# Introduction to Nutanix Prism

- What Prism Element and Prism Central are.
- How to log into Prism Element.
- About the various components of Prism Element's Home dashboard.
- How to log into Prism Central.
- About the various components of Prism Central's Main dashboard.
- When to use Prism Central and when to use Prism Element.

What is Nutanix Prism?

- Nutanix Prism (Prism) provides central access for administrators to configure, monitor, and manage virtual environments by combining several aspects of datacenter management into a single, easy-to-use solution. Using innovative machine learning technology.
- Prism is a part of every Nutanix deployment and has two core components:
  - Prism Element
  - Prism Central

What is Nutanix Prism?

Prism

Configure, monitor, and
manage virtual environments.

Prism Element

Single cluster management

Prism Central

One or more clusters
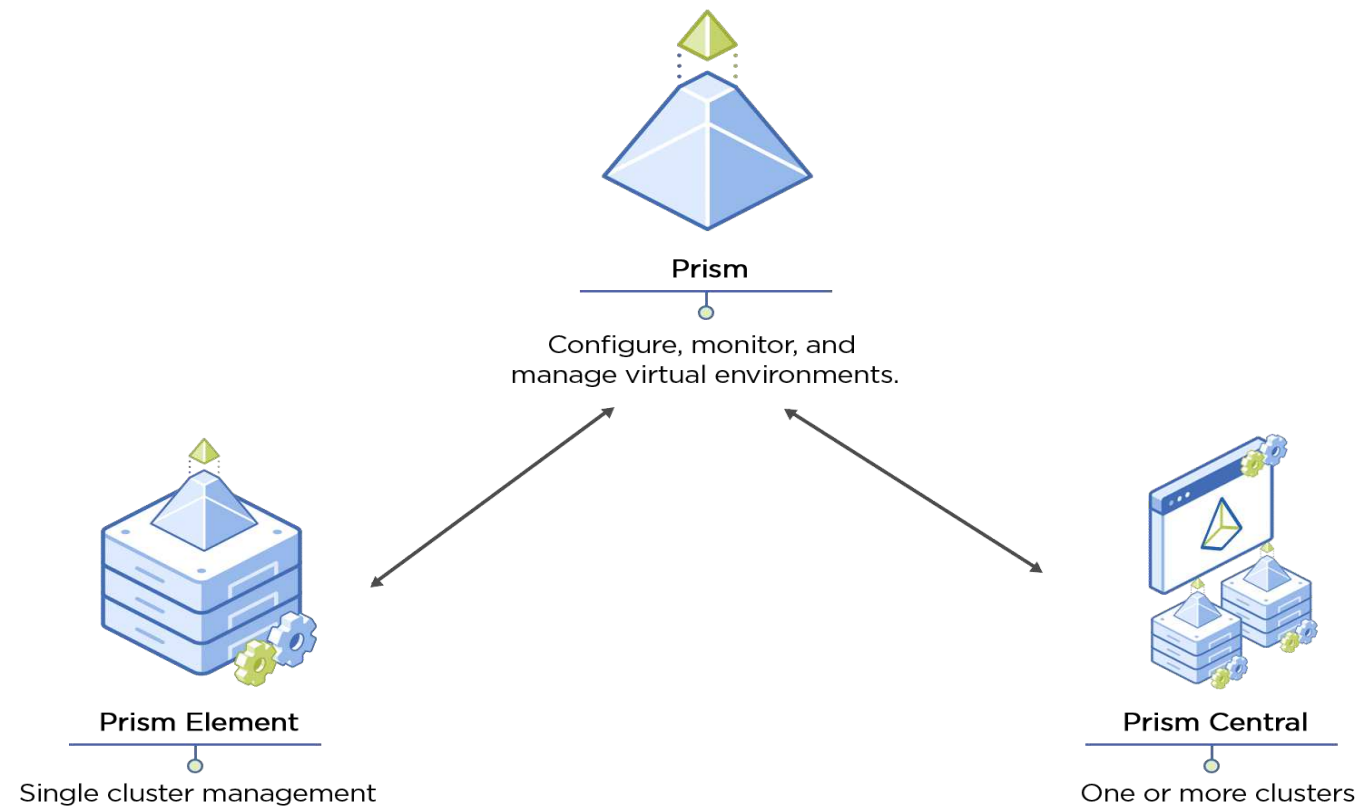
Prism Element

192.168.115.10
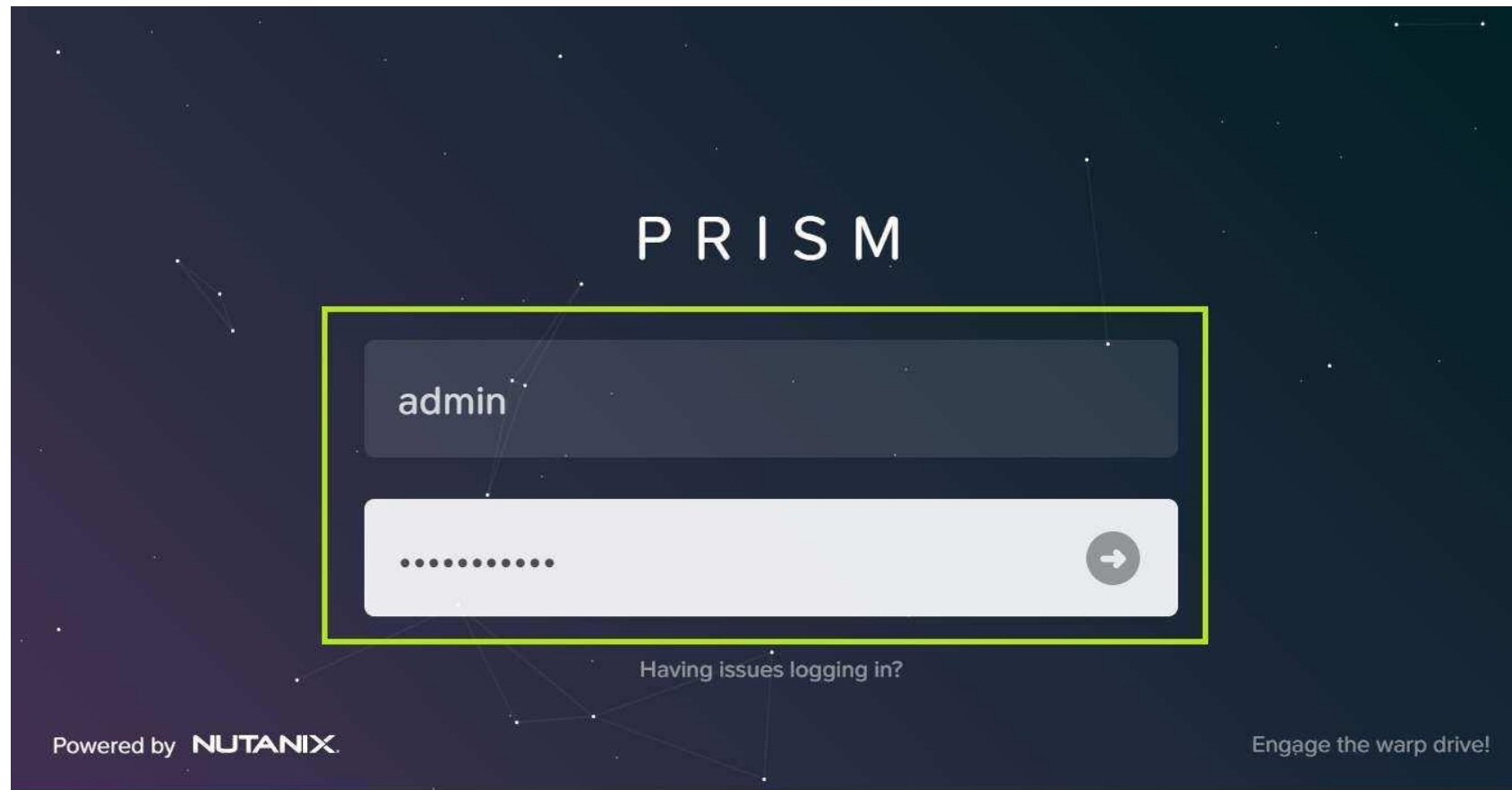
Prism Element

To log into Prism Element for this first time:

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.

   - This IP address can be either the cluster virtual IP address or the IP address of any Nutanix Controller VM (CVM) in the cluster

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.

Why Should Pulse be Enabled?

- When logging into Prism for the first time or after an upgrade, the system will check whether or not Pulse is enabled. If it is not, you will be prompted to enable Pulse. When Pulse is enabled, it sends a summary email of the cluster configuration to a Nutanix Support server daily by default. These messages are sent through ports 80/8443/443 (by default) or through your mail server (if configured). It is recommended to enable Pulse unless providing cluster information to Nutanix customer support violates your security policies.

