

VES Online Ordering System

e-Commerce 2.0

Infra/Dev Status Review

Sept 29, 2016



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VESOOS: Comparison with IBM WC

Metric	IBM WC	VESOOS
License cost	IBM, Oracle (Annual IBM license/ support \$1.3 M)	Full open source. (Need to cover support costs of Percona MYSQL, Broadleaf eCommerce)
Architecture	Huge monolithic app on licensed software	Open source application software with simplified app exposing REST services. One step closer to micro services
Private/Public Cloud compatibility (AWS)	No	Easy migration to AWS. App layer is built on Cloud Foundry
Dev Ops	No	Integrated Delivery pipeline with no touch deployment
Application Availability	Single Data Center	Active-Active across Tampa/Sacramento (0 downtime)
Test automation coverage	Not supported	Goal is 80% and expand to maximize the benefit
Security Test cases integration	No	Integrated with Delivery pipeline
Technical debt	100 years	21 days. Goal is 10 days
Deployment time (shared env)	40 minutes with human intervention	15 minutes fully automated including running tests.
Server startup time	~30 minutes	~5 minutes
Hot code deployment	For UI changes only	Full hot code deployment
Integrated with One stack	No	Completely integrated with Verizon one stack – JIRA, GIT Stash, Jenkins, Confluence

VESOOS: eCommerce Evolution



Software delivery pipeline



Test automation

Service virtualization



Cloud

Getting closer to micro services



Iterations

MVP



Collaboration



VESOOS: Redesign Benefits

Marketing/Business

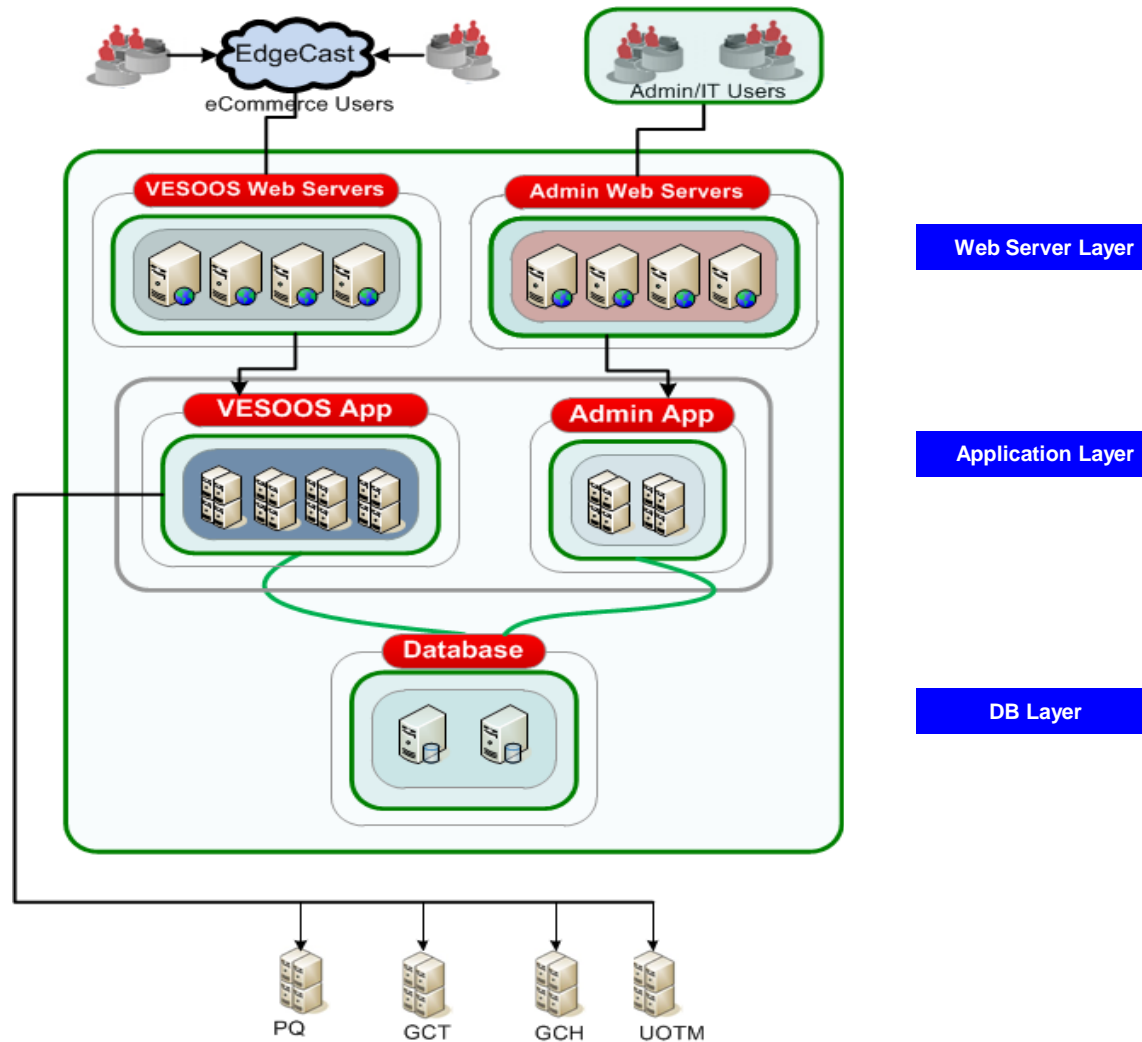
- Faster response times with simplified layers of application redesign
- Integrated with Edgecast managing global pops with static content cache – Faster response times
- Reduce time to market for new products – Everything online is the direction
- Integrated feedback/guided tour
- Easy to rollout/expand pilot with A/B implementation and Feature toggle

Developers/Support teams

- Reduction in Build/Deployment time during development cycle with automated DP
- Proactive notification at every stage of Delivery pipeline
- Ease of Monitoring/Analysis/Troubleshooting production traffic/ incidents with integrated
- log stash/Kibana access to developers across shores
- Canary releases – verification of functionality in advance of prod rollout
- More time available for innovation and add value rather than fix/maintain

VESOOS: **Infrastructure Architecture**

VESOOS: Application Layout



❖ Simplified architecture with Load balancer at Web/App layer across Tampa/Sacramento Data Centers with active-active traffic

Hardware: Web Servers

❖ Virtualization VM Architecture

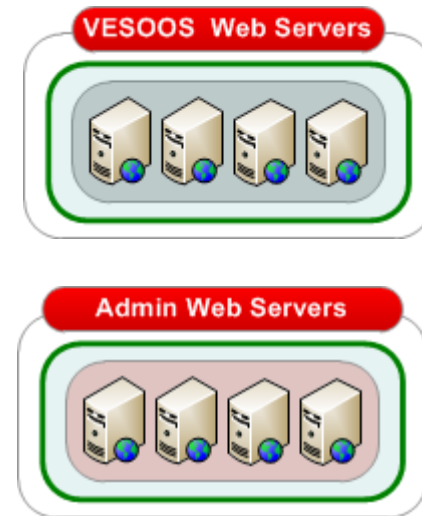
- LDOM Architecture
- 6 VMs on EHNET per data center for Admin Web – TDC/SDC
- 6 VM's on IDMZ per data center for VESOOS Web – FDC/SDC

