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HT Grupa

"From Zero to Fleet": Automatizirana izgradnja novog okruženja u VMware Cloud Foundationu 9

Jadran Meštrović, COMBIS

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"From Zero to Fleet"

Automatizirana izgradnja novog okruženja u VMware Cloud Foundationu 9

Kako od "praznog lista papira" doći do potpuno funkcionalnog VCF okruženja.



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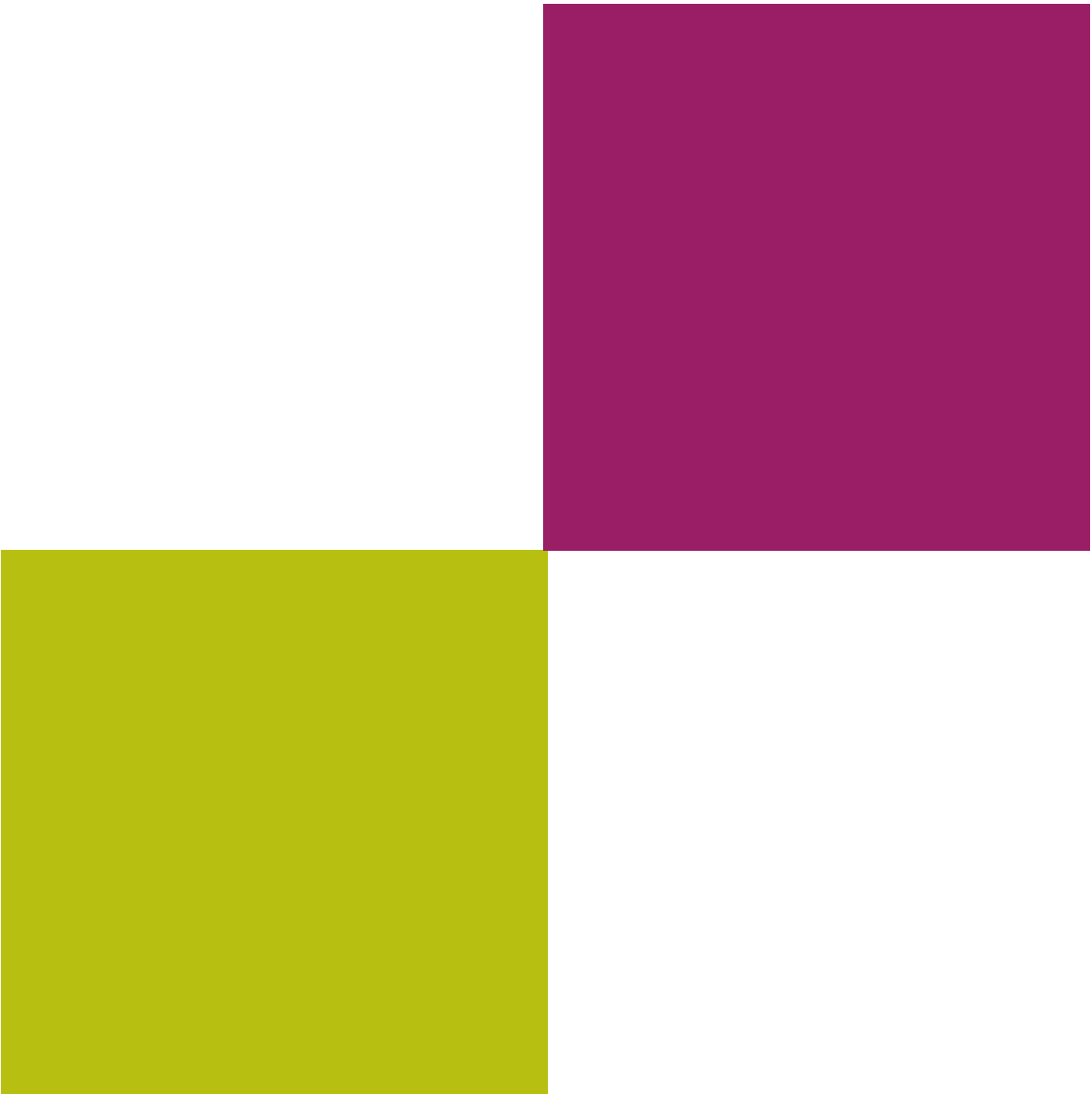
Zaključak



Uvod u VCF 9



Arhi-
tektura



Deployment
modeli



Domene



vCloud Foundation 9



VCF 9 arhitektura

Arhitektura VCF 9 temelji se na više **domena** koje objedinjuju **vCenter**, **NSX Manager**, **vSphere Cluster** i **SDDC Manager**. Svaka domena može biti dio **VCF Fleeta**, kojim centralno upravljaju **VCF Operations** i **VCF Automation** servisi. Ovakav pristup omogućuje skalabilno i standardizirano upravljanje višestrukim VCF instancama unutar privatnog clouda.