Why Should Pulse be Enabled?

Pulse only shares basic, system-level information. This includes:

- System alerts.
- Current Nutanix software version.
- Nutanix processes and CVM information.
- Hypervisor information, such as type and version.

Important data, such as system-level statistics and configuration information, is collected more frequently so that issues can be detected automatically, and troubleshooting can be made easier.

Monitoring a Cluster with Prism Element

- By default, the Home dashboard of Prism Element provides a high-level overview of nearly every major facet of a single cluster. As a result, if you are responsible for monitoring and reporting on a single cluster, the Home dashboard of Prism Element is a good place to start looking for information.
- From the Home dashboard alone, you can view the status of VMs, hosts, storage, and Prism Central; a handful of basic performance metrics; the overall health and data resiliency status of your cluster; as well as alerts and events grouped by severity level.
- Having this information readily accessibly means that you can quickly scan through the Home dashboard, identify areas that need further investigation or exploration, and then either use the Home dashboard widgets themselves or different dashboard in Prism Element to drill down and obtain further details.

An Overview of the Prism Element Home Dashboard
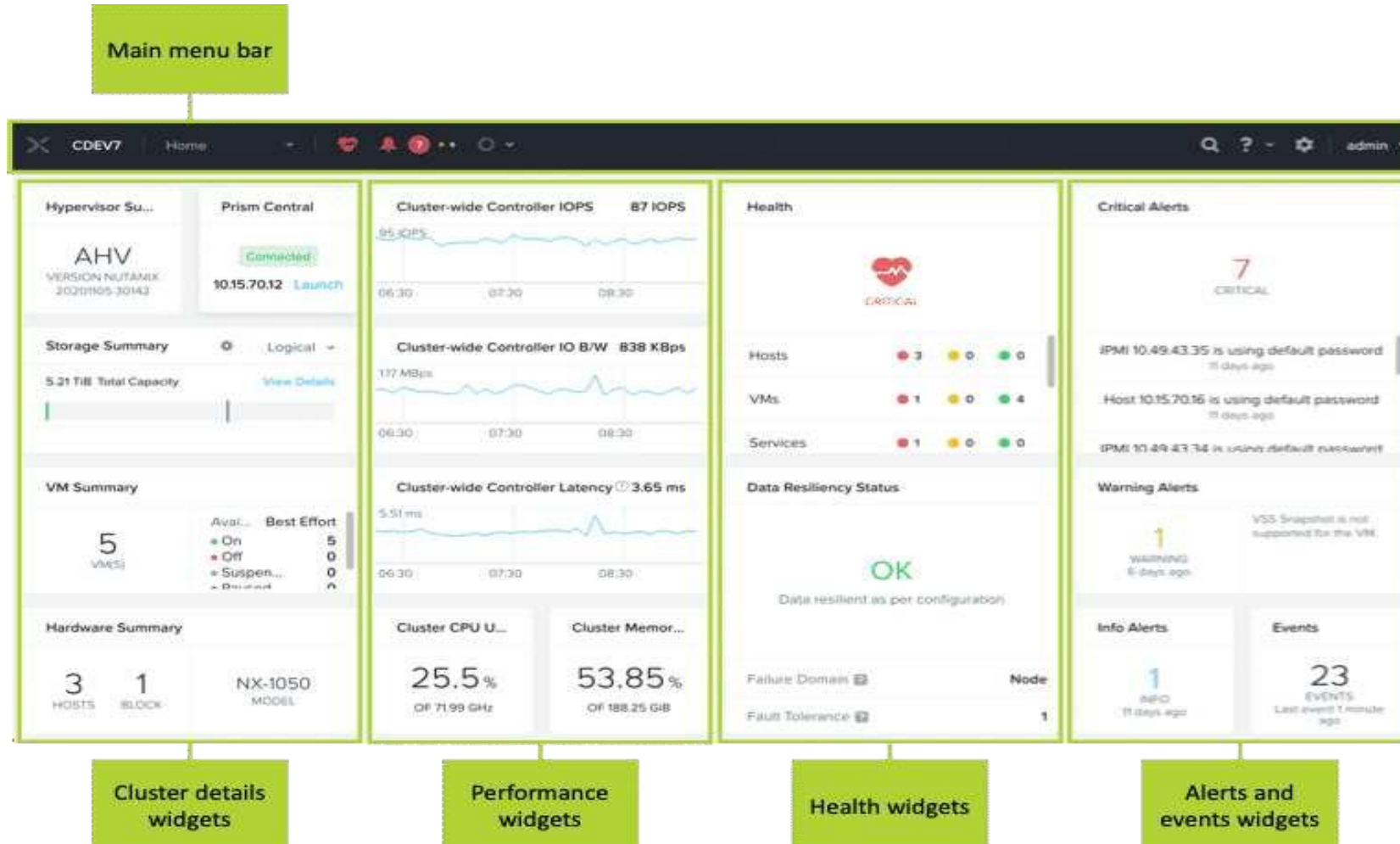
Cluster Details Widgets

- This collection of widgets displays basic information about:
- The installed hypervisor and the associated version.
- Whether or not the cluster has been connected to Prism Central. If the cluster is connected to Prism Central, you can launch Prism Central directly from this widget.
- Storage on the cluster. Basic information is available at a glance and the widget is clickable, allowing you to view physical and logical storage information, configure an alert that will trigger if storage utilization crosses a specific threshold, and more.

Cluster Details Widgets

- The VMs installed on the cluster. The widget groups VMs by state (on, off, suspended, paused, and unknown).
- Cluster hardware. The widget displays the number of hosts (or nodes) and blocks in the cluster, as well as the model number of the blocks if applicable. A node is an x86 server with compute and storage resources. A single cluster can have a maximum of 32 nodes for an AHV cluster and 48 nodes for an ESXi cluster.

Note: 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. Nodes, blocks, and clusters will be discussed in more detail in the Hardware module.

Performance Widgets

- By default, Prism Element displays a number of performance charts and statistics on the Home dashboard, designed to help you assess cluster performance.

- Moving the mouse cursor over any one of the three charts will display a button at the top left that will allow you to add a temporary, custom chart to the Analysis dashboard in Prism Element. You will be prompted to save the chart on the Analysis dashboard for future viewing.

Performance Widgets

- On the Home dashboard, moving your mouse cursor over the graph itself will display details for a specific point in time.

- Moving your mouse cursor over the Cluster CPU Usage or Cluster Memory Usage widgets will display an Analyze button. Click this button to add a temporary, custom chart to the Analysis dashboard.

Health Widgets

- The Health widget displays the health status for the cluster as a whole, as well as cluster entities. The three possible health states are good, warning, and critical, indicated by green, yellow, and red heart icons respectively. Scrolling down in the widget will display the health status of hosts, VMs, cluster services, disks, storage containers, and storage pools. Clicking the widget will take you to the Health dashboard, where you can view more details about each or all of these entities.

Health Widgets

- The Data Resiliency Status widget summarizes the number of failures that a cluster can withstand. In the figure above, the sample cluster used can withstand the failure of a single node. Moving your mouse cursor over the question marks next to Failure Domain and Fault Tolerance will display a small popup with more information about each item. Clicking the widget will display a Data Resiliency Status details page, which shows how many individual component failures the cluster can withstand based on the currently configured failure domain.
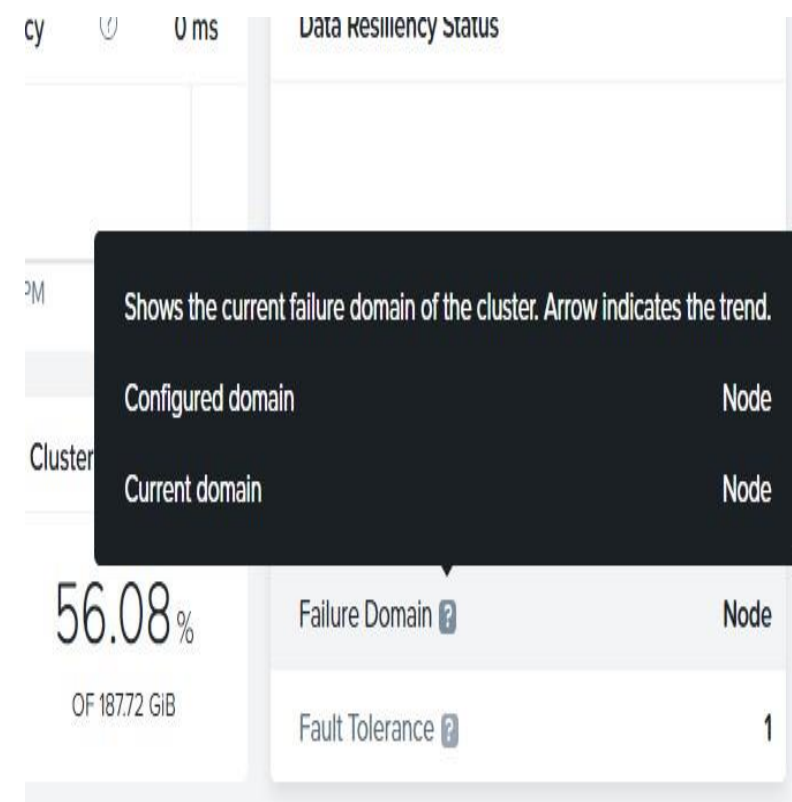
Alerts and Events Widgets

- The Alerts widgets display the most recent unresolved alerts on the cluster. Each set of alerts is displayed in a separate widget, with one widget each for critical, warning, and informational alerts.