❖ Hardware Configuration

- Redhat 6 Linux VM
- 8 vCPU 16 GB RAM per Web Server

❖ Software Configuration

- Red Hat Jboss Enterprise Web Server 64 bit 2.2.x
- OpenSSO Policy 3.0 Agent (AM) for VESOOS Internet exposed Web
- SiteMinder Web Agent 12.52 (SSO) for Internal apps VESOOS Admin Web



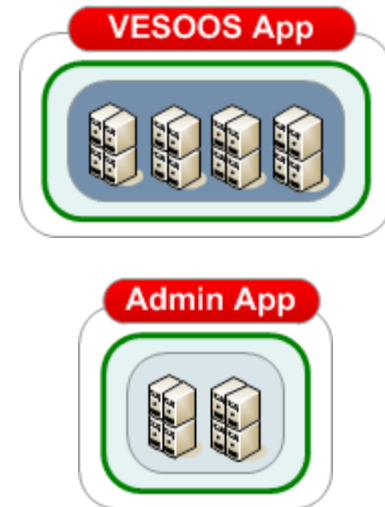
Hardware: App Servers

❖ Cloud Foundry Infrastructure

- 2 Zones in each Data Center for VESOOS and Admin apps – TPA/SDC

❖ Software Configuration

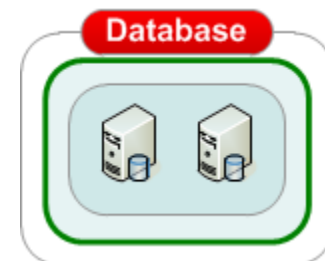
- Sun JDK 1.8
- Broadleaf eCommerce (Open Source)
- Angular JS



DB Servers

❖ Virtualization VM Architecture

- LDOM Architecture
- 2 VMs on EHNET per data center – TPA/SDC – Database
- 1 VM on EHNET per data center – TPA/SDC – DB Demons
- 1 VM on EHNET in FDC – Quorum Arbitrator



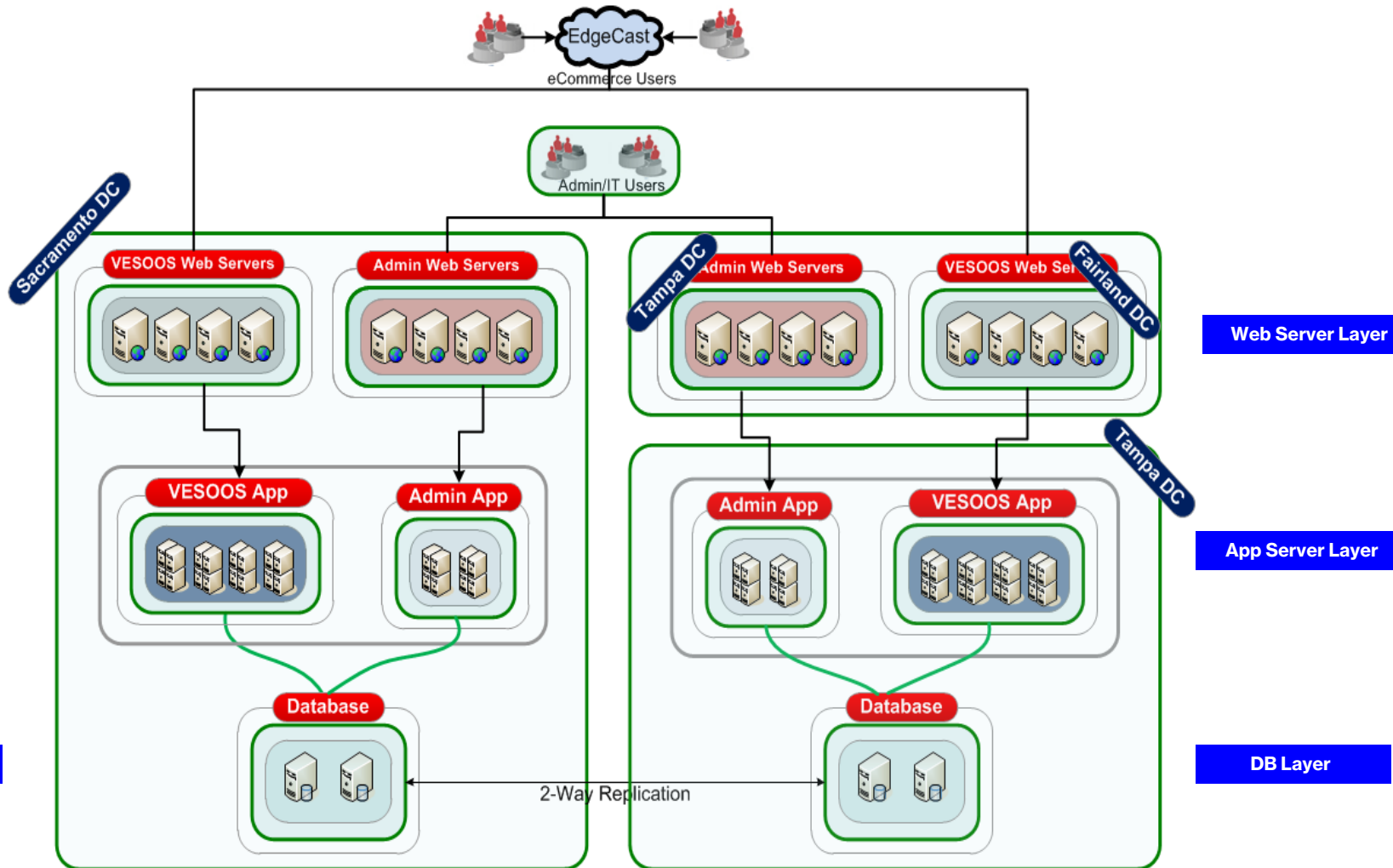
❖ Hardware Configuration

- Red Hat Enterprise Linux Server release 6.7 (Santiago)
- 16 vCPU + 32 GB RAM per DB server
- 8 vCPU + 16 GB RAM Per VM - DB Demons, Quorum Arbitrator

❖ Software Configuration

- DB Flavor: MYSQL DB 5.6 (Open Source)
- Replication Cluster: Percona XtraDB Cluster 5.6 (Vendor Support)

