

HOL-2494-91-ISM
Lightning Lab

Table of contents

Lab Overview - HOL-2494-91-ISM - Azure VMware Solution - Lightning Lab	3
Lab Description.....	3
Lab Guidance	3
Module 1 - Azure VMware Solution Concepts (15 minutes) Basic	5
Azure VMware Solution Introduction	5
Azure Concepts	5
Azure VMware Solution Concepts	6
Conclusion.....	8
Module 2 - Azure VMware Solution Portal UI Tour (15 minutes) Basic	9
Introduction.....	9
Hands-on Labs Interactive Simulation: Azure VMware Solution Portal UI Tour	9
Conclusion.....	11

Lab Overview - HOL-2494-91-ISM - Azure VMware Solution - Lightning Lab

Lab Description

[2]

In this lab, we will introduce Azure VMware Solution concepts and provide a tour of the administrative console.

Lab Guidance

[3]

Welcome! This lab is available for you to repeat as many times as you want. To start somewhere other than the beginning, use the Table of Contents in the upper right-hand corner of the Lab Manual or click on one of the modules below.

- Module 1 - Azure VMware Solution Concepts (15 minutes) (Basic) Introduction to Azure and AVS concepts
- Module 2 - Azure VMware Solution Portal UI Tour (15 minutes) (Basic) A guided tour of the AVS management interface

Lab Captains:

- Steve Pantol, Staff Cloud Solutions Architect, USA
- Jeremiah Megie, Principle Cloud Solutions Architect, USA

Lab Principal:

- Doug Baer, Staff Solution Architect, USA

Content Architect:

- Guan Hua Liang Wu, Associate Content Architect, Costa Rica

This lab manual can be downloaded from the Hands-on Labs document site found here:

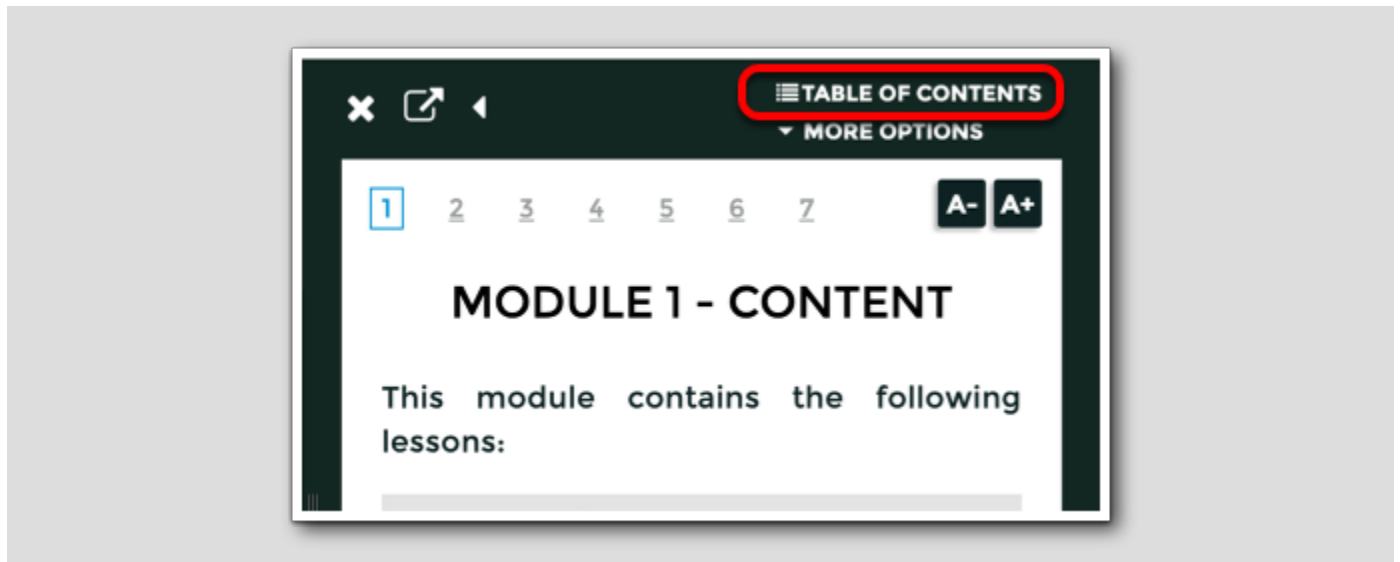
<http://docs.hol.vmware.com>

This lab may be available in other languages. To set your language preference and view a localized manual deployed with your lab, utilize this document to guide you through the process:

<http://docs.hol.vmware.com/announcements/nee-default-language.pdf>

First time using Hands-on Labs?