- The Events widget displays the total number of events that have occurred on the cluster, as well as how recently the last event occurred.

Cluster Details in Prism Element

- In Prism Element, clicking the cluster name in the main menu bar displays the Cluster Details window as shown in the following figure.

Cluster Details ✕

Cluster UUID
0005d8c7-ec42-a6e1-0000-0000000025dc

Cluster ID
0005d8c7-ec42-a6e1-0000-0000000025dc::9692

Cluster Incarnation ID
1645728057435873

Cluster Subnet (Gateway IP / Prefix Length)
10.15.70.0/24

Cluster Name
CDEV7

FQDN

Virtual IP
10.15.70.10

Virtual IPv6

Save

Managing a Cluster with Prism Element

- Cluster Management

You can manage a single cluster using Prism Element, it involves configuring and monitoring the entities within the cluster, such as virtual machines, storage containers, hardware components, and so on.
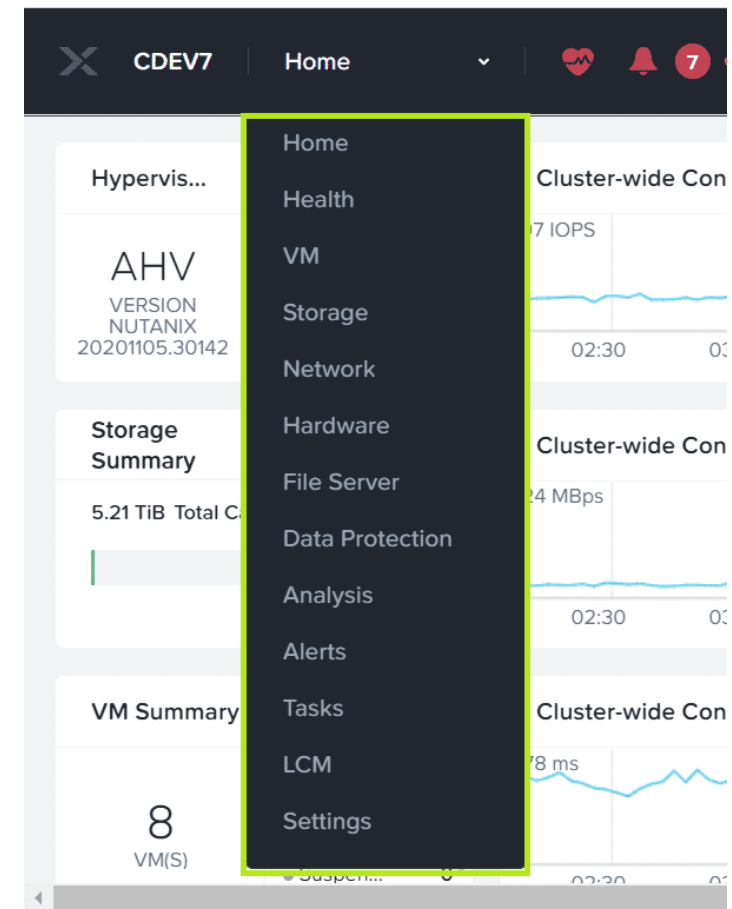
Managing a Cluster with Prism Element

- Storage Management

Prism Element helps you monitor storage usage across the cluster. It provides you the options to create storage containers and volume groups, as well as configure a threshold warning for storage capacity available in the cluster. You can also reserve storage capacity for rebuilding failed nodes, blocks or racks.
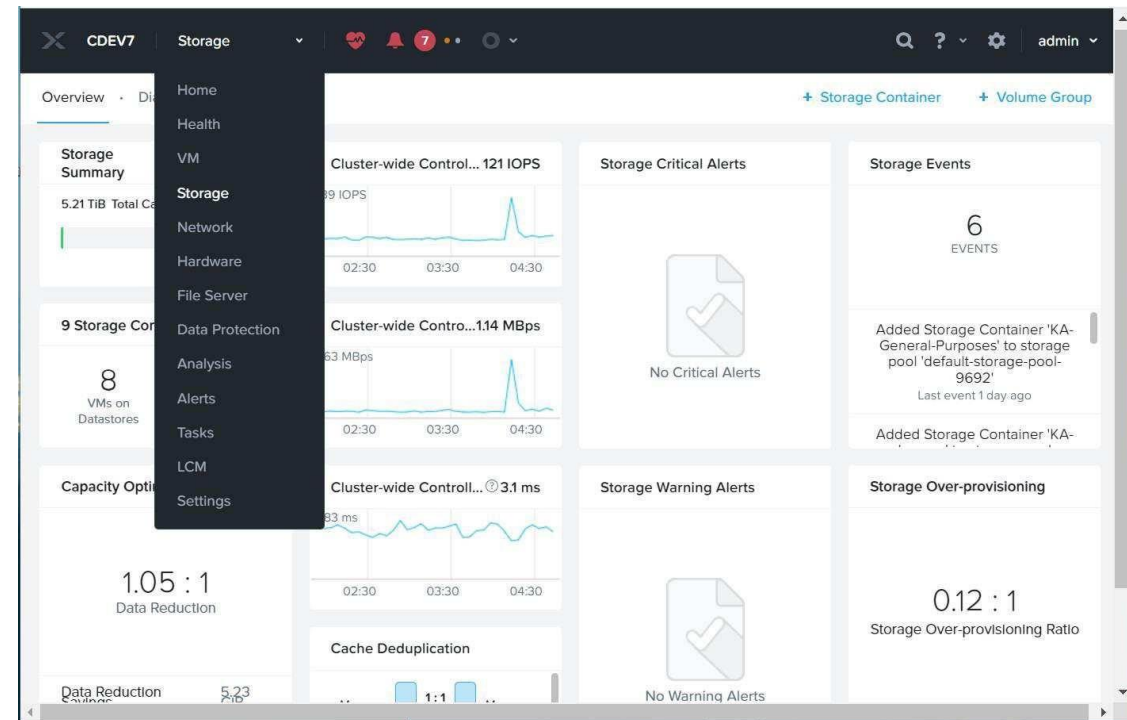
Managing a Cluster with Prism Element

