

PROJECT

# ORE Task 1

## Integration Activities

DATE

20 October 2022

CLIENT

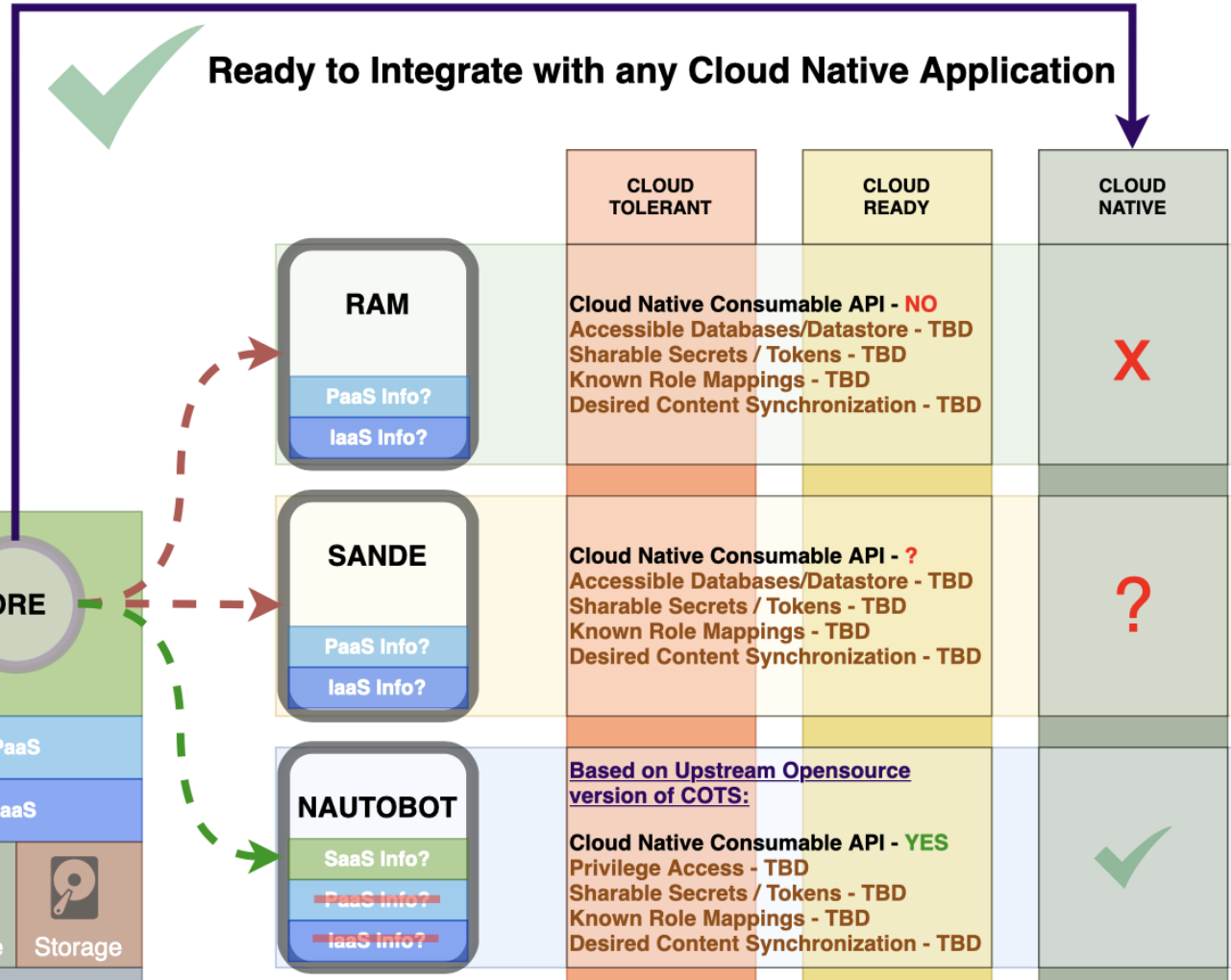
Navy

PHASE

1



CLOUD MATURITY THRESHOLDS/SPECS				
	INTOLERANT	TOLERANT	READY	NATIVE
COMPUTE	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS
NETWORKING	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS
STORAGE	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS
APPLICATION	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS	• NO SHARED VOLUMES • NO SHARED STORAGE • NO SHARED NETWORKS



ORE is ready to integrate with desired solutions (i.e. RAM, SANDE, NAUTOBOT, etc...)

