NUTANIX

Nutanix Core Concepts

Module 1

NUTANIX CORE CONCEPTS

Hyperconverged Infrastructure and Cloud Concepts

Term	Definition
HCI	Hyperconverged infrastructure (HCI) is a combination of servers and storage into a distributed infrastructure platform with intelligent software to create flexible building blocks that replace legacy infrastructure consisting of separate servers, storage networks, and storage arrays. More specifically, it combines commodity datacenter server hardware with locally attached storage devices (spinning disk or flash) and is powered by a distributed software layer to eliminate common pain points associated with legacy infrastructure.
Public Cloud	A public cloud is a platform that makes the standard cloud computing resources (e.g. storage, compute power, virtual machines.) available to users via the internet. Today, there are three main public cloud providers: AWS, Microsoft, and Google. These providers deliver their services over the internet or through dedicated connections, and they use a fundamental pay-per-use approach.
Private Cloud	A private cloud is also known as an on-premises cloud architecture, and is deployed on a business's in-house datacenter. The private cloud definition from The National Institute for Standards and Technology (NIST) says that "the cloud infrastructure is provisioned for exclusive use by a single organization comprising multiple consumers. It may be owned, managed, and operated by the organization, a third party, or some combination of them, and it may exist on or off premises."
Hybrid Cloud	A hybrid cloud model combines on-premises IT (traditional infrastructure and private cloud) with off-premises resources or services from a public cloud—such as Google Cloud Platform (GCP), Amazon Web Services (AWS), or Microsoft Azure—or at a cloud service provider (CSP).
Enteprise Cloud	An enterprise cloud is a unified IT operating environment that melds private cloud, public cloud, and distributed cloud, providing a single point of control for managing infrastructure and applications in any cloud. The enterprise cloud delivers a consistent, high-performance and seamless experience for both cloud operators and consumers of cloud-delivered services and applications. The enterprise cloud is a model for IT infrastructure and platform services that delivers the advantages of public cloud offerings for enterprise applications

Term	Definition
	without compromising on the value provided by private datacenter environments.

Virtualization Concepts

Term	Definition
Software-defined Networking (SDN)	Software-defined networking (SDN) describes an architecture that separates the network control plane and the forwarding plane, aiming to simplify and improve network control. IT teams are better able to rapidly adapt to changing business requirements and application needs. SDN is a highly flexible, agile way to adapt to growing networking requirements and enable automation and agility. By separating the network control and forwarding planes, SDN makes network control a programmable entity and abstracts the infrastructure underneath.
Software-defined Storage (SDS)	Software-defined storage is a storage system that does not rely on the underlying hardware. Instead, the software is used to manage data. While most data storage products do require both software and hardware to function—with the software serving as the management component to control and monitor the hardware and storage tasks—software-defined storage differs. Software-defined storage describes products that run on commodity server hardware without any specially built hardware components. In this way, software-defined storage solutions are better suited to cut costs than a traditional hardware-dependent storage product.
Virtual Machine	Virtual machines are an emulation of a computer system. The underlying hardware is copied by a hypervisor to run multiple operating systems. While VMs have been around for 50 years, they are now becoming more popular with the advance of the remote workforce and end-user computing. Some popular virtualization stacks and hypervisors include VMware vSphere with ESXi, Microsoft Windows Server 2016 with Hyper-V, Nutanix Acropolis with AHV, Citrix XenServer, and Oracle VM

Core Nutanix Concepts

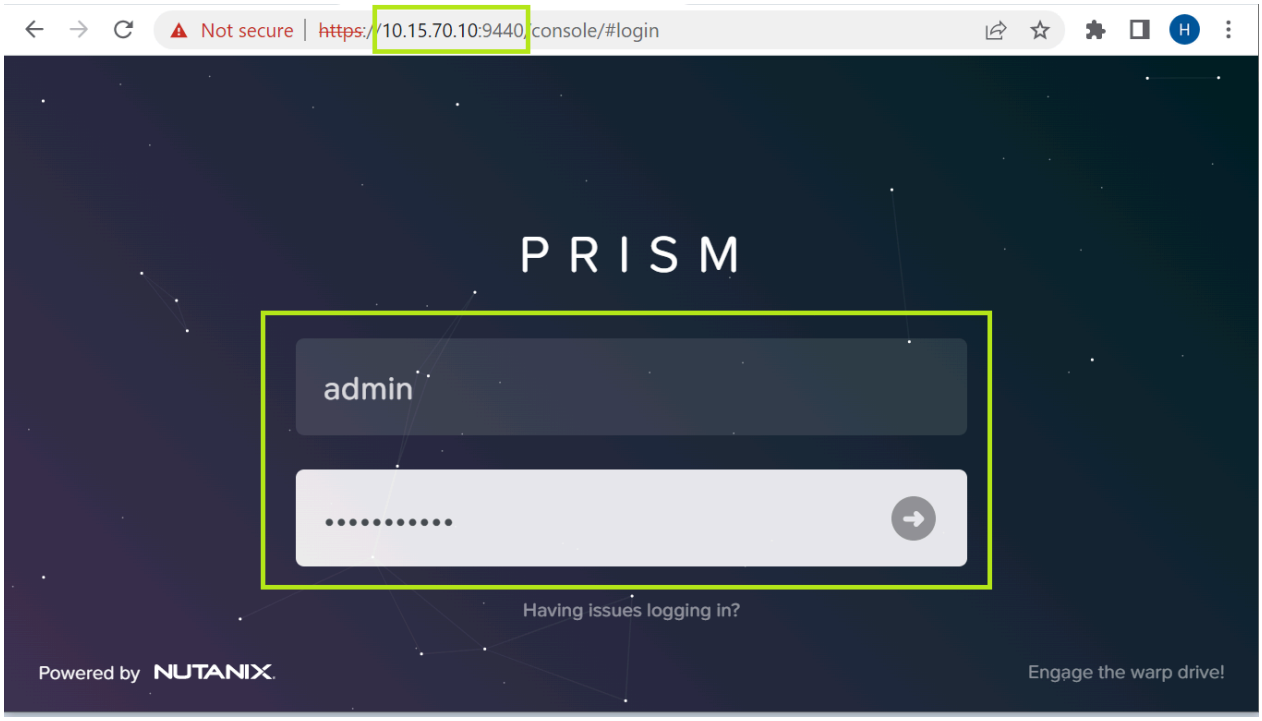
Term	Definition
Block	In a typical Nutanix cluster, a block is a chassis that holds one to four nodes, and contains power, cooling, and the backplane for the nodes. The number of nodes and drives depends on the hardware chosen for the solution.
Cluster	A Nutanix cluster is a logical grouping of physical and logical components. A single Nutanix cluster can consist of one, two, three, four, or more nodes, and these nodes can be housed in one or more blocks. Since a cluster is both a physical and a logical grouping, it is possible for nodes in a single block to belong to different clusters.