- Network Management

Prism Element allows you to track and record networking statistics for a cluster. On AHV clusters, a network visualizer is provided that displays a consolidated graphical representation of the network formed by the VMs and hosts in a Nutanix cluster. You can use the visualizer to monitor the network and to obtain information that helps you identify network issues.
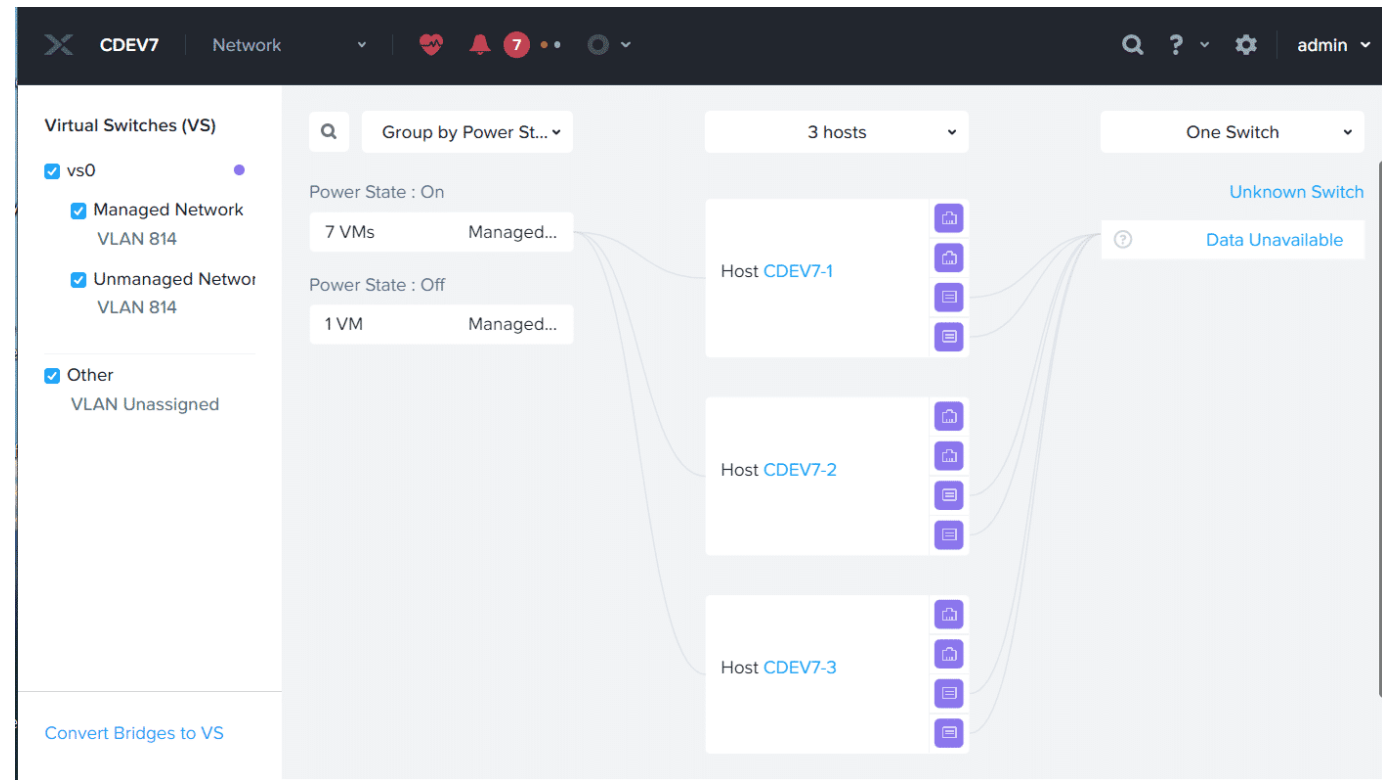
Prism Central

- Like Prism Element, Prism Central is also a web-based management console, that can be used to perform a variety of monitoring, management, and administrative tasks. However, there are some important differences to note.
- Unlike Prism Element, which is built into every cluster, Prism Central is an application that must first be deployed as a VM before it can be used. A single instance of Prism Central can be used to manage just one cluster, or several clusters. The choice of whether or not to use Prism Central depends on two factors:
  - The feature set that you want access to.
  - The number of clusters you want to manage.

Prism Central

- Even if you only have a single cluster to manage - whether it is a large or small deployment - management via Prism Central gives you access to features that are not present in Prism Element, such as advanced reporting capabilities; a customizable main dashboard and the ability to create custom dashboards; tools to analyze system activity, plan for resource needs, create usage reports, and automate routine administrative tasks; and more.

Accessing Prism Central
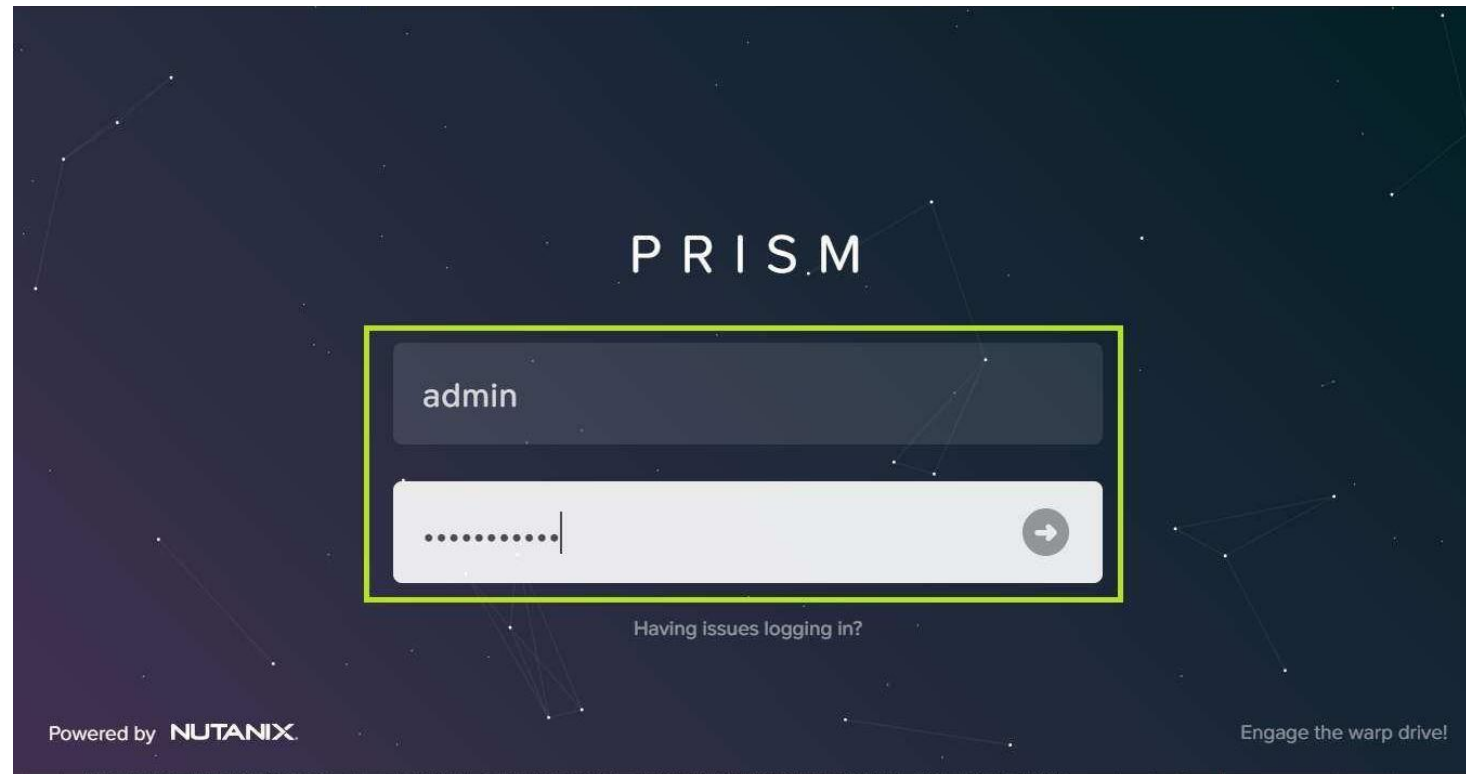
Accessing Prism Central

1. Open a web browser, enter *http://management_ip_addr* and press **Enter**. When logging into Prism Central, you must provide the IP address of the Prism Central VM.
2. At the login screen, enter your username and password and press **Enter** or click the right arrow icon.
3. If you are logging in to Prism Central for the first time, you will see several screens that are similar to the first-time login screens for Prism Element. These are:
   1. A prompt to change the default admin password. If prompted, enter a new password, retype to confirm, and press **Enter** or click the right arrow icon.
   2. A license agreement screen. Read the license agreement, enter the required information, agree to the terms and conditions, and click the **Accept** button.

After you have successfully logged in, you should see the Main Dashboard of Prism Central.

Monitoring One or More Clusters in Prism Central

- Much like Prism Element, Prism Central also provides a high-level overview of nearly every major facet of one or more clusters. However, Prism Central offers additional, more advanced functionality when compared to Prism Element.

- The Main dashboard of Prism Central is customizable. While a number of widgets are available on the Main dashboard out-of-the-box, you can remove these widgets and replace them with others as needed.

Monitoring One or More Clusters in Prism Central

- In addition to customizing the Main dashboard, based on your Prism Central license level, you can also create multiple, custom dashboards with widgets that provide information about a specific resource or usage topic.

- So, the home dashboards of Prism Element and Prism Central serve different needs for cluster monitoring. Prism Element provides a robust, out-of-the-box monitoring experience that provides you with easy access to summarized and detailed information. Prism Central provides all of the functionality of Prism Element, while also offering a highly customizable monitoring experience that can be tailored to suit the specific needs of your business. And, of the two interfaces, Prism Central is the only one that allows you to monitor multiple clusters from a single location.