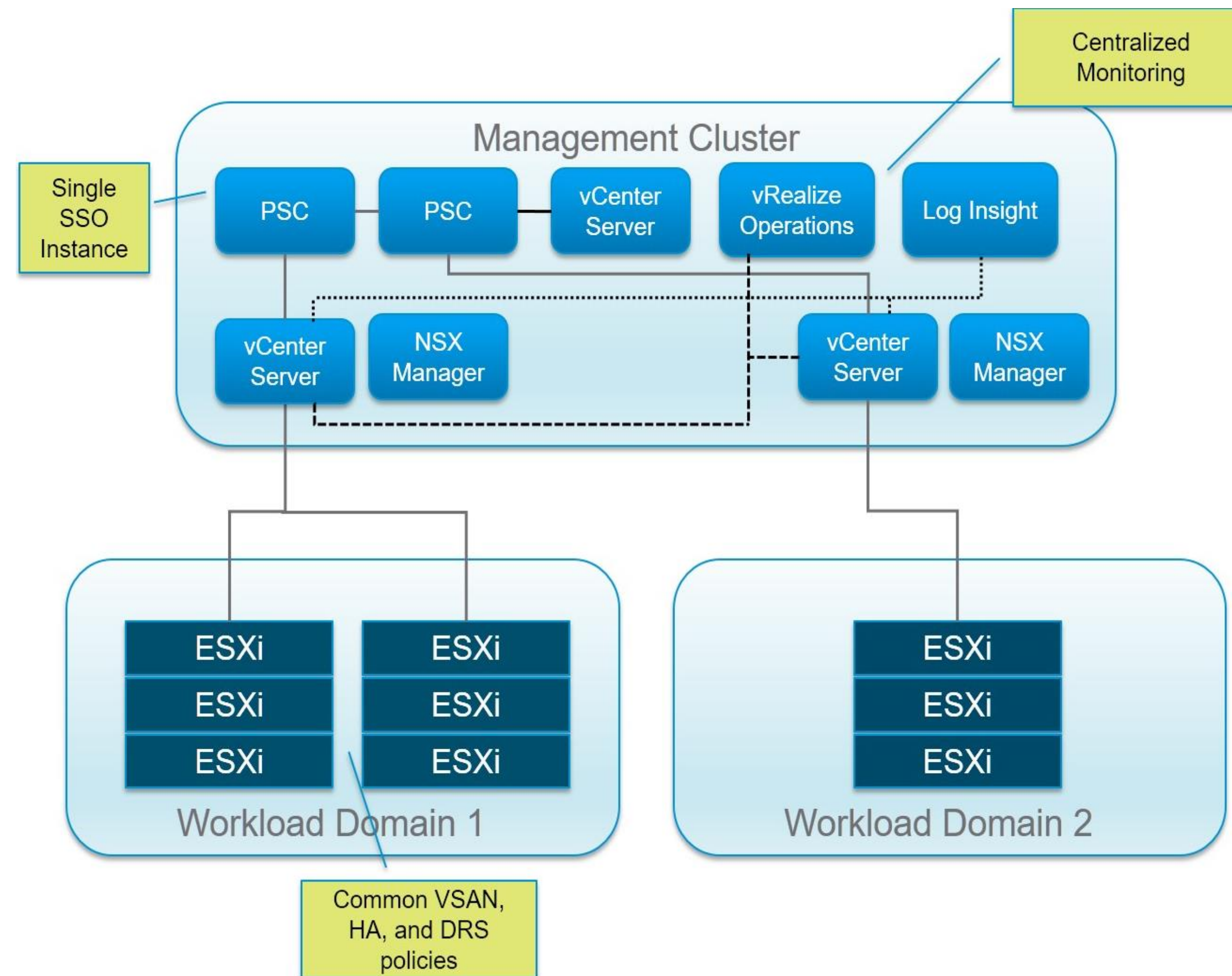
Management i workload domene

Management domena

Središnji dio VCF okruženja koji sprema ključne servise poput vCentera, NSX Managera i SDDC Managera. Omogućuje upravljanje, automatizaciju i nadzor cijele infrastrukture te služi kao temelj za kreiranje workload domena.