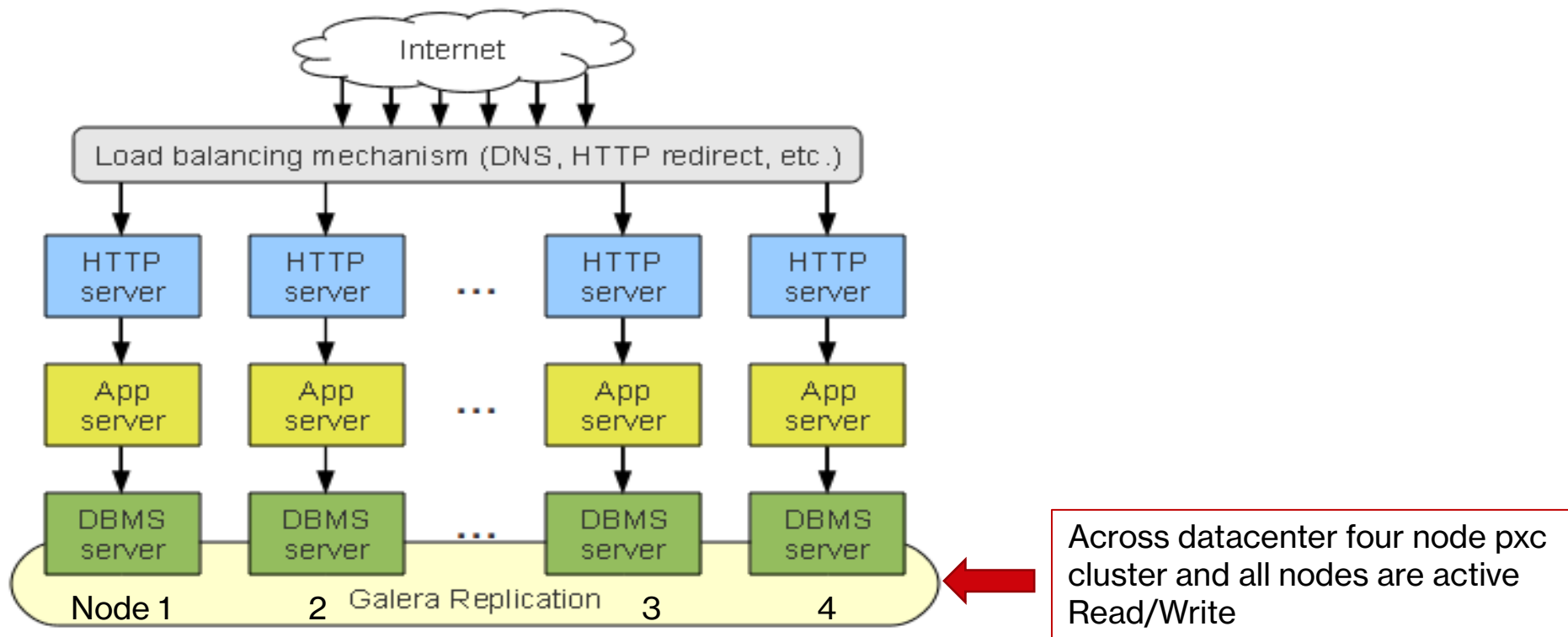
VESOOS Active-Active



❖ VESOOS infrastructure is Active-Active across TPA/SDC with 2 way replication across Web/App/DB layers

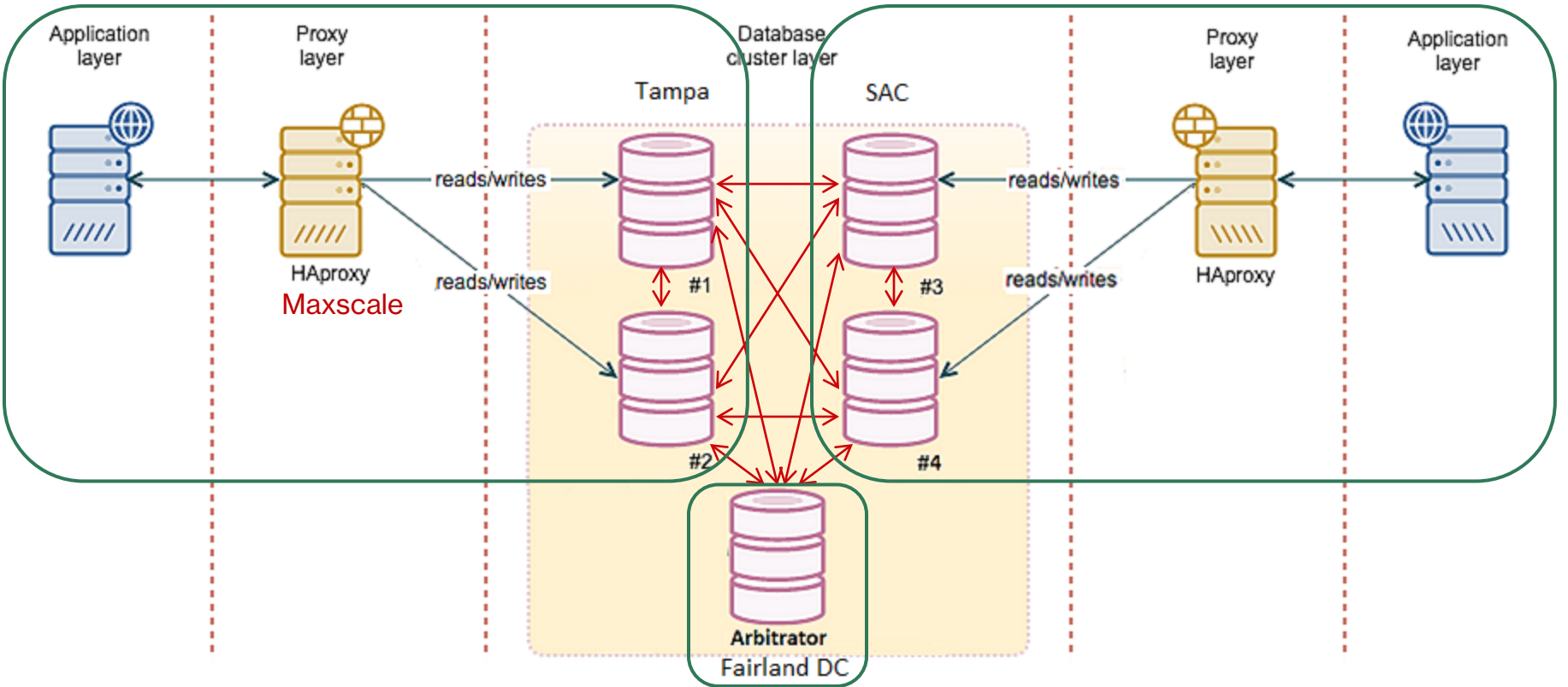


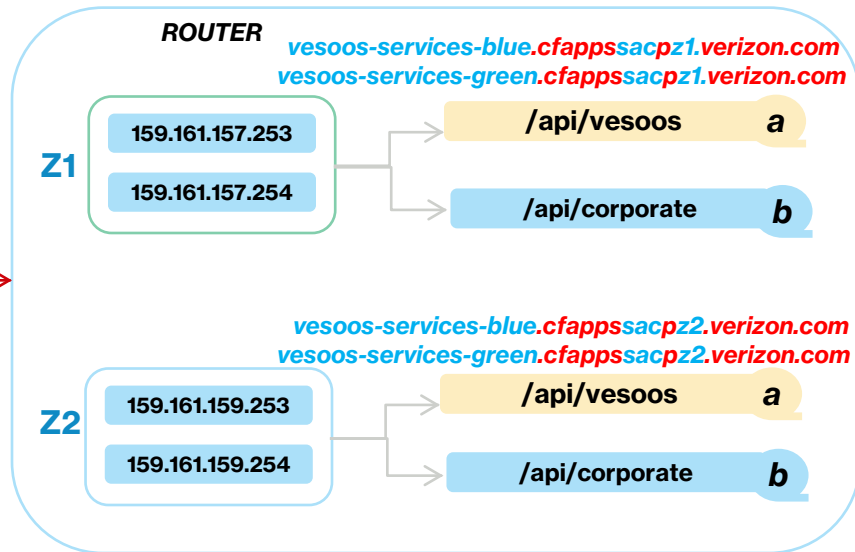
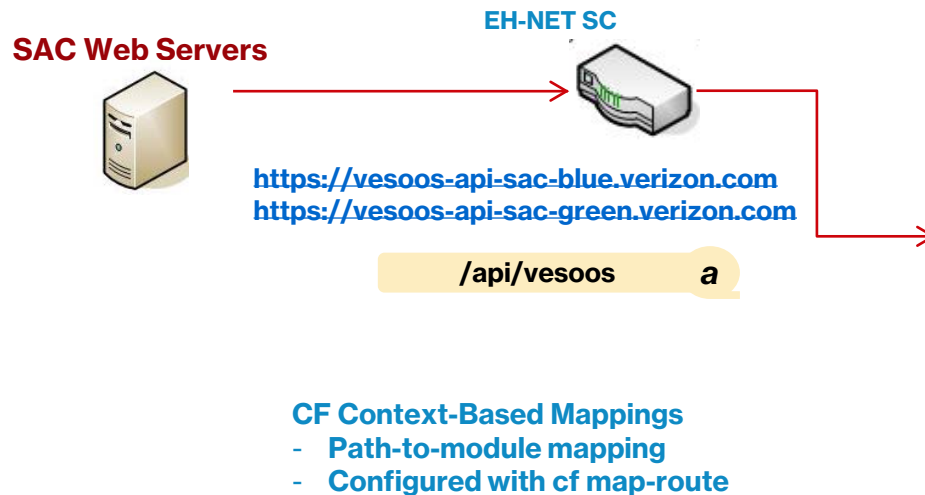
VESOOS DB: Replication Architecture