An Overview of the Prism Central Main Dashboard
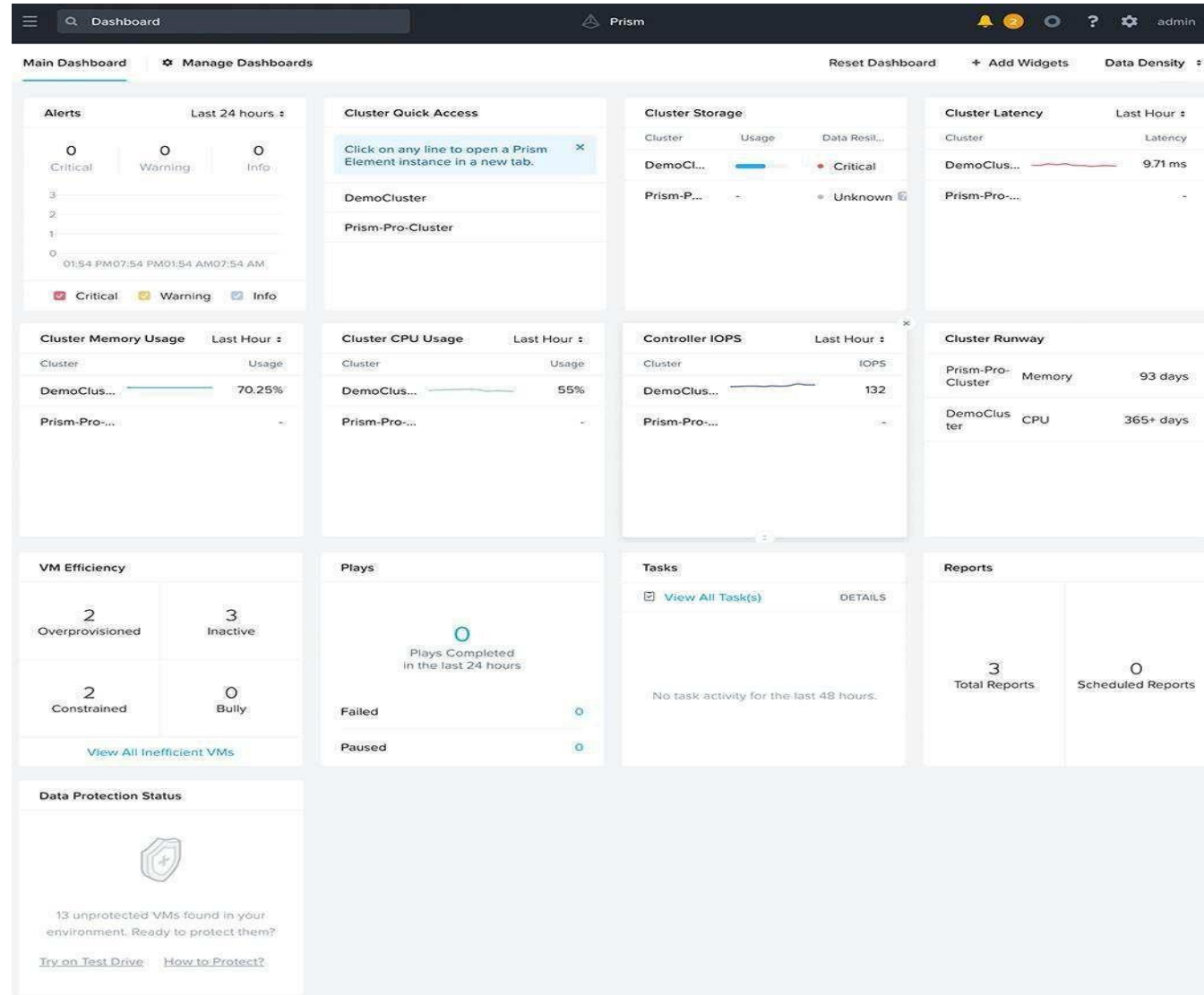
An Overview of the Prism Central Main Dashboard
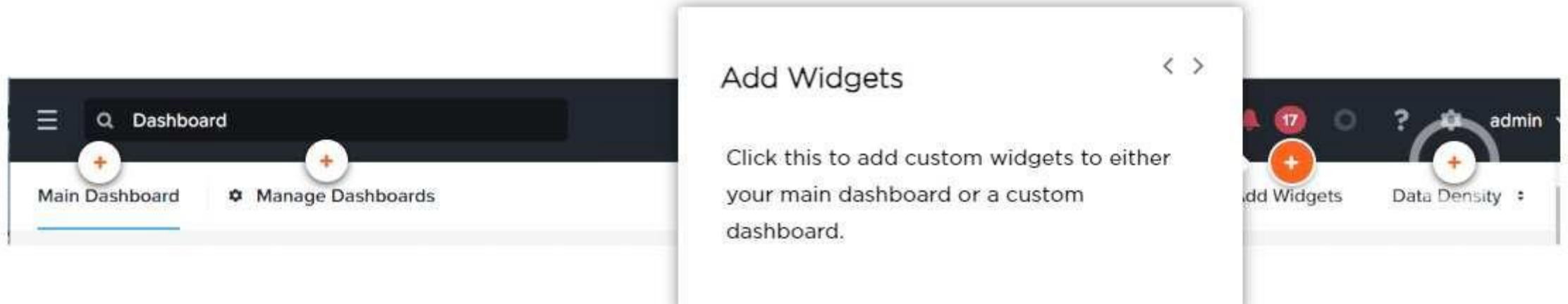
- The Prism Central Main Dashboard can be divided into three sections:
1. **The Main Menu Bar**
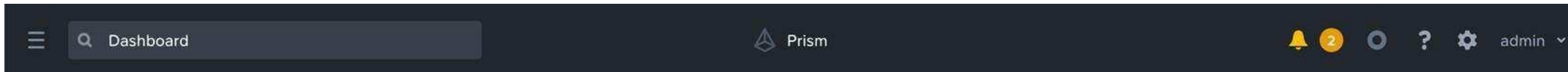
An Overview of the Prism Central Main Dashboard

- The Prism Central's main menu provides you with different elements, such as the entities menu which gives you access to the different dashboards and screens, the search field, the alerts (bell) icon, the settings (gear) icon, and much more. In the next section we will discuss the entities menu. This is what you will use to access the different dashboards and screens to manage various aspects of one or more clusters.

An Overview of the Prism Central Main Dashboard

The Entities Menu

- The first option on the entities menu is Dashboard. Click this to return to the Main Dashboard from anywhere in Prism Central at any time.
- The Bookmarks option shown in the figure below may not be visible if you are using or working with a brand new cluster, or a cluster that has no bookmarked pages.
- When you search for an entity in the search field of the main menu bar, you can click the star icon to the right of the field to bookmark that particular search result. That bookmarked result (or page) will then be displayed in the bookmarks category of the entities menu.
- You can also bookmark a sub-page or dashboard by clicking the star icon next to its name in the entities menu.

An Overview of the Prism Central Main Dashboard
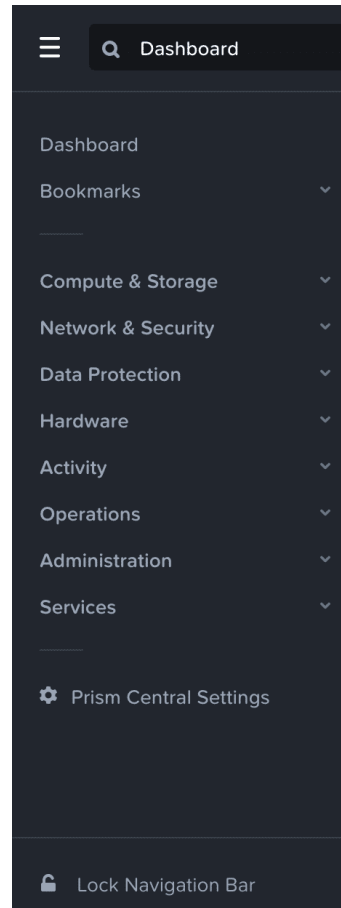
An Overview of the Prism Central Main Dashboard

Next, you will see eight category options. Each category contains a collection of dashboards that can be used to monitor and manage different aspects of the cluster.

- **Compute & Storage:** Has pages for VMs, Templates, OVAs, Images, Catalog Items, Volume Groups, and Storage Policies.
- **Network & Security:** Has pages for Subnets, Virtual Private Clouds, Floating IPs, Connectivity, and Security Policies.
- **Data Protection:** Has pages for Protection Summary, Protection Policies, Recovery Plans, and VM Recovery Policies.

An Overview of the Prism Central Main Dashboard

2. **The Dashboards Menu Bar**

- The Dashboards menu bar is directly under the main menu bar and is only visible when viewing the Main Dashboard in Prism Central.
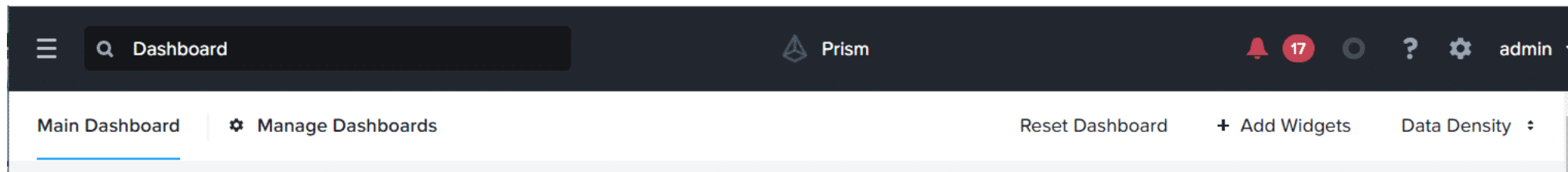
An Overview of the Prism Central Main Dashboard
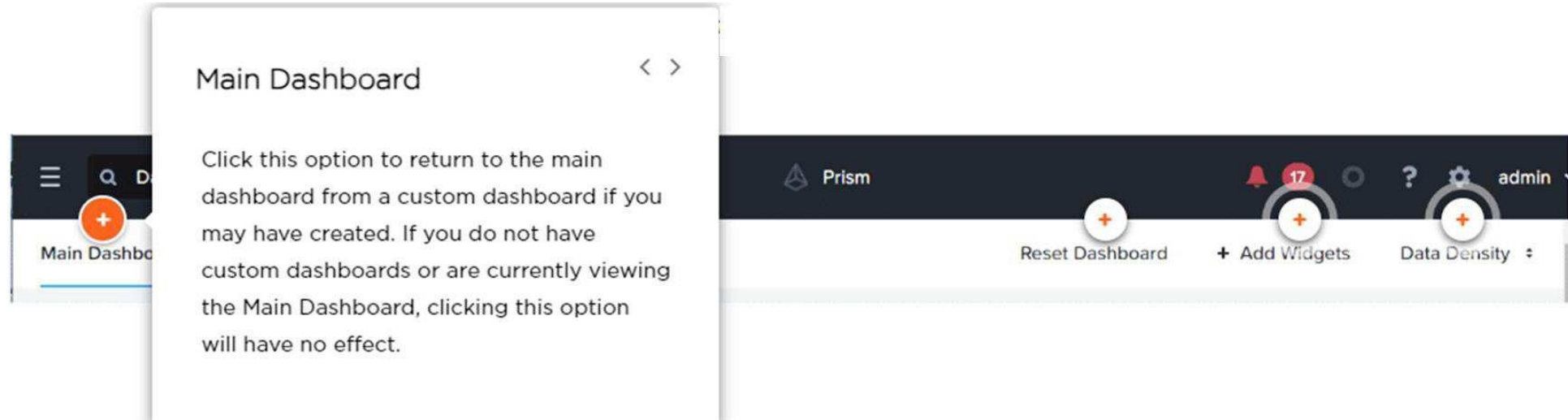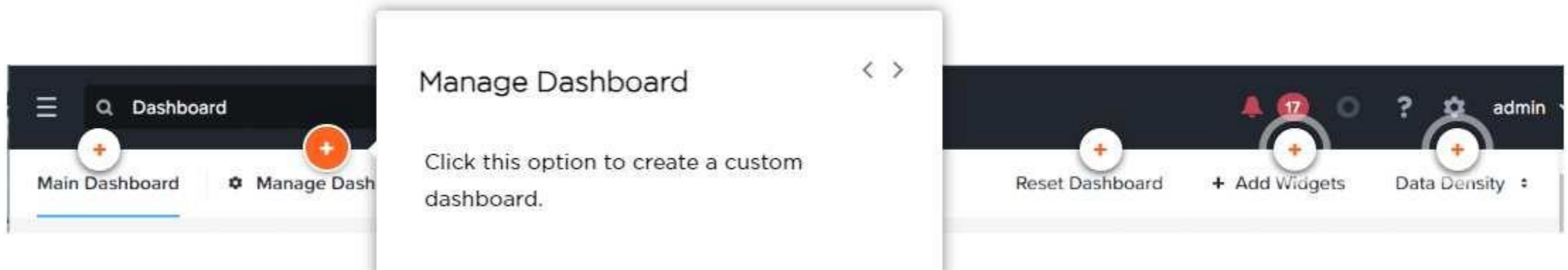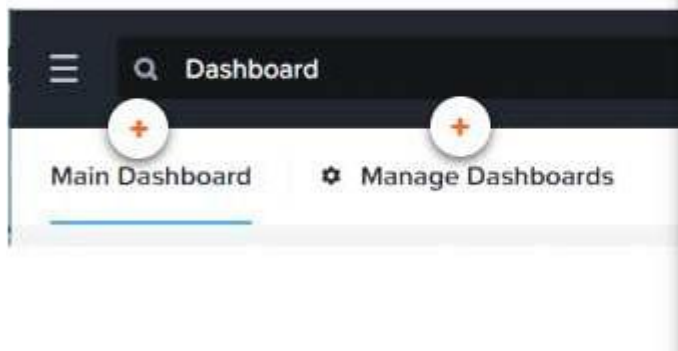
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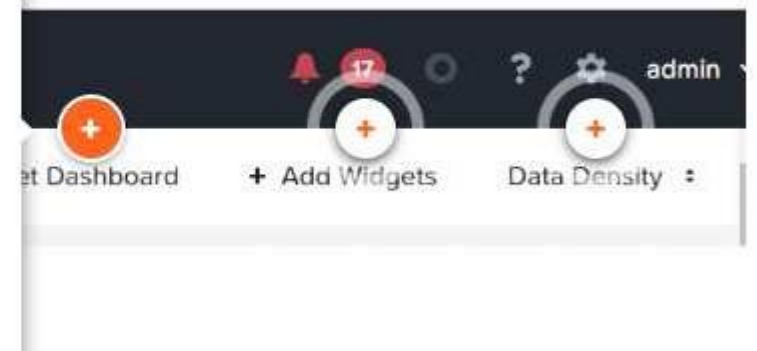
An Overview of the Prism Central Main Dashboard

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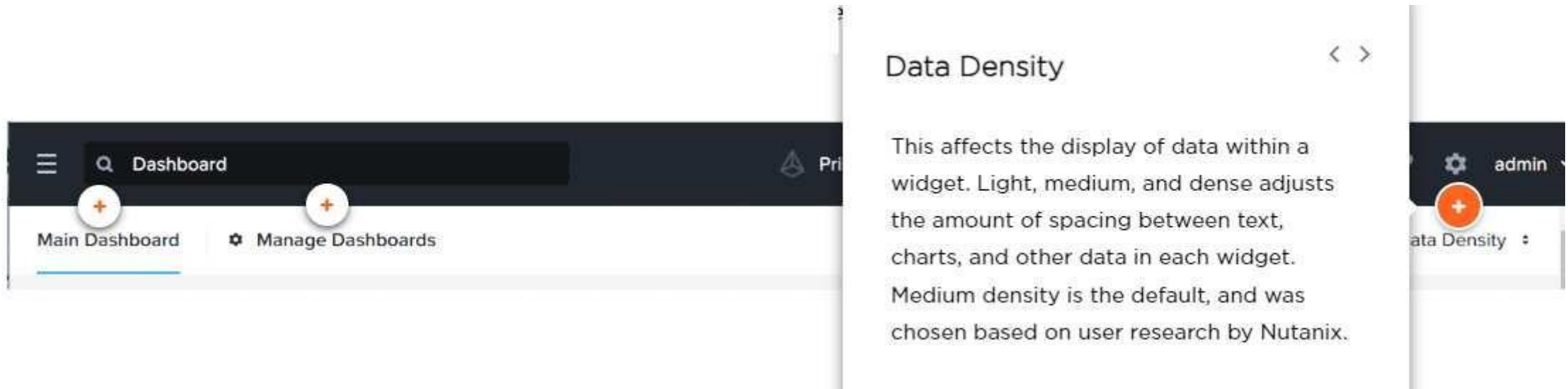
An Overview of the Prism Central Main Dashboard

3. **The Widgets Section**

*   This section includes a number of widgets which provide information that you can use to monitor the clusters registered to this instance of Prism Central.

An Overview of the Prism Central Main Dashboard

- **Alerts Widget**

  Displays the number of critical, warning, and informational alerts on all monitored clusters within a selected time period.

- **Cluster Quick Access Widget**

  Displays the clusters managed by this instance of Prism Central. Each of the cluster names is clickable; doing so will open that cluster's Prism Element.

- **Cluster Storage Widget**

  Displays the amount of free and used storage space, and data resiliency for all clusters managed by this instance of Prism Central.

- **Cluster Performance Widgets**

  These widgets display key performance metrics for all clusters managed by this instance of Prism Central. The four performance widgets are cluster latency, cluster memory usage, cluster CPU usage, and controller IOPS.

Cluster Details in Prism Central

Cluster Details in Prism Central

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Prism Central Features

In addition to the Prism Element capabilities, Prism Central includes a host of other advanced features (based on your licensing) which help in managing and monitoring your clusters.

Prism Central Features

- Cost Management

Provides access to a cost governance and security compliance SaaS product offering, called Xi Beam. This helps gain visibility into cloud spend and security compliance status across multiple cloud environments.

Prism Central Features
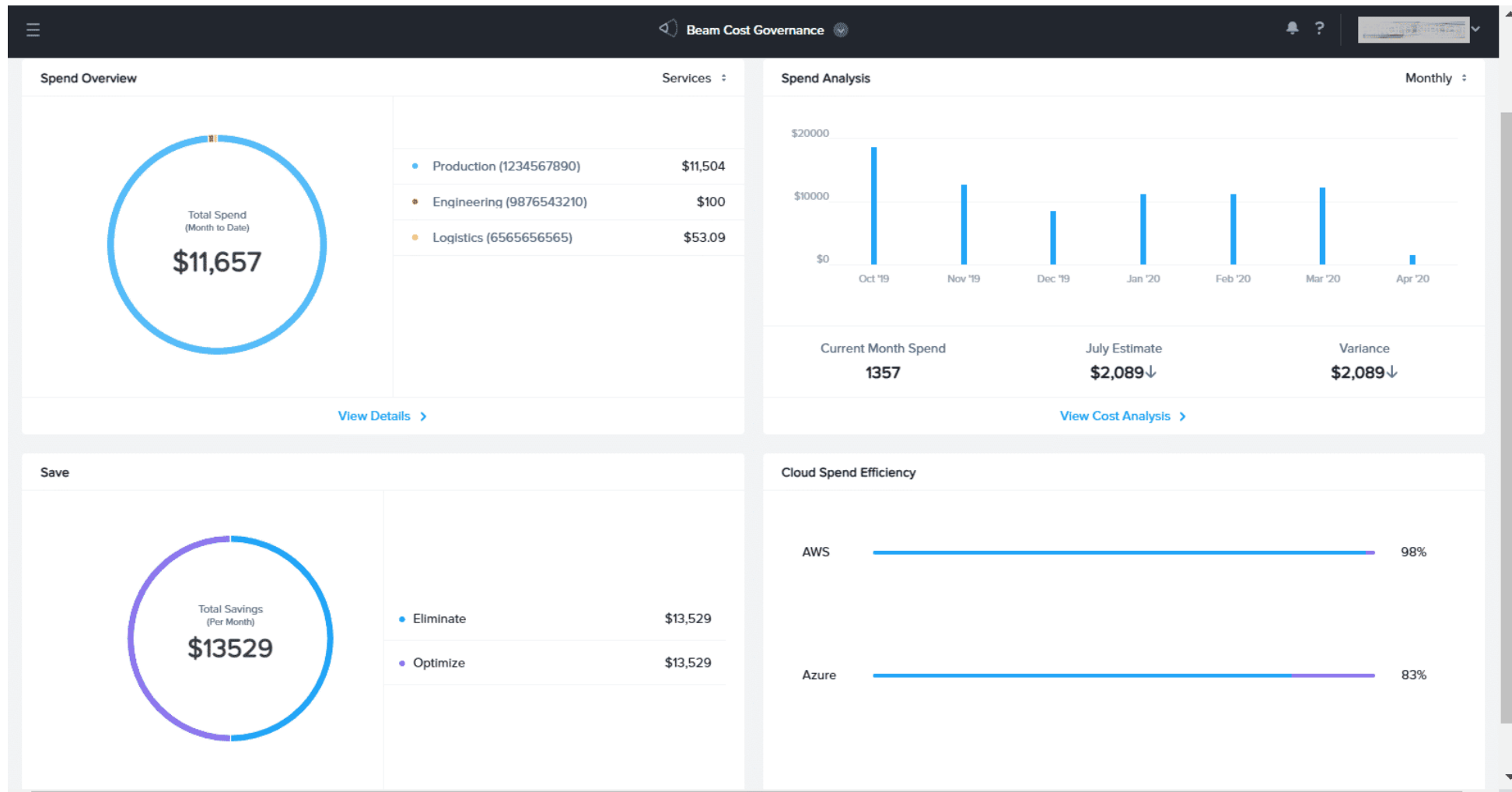
Prism Central Features

- Resources Planning

You can use the planning dashboard to review and analyze current and potential resource needs. The Capacity Runway tab allows you to view current resource runway information across the registered Nutanix and Non-Nutanix clusters.

Prism Central Features

Prism Central Features

- Task Automation

The X-Play feature allows you to automate routine administrative tasks, and auto-remediate issues that may occur in your system. This automation is achieved by creating playbooks.

Prism Central Features

Prism Central Features

- Service Enablement

You can enable selected services through Prism Central, such as Calm, Karbon, Files, Object, and more.

Prism Central Features

When to Use Prism Central and Prism Element

- Prism Central has a much wider, deeper feature set than Prism Element. And, Prism Central can be used to manage one or more clusters, which means that you can leverage the capabilities of Prism Central even if you have a deployment with just one cluster. However, as noted previously, some actions - such as configuring a cluster virtual IP or the ISCSI data services IP - can only be performed in Prism Element.

- Prism Central features such as Leap Leap, which offers an entity-centric automated approach to protect and recover applications or use Nutanix Flow to deliver advanced network security

When to Use Prism Central and Prism Element

expanding the entities menu in Prism Central provides you multiple options to manage, administer, and monitor your clusters as well as gives access to other feature sets.
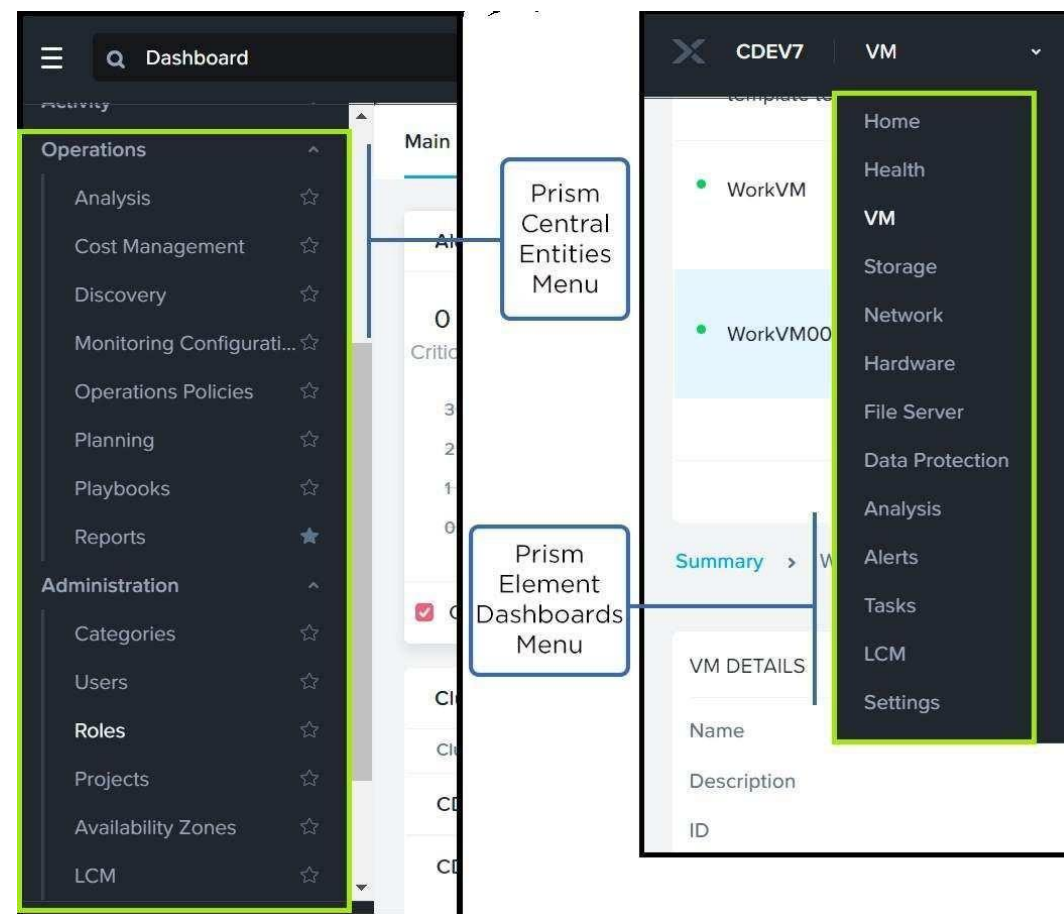
When to Use Prism Central and Prism Element

In addition to the mentioned features you can also make use of different tools like capacity planning to view summary resource runway information for registered Nutanix and Non-Nutanix clusters as well as use "scenarios" to create "what if" scenarios to assess the future resource requirements for potential work loads.

When to Use Prism Central and Prism Element
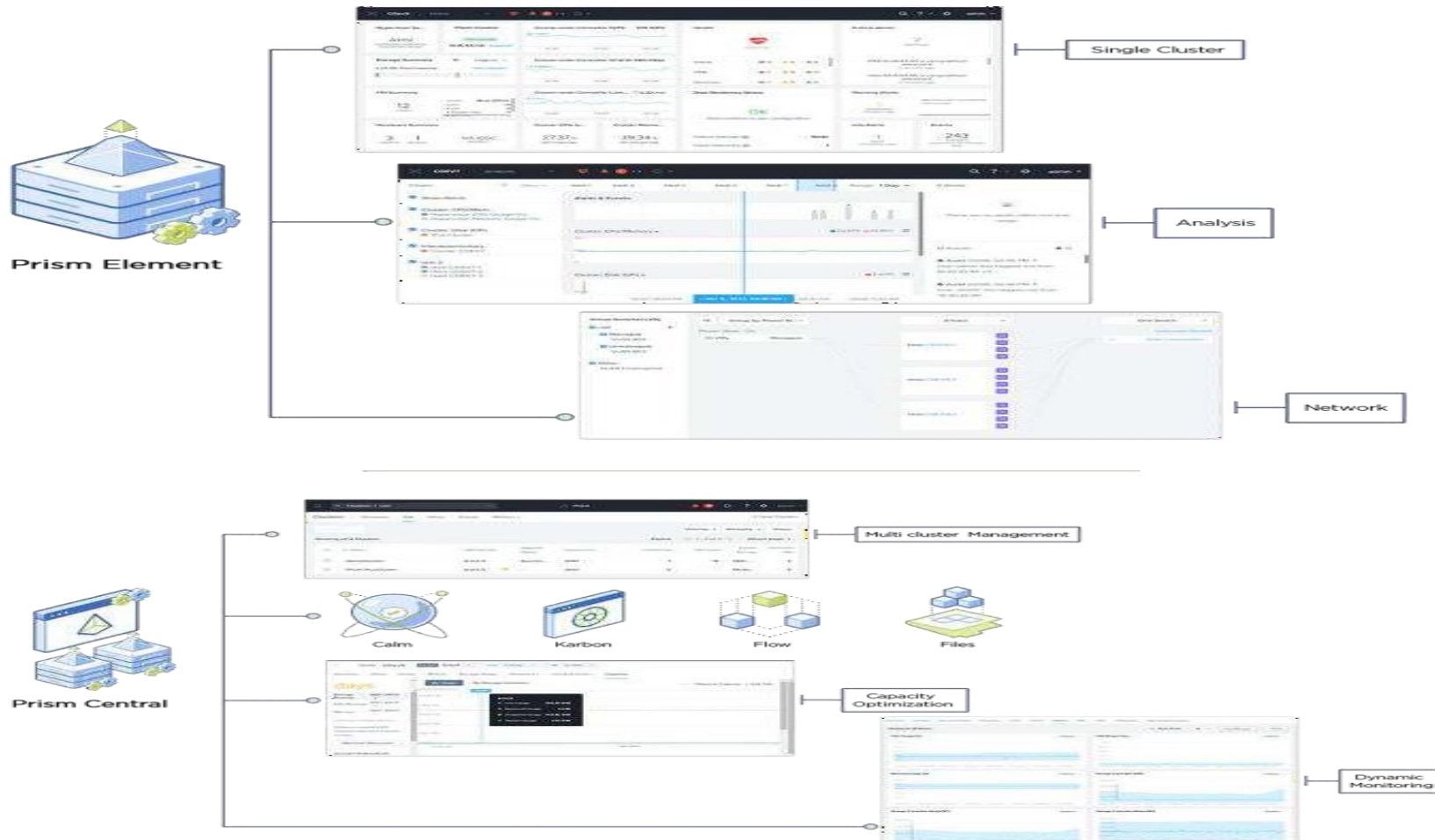
When to Use Prism Central and Prism Element

	Prism Central Capabilities	**Prism Element Capabilities**
Hardware	Prism Central has four separate dashboards for hardware: Clusters, Hosts, Disks, and GPUs. Clusters dashboard: Launch Prism Element, upgrade software, rack configuration, manage categories, enable/disable efficiency measurement, enable/disable anomaly detection, run playbook, manage and backup keys, enable encryption, manage KMS type, view cluster alerts and events, view cluster metrics. Hosts dashboard: Manage categories; run playbook; view alerts and events; view audits; view metrics; filter by name, health, hypervisor, resource usage, and so on. Disk dashboard: View alerts and events; view metrics; filter by serial number, host, cluster, health, usage, capacity, and performance.	Expand cluster; repair host boot device; view host, disk, and switch metrics; and put host into maintenance mode.

When to Use Prism Central and Prism Element

	Prism Central Capabilities	Prism Element Capabilities
Storage	Manage containers and volume groups separately, on two different dashboards. Storage container dashboard: Create, update, and delete storage container; view detailed performance metrics; view storage container specific alerts and events; detailed viewing filters for sorting by performance, optimization, replication factor, compression, erasure coding, used/free/total space, IOPS, bandwidth, health, and so on. Volume groups dashboard: Create, update, delete, manage connections for a volume group; view volume group alerts; metrics for usage, IOPS, IO latency, and bandwidth. Storage policies dashboard: Create, assign, and monitor storage policies.	View storage metrics; create, update, and delete storage container; create, clone, update, and delete volume group; update storage pool; clear recycle bin; export storage report as CSV or JSON.

When to Use Prism Central and Prism Element

	Prism Central Capabilities	Prism Element Capabilities
Network	Prism Central has separate dashboards for Subnets, Virtual Private Clouds, Floating IPs, and Connectivity. Note that virtual Private Clouds and Floating IPs are advanced networking topics, and are not discussed here. Subnets dashboard: Create, update, extend, delete, and manage categories for subnets; filter by name, connectivity, type, VLAN ID, VPC, cluster, hypervisor, and categories. Connectivity dashboard: Create and manage local and remote gateways; create and manage VPN connections; create and manage subnet extensions across availability zones or to a third-party datacenter.	Prism Element has a network visualization dashboard, which displays the various components of the network - such as VMs, virtual switches, and hosts - and the connections between them. You can view assigned and unassigned VLANs; group VMs by power state, host, or VM type; and view network connections for individual hosts. From the VM dashboard in Prism Element, you can create, edit, and delete subnets and virtual switches, and configure internal interfaces

When to Use Prism Central and Prism Element

	Prism Central Capabilities	Prism Element Capabilities
Virtual machines	Create, update, clone, delete, launch console, migrate, power off/on, hard power off, soft shutdown, enable/disable efficiency measurement, enable/disable anomaly detection, protect/ unprotect, create recovery point, install NGT, manage NGT, upgrade NGT, configure host affinity, add to catalog, export as OVA, run playbook, manage categories, manage affinity policies, manage NGT policies.	Create, update, clone, delete, launch console, migrate, take snapshot, power on/off, manage guest tools.

Module 1: Wrap-up

- The concept of hyperconverged infrastructure.
- How HCI works.
- What the Nutanix Cloud Platform is.
- What Nutanix cloud solution packages are.
- What Prism Element and Prism Central are.
- How to log into Prism Element.
- About the various components of Prism Element's Home dashboard.
- How to log into Prism Central.
- About the various components of Prism Central's Main dashboard.
- When to use Prism Central and when to use Prism Element.

Module 1: Quiz

A solution that includes virtual compute, storage and networking for virtual machines and containers, and can be deployed in private datacenters on the hardware of your choice or in public clouds is _____. (Select one)

- Nutanix End User Computing Solutions (EUC)
- Nutanix Cloud Infrastructure (NCI)
- Nutanix Database Service (NDB)
- Nutanix Unified Storage (NUS)
- Nutanix Cloud Manager (NCM)

Module 1: Quiz

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Module 1: Quiz

The Nutanix interfaces that can be used to manage a Nutanix cluster are: (Select all that apply.)

- Prism Element
- Prism Central
- Prism Ultimate
- Prism Universal
- Prism Pro

Module 1: Quiz

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Module 1: Quiz

Which of the following components are the core components of the Nutanix Solution? (Select all that apply.)

- Nutanix Clusters
- Calm
- AOS Storage
- Beam
- Prism
- AHV Virtualization

Module 1: Quiz

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- Beam
- Prism
- AHV Virtualization

Module 1: Quiz

Pulse is a feature that provides _____ data to Nutanix customer support, allowing proactive, context-aware support to be delivered for Nutanix solutions. (Select one.)

- ▫ compute
- ▫ cost governance
- ▫ diagnostic system
- ▫ Prism Element

Module 1: Quiz

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Module 1: Quiz

The Data Resiliency Status widget summarizes the number of _____that a cluster can withstand. (Select one.)

- ▫ Power-offs
- ▫ Packet drops
- ▫ Reports
- ▫ Failures

Module 1: Quiz

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