[4]



Welcome! If this is your first time taking a lab, navigate to the **Appendix** in the Table of Contents to review the interface and features before proceeding.

For returning users, feel free to start your lab by clicking next in the manual.

Module 1 - Azure VMware Solution Concepts (15 minutes) Basic

Azure VMware Solution Introduction

[6]

Azure VMware Solution combines VMware compute, networking, and storage running on top of dedicated, bare-metal hosts in Microsoft Azure. AVS provides the full VMware SDDC as a service, managed and operated by Microsoft, integrated with the Azure Portal and Resource Manager, and managed with familiar VMware interfaces.

Because vSphere is running on bare metal, customers get the same performance and resilience they are accustomed to having on-premises, without any performance penalties from nested virtualization. AVS hosts use vSAN all-flash and hybrid storage for performance and reliability that scales as more hosts are added. NSX-T provides software-defined networking within the AVS private cloud for easy compatibility with on-premises networks. VMware components are managed from vCenter running in the AVS private cloud.

AVS is jointly engineered by Microsoft and VMware, with Microsoft serving as the operator. This means that Microsoft delivers the initial environment and provides periodic updates and fixes, remediates any hypervisor, server, or network failures, and provides support. It also means that the service is fully integrated with Azure native services.

In this lab, we will go through the steps to prepare for a private cloud deployment, deploy the private cloud, connect the private cloud to an Azure virtual network, access vCenter from that Azure virtual network, connect your on-premises data center to your private cloud, and access vCenter from an on-premises VM.

Before planning an Azure VMware Solution deployment, a working understanding of core Azure and Azure VMware Solution concepts is required.

Azure Concepts

[7]

Get to know the following Azure concepts before starting the Hands-on Labs:

Subscriptions

[8]

Within Azure, a Subscription is a billing boundary for services. A user must have access to a valid Azure Subscription to deploy any Azure resources. Azure VMware Solution is supported only in subscriptions associated with a Microsoft Enterprise Agreement or a Cloud Solution Provider Azure plan.

Regions

[9]

An Azure region is a collection of data centers interconnected by a dedicated, low-latency network hosting Azure services. Not all Azure services are available in all regions. At the time of this writing, Azure VMware Solution is supported in 15 regions. A current list of supported regions can be found [here](#).

Resource Groups

[10]

A Resource Group is a container object into which other Azure resources can be grouped to simplify management of multiple resources. Policies and lifecycle actions can be applied to the group to affect all resources within the group.

Virtual Networks (VNets) and Virtual Network Gateways

[11]

Azure Virtual Networks are the building blocks for private network communication within Azure. VNets enable Azure resources to securely communicate with each other, the internet, and on-premises resources. A Virtual Network Gateway allows VNets to exchange routes and route traffic between each other.

ExpressRoute and ExpressRoute Global Reach

[12]

An ExpressRoute circuit is a private connection to the Microsoft Azure global backbone. A customer can connect to an ExpressRoute location via an ExpressRoute connectivity provider and access all regions within a geopolitical region via that connection.

Azure VMware Solution Concepts

[13]

Get to know the following Azure VMware Solution concepts before starting the Hands-on Labs:

Private Cloud

[14]

An Azure VMware Solution private cloud consists of one or more vSphere clusters deployed on bare-metal server hosts, vCenter Server, NSX-T, vSAN, and various Azure underlay resources required for connectivity and operation. By default, only one AVS private cloud can be deployed per Azure subscription, but this limit can be scaled by support ticket.

AVS Hosts

[15]

At the time of this writing, AVS supports three host types--AV36, AV36p, and AV52. Not all host types are available in all regions. Refer to the [Azure VMware Solution pricing page](#) to confirm host options in a given region.