Term	Definition
CVM	A Nutanix VM that manages storage and other cluster functions on a node.
Hypervisor	In the case of server virtualization, a hypervisor is a software process that creates and runs virtual machines (VMs) using the resources of physical hardware. The hypervisor abstracts and isolates the VMs and their programs from the underlying server hardware, enabling a more efficient use of physical resources, simpler maintenance and operations, and reduced costs.
Host	A host (also called a node) is an x86 server with compute and storage resources. Three types of nodes are available: HCI, compute-only (CO), and storage-only (SO).
Prism	Web-based management interface for managing Nutanix clusters.
Prism Central	Centralized management tool that runs as a separate VM configured as a single-node cluster to monitor and manage multiple clusters through a single web console.
PuTTY	PuTTY is a software terminal emulator for Windows and Linux. It is free, open source, and supports multiple network protocols such as Telnet, SCP, SSH, rlogin, serial port, and raw socket connection.
SSH	SSH (Secure Shell or Secure Socket Shell) is a network protocol that allows users to securely access a computer over an unsecured network. In addition to providing strong encryption, SSH is commonly used to manage systems and applications remotely, enabling administrators to log in to another computer over a network, execute commands and move files from one computer to another.
Storage Pool	A storage pool is a group of physical storage devices including PCIe SSD, SSD, and HDD devices for the cluster. The storage pool can span multiple Nutanix nodes and is expanded as the cluster scales. In most configurations, only a single storage pool is leveraged.
Storage Container	A container is a logical segmentation of the Storage Pool and contains a group of VM or files (vDisks). Some configuration options (e.g., RF) are configured at the container level, however are applied at the individual VM/file level. Containers typically have a 1 to 1 mapping with a datastore (in the case of NFS/SMB).
Volume Group	A volume group is a collection of logically related virtual disks or volumes. It is attached to one or more execution contexts (VMs or other iSCSI initiators) that share the disks in the volume group. You can manage volume groups as a single unit. Each volume group contains a UUID, a name, and iSCSI target name. Each disk in the volume group also has a UUID and a LUN number that specifies ordering within the volume group.

Note: For other important terms and definitions, see the Glossary on nutanix.com or the Glossary in the Prism Central Guide.

Logging into Prism

Note: Most of the steps in the following procedure are only applicable to your very first Prism login. On each subsequent login, entering your username and password will take you directly to the Home dashboard with no additional actions typically required. Additional actions may be required after an upgrade is performed.



The steps to log into Prism Element and Prism Central are similar. Differences between the two have been called out specifically in the steps below, where applicable.

1. Open a supported browser, such as FireFox, Chrome, Safari, Internet Explorer version 11, or Microsoft Edge, and Type *http://management_ip_addr* in the address bar and press **Enter** or click the right arrow icon.
   - When logging into Prism Element, this IP address can be either the cluster virtual IP address or the IP address of any Nutanix Controller VM (CVM) in the cluster.
   - When logging into Prism Central, you must provide the IP address of the Prism Central VM.
2. The browser will redirect to the encrypted port (9440) and may display an SSL certificate warning. Acknowledge the warning and proceed to the site.
3. Enter your username and password, and press **Enter**. If you are logging in as an administrator for the first time, you will be required to change the default password.
4. After you change your password, you will be prompted to accept the End User License Agreement (EULA). On this page, read the license agreement, update the required information, accept the terms and conditions, and click the **Accept** button.
   - You will only see the EULA if you are logging in for the first time, or if the EULA has changed since the last login.

5. The next screen will inform you that Pulse will be enabled. Click the **Continue** button.
   - Like the EULA screen, you will only see this screen if you are logging in for the first time, or after an upgrade. Pulse is a feature that alerts Nutanix customer support if your cluster experiences health issues and is discussed in the next section.
6. If Pulse was enabled or after a cluster is upgraded, the next screen will prompt you to enable enhanced cluster health monitoring. Click the **Yes** button.
   - This feature acts in addition to Pulse provides Nutanix customer support with more detailed information that allows them to monitor the health of your cluster more effectively. It is recommended to enable enhanced cluster health monitoring unless providing cluster information to Nutanix customer support violates your security policies.

You should now see the Home dashboard.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