Workload domena

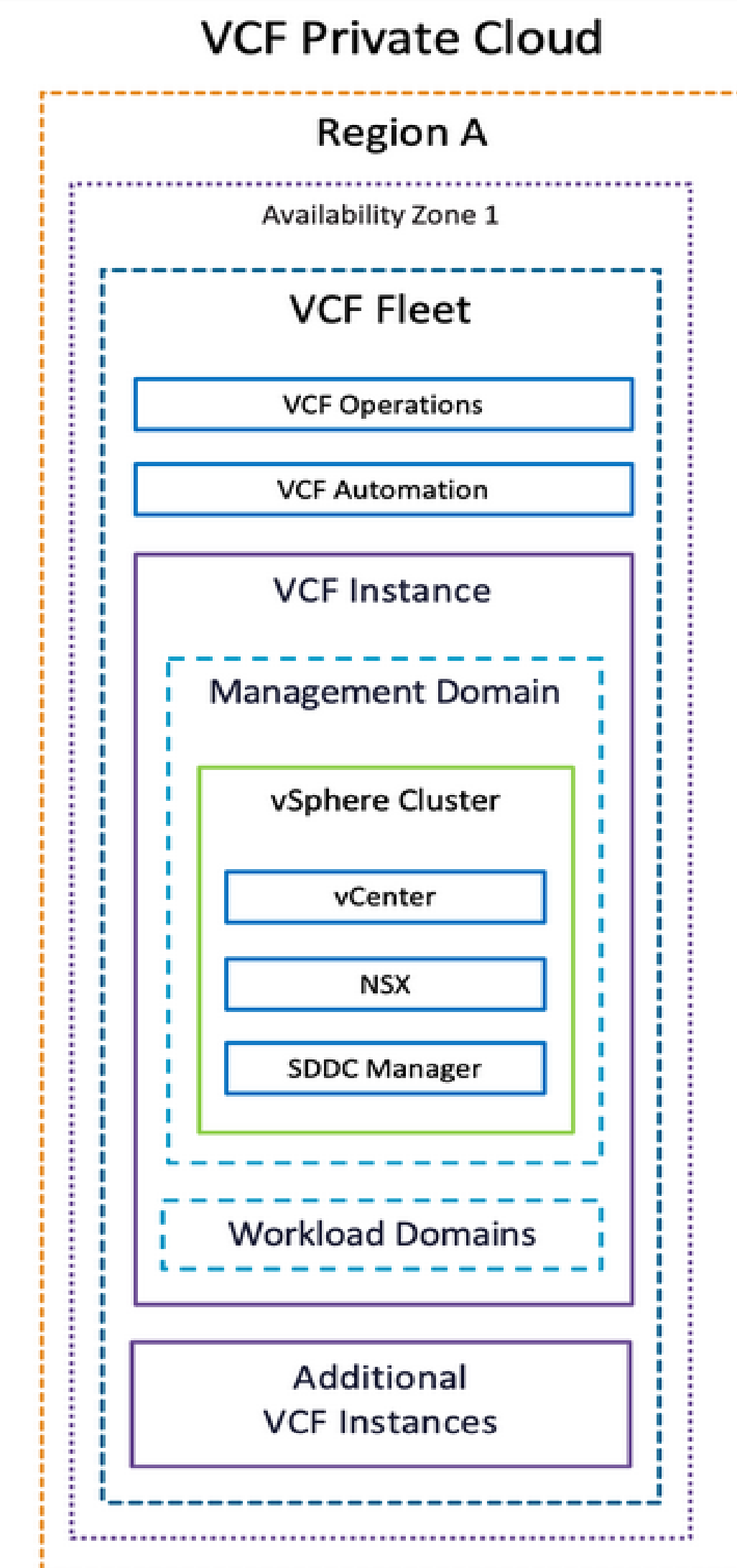
Namijenjena za korisničke virtualne mašine i aplikacije. Svaka domena ima vlastiti vCenter, NSX i vSAN resurse, pružajući izolirano, skalabilno i sigurno okruženje za poslovna ili razvojna okruženja.