Each AV36 host includes:

- Two Intel 18-core, 2.3 GHz, processors
- 576 GB RAM
- Two dual-port 25GbE network adapters, configured as two vmnics for ESXi system traffic and two vmnics for workload traffic
- A vSAN Cache Tier consisting of 3.2 TB raw NVMe
- A vSAN Capacity Tier consisting of 15.2 TB raw SSD

Each AV36p host includes:

- Two Intel 18-core, 2.6 GHz, processors
- 768 GB RAM
- Two dual-port 25GbE network adapters, configured as two vmnics for ESXi system traffic and two vmnics for workload traffic
- A vSAN Cache Tier consisting of 1.5 TB raw Intel cache
- A vSAN Capacity Tier consisting of 19.2 TB raw NVMe

Each AV52 host includes:

- Two Intel 26-core, 2.7 GHz, processors
- 1,536 GB RAM
- Two dual-port 25GbE network adapters, configured as two vmnics for ESXi system traffic and two vmnics for workload traffic
- A vSAN Cache Tier consisting of 1.5 TB raw Intel cache
- A vSAN Capacity Tier consisting of 38.4 TB raw NVMe

Cluster Configuration

[16]

An AVS private cloud will start with a single cluster with 3-16 hosts. Up to 12 clusters can be created in each AVS private cloud, with up to 96 hosts distributed between those clusters. All AVS management VMs, including vCenter, NSX Manager, and HCX components will be placed on the first cluster.

Identity and Access Management

[17]

A local user named `cloudadmin` assigned to the CloudAdmin role is used to administer vCenter in AVS. This role provides the permissions necessary to manage the environment but will not have access to specific management components supported and managed by Microsoft, including ESXi hosts, clusters, and datastores. The `cloudadmin` user can be used to assign the CloudAdmin role to Active Directory users and groups.

A local `cloudadmin` user is also created for NSX management. This user has full access to Tier-1 Gateways, segments, and most services, and read-only access to Tier-0 Gateways.

A full inventory of permissions granted to each `cloudadmin` user can be found in the [Azure VMware Solution identity concepts documentation](#).

Connectivity

[18]

At provisioning, an ExpressRoute circuit is created connecting the AVS private cloud to the Microsoft Dedicated Enterprise Edge routers, allowing the AVS private cloud to connect to the Azure backbone and access Azure services. The AVS private cloud can be connected to an existing Azure VNet by way of an ExpressRoute Gateway. The preferred method for connecting an AVS private cloud to an on-premises datacenter is via ExpressRoute Global Reach. If an ExpressRoute circuit between the on-premises datacenter and Azure is not available, a Site-to-Site VPN connection can be used.

Conclusion

[19]

In this module, we reviewed core Azure and Azure VMware Solution concepts.

You've finished Module 1

[20]

Congratulations on completing Module 1.

Module 2 - Azure VMware Solution Portal UI Tour (15 minutes) Basic

Introduction

[22]

In this module, we take you on a guided tour of Azure VMware Solution administration through the Azure Portal.