\* Where is the solution hosted? Who is the technical admin point of contact?

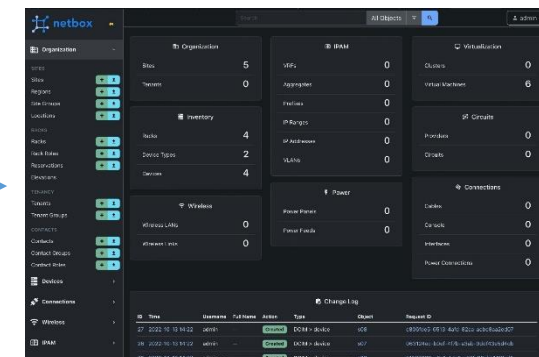
\* What is the URL path?

\* What secrets / tokens / cryptographic standards is desired to be used?





\* What are the contents in the solution desired synchronization with ORE?

**Bottom Line:** Need "Info" to integrate ORE with RAM, SANDE and Nautobot.

Deployed on **NDP Triton Platform**

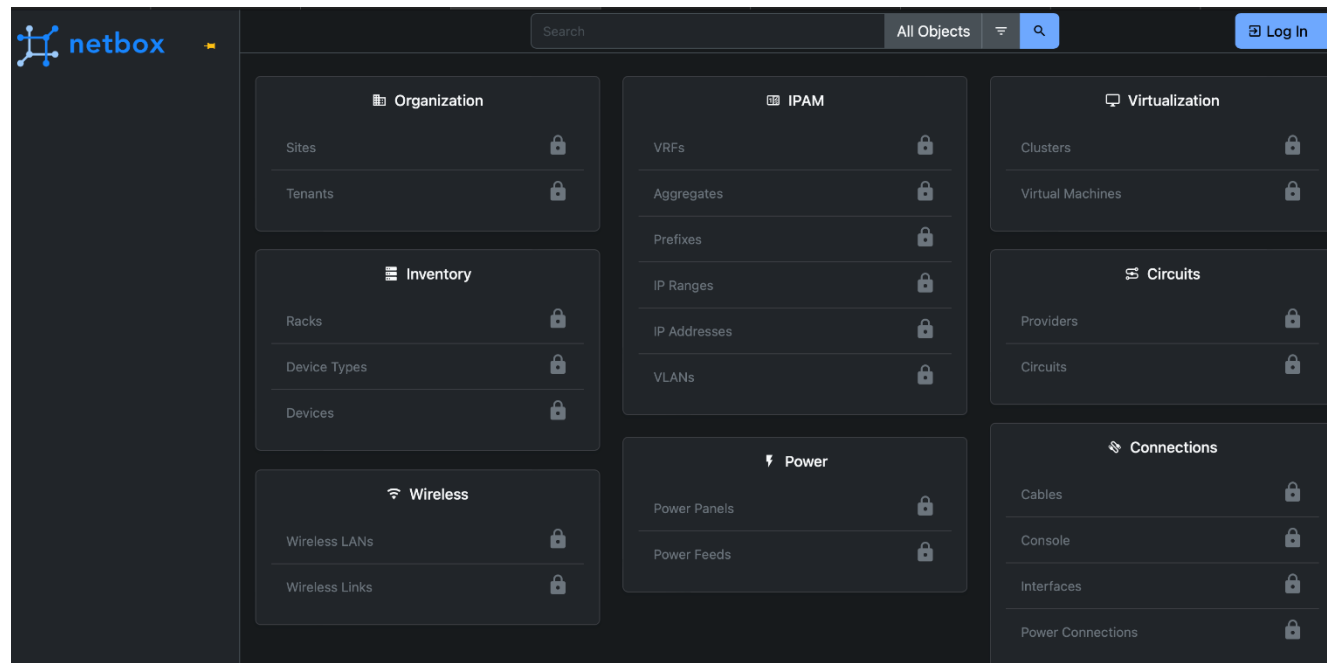


**WHAT data elements are desired to integrate into the ORE?**

CLOUD MATURITY THRESHOLDS/SPECS				
	INTOLERANT	TOLERANT	READY	NATIVE
<b>COMPUTE</b> 	NONSTANDARD HARDWARE, HYPERVISORS	STANDARDIZE <ul style="list-style-type: none"> <li>HARDWARE</li> <li>HYPERVISORS</li> <li>MODERN OS</li> </ul>	<ul style="list-style-type: none"> <li>APPLICATION ISOLATION</li> <li>KERNEL COMPUTE POLICY</li> <li>SEMI AUTO IAAS</li> </ul>	<ul style="list-style-type: none"> <li>ZERO TRUST DATA IN PROCESS</li> <li>FULL AUTO IAAS</li> <li>CONTAINER</li> <li>MICROSERVICES</li> </ul>
<b>NETWORKING</b> 	NONSTANDARD L1 AND L2 HARDWARE, SILOED CORE SERVICES	STANDARDIZE <ul style="list-style-type: none"> <li>L1 AND L2 HARDWARE</li> <li>ENTERPRISE CORE SERVICES</li> </ul>	<ul style="list-style-type: none"> <li>API DRIVEN NETWORKS</li> <li>PKI, TRAFFIC ANALYSIS</li> <li>FLATTEN NETWORK</li> <li>TENANT ISOLATION</li> </ul>	<ul style="list-style-type: none"> <li>ZERO TRUST DATA IN TRANSIT</li> <li>L2-7 AS SOFTWARE</li> <li>SIDECAR SECURITY DATA COLLECTION</li> <li>IPV6</li> </ul>