Fleet deployment model

Basic design

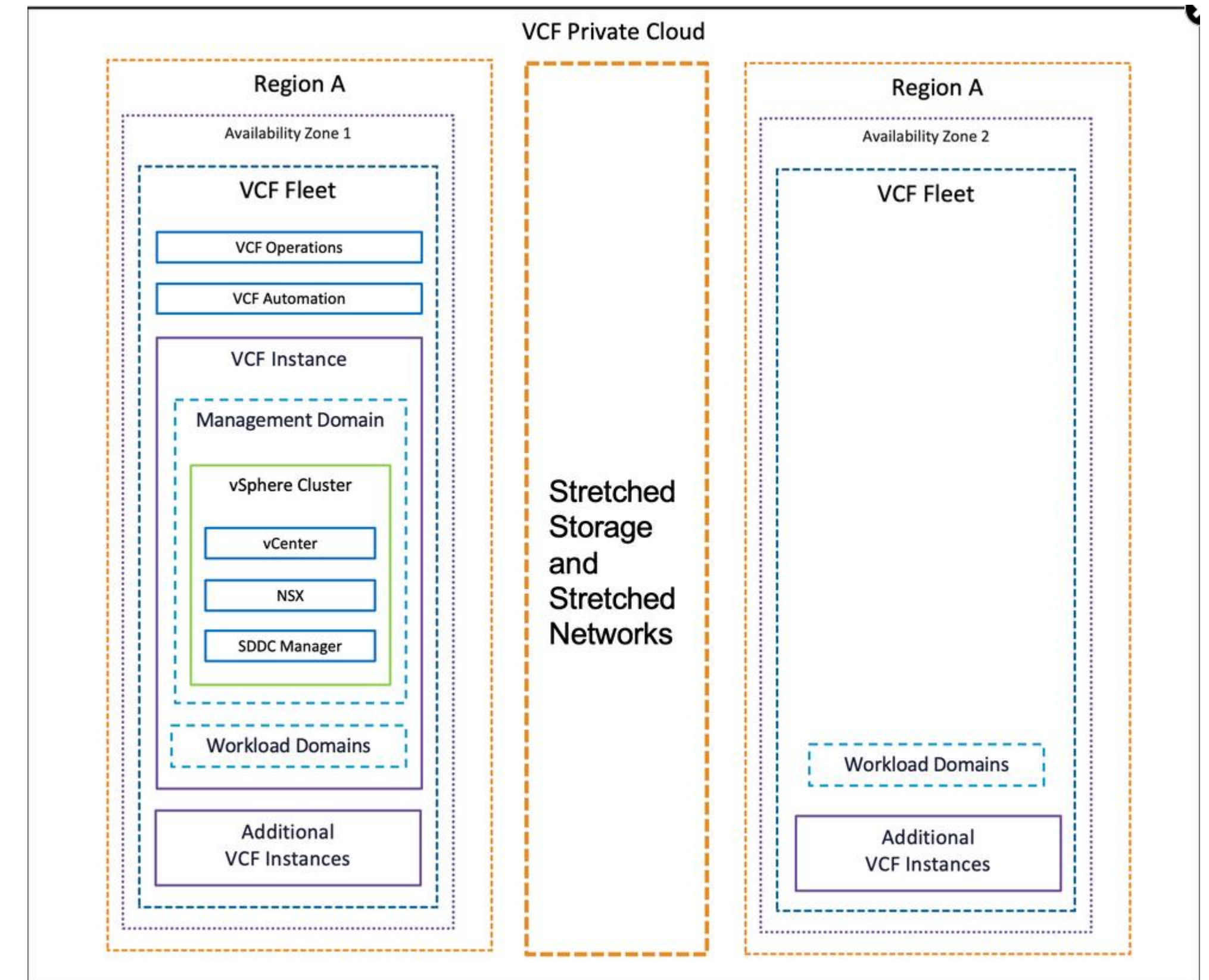
- Jedan **VCF Private Cloud** s jednom regijom i zonom dostupnosti
- Centralizirana **Management domena** (vCenter, NSX, SDDC Manager, Fleet, Operations, Automation)
- **Workload domene** za korisničke resurse
- Jednostavna implementacija i održavanje
- Idealno za **lab**, **PoC** i manja produkcijska okruženja
- Niska kompleksnost, manji operativni trošak
- Brža nadogradnja i lifecycle management