Hands-on Labs Interactive Simulation: Azure VMware Solution Portal UI Tour

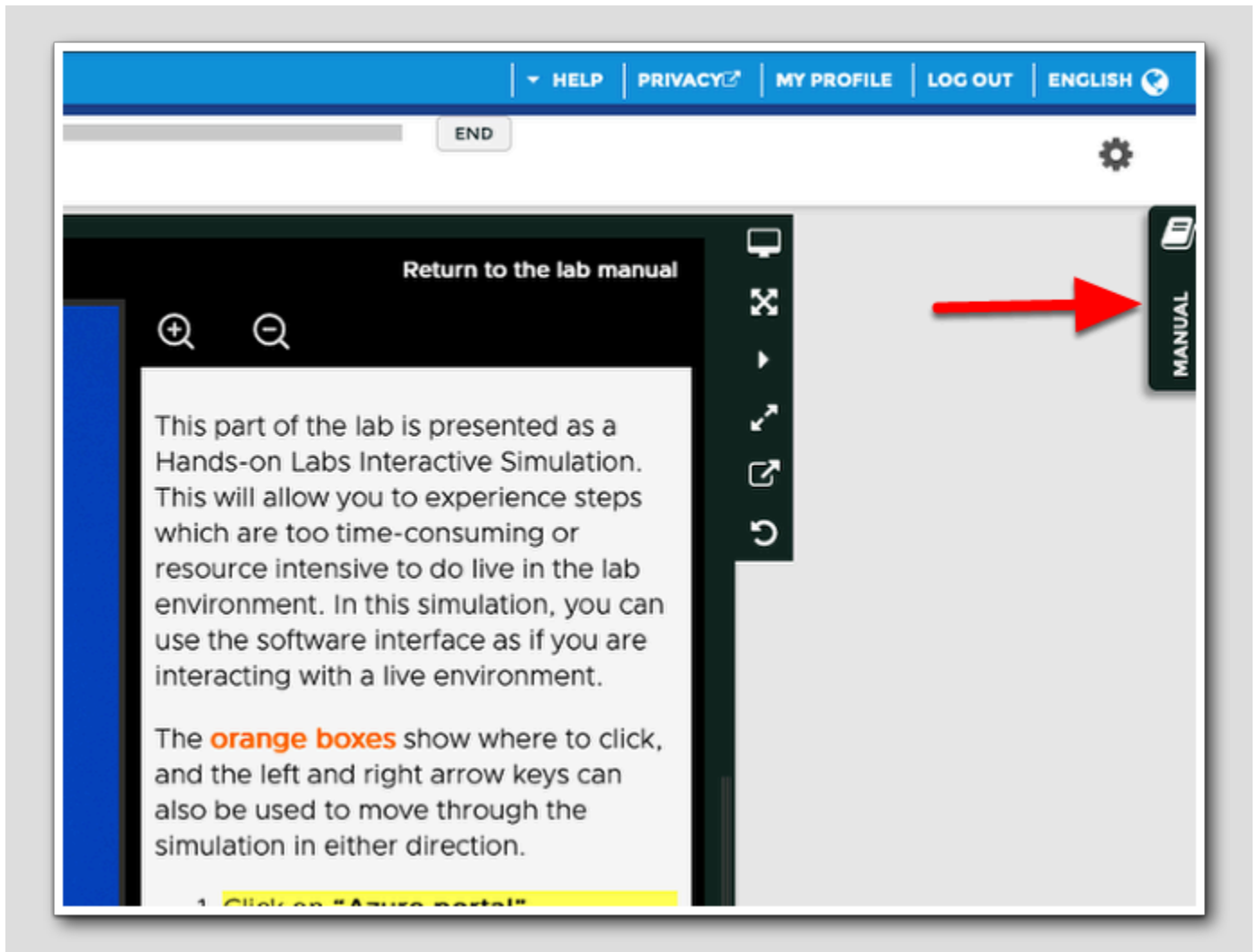
[23]

This part of the lab is presented as a **Hands-on Labs Interactive Simulation**. This will allow you to experience steps which are too time-consuming or resource intensive to do live in the lab environment. In this simulation, you can use the software interface as if you are interacting with a live environment.

Click the button below to start the simulation!

