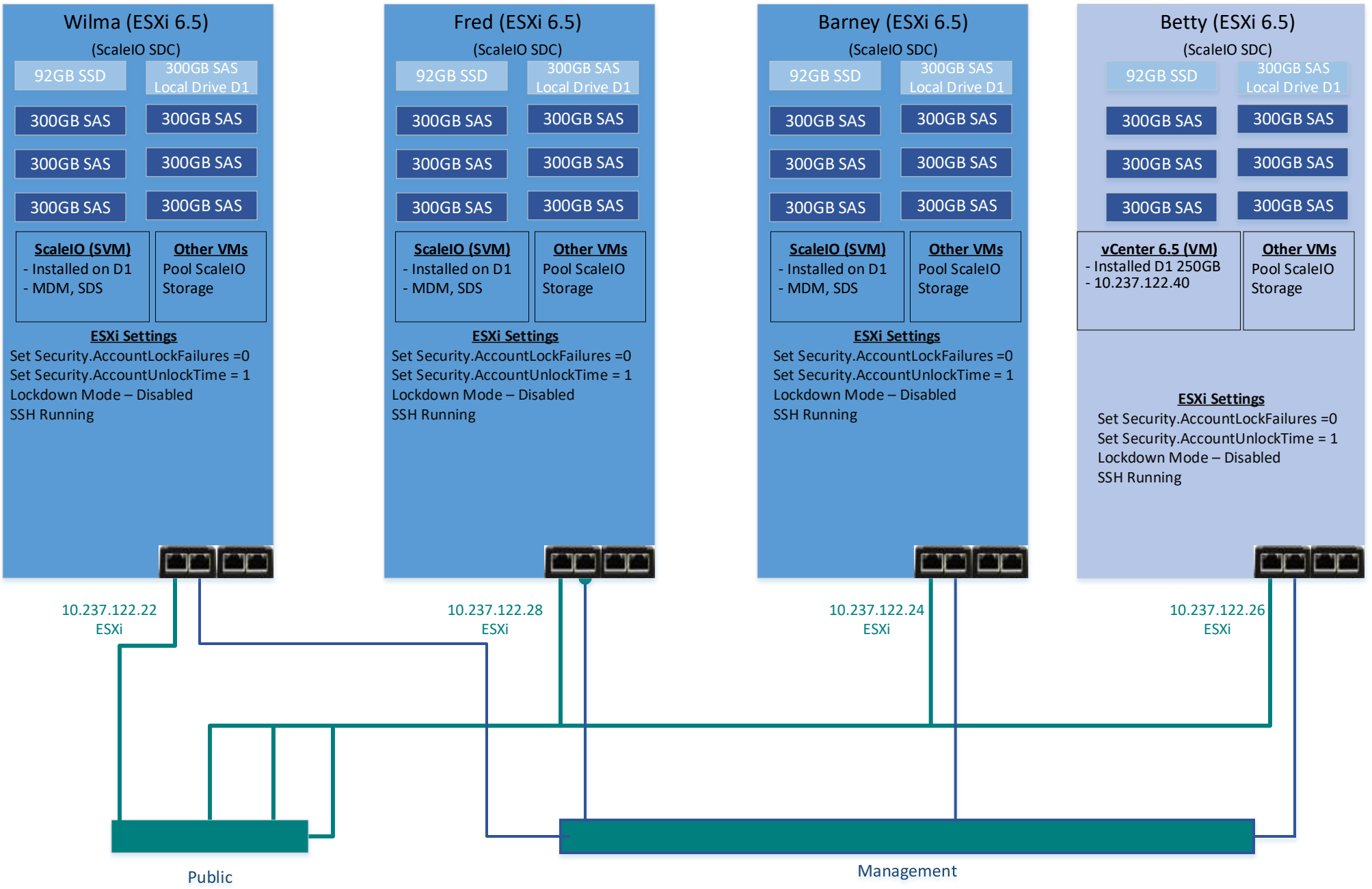
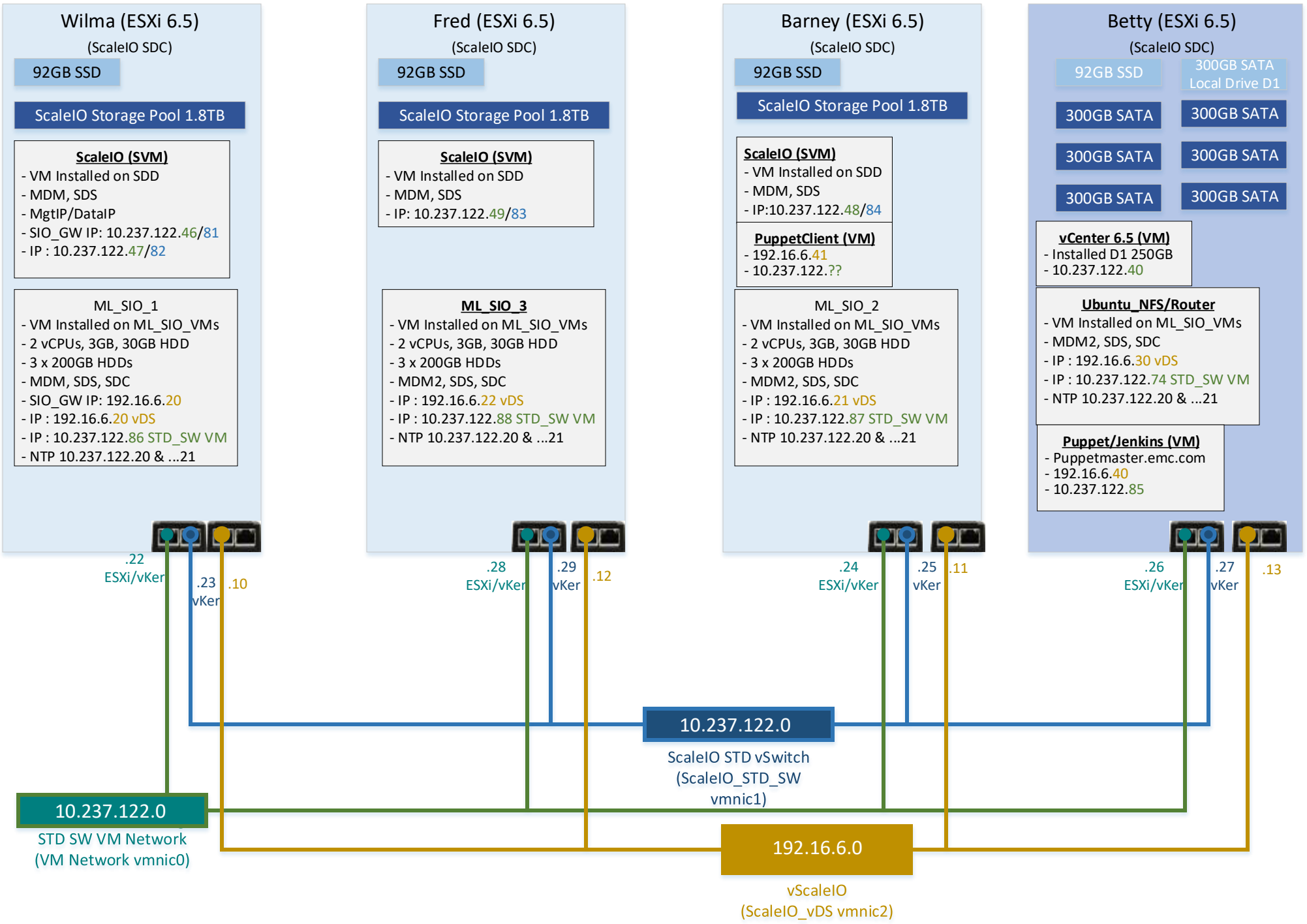
Overview

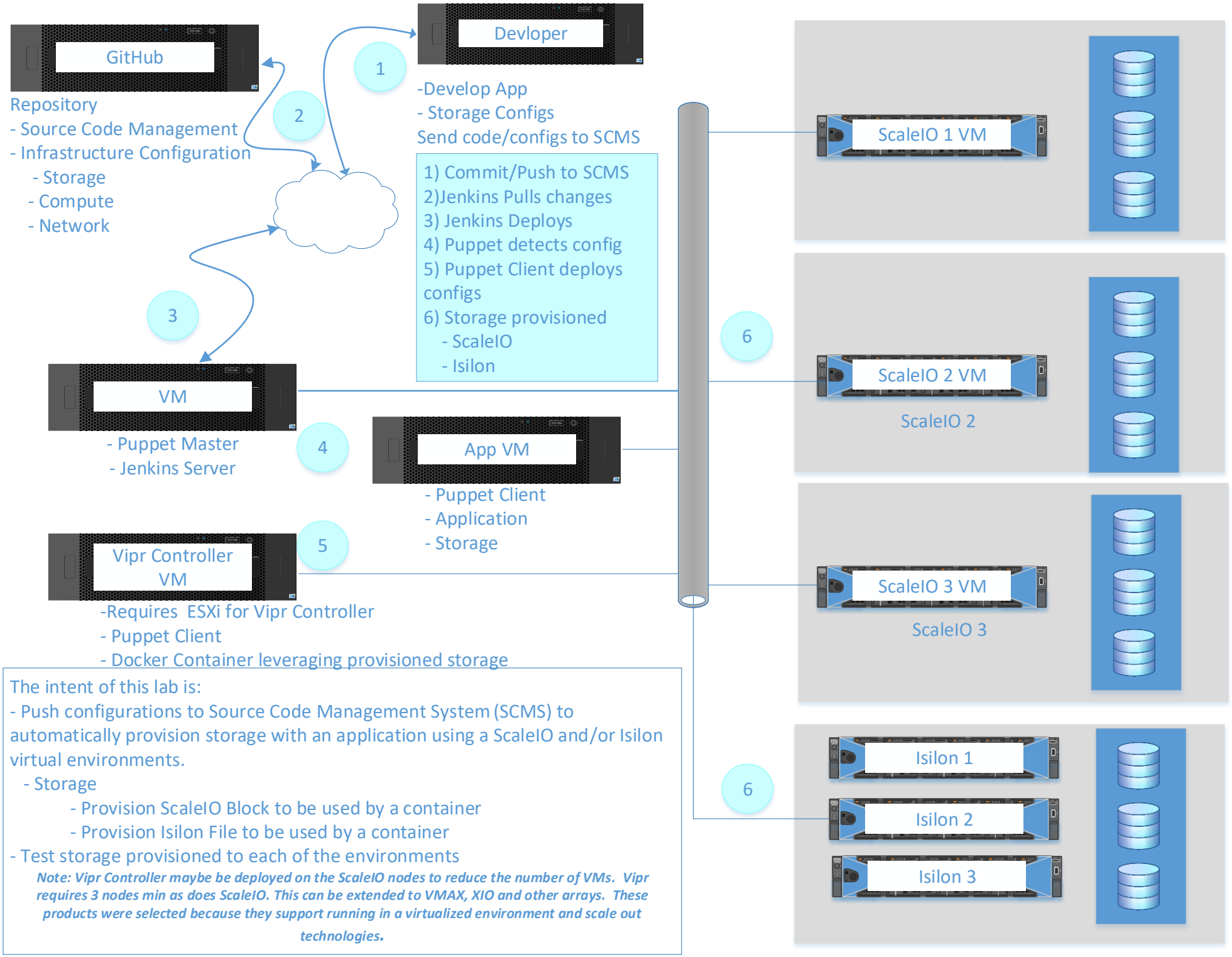
- Physical environment
- ESXi and ScaleIO for pooling the internal drives of ESXi host
- Slide IaC demonstrates a storage flow of Infrastructure as Code
- Slide Warren Lab is an overview of what the Warren Lab has installed
- Slide CI-CD is a logical pipeline deploying an application and infrastructure leveraging commonly used tools in the industry today (GitHub, Jenkins, and Puppet)

Warren Lab (MetroLab Physical Layout)



Warren Lab (MetroLab Virtual Layout)




GitHub
Repository
- Source Code Management
- Infrastructure Configuration
- Storage
- Compute
- Network
Devloper
1
-Develop App
- Storage Configs
Send code/configs to SCMS
2
1) Commit/Push to SCMS
2)Jenkins Pulls changes
3) Jenkins Deploys
4) Puppet detects config
5) Puppet Client deploys configs
6) Storage provisioned
- ScaleIO
- Isilon
3
VM
- Puppet Master
- Jenkins Server
4
App VM
- Puppet Client
- Application
- Storage
5
Vipr Controller VM
-Requires ESXi for Vipr Controller
- Puppet Client
- Docker Container leveraging provisioned storage
6
ScaleIO 1 VM
ScaleIO 2 VM
ScaleIO 2
ScaleIO 3 VM
ScaleIO 3
6
Isilon 1
Isilon 2
Isilon 3
The intent of this lab is:
- Push configurations to Source Code Management System (SCMS) to automatically provision storage with an application using a ScaleIO and/or Isilon virtual environments.
- Storage
- Provision ScaleIO Block to be used by a container
- Provision Isilon File to be used by a container
- Test storage provisioned to each of the environments
Note: Vipr Controller maybe be deployed on the ScaleIO nodes to reduce the number of VMs. Vipr requires 3 nodes min as does ScaleIO. This can be extended to VMAX, XIO and other arrays. These products were selected because they support running in a virtualized environment and scale out technologies.

Warren Lab (MetroLab Virtual Layout)

Management SIO
ESXi SIO Data
vSIO Data

ESXi & SIO

vCenter 6.5 (VM)
- Installed D1 250GB
- 10.237.122.40

ScaleIO (SVM_47)
- VM Installed on SDD
- MDM, SDS
- MgtIP/DataIP
- SIO_GW IP: 10.237.122.46/81
- IP : 10.237.122.47/82
-10.237.122.81 SIO_VIP

ScaleIO (SVM_49)
- VM Installed on SDD
- MDM, SDS
- IP: 10.237.122.49/83

ScaleIO (SVM_48)
- VM Installed on SDD
- MDM, SDS
- IP:10.237.122.48/84

vSIO

ML_SIO_1
- VM Installed on ML_SIO_VMs
- 2 vCPUs, 3GB, 30GB HDD
- 3 x 200GB HDDs
- MDM, SDS, SDC
- SIO_GW IP: 192.16.6.20
- IP : 192.16.6.20 vDS
- IP : 10.237.122.86 STD_SW VM
- NTP 10.237.122.20 & ...21

ML_SIO_3
- VM Installed on ML_SIO_VMs
- 2 vCPUs, 3GB, 30GB HDD
- 3 x 200GB HDDs
- MDM2, SDS, SDC
- IP : 192.16.6.22 vDS
- IP : 10.237.122.88 STD_SW VM
- NTP 10.237.122.20 & ...21

ML_SIO_2
- VM Installed on ML_SIO_VMs
- 2 vCPUs, 3GB, 30GB HDD
- 3 x 200GB HDDs
- MDM2, SDS, SDC
- IP : 192.16.6.21 vDS
- IP : 10.237.122.87 STD_SW VM
- NTP 10.237.122.20 & ...21

10.237.122.0
STD SW VM Network
(VM Network vmnic0)

10.237.122.0
192.16.7.0
ScaleIO STD vSwitch
(ScaleIO_STD_SW
IsilonSW vDS
vmnic1)

192.16.6.0
vScaleIO
(ScaleIO_vDS vmnic2)

Dell EMC

vIsilon

Isilon MGT (VM)
- IsMGT...emc.com
- 10.237.122.90
- 192.16.6.51
- 192.16.7.50 IsilonsDSSW
vCPU – 2
RAM – 6GB
Hard disk—50 GB

Isilon Cluster3 (VM)
-IsCluster3...emc.com
- 192.16.6.54
- 192.16.7.54 IsilonsDSSW
vCPU – 4
RAM –12GB
Hard disk—1000 GB

Isilon Cluster2 (VM)
- IsCluster2...emc.com
- 192.16.6.53
- 192.16.7.53 IsilonsDSSW
vCPU – 4
RAM –12GB
Hard disk—1000 GB

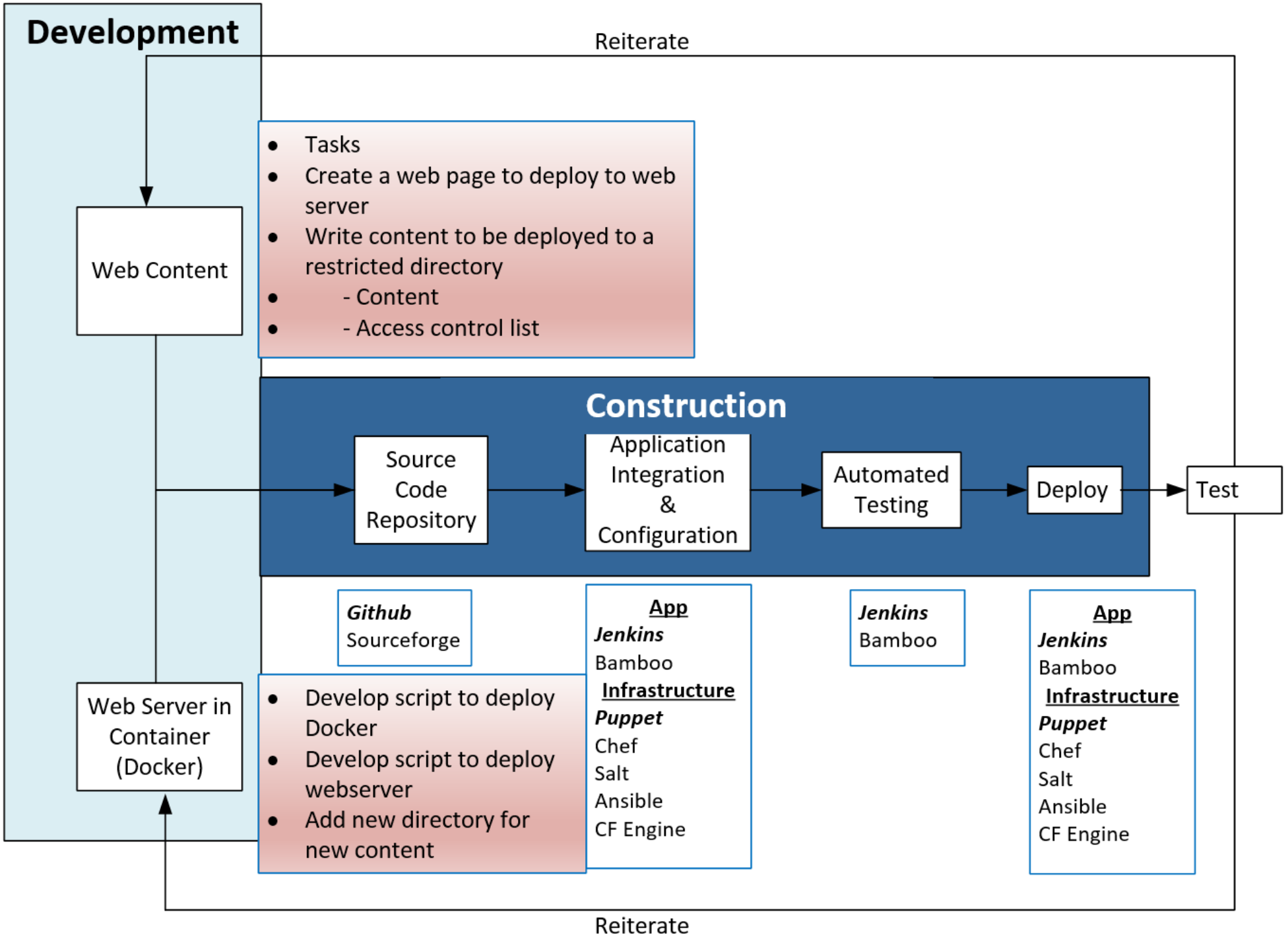
Isilon Cluster1 (VM)
- IsCluster1...emc.com
- 192.16.6.52
- 192.16.7.51/52 IsilonsDSSW
vCPU – 4
RAM –12GB
Hard disk—1000 GB

Ubuntu_NFS/Router
- VM Installed on ML_SIO_VMs
- MDM2, SDS, SDC
- IP : 192.16.6.30 vDS
- 192.16.7.30 IsilonsDSSW
- IP : 10.237.122.74 STD_SW VM
- NTP 10.237.122.20 & ...21

PuppetClient (VM)
- 192.16.6.41

Puppet/Jenkins (VM)
- Puppetmaster.emc.com
- 192.16.6.40
- 10.237.122.85

Application


Development
Reiterate
Web Content
Tasks
Create a web page to deploy to web server
Write content to be deployed to a restricted directory
- Content
- Access control list
Construction
Source Code Repository
Application Integration & Configuration
Automated Testing
Deploy
Test
Github
Sourceforge
App
Jenkins
Bamboo
Infrastructure
Puppet
Chef
Salt
Ansible
CF Engine
Jenkins
Bamboo
App
Jenkins
Bamboo
Infrastructure
Puppet
Chef
Salt
Ansible
CF Engine
Web Server in Container (Docker)
Develop script to deploy Docker
Develop script to deploy webserver
Add new directory for new content
Reiterate