desktop, PIV should work.
- Test ability to connect via Reflections from a shortcut on a users desktop, PIV should work.
- Test Controlled Substance Order from VistA

Top Test Focus Areas for POC and Pre-Prod Prep (Continued)

- Test Medical devices, specifically those that are IP based and do not use an onsite server and those that do not support FQDN capability.
- Test Print devices, like label printers
- Test Third Party Devices, perhaps a biomedical device
- Test Storage – Net App CVO and Native EBS
- Test Backup, Restore, Fail-Over, Mirroring/Shadowing

Network Design/Testing

- Review the COMS AD solution
  - Validate support for SCCM
  - Validate support for Dynamic DNS
  - Validate support for other?
- Address Adams question about use or need for 2nd Nic, Brad suggested asking ISC what their recommendation is, Jay says we did this already with Mark Bolinski
- Adam Rolli and John Dellar - Centrify use case. Need to address this one also.
- ELB Design – Claude has been testing some stuff for this. Claude, Brian Shackleford, Brad.

Printer and Medical Device Design/Testing

- Need the test account database to make any real progress here

Storage Design/Testing

- Work with NetApp to determine how many CVO instances are needed to support all 70 VistA sites
- Brad and Claude test their scripts to confirm it works totally on NetApp CVO
- Finalize decision on what backend storage VistA is going to use in VAEC

COTS Design/Testing

- Develop plan with Citrix team rep (Randy Hall) to define what servers and server types are need to perform a proper test in AWS

Performance Design/Testing

- Performance test to see whether the AWS EC2 instances are sized appropriately to support the workload of each VistA site type
  - Adjustments might been needed if we have performance issues
  - Need to develop a plan on how to provision all 70 VistA and COTS EC2 instances and storage
  - Need to develop plan on how to monitor the health of the VistA and COTS systems etc. from a performance perspective

Concerns

- Jay - I talked for a few hours on it but I believe it's on HSP plate. When that testing is completed lessons learned apply to others. my concern is finding a standard way to move an alias including for sql always on.
- John B - do we have the ELB components included in design docs for the POC? My concern is we keep talking about this, but I don't think I have seen any documentation of the target solution for it. Bob G – responded via email on 1/18/19.

Who to Invite

- Add Bryan Shackleford
- Core list from before keep all
- Mark B. (one day for portion) from ISC
- Kyle Monsees
- Need someone from field, Shawn Dorsey, Kyle M, or/and Adam R (Adam is not a travel fan)
- Someone from storage Will Traumbaur, Netapp mgmt. and backup component he does current environment
- Mike Seaman – virtual
- COTS Representation – Noah Pitts, also need field lead for COTS Scottie Washington
- HS Health Connect and HealthShare will also be in VAEC
- KMIP appliance – instances in cloud must talk to on-prem, we need 5696 opened up,

Appendix Items

[1/25/2019 8:33 AM] Rutledge, Matthew:
certain instance types for varied interface speeds and the AMI configured correctly:
https://aws.amazon.com/premiumsupport/knowledge-center/enable-configure-enhanced-networking/

[1/25/2019 8:36 AM] Rutledge, Matthew:
here is the ENI break downs for instance types:
https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/using-eni.html