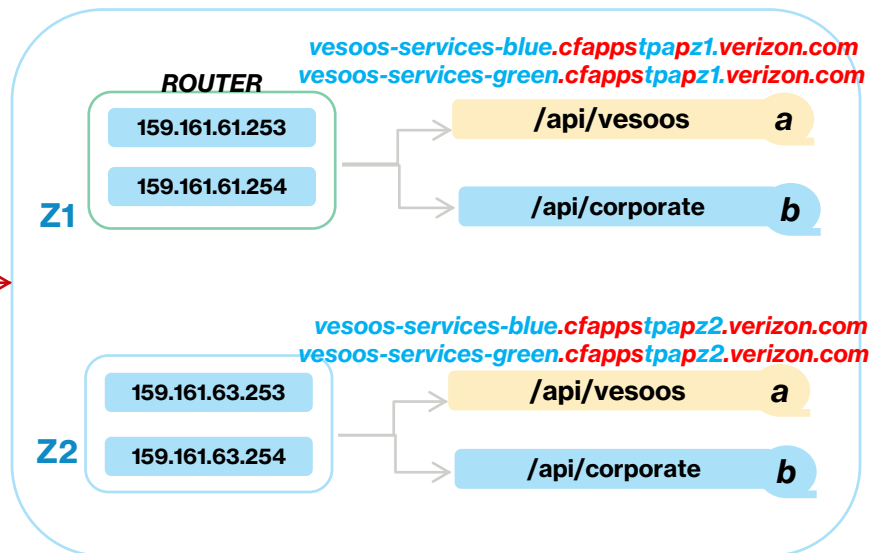
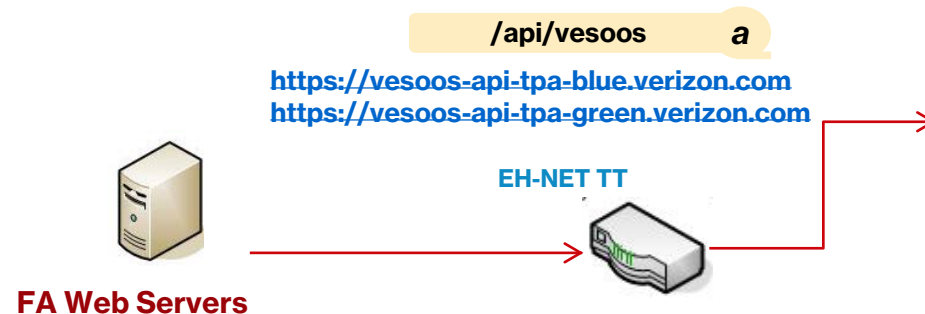
Production 4 node Active-Active cluster + 1 arbitration server

Application / Database High Availability: Clustering Frameworks

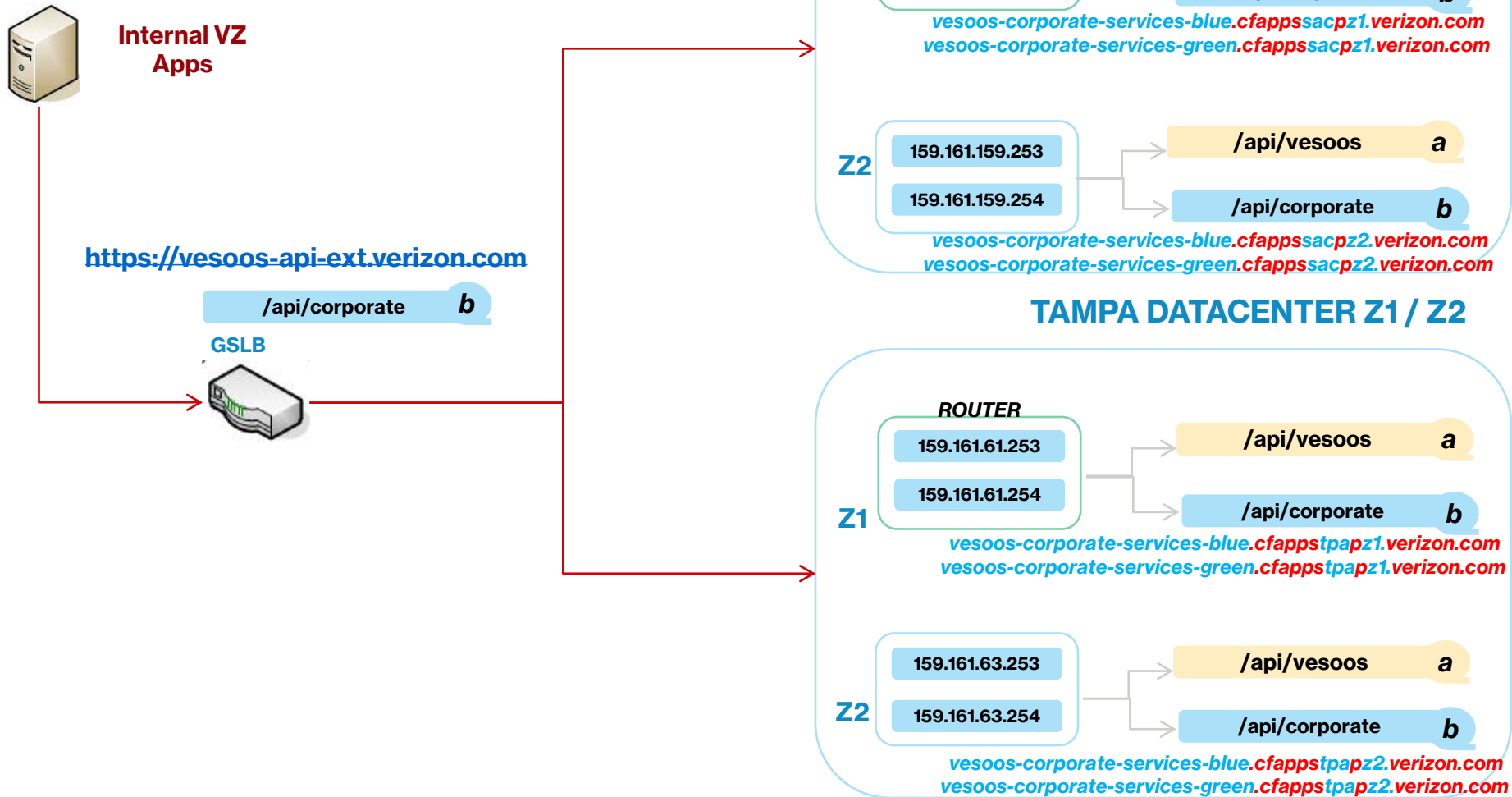




TAMPA DATACENTER Z1 / Z2



- CF Context-Based Mappings
- Path-to-module mapping
 - Configured with cf map-route