<b>STORAGE</b> 	NONSTANDARD HARDWARE, PROTOCOLS, DATABASES	STANDARDIZE: <ul style="list-style-type: none"> <li>STORAGE FABRIC</li> <li>RATIONALIZE DATA (EPHEMERAL/PERSISTENT)</li> <li>OBJECT, FILE, BLOCK STORAGE</li> <li>PERF RQTS FOR SSD, PLATTER, ARCHIVE</li> </ul>	<ul style="list-style-type: none"> <li>API DRIVEN STRAGE</li> <li>ROBUST STORAGE PAAS OVER ETHERNET</li> <li>FIBER FOR CUSTOM</li> <li>METADATA TAGS</li> </ul>	<ul style="list-style-type: none"> <li>ZERO TRUST DATA AT REST</li> <li>NATIVE ENTERPRISE SCALABILITY</li> <li>EVENTUAL TO HIGH CONSISTENCY</li> <li>PARTITION TOLERANCE</li> <li>STREAMING</li> </ul>
<b>APPLICATION</b> 	NONSTANDARD SERVICES, MANUAL OPERATIONS	STANDARDIZE SOFTWARE FOR <ul style="list-style-type: none"> <li>ENGINEERING,</li> <li>DEV, STAGING, CYBER, OPS</li> <li>GOVERNANCE</li> </ul>	<ul style="list-style-type: none"> <li>API DRIVEN SOFTWARE</li> <li>SERVICE MESH</li> <li>EVENTUAL TO HIGH CONSISTENCY</li> <li>PARTITION TOLERANCE</li> <li>DR/HA</li> <li>STREAMING</li> </ul>	<ul style="list-style-type: none"> <li>ZERO TRUST CODE AT SOURCE</li> <li>NATIVE ELASTICITY/SCALABILITY</li> <li>EVENTUAL TO HIGH CONSISTENCY</li> <li>ON DEMAND SELF SERVICE</li> <li>MEASURED SERVICE</li> </ul>

Team implemented the upstream opensource version of Nautobot COTS (Netbox), deployed on Triton Platform (Cloud native infrastructure), leveraging stateless and ephemeral/persistent storage design

- **What data elements from Nautobot are desired for extraction into the ORE?**
- **When can the Core Node provide the API endpoints and data functions for integration to the ORE?**
- **What services and elements (data) from SANDE are desired to be put into the ORE?**
- **When can SANDE team provide API Endpoints and data elements required for integration for SANDE integration?**



## Organization

The screenshot displays the Netbox web interface. The sidebar on the left contains navigation links for Organization, Sites, Regions, Site Groups, Locations, RACKS, Racks, Rack Roles, Reservations, Elevations, TENANCY, Tenants, Tenant Groups, CONTACTS, Contacts, Contact Groups, Contact Roles, Devices, Connections, Wireless, IPAM, and Overview. The main content area shows summary cards for Organization (Sites: 5, Tenants: 0), IPAM (VRFs: 0, Aggregates: 0, Prefixes: 0, IP Ranges: 0, IP Addresses: 0, VLANs: 0), Virtualization (Clusters: 0, Virtual Machines: 6), Inventory (Racks: 4, Device Types: 2, Devices: 4), Wireless (Wireless LANs: 0, Wireless Links: 0), Power (Power Panels: 0, Power Feeds: 0), and Connections (Cables: 0, Console: 0, Interfaces: 0, Power Connections: 0). At the bottom, a Change Log table lists recent actions.

ID	Time	Username	Full Name	Action	Type	Object	Request ID
27	2022-10-13 14:22	admin	—	Created	DCIM > device	s08	c806fde5-6513-4afd-82ea-acbe8aa2ed07
26	2022-10-13 14:22	admin	—	Created	DCIM > device	s07	063124ec-b0ef-4f7b-a3ab-9ddf43e5d4db
25	2022-10-13 14:22	admin	—	Created	DCIM > device	s06	51522033-c3c1-4de0-a20f-02ebb14f3cd1

## Devices

The screenshot displays the Netbox web interface. On the left is a sidebar with a navigation menu. The main content area shows a dashboard with several cards representing different object categories and their counts. At the bottom, there is a 'Change Log' table.

**Organization**

- Sites: 5
- Tenants: 0

**Inventory**

- Racks: 4
- Device Types: 2
- Devices: 4

**Wireless**

- Wireless LANs: 0
- Wireless Links: 0

**IPAM**

- VRFs: 0
- Aggregates: 0
- Prefixes: 0
- IP Ranges: 0
- IP Addresses: 0
- VLANs: 0

**Power**

- Power Panels: 0
- Power Feeds: 0

**Virtualization**

- Clusters: 0
- Virtual Machines: 6

**Circuits**

- Providers: 0
- Circuits: 0

**Connections**

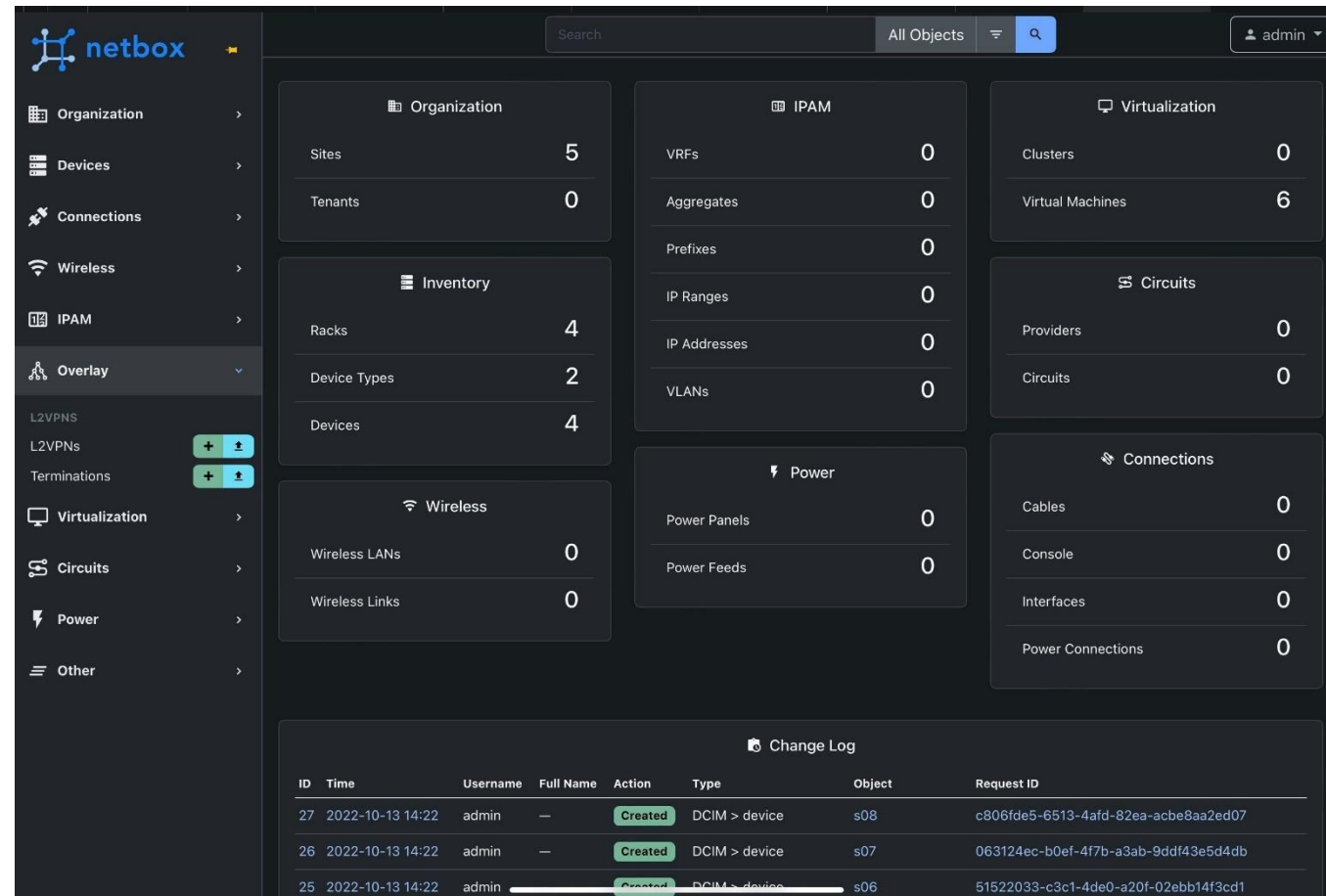
- Cables: 0
- Console: 0
- Interfaces: 0
- Power Connections: 0

**Change Log**

ID	Time	Username	Full Name	Action	Type	Object	Request ID
27	2022-10-13 14:22	admin	—	Created	DCIM > device	s08	c806fde5-6513-4afd-82ea-acbe8aa2ed07
26	2022-10-13 14:22	admin	—	Created	DCIM > device	s07	063124ec-b0ef-4f7b-a3ab-9ddf43e5d4db
25	2022-10-13 14:22	admin	—	Created	DCIM > device	s06	51522033-c3c1-4de0-a20f-02ebb14f3cd1



## Overlay



The screenshot displays the Netbox web interface. The left sidebar contains a navigation menu with categories like Organization, Devices, Connections, Wireless, IPAM, and Overlay. The 'Overlay' category is expanded, showing sub-items: L2VPNS, L2VPNs, and Terminations. The main content area features several summary cards for Organization, IPAM, Virtualization, Inventory, Wireless, Power, and Connections, each displaying counts for various objects. At the bottom, a 'Change Log' table lists recent actions.

ID	Time	Username	Full Name	Action	Type	Object	Request ID
27	2022-10-13 14:22	admin	—	Created	DCIM > device	s08	c806fde5-6513-4afd-82ea-acbe8aa2ed07
26	2022-10-13 14:22	admin	—	Created	DCIM > device	s07	063124ec-b0ef-4f7b-a3ab-9ddf43e5d4db
25	2022-10-13 14:22	admin	—	Created	DCIM > device	s06	51522033-c3c1-4de0-a20f-02ebb14f3cd1

## Virtualization

The screenshot displays the Netbox dashboard interface. The left sidebar contains navigation links for Organization, Devices, Connections, Wireless, IPAM, Overlay, Virtualization, and Other. The main content area is divided into several sections:

- Organization:** Sites (5), Tenants (0)
- Inventory:** Racks (4), Device Types (2), Devices (4)
- IPAM:** VRFs (0), Aggregates (0), Prefixes (0), IP Ranges (0), IP Addresses (0), VLANs (0)
- Virtualization:** Clusters (0), Virtual Machines (6)
- Wireless:** Wireless LANs (0), Wireless Links (0)
- Power:** Power Panels (0), Power Feeds (0)
- Circuits:** Providers (0), Circuits (0)
- Connections:** Cables (0), Console (0), Interfaces (0), Power Connections (0)

At the bottom, there is a **Change Log** table with the following data:

ID	Time	Username	Full Name	Action	Type	Object	Request ID
27	2022-10-13 14:22	admin	—	Created	DCIM > device	s08	c806fde5-6513-4afd-82ea-acbe8aa2ed07
26	2022-10-13 14:22	admin	—	Created	DCIM > device	s07	063124ec-b0ef-4f7b-a3ab-9ddf43e5d4db
25	2022-10-13 14:22	admin	—	Created	DCIM > device	s06	51522033-c3c1-4de0-a20f-02ebb14f3cd1



## Circuits

The screenshot displays the Netbox web interface. The sidebar on the left contains navigation links for Organization, Devices, Connections, Wireless, IPAM, Overlay, Virtualization, Circuits, and Other. The Circuits section is currently selected. The main content area shows summary statistics for various categories:

- Organization:** Sites (5), Tenants (0)
- Inventory:** Racks (4), Device Types (2), Devices (4)
- IPAM:** VRFs (0), Aggregates (0), Prefixes (0), IP Ranges (0), IP Addresses (0), VLANs (0)
- Virtualization:** Clusters (0), Virtual Machines (6)
- Wireless:** Wireless LANs (0), Wireless Links (0)
- Power:** Power Panels (0), Power Feeds (0)
- Circuits:** Providers (0), Circuits (0)
- Connections:** Cables (0), Console (0), Interfaces (0), Power Connections (0)

At the bottom, there is a Change Log table:

ID	Time	Username	Full Name	Action	Type	Object	Request ID
27	2022-10-13 14:22	admin	—	Created	DCIM > device	s08	c806fde5-6513-4afd-82ea-acbe8aa2ed07
26	2022-10-13 14:22	admin	—	Created	DCIM > device	s07	063124ec-b0ef-4f7b-a3ab-9ddf43e5d4db
25	2022-10-13 14:22	admin	—	Created	DCIM > device	s06	51522033-c3c1-4de0-a20f-02ebb14f3cd1

Virtual  
Machines

The screenshot shows the Netbox web interface for creating a new Virtual Machine. The left sidebar contains a navigation menu with categories: Organization, Devices, Connections, Wireless, IPAM, Overlay, and Virtualization. Under Virtualization, there are sub-sections for Virtual Machines, Interfaces, Clusters, Cluster Types, Cluster Groups, Circuits, Power, and Other. The main content area is titled 'Virtual Machine' and contains several form fields: Name (text input), Role (dropdown), Status (dropdown, set to 'Active'), Tags (tag selector), Site/Cluster section with Site, Cluster group, Cluster, and Device dropdowns, and a Tenancy section with Tenant group and Tenant dropdowns. A 'Create' button is at the top left of the form area, and a 'Help' button is at the top right. The top of the interface includes a search bar, 'All Objects' filter, and a user profile dropdown for 'admin'.

netbox

Organization

Devices

Connections

Wireless

IPAM

Overlay

Virtualization

VIRTUAL MACHINES

Virtual Machines

Interfaces

CLUSTERS

Clusters

Cluster Types

Cluster Groups

Circuits

Power

Other

Create

Search

All Objects

admin

Help

Virtual Machine

Name \*

Role

Status \*

Tags

Site/Cluster

Site

Cluster group

Cluster

Device

Tenancy

Tenant group

Tenant

Optionally pin this VM to a specific host device within the cluster

## Service Providers

The screenshot displays the Netbox web interface for creating a new provider. The left sidebar shows the navigation menu with 'Circuits' expanded and 'Providers' selected. The main content area is titled 'Create' and contains the 'Provider' form. The form includes fields for Name, Slug, ASN, ASNs, Tags, Account number, Portal URL, NOC contact, and Admin contact. The 'Support Info' section is also visible.

**netbox**

Search All Objects admin

Create

**Provider**

**Name \***  Full name of the provider

**Slug \***

**ASN**  BGP autonomous system number (if applicable)

**ASNs**

**Tags**

**Support Info**

**Account number**

**Portal URL**  URL of the provider's customer support portal

**NOC contact**  NOC email address and phone number

**Admin contact**

**Navigation Menu:**

- Organization
- Devices
- Connections
- Wireless
- IPAM
- Overlay
- Virtualization
- Circuits**
  - Circuits
  - Circuit Types
- PROVIDERS**
  - Providers**
  - Provider Networks
- Power
- Other

## IP Address Management

The screenshot displays the Netbox web interface for IP Address Management. The left sidebar contains a navigation menu with categories: Organization, Devices, Connections, Wireless, and IPAM. The IPAM section is expanded, showing sub-items: IP ADDRESSES, IP Ranges, PREFIXES, ASNS, AGGREGATES, RIRs, VRFS, Route Targets, VLANS, and VLAN Groups. Each sub-item has a green '+ Add' button and a blue 'Import' button. The main content area is titled 'IP Addresses' and includes a search bar, a 'Results' tab, and buttons for '+ Add', '+ Import', and '+ Export'. Below the search bar are filters for 'Search' and 'Tags'. The 'Attributes' section contains fields for 'Parent Prefix', 'Address family', 'Status', 'Role', 'Mask length', and 'Assigned to an interface'. The 'VRF' section contains fields for 'Assigned VRF' and 'Present in VRF'. The 'Tenant' section contains a field for 'Tenant group'. The interface is dark-themed and includes a user profile dropdown in the top right corner.

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Organization

Devices

Connections

Wireless

IPAM

IP ADDRESSES

IP Addresses

IP Ranges

PREFIXES

Prefixes

Prefix & VLAN Roles

ASNS

ASNs

AGGREGATES

Aggregates

RIRs

VRFS

VRFs

Route Targets

VLANS

VLANs

VLAN Groups

Search

All Objects

admin

IP Addresses

+ Add

+ Import

+ Export

Results

Filters

Search

Tags

Select Tags

Attributes

Parent Prefix

Prefix

Address family

-----

Status

Select Status

Role

Select Role

Mask length

-----

Assigned to an interface

-----

VRF

Assigned VRF

Select Assigned VRF

Present in VRF

-----

Tenant

Tenant group

Select Tenant group

## Rack Data

The screenshot displays the Netbox web interface for creating a new rack. The left sidebar shows the navigation menu with 'Racks' selected under the 'RACKS' category. The main form area contains the following fields:

- Region**: A dropdown menu.
- Site group**: A dropdown menu.
- Site\***: A dropdown menu.
- Location**: A dropdown menu.
- Name\***: A text input field with a sub-label 'Organizational rack name'.
- Status\***: A dropdown menu with 'Active' selected.
- Role**: A dropdown menu.
- Tags**: A button labeled 'Select Tags' with a plus icon.
- Inventory Control**: A section containing three text input fields:
  - Facility ID**: A text input field with a sub-label 'The unique rack ID assigned by the facility'.
  - Serial number**: A text input field.
  - Asset tag**: A text input field with a sub-label 'A unique tag used to identify this rack'.

## Rack Diagrams

The screenshot shows the Netbox web interface. On the left is a sidebar with navigation links: Organization, SITES, Sites, Regions, Site Groups, Locations, RACKS, Racks, Rack Roles, Reservations, Elevations, TENANCY, Tenants, Tenant Groups, CONTACTS, Contacts, Contact Groups, Contact Roles, Devices, Connections, Wireless, IPAM, and Overview. The main area has a search bar and a dropdown menu set to 'All Objects'. Below this are tabs for 'Results' and 'Filters'. The main content area displays four columns: 'cisco', 'ndp', 'rack1', and 'rh'. Each column contains a vertical list of numbers from 7 to 42, representing rack units.

	cisco	ndp	rack1	rh
42				
41				
40				
39				
38				
37				
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33				
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31				
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8				
7				



## Circuit Data Import

Field	Required	Accessor	Description
name	✓	—	Name of circuit type
slug	✓	—	URL-friendly unique shorthand
description	—	—	Description