Fleet deployment model

Disaster avoidance

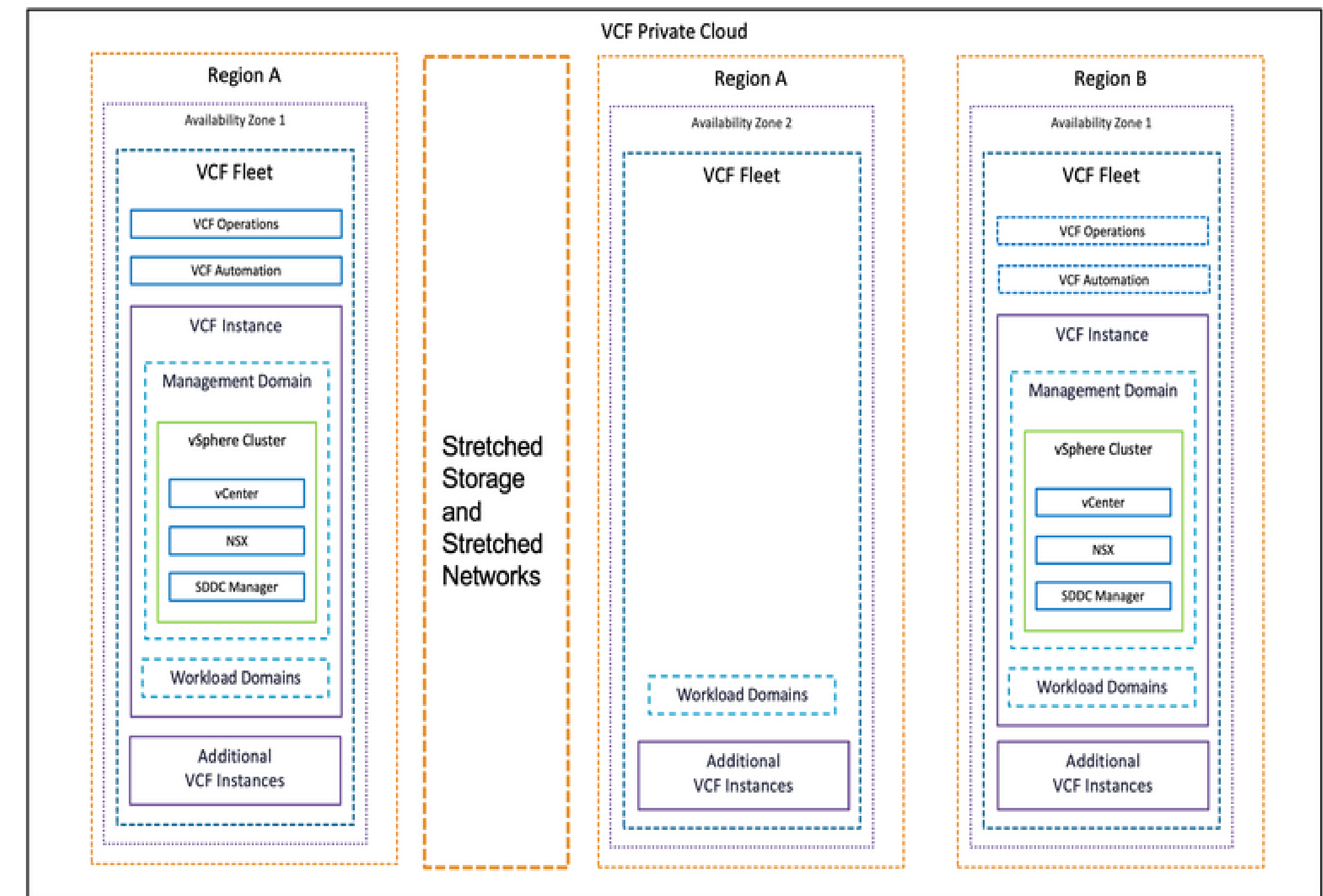
- Dvije **Availability Zone** unutar iste regije za visoku dostupnost
- **Stretched Storage** i **Stretched Networks** omogućuju kontinuitet servisa bez prekida
- Aktivno-aktivna replikacija između zona
- Centralizirani **VCF Fleet** za upravljanje i nadzor
- Idealno za **mission-critical** sustave s nultom tolerancijom na prekid
- Automatizirano prebacivanje u slučaju kvara zone
- U slučaju katastrofe oba site-a su nedostupna