VESOOS Hostnames

	Environment	Application	Hostname	IP	EBU Hostname	IP
Sacramento	PROD – Blue	Internal/Admin-Web	fq3scvlpw001	138.83.22.189	fq3scvlpw001g	172.18.184.205
Prod EHNET - GZ	PROD - Blue	Internal/Admin-Web	fq3scvlpw002	138.83.22.190	fq3scvlpw002g	172.18.184.206
	PROD - Green	Internal/Admin-Web	fq3scvlpw003	138.83.22.191	fq3scvlpw003g	172.18.184.207
	PROD - Green	Internal/Admin-Web	fq3scvlpw004	138.83.22.192	fq3scvlpw004g	172.18.184.208
	Canary	Internal/Admin-Web	fq3scvlpw005	138.83.22.193	fq3scvlpw005g	172.18.184.209
	Canary	Internal/Admin-Web	fq3scvlpw006	138.83.22.194	fq3scvlpw006g	172.18.184.210
	Pkg Deploy		fq3scvlpw007	138.83.22.195	fq3scvlpw007g	172.18.184.211
Prod IDMZ - YZ	PROD - Blue	Internet - Web	fq3scvlpw008	138.83.219.232	fq3scvlpw008g	172.18.136.14
	PROD - Blue	Internet - Web	fq3scvlpw009	138.83.219.239	fq3scvlpw009g	172.18.136.15
	PROD - Green	Internet - Web	fq3scvlpw010	138.83.219.240	fq3scvlpw010g	172.18.136.16
	PROD - Green	Internet - Web	fq3scvlpw011	138.83.219.241	fq3scvlpw011g	172.18.136.17
	Canary	Internet - Web	fq3scvlpw012	138.83.219.242	fq3scvlpw012g	172.18.136.18
	Canary	Internet - Web	fq3scvlpw013	138.83.219.243	fq3scvlpw013g	172.18.136.19
			Prod EHNET - GZ			
Fairland	OIB/ELK		fq3favlpw001	166.68.190.219	fq3favlpw001g	172.16.187.30
			Prod EHNET - GZ			
	OIB/ELK		fq3favlpw001	166.68.190.220	fq3favlpw001g	172.16.187.31
Prod IDMZ - YZ						
	PROD - Blue	Internet - Web	fq3favlpw008	140.108.154.242	fq3favlpw002g	172.16.136.61
	PROD - Blue	Internet - Web	fq3favlpw009	140.108.154.243	fq3favlpw003g	172.16.136.62
	PROD - Green	Internet - Web	fq3favlpw010	140.108.154.244	fq3favlpw004g	172.16.136.63
	PROD - Green	Internet - Web	fq3favlpw011	140.108.154.245	fq3favlpw005g	172.16.136.64
	Canary	Internet - Web	fq3favlpw012	140.108.154.246	fq3favlpw006g	172.16.136.65
	Canary	Internet - Web	fq3favlpw013	140.108.154.247	fq3favlpw007g	172.16.136.66
Tampa			Prod EHNET - GZ			
	PROD – Blue	Internal/Admin-Web	fq3ttvlpw001	138.83.30.235	fq3ttvlpw001g	172.19.185.72
	PROD - Blue	Internal/Admin-Web	fq3ttvlpw002	138.83.30.236	fq3ttvlpw002g	172.19.185.73
	PROD - Green	Internal/Admin-Web	fq3ttvlpw003	138.83.30.237	fq3ttvlpw003g	172.19.185.74
	PROD - Green	Internal/Admin-Web	fq3ttvlpw004	138.83.30.238	fq3ttvlpw004g	172.19.185.75
	Canary	Internal/Admin-Web	fq3ttvlpw005	138.83.30.239	fq3ttvlpw005g	172.19.185.76
	Canary	Internal/Admin-Web	fq3ttvlpw006	138.83.30.240	fq3ttvlpw006g	172.19.185.77
	Pkg Deploy		fq3ttvlpw007	138.83.30.241	fq3ttvlpw007g	172.19.185.78
			Prod EHNET - GZ			
	DB Server		fq3ttvlpd001	138.83.30.243	fq3ttvlpd001g	172.19.190.245
	DB Server		fq3ttvlpd002	138.83.30.244	fq3ttvlpd002g	172.19.190.201

VESOOS Production URLs

Internet Facing	https://enterpriseordering.verizon.com https://enterpriseordering-pilot.verizon.com https://enterpriseordering-ittest.verizon.com
VZ Internal	https://vesoos-api-ext.verizon.com
Cloud Foundry Internal (Tampa)	https://vesoos-api-tpa-blue.verizon.com https://vesoos-api-tpa-green.verizon.com
Cloud Foundry Internal (Sacramento)	https://vesoos-api-sac-blue.verizon.com https://vesoos-api-sac-green.verizon.com

