

# **VMware NSX-T Data Center: Design**

Lab Manual  
NSX-T 3.0



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## **VMware NSX-T Data Center: Design**

Lab Manual

NSX-T 3.0

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## Lab Use Case

Use the design document provided and the lab template to execute the design labs.

Provide justifications for the design choices you make.

## Lab Exercise 1: Conceptual Design

Using the documentation provided for your choice of use case, fill the tables:

- A. Customer Business Objectives
- B. Customer Background
- C. Customer Requirements
- D. Customer Constrains
- E. Customer Assumptions
- F. Customer Risk and Plan Mitigation

### 1.1-Based on your use case, list the Business Objectives of your customer.

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#### Business Objectives

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1.2-Based on your case, describe the customer background.

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---

1.3-List your Customer Requirements.

---

**Business Requirements**

**BR001**

**BR002**

**BR003**

**BR004**

**BR005**

**BR006**

**BR007**

**BR008**

**BR009**

---

## 1.4-List your Customer Constraints.

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### Constraints

C001

C002

C003

C004

C005

C006

C007

C008

C009

---

## 1.5-List your Customer Assumptions.

---

### Assumptions

A001

A002

A003

A004

A005

A006

A007

A008

A009

---

## 1.6-List your Customer Risks and Risk Mitigation.

Risks	Impact	Risk Mitigation
R001		
R002		
R003		
R004		
R005		
R006		
R007		

## Lab Exercise 2: Physical Design

Using the documentation provided for your choice of use case, recommend a design for the customer.

List the underlay type, protocols being used, number of physical hosts, and number of uplinks.

List all design decision justifications.

### 2.1-Underlay Design

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### 2.2-Underlay Design Justification and Implications

Decision ID	Design Decision	Design Justification	Design Implication
UHYD001			
UHYD002			
UHYD003			
UHYD004			
UHYD005			
UHYD006			
UHYD007			



## Lab Exercise 3: Virtual Infrastructure Design

Using the documentation provided for your choice of use case, review and analyze the logical design provided.

Fill the table with a complete list of design decision justifications.

### 3.1-Virtual Infrastructure Design Justification and Implications

Decision ID	Design Decision	Design Justification	Design Implication
VIHYD001			
VIHYD002			
VIHYD003			
VIHYD004			
VIHYD005			
VIHYD006			
VIHYD007			

## Lab Exercise 4: Logical Switch Design

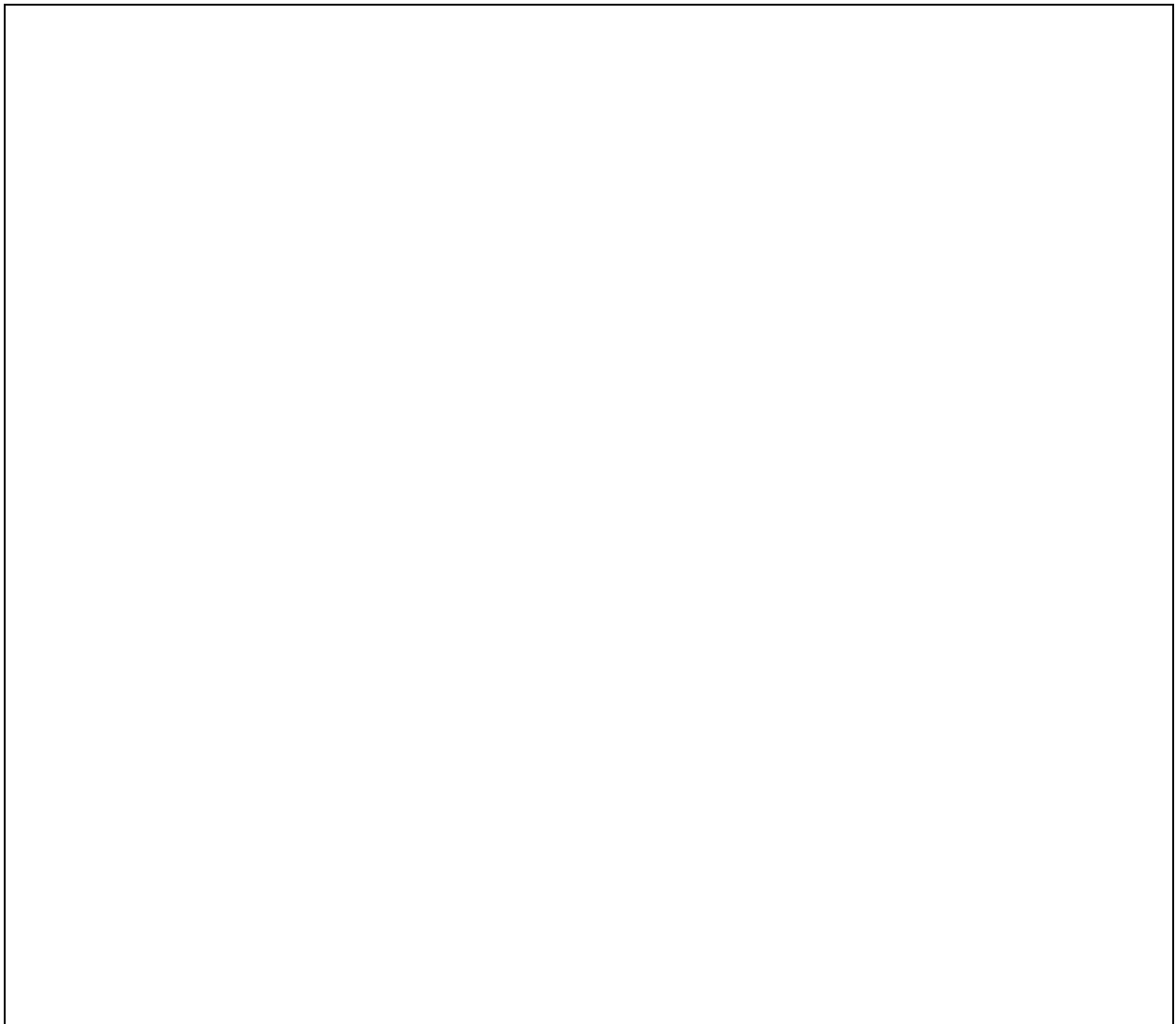
Using the documentation provided for your choice of use case, recommend a design for the customer.