Fleet deployment model

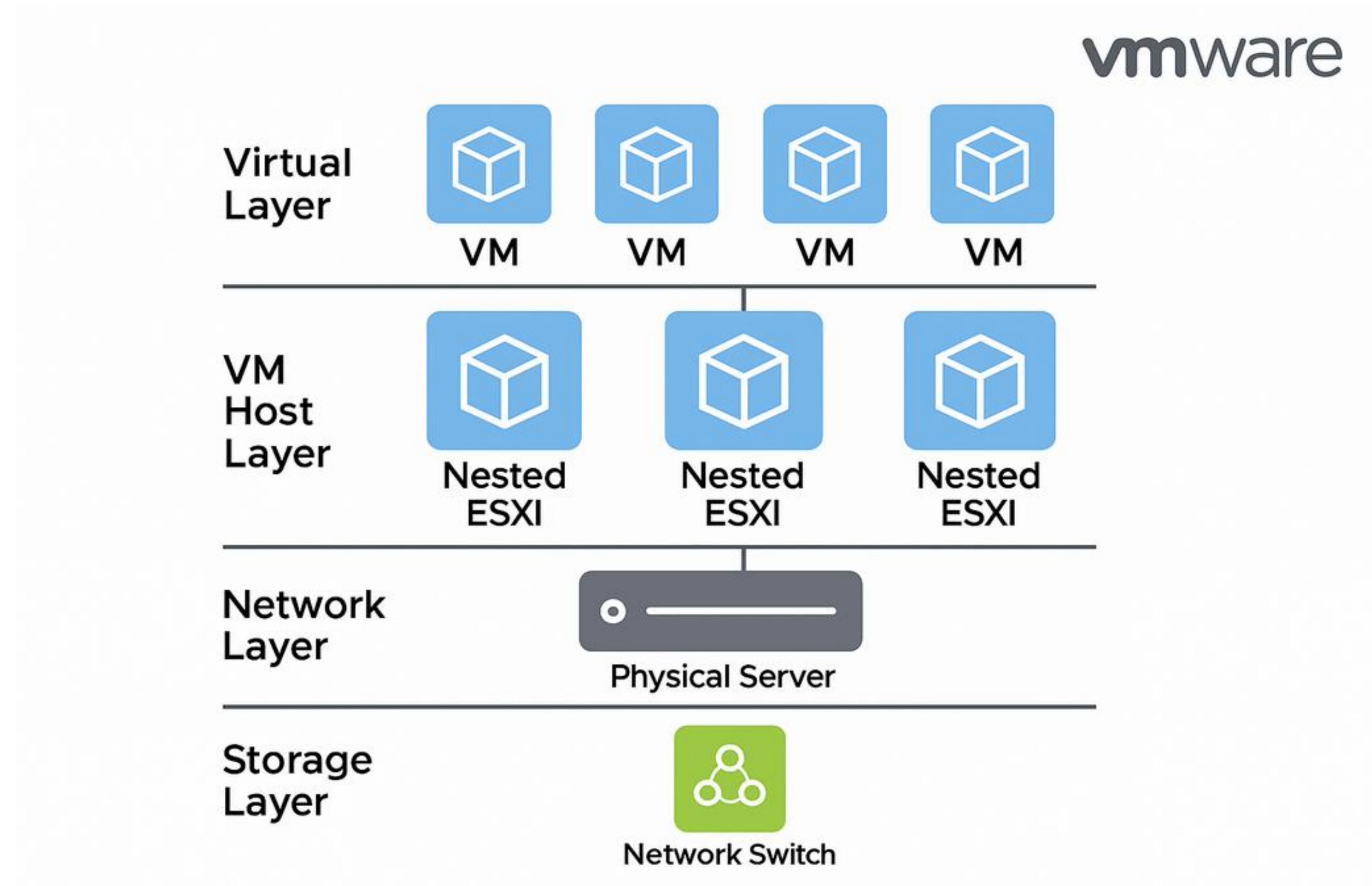
Disaster recovery

- **Dvije regije** (A i B) fizički odvojene za potpunu geo-redundanciju
- Svaka regija ima vlastiti VCF instancu
- Podaci se repliciraju putem stretched storage i mreža
- Omogućeno failover/failback između regija
- Idealno za kritične organizacije sa zahtjevom za oporavkom nakon katastrofe
- Podržava SRM i automatizirane DR procedure

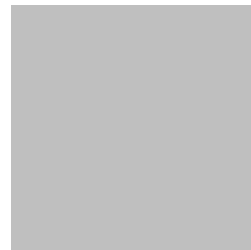


Priprema infrastrukture

LAB



LAB setup



Hypervisor: VMware ESXi 8.0.3 (Build 24784735)

- Model: HPE ProLiant DL380 Gen10
- CPU: Intel Xeon Silver 4214 @ 2.20GHz
- RAM: 384 GB
- Storage: 12 TB
- Mreža: Standard switch, VLAN trunk 4095, 10Gb



ESXi (3 × virtual appliance)

- vCPU: 32 | MEM: 112 GB | DISK1: 32 GB
- Network cards: 2 (VCF network on VLAN 4095)
- vSAN Cache: 100 GB | vSAN Capacity: 500 GB