VESOOS Dev Ops: **ONE VZ Tooling**

Source Code Management: OneStash

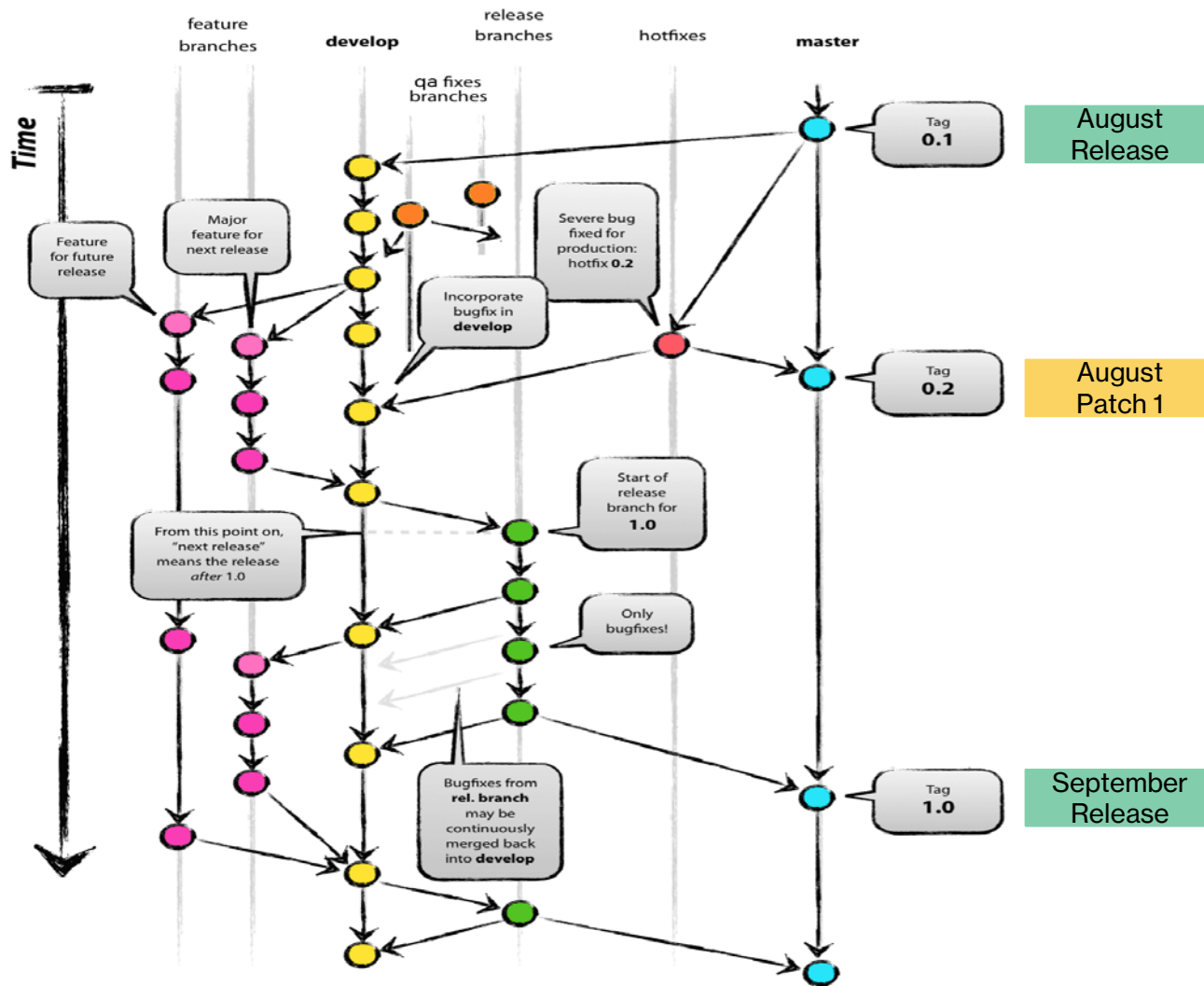
The screenshot shows the OneStash web interface. The top navigation bar includes 'Stash', 'Projects', 'Repositories', and 'People'. The left sidebar shows the repository 'FQ3V_VESOOS' and various actions like 'Clone', 'Create branch', 'Create pull request', and 'Fork'. The main content area displays a commit by 'Bernal Punil, Katerin V' with the message 'Remove test exclusion for sonar'. Below the commit, a diff view for 'ves-e-commerce-core / pom.xml' is shown, highlighting changes to the 'sonar.test.exclusions' property.

Web
Atlassian
OneStash

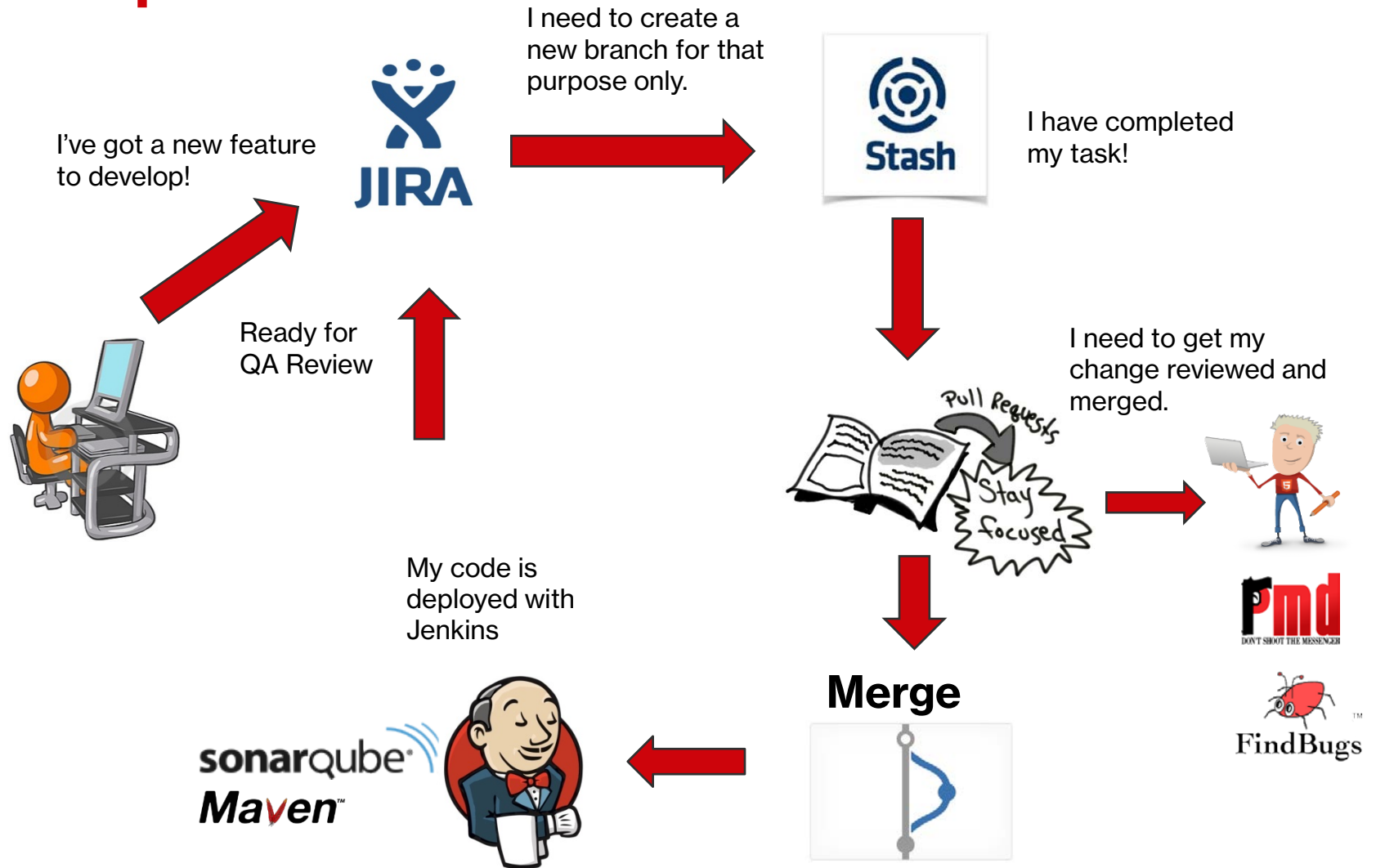
The screenshot shows the SourceTree desktop application. The left sidebar displays the 'vesoos' repository with sections for 'FILE STATUS', 'BRANCHES', 'TAGS', and 'REMOTES'. The main area shows a commit graph with a list of commits and their descriptions. The commits include 'Merge pull request #114 in FQVD/vesoos from feature/FQVD-394-include-global-nav to develop', 'Merge pull request #113 in FQVD/vesoos from feature/FQVD-387-remove-business-corporate-project to develop', 'Merge pull request #112 in FQVD/vesoos from bugfix/FQVD-391-update-default-priority-in-ui-after to develop', 'Add production files for vesoos project', 'Include code to get the addressObject using the orderId', 'use localhost for db', 'Add style for table in global nav', and 'Update the priority selected after Cameo response'.