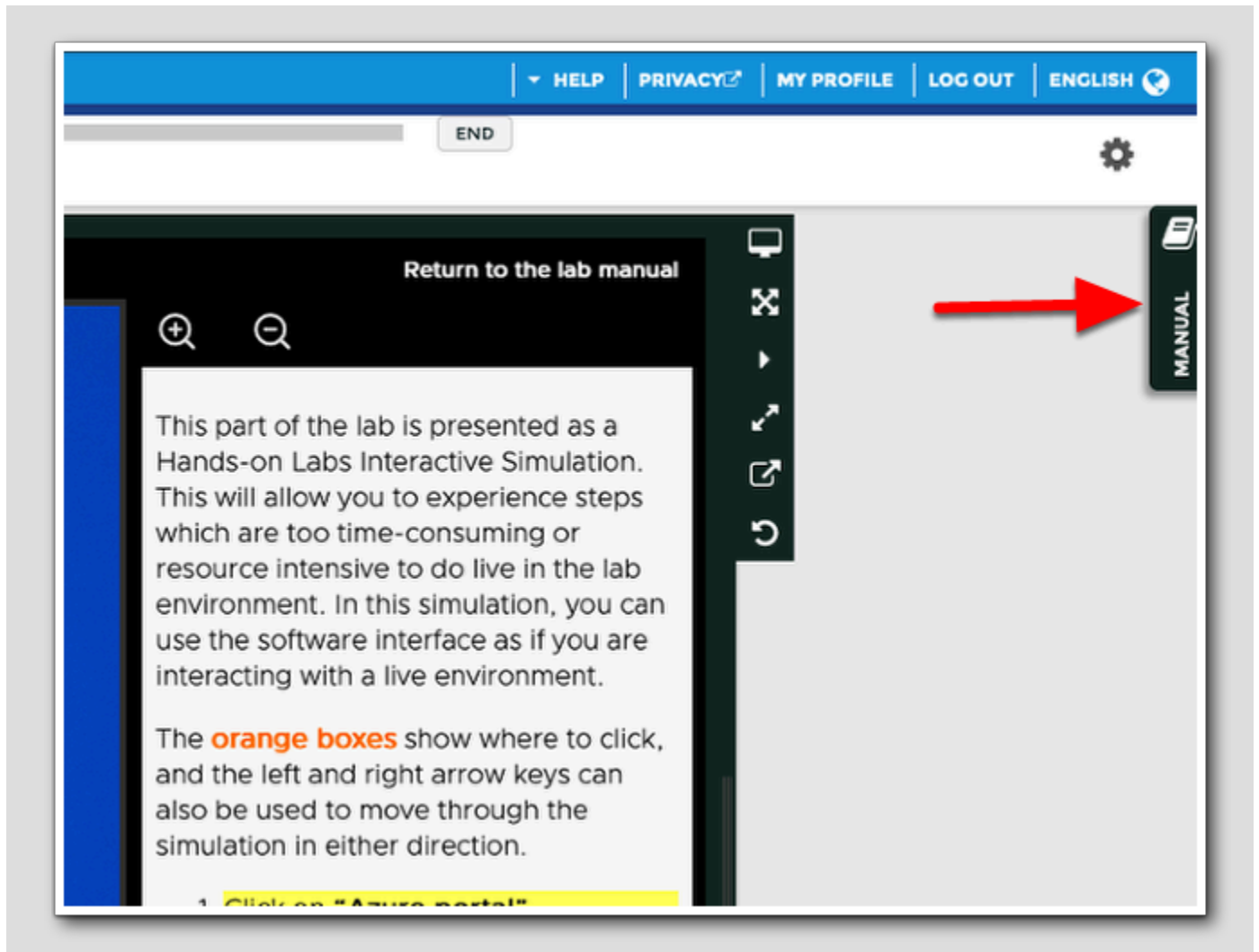
[View the Interactive Simulation](#)

You can hide the manual to use more of the screen for the simulation.



NOTE: When you have completed the simulation, click on the Manual tab to open it and continue with the lab.

[vlp:close-panellmanual|Close Instructions Panel]



Conclusion

[24]

Congratulations on completing Module 2.

You've finished Module 2

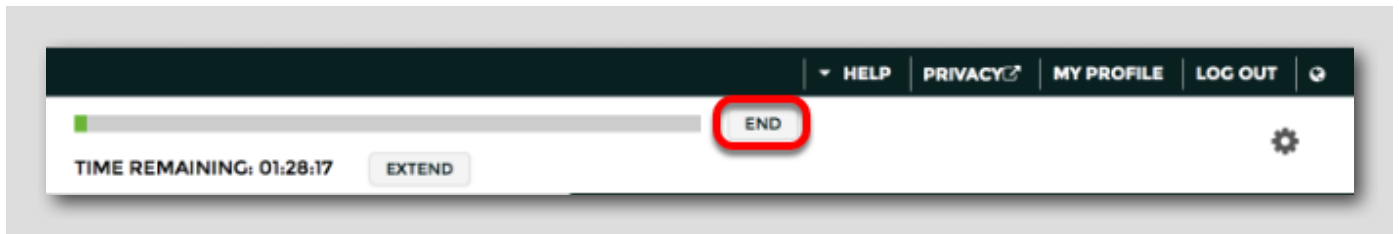
[25]

If you are looking for additional information on Azure VMware Solution, try one of these:

- Azure VMware Solution on VMware Cloud Tech Zone
- Azure VMware Solution documentation on Microsoft Learn
- Azure VMware Solution Hands-on Labs

How to End Lab

[26]



To end your lab click on the END button.