Segment profiles provide layer 2 networking configuration details for segments and ports. You can create various types of segment profiles from the NSX UI.

Each type of segment profile has a different function:

- IP Discovery: Learns the VM MAC and IP addresses
- MAC Discovery: Supports MAC learning and MAC address change
- SpoofGuard: Helps prevent NIC spoofing by authenticating the IP and MAC address of the virtual NIC
- Segment Security: Provides stateless layer 2 and layer 3 security
- QoS: Provides high-quality and dedicated network performance for the preferred traffic

### 4.1- Recommend a segment profile design for your customer use case.



#### 4.2-List all design decisions justifications.

Decision ID	Design Decision	Design Justification	Design Implication
LSHYD001			
LSHYD002			
LSHYD003			
LSHYD004			
LSHYD005			
LSHYD006			
LSHYD007			

## Lab Exercise 5: Edge Design

Using the documentation provided for your choice of use case, recommend a design for the customer.

The proper choice of edge design implementation on NSX-T Data Center is fundamental to the operations of your data center considering all the services and north and south routing.

The edge offers the choice between a virtual machine (Edge VM) design and an edge bare metal (Edge BM) design.

### 5.1-List all design decision justifications.

Decision ID	Design Decision	Design Justification	Design Implication
ESGHYD001			
ESGHYD002			
ESGHYD003			
ESGHYD004			
ESGHYD005			
ESGHYD006			
ESGHYD007			
ESGHYD008			

## Lab Exercise 6: Routing Design

Using the documentation provided for your choice of use case, recommend a design for the customer.

You must understand routing and the relevance of the NXS-T Data Center 3.0 architecture to design the traffic flow for routing. To design the routing properly from the compute cluster to the edge cluster, you must consider peering with upstream underlay routers.

Logical routers:

- Provide E-W routing between different logical switches
- Peer with the physical infrastructure for N-S routing
- Can provide network services such as network address translation (NAT), load balancing, perimeter firewall, VPN, and so on.

### 6.1-List all design decision justifications.

Decision ID	Design Decision	Design Justification	Design Implication
RTHYD001			
RTGHYD002			
RTGHYD003			
RTGHYD004			
RTGHYD005			
RTGHYD006			
RTGHYD007			
RTGHYD008			
RTGHYD009			

## Lab Exercise 7: Security Policy Overall Design

Using the documentation provided for your choice of use case, recommend a design for the customer.

List all design decision justifications.

You must understand how security rules work in NSX-T Data Center and how the distributed firewall and gateway firewall treat traffic flows. You must also be able to incorporate a tested security policy methodology. Security policies are configured through the Firewall Rule table by using a GUI or REST API in NSX Manager.

The following high-level logical steps must be performed before you define security policy rules:

1. Inventory the VM collection
2. Tag workloads
3. Group workloads
4. Define application profiling
5. Define the appropriate security policy

### 8.1-List all design decisions justifications.

Decision ID	Design Decision	Design Justification	Design Implication
SECYD001			
SECHYD002			
SECHYD003			
SECHYD004			
SECHYD005			
SECHYD006			
SECHYD007			
SECHYD008			

## Lab Exercise 8: Federation Design

Using the documentation provided for your choice of use case, recommend a design for the customer.

Federation provides multisite functionality for the enterprise data centers. Three sites are supported in NSX-T Data Center 3.0.

Multiple sites are used for the following reasons:

- Ensure high availability of the applications
- Provide a better application response time
- Provide the most cost-effective hosting solution depending on the application criticality
- Provide configuration during mergers or acquisition

8.1-Based on your use case, make a recommendation for the federation design.



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## 8.2-List all design decision justifications.

Decision ID	Design Decision	Design Justification	Design Implication
FEDHYD001			
FEDHYD002			
FEDHYD003			
FEDHYD004			
FEDHYD005			
FEDHYD006			
FEDHYD007			
FEDHYD008			
FEDHYD009			