Desktop
Atlassian
SourceTree &
Eclipse Plugin

Source Code Management - Branching Model



Dev Ops Workflow

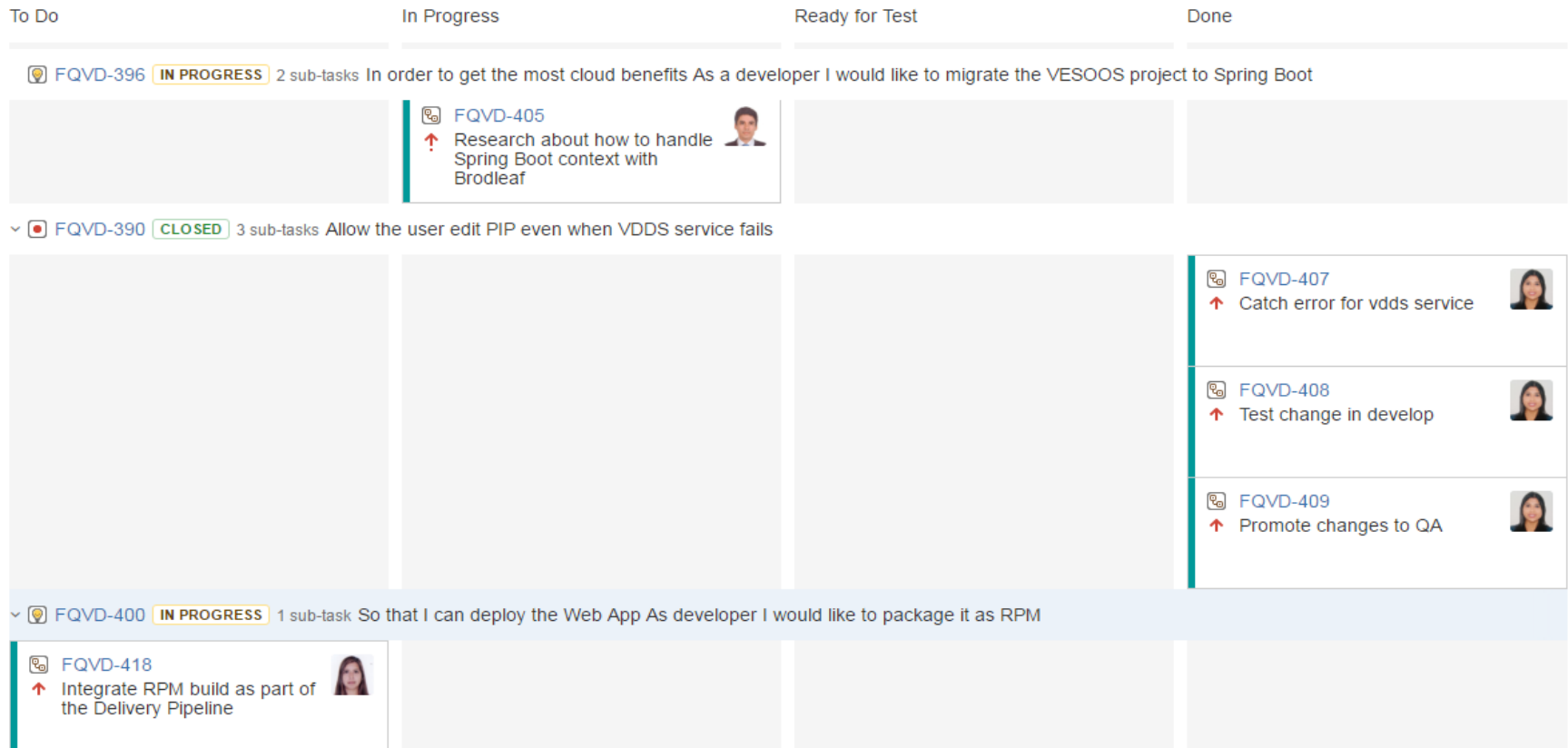


Agile Board with OneJira

VESOOS Agile Board

VESOOS: Iteration 14

QUICK FILTERS: [Only My Issues](#) [Recently Updated](#)



Full visibility of the current Sprint



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Collaboration & Sharing with OneConfluence

The screenshot displays the Verizon OneConfluence web interface. The top navigation bar includes the Verizon logo, a hamburger menu, and links for Spaces, Forums, People, and Calendars. A 'Create' button with a plus icon is also present. The left sidebar shows the 'VES Online Ordering System' with a star icon. Below this, there are sections for 'Pages', 'Blog', 'Calendars', 'SPACE SHORTCUTS', and 'Retrospectives'. The 'PAGE TREE' section lists a hierarchy of topics, with 'Load Testing - Ecommerce 2.0' highlighted at the bottom. The main content area shows the page title 'Load Testing - Ecommerce 2.0' and its creation/modification details. It includes a paragraph about testing performance, a 'CATALOG' section with a 'Timer' link, and a 'Product Catalog' section with a search bar and several product cards. The 'CHECK AVAILABILITY' section also includes a 'Timer' link.

Pages / VES Online Ordering System

Load Testing - Ecommerce 2.0

Created by Felipe Ayala, Michael J, last modified by Bernal Punil, Katerin V on Jul 19, 2016

In order to test the performance in Ecommerce 2.0, we have identified the main features to be tested.

CATALOG

Timer: Load Product Catalog

After login to <https://vesoosqa1.ebiz.verizon.com/> the Catalog page will load with all the products and the us

Product Catalog

Browse the enterprise products and services to create your order request.

Internet & Wired Communications Wireless & Mobility Cloud & IT Security


Subcategory: All

Search by product name

Private IP

Our MPLS-based Private IP service gives you highly scalable connectivity options, simple any-to-any network design, and can

[Learn more](#)




[Install Service >](#)

[Move Change Disconnect](#)

Internet Dedicated Services

Get direct access to one of the world's most connected networks. Verizon provides a range of bandwidth

[Learn more](#)




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Private Line

Verizon's U.S. Private Line product family provides point-to-point and point-to-multipoint circuits between locations in the

[Learn more](#)



[Install Service >](#)

[Move Change Disconnect](#)

Private IP-Ethernet

Use Ethernet to access our MPLS-based Private IP service to give you highly scalable connectivity options, simple any-

[Learn more](#)

Internet Dedicated Ethernet

Get direct access to one of the world's most connected networks. Verizon provides a range of bandwidth

[Learn more](#)

DS1Point-to-Point

This service provides a dedicated T-1 connection between two points within a LATA

[Learn more](#)

CHECK AVAILABILITY

Timer: Load Check Availability Page

In order to test these scenarios, please consider the following information:

Full-text search across all the organization!