LAB setup



Eksterni servisi: DNS + NTP server
Domena: c.hr



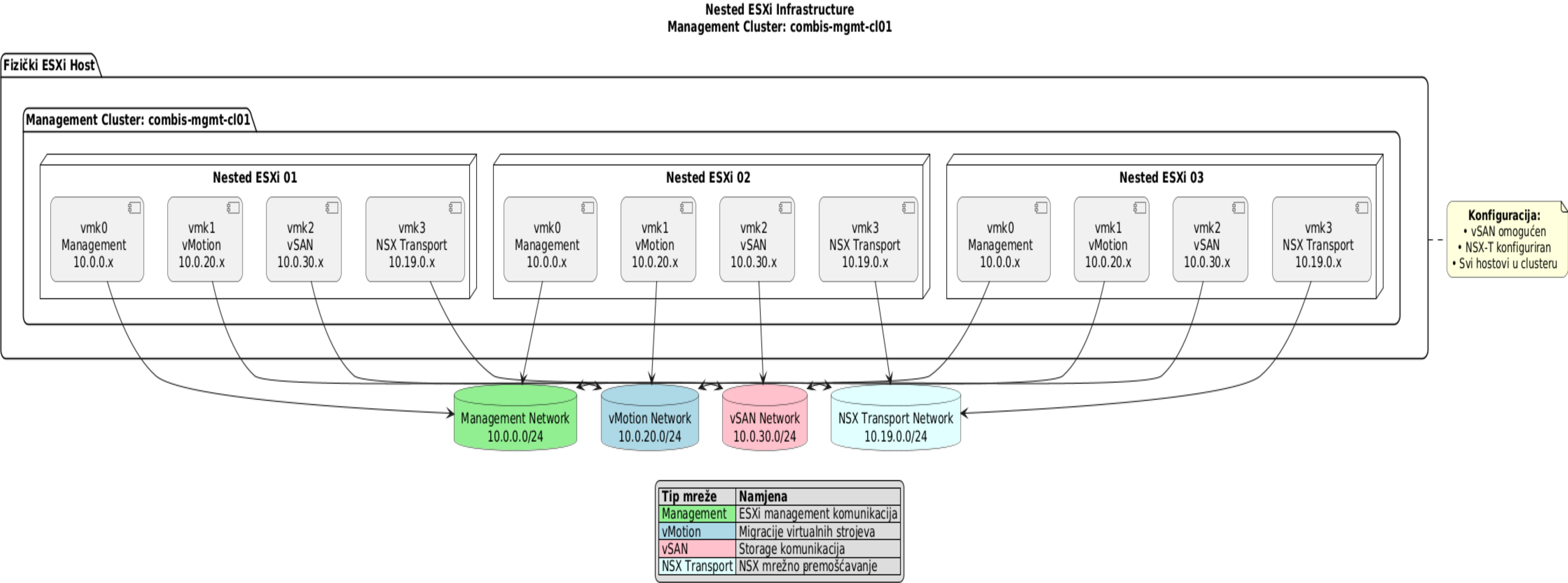
Subnet plan

- 10.0.0.0/24 – Management + VM Management
- 10.0.20.0/24 – vMotion
- 10.0.30.0/24 – vSAN
- 10.19.0.0/24 – NSX Transport / TEP
- 198.18.0.0/15 – Automation Cluster Network

Component	vCPU	Memory	Storage Provisioned	Storage Used
1 x vCenter Server	4	21GB	642GB	~30GB
1 x NSX Manager	6	24GB	300GB	~14GB
1 x SDDC Manager	4	16GB	931GB	~77GB
1 x VCF Operations	4	16GB	290GB	~13GB
1 x VCF Operations Fleet Manager	4	12GB	206GB	~117GB
1 x VCF Operations Collector	4	16GB	280GB	~11GB
1 x VCF Automation	24	96GB	626GB	~72GB



LAB setup



VCF Installer

- Orkestrira cijeli proces izgradnje VCF management domene
- Čita JSON specifikaciju i validira sve preuvjete
- Kreira vCenter, NSX i SDDC Manager komponente
- Automatski konfigurira vSAN i mrežne segmente
- Nadgleda i logira sve korake instalacije u realnom vremenu

VMware Cloud Foundation Installer

VMware Cloud Foundation installer deploys and performs the initial configuration of a new VMware vSphere Foundation or VMware Cloud Foundation environment. The installation process automates the deployment and configuration of the various components in each solution.

[LEARN MORE](#)[REVIEW PREREQUISITES](#)

Get Started

Download Binaries

Online depot connection active

You can edit your depot connection and/or download additional software binaries

VMware vSphere Foundation 9.0.0.0 Not downloaded

VMware Cloud Foundation 9.0.0.0 Not downloaded

+ 1 other versions

[DEPOT SETTINGS](#)

Deploy

Previous deployment completed successfully [View Details](#)

You can deploy VMware Cloud Foundation or VMware vSphere Foundation using the deployment wizard or uploading a deployment specification JSON file.

[DEPLOYMENT WIZARD](#)[DEPLOY USING JSON SPEC](#)

Online i offline depot

Online depot

Automatsko preuzimanje bundleova s interneta.

Brža provjera i instalacija ažuriranja.

Manje ručnog rada, više automatizacije.

Za okruženja s internet pristupom.

Offline depot

Ručni import bundleova bez interneta.

Potrebno više prostora i koraka.

Potpuna kontrola verzija i sigurnosti.

Idealno za zatvorena (air-gapped) okruženja.



Depot Settings

You can only connect the VCF Installer to one depot at a time. Configuring another depot connection deactivates and deletes any existing configuration.

 Alternatively, you can use the Binary Transfer utility to manually download the binaries from the depot to your local computer [Read more](#) and then upload them to the VMware Cloud Foundation Installer appliance.

Connect to the online depot

-  Depot connection active
-  Proxy settings are not configured

[EDIT DEPOT CONNECTION](#)

[DISCONNECT](#)

Offline Depot

Offline depot connection not set up. Start setup and enter the offline depot settings to setup connection.

[CONFIGURE](#)

Connect to the online depot

Enter your Download Token from support.broadcom.com to connect to the online depot:

Download Token *

Configure your internet access proxy if you don't have a direct access to the internet.

☐ Enable proxy server

[CANCEL](#)

[AUTHENTICATE](#)

Offline Depot

Enter your offline depot credentials.

 Setting up an offline depot will delete and disable the configured offline depot connection

FQDN or IP Address *

Must support HTTPS protocol

Port *

Username *

admin@local

Password *

••••••••••

[CANCEL](#)

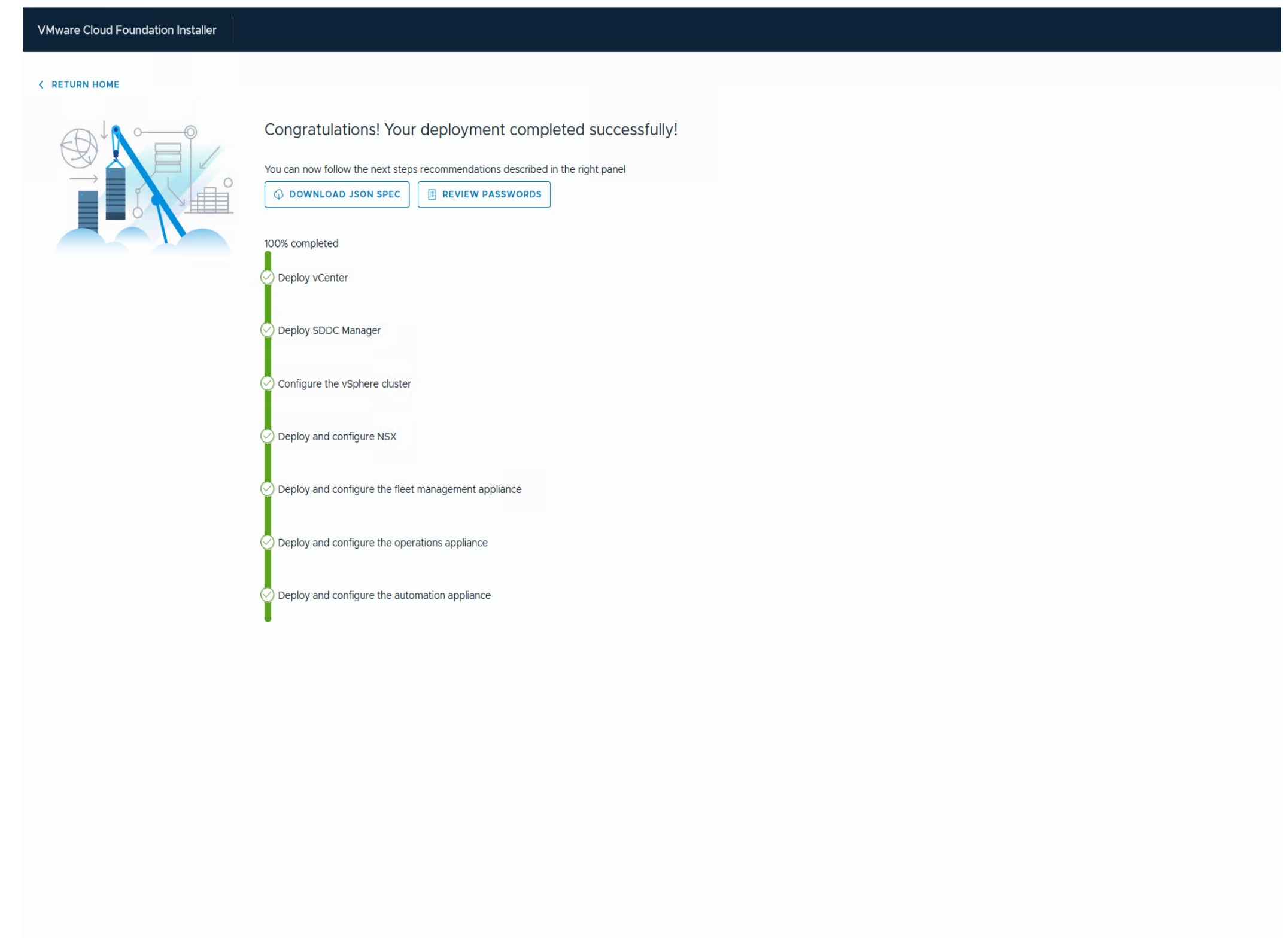
[CONFIGURE](#)

DEMO



Rezultat: Potpuno funkcionalan VCF 9 sustav

- **100% completed deployment** – svi koraci uspješno završeni
- Aktivirani ključni servisi: **vCenter, SDDC Manager, NSX, Operations, Automation**
- vSphere cluster konfiguriran i spreman za workload domene
- Fleet Management i Operations Appliance omogućuju nadzor i upravljanje
- Sustav spreman za daljnju automatizaciju i integraciju



Zaključak

Ključne prednosti automatizacije



**Ušteda vremena i
resursa**



**Konzistentnost
konfiguracija**



**Smanjena
mogućnost
pogreške**



**Click-and-deploy
koncept u praksi**



Adria Forum 2025

Thank You!