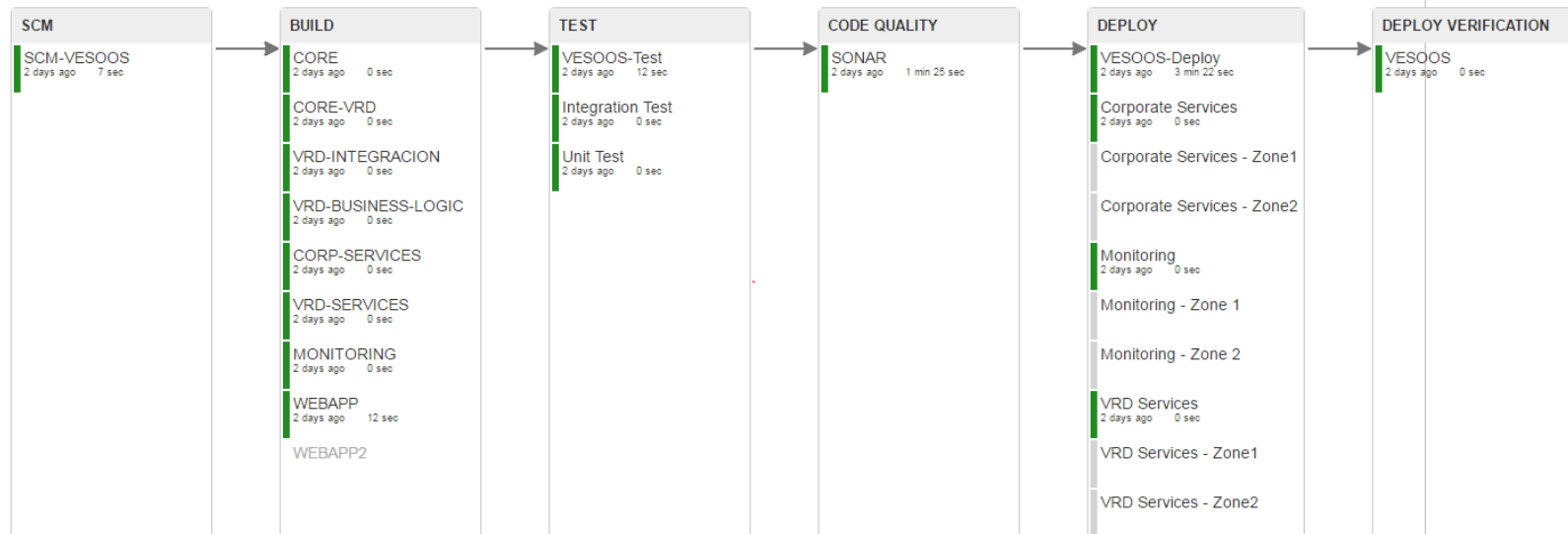
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Delivery Pipeline with OneJenkins

- ✓ Continuous Deployment in DEV and QA
- Automated Deployment in Prod (In Process)

VESOOS - Delivery Pipeline DEV

#200 triggered by user Bernal Punil, Katerin V started 2 days ago



VESOOS:

Infra/Dev Timeline

Production Infrastructure & Deployment Efforts: Completed

- ✓ Production Architecture
 - Web Server & Cloud Foundry integration design
 - Blue-green deployment design
- ✓ Infrastructure Acquisition/Provisioning
 - Web Servers – Fairland/Sacramento
 - Cloud Foundry Space – Tampa/Sacramento
 - DB Server – Tampa
- ✓ VM Server Setup/Software Installation
- ✓ Application Packages & SSI config
 - Web server packages & SSI config with needed software packages installation
 - Cloud Foundry artifacts
- ✓ Web Server deployment
- ✓ Application Delivery Pipeline – QA/Dev Environments Deployment
- ✓ Access Manager Integration
- ✓ Local LB rules across CF Zone 1,2 for within datacenter failover needs
- ✓ GSLB urls and associated geographic first pref – failover – spill over rules across Tampa/Sacramento
- ✓ ELK Stack
- ✓ Edgecast Implementation with static content serving global POPs
- ✓ CA-APM integration – for tracking metrics of app/infra@runtime
- ✓ Tampa Production DB Install & Schema Deployment
- ✓ Cloud Foundry pkgs Deployment – TDC/SDC

Production Infrastructure: Pending Tasks

- Web/CF – Tampa Data center failover verification – Increase/reduce CF app instances dynamically with load test –modifications to setup scripts as needed – Sept 4th week
- Sacramento DB Server acquisition/OS Setup – Target by Sept 4th week
- SDC DB setup with cross cluster replication across Tampa/Sacramento – Oct 1st week
- Web/CF – Cross Data center failover verification – Increase/reduce CF app instances dynamically with load test – Mid October
- Production Delivery Pipeline – No touch deployment – Mid October
- CA APM Dashboard generation – Mid October

Pending Development for PIP

View	Product	Functionality
Check Availability	-	Add New Service Address
Check Availability	-	Add more than one location
Check Availability	-	Copy Configuration from current order
Check Availability	-	Copy Configuration from an existing Location (PQ)
Check Availability	-	Service validation progress dialog
Check Availability	-	Continue without pricing (WCS In Development)
Configure and Review	-	Edit CLE and Contract
Configure and Review	-	Delete Location
Configure and Review	-	Email pricing
Configure and Review	-	Print Estimate
Configure and Review	All Products	Scenario Id
Configure and Review	All Products	Show and edit Service term
Configure and Review	All Products	Show line items
Configure and Review	All Products	Show selected promotions and discounts
Configure and Review	PIP / PIP Gateways	Show Foot Notes and Appendix details from vprice
Configure and Review	PIP	Additional pricing
Configure and Review	PIP	PIP Multi VRF
Configure and Review	WAN Analysis	Add Clear Section
Configure and Review	Private IP Gateways	Configure product
Configure and Review	Managed WAN	Configure product
Configure and Review	CPE	Configure product
Contacts	-	Edit Primary Contact
Contacts	-	Select Primary Contact
Contacts	-	Select Contacts
Contacts	-	Add Expand/Collapse All contacts
Review and Submit	-	Print pdf
Ordering	-	Accepted email
Ordering	-	GCT call
Ordering	-	CDCV call
All Views	-	Detailed View
All Views	-	Save and Continue Later
All Views	-	Guided Tour
All Views	-	Global Navigation
All Views	-	Chat

Catalog Gaps

View	Functionality
Catalog	Catalog Filter
Catalog	Redirect to VEC

Pending Products

Pending Products
Internet Dedicated Services
Secure Cloud Interconnect Standalone
Voice over IP (WCS In Development)

Non VRD Products
Internet Dedicated Services (IDS)
Verizon Solutions for Business Bundle (VSBB)
Manage Security Service (MSS)
TVP Colocation

Development Efforts - MVP

VESOOS Sprint 14

Global Nav Integration	Port Speed Fixes & Improvements	Resilience Upon VDDS Failure
Spring Boot Integration	LISA Virtualization	UI Build & Pipeline Improvements
Dynamic Endpoints POC	App Packaging & Versioning	Admin functionality – App/Web

VESOOS Onboarding & Knowledge Sharing across shores

Local Environment Setup		
KT Sessions		
Private IP Gateway – 21 subtasks		

Development Efforts – Next Sprints

VESOOS Next Sprint iterations

Global Nav Integration	Port Speed Fixes & Improvements	Resilience Upon VDDS Failure
Spring Boot Integration	LISA Virtualization	UI Build & Pipeline Improvements
Dynamic Endpoints POC	App Packaging & Versioning	Admin functionality – App/Web
Catalog ready for Prod	PIP flow solidification with Scenario ID	SCI integration

Pilot Rollout Logistics – MVP – IT /Marketing only Testing – Nov

New Menu Item in VEC for VESOOS Controlled thru feature toggle – No impact to current flow with eCommerce 1.0

Redirection & Feature Toggle at Catalog and Product Level

- Catalog in eComm 1.0 to product in eComm 2.0
- Catalog in eComm 2.0 to product in eComm 1.0
- Enable controlled testing with automated testing

Timeline: High level

Infrastructure

Tampa: Sept 4th week

Sacramento: October 2nd week

Active-Active Go-Live: Oct 4th week

Development/Production Rollout <<working on target dates>>

IT Only Testing for MVP product:

Prod traffic Cut over to 2.0 &

Stop development work on 1.0 eComm flow: