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Power Virtual Server Networking and Administration Best Practices

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Agenda

- Key questions for Power Virtual Server (PowerVS) migration
- Network scenarios
- Initial setup in PowerVS
- Managing LPARs in PowerVS
- Lab Services offerings

Key Questions and Planning Topics for Migration Services

- Workload identification
 - Business criticality and risk, RTO and RPO for migration
 - Start with test, dev, UAT
- OS version and application dependencies
 - Note minimum supported OS versions for AIX and IBM i:
<https://cloud.ibm.com/docs/infrastructure/power-iaas?topic=power-iaas-power-iaas-faqs>
 - OS upgrade may be necessary prior to cloud migration
 - Collaborate with client on evaluating application impacts
- Network architecture and design
 - What types of access to VMs (LPARs) is required?
 - How much bandwidth is needed based on access – console, application, DR?
 - Size of workloads and migration timeline
- Backup and HA/DR requirements:
 - Full-system vs. file- or object-level backups and frequency
 - RTO, RPO and mapping of HA/DR requirements to available PowerVS options
- Skills transfer requirements for running Power workloads in IBM Cloud

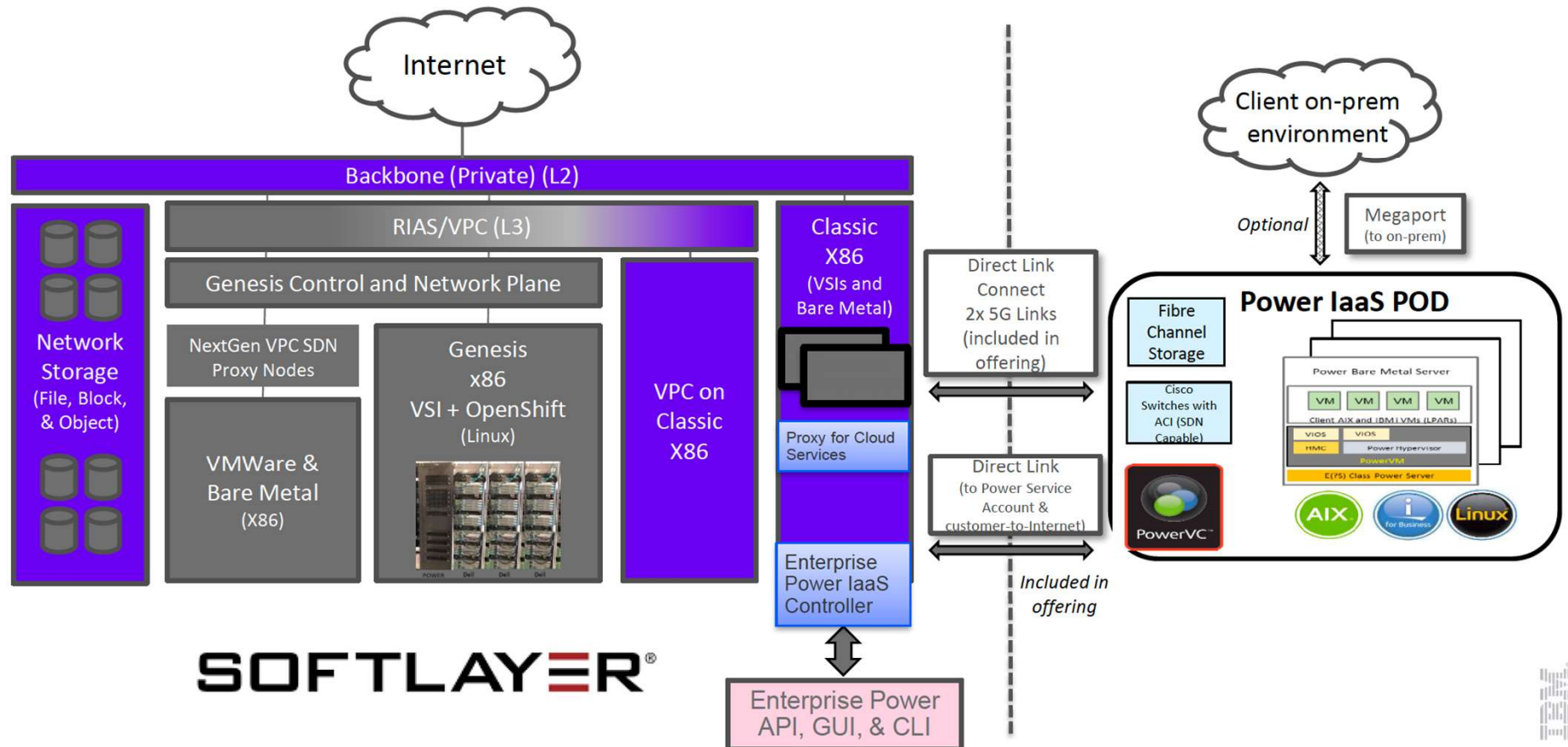
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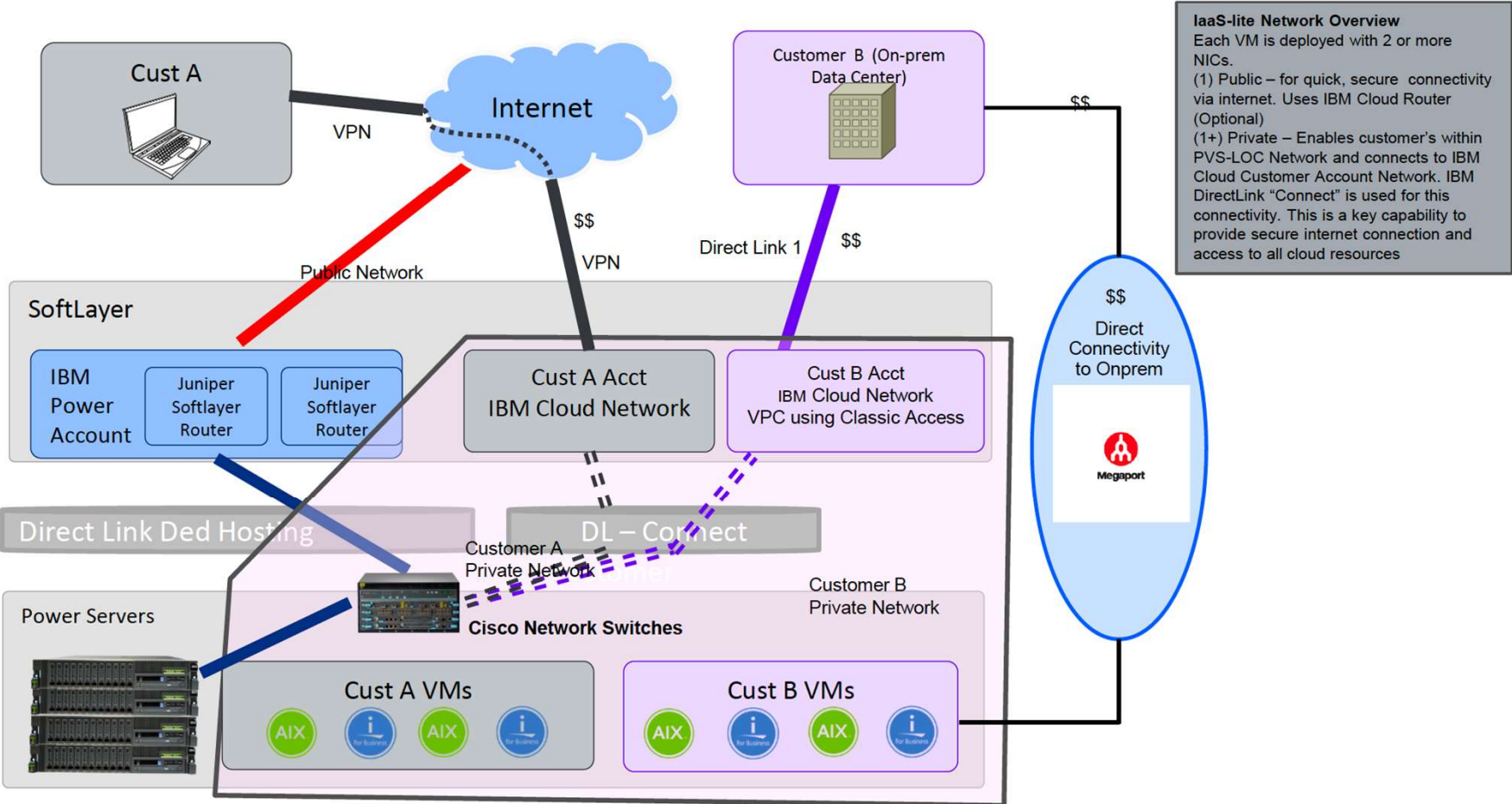
Network Scenarios



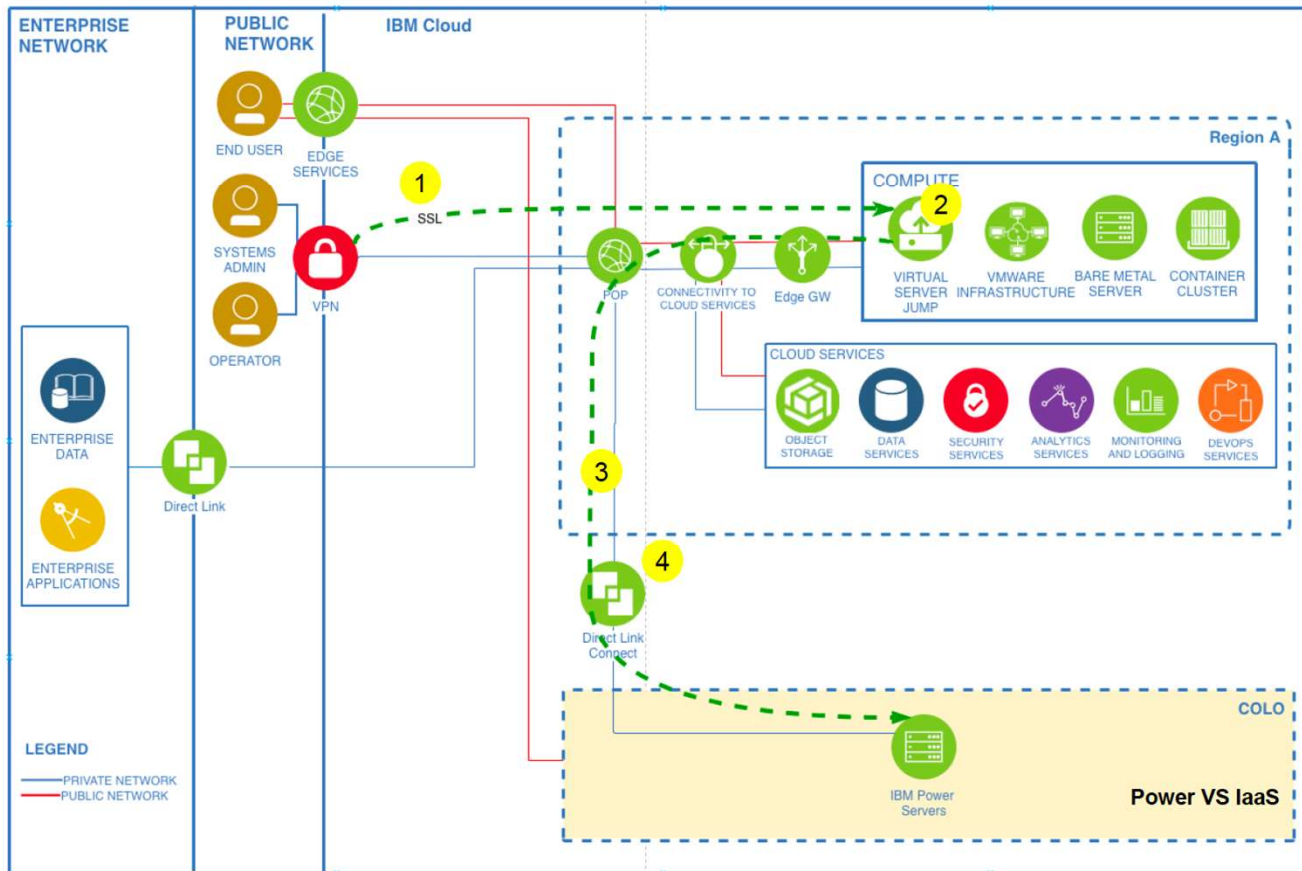
IBM Cloud Enterprise Power VS PVS-LOC Model



IaaS-Lite Network Overview



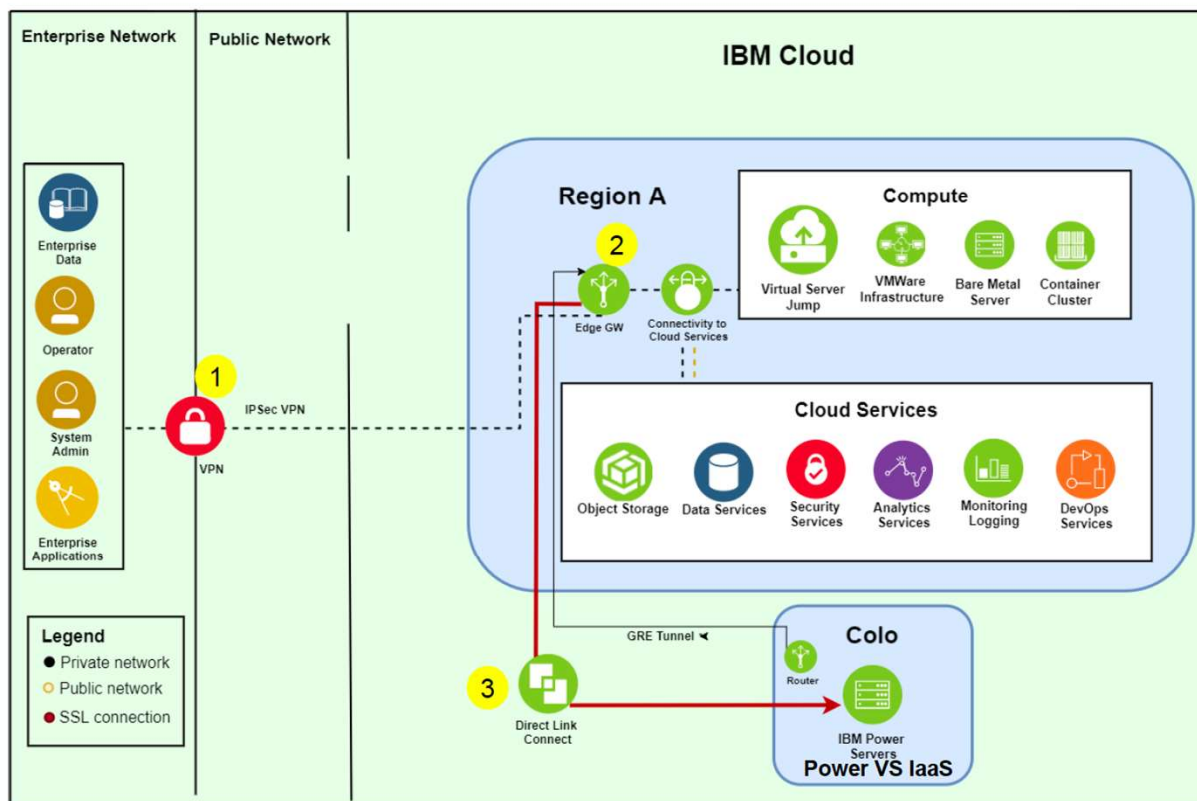
Scenario 1: Private Connection using SSL + Jump host + Direct Link Connect



- 1 IBM Cloud SSL VPN service is used to connect the IBM Cloud network.
- 2 Inside the IBM Cloud network, a IBM Cloud virtual machine (VM) is used as a jump server to:
- 3 Connect to the Power Systems Virtual Server instance.
- 4 Direct Link Connect is used to connect IBM Power Systems to the IBM Cloud Network

Note:
 Jump server can be used as login server and/or as a proxy servers.

Scenario 2: Private Connection using IPsec VPN + Direct Link Connect + Edge GW



- 1 IBM Cloud IPsec VPN service is used to connect the IBM Cloud network.
- 2 Inside the IBM Cloud network, an Edge Gateway device is used to connect to the Power Systems Virtual Instance. An Edge Gateway (Vyatta or vSRX) based IPsec VPN must be used. IBM Cloud IPsec service is option as well.

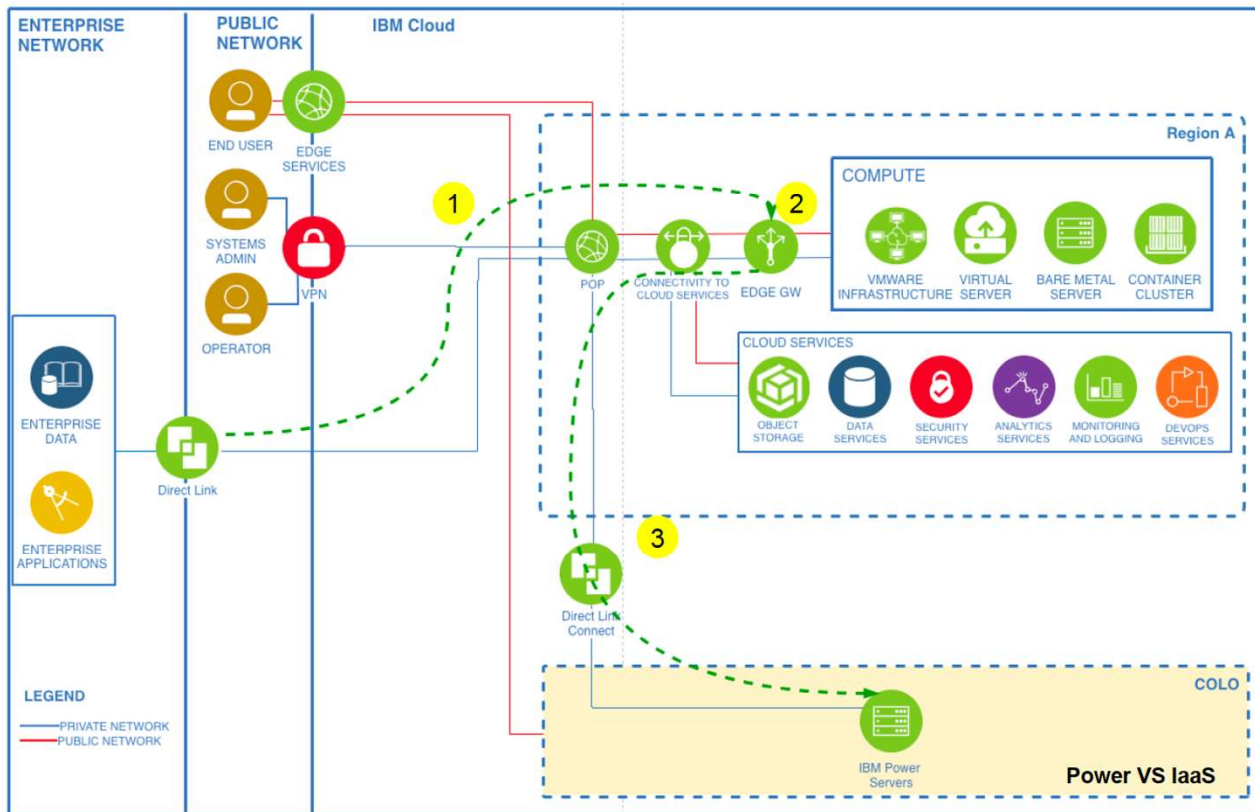
Direct Link Connect is used to connect IBM Power Systems to the IBM Cloud

- 3 Network

This option is typically used for environment management from the public network. It is not recommended for production workloads. Can be good option for PoCs and Dev/Test.

GRE Tunneling is needed in most configurations because IBM Cloud Network does not advertise on-prem subnets over Direct Link and BYOIP considerations.

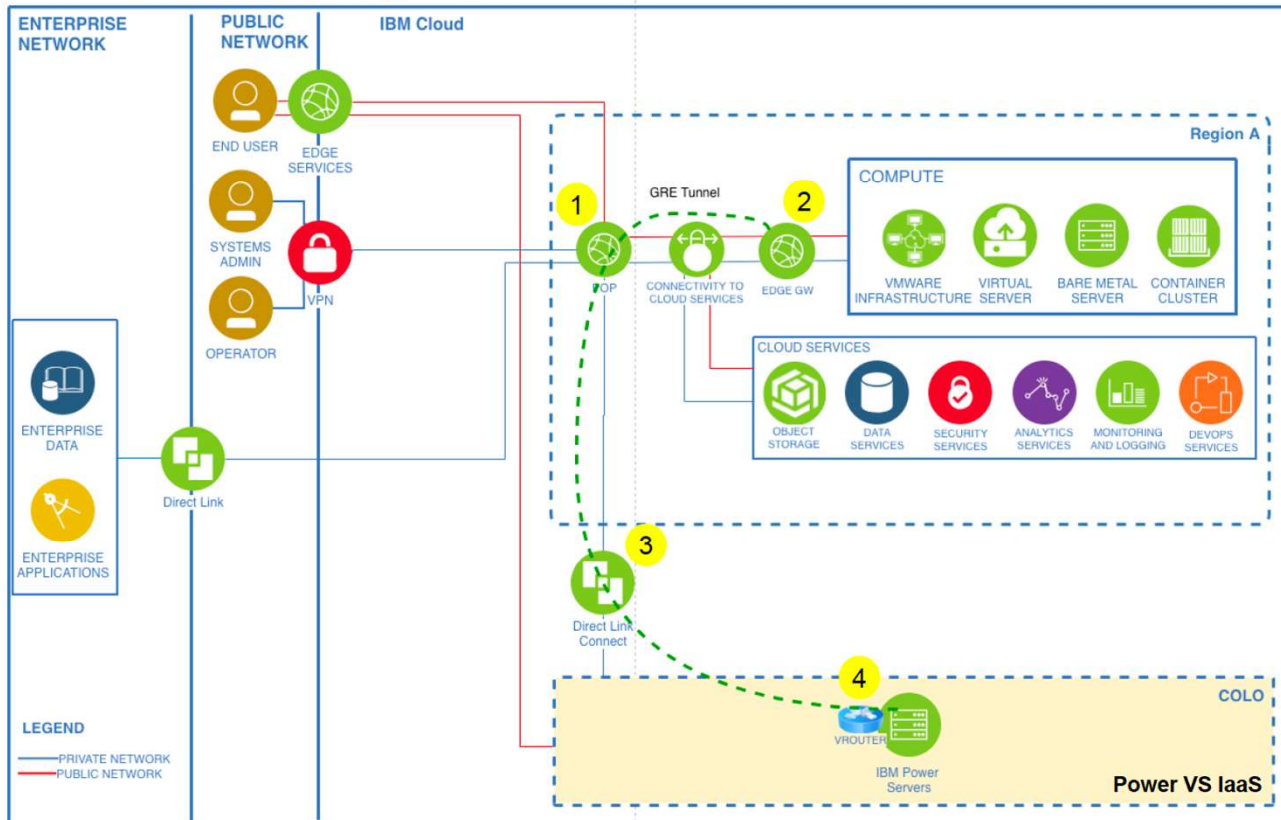
Scenario 3: Private Connection using Direct Link + Direct Link Connect + Edge GW



- 1 Direct Link is used to connect the enterprise to the IBM Cloud network.
- 2 Inside the IBM Cloud network, an Edge Gateway device is used to connect to the Power Systems Virtual Instance. An Edge Gateway must be used to control routing between IBM Cloud and the PVS-LOC where IBM Power Systems resides
- 3 Direct Link Connect is used to connect IBM Power Systems to the IBM Cloud Network

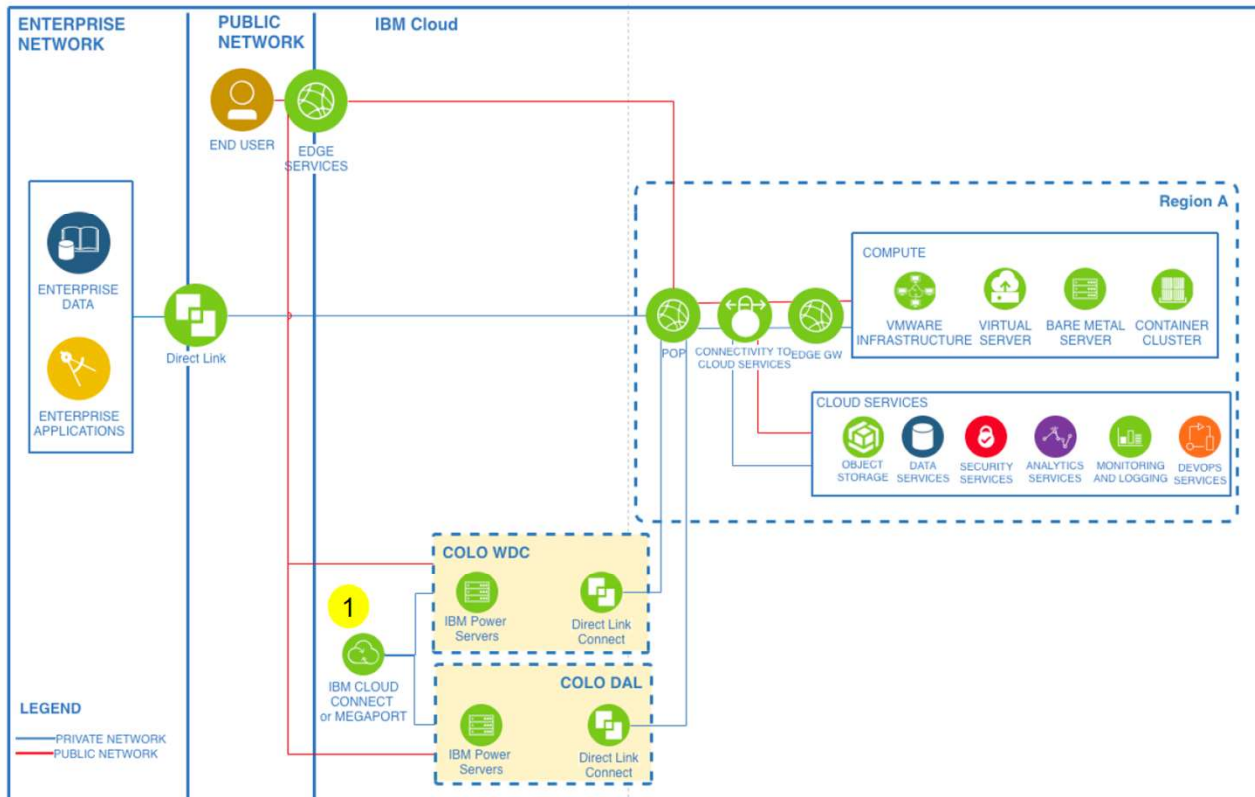
GRE Tunneling is needed in most configurations because IBM Cloud Network does not advertise on-prem subnets over Direct Link and BYOIP considerations.

Scenario 4: Enterprise Private Connection with BYOIP using Direct Link, Direct Link Connect and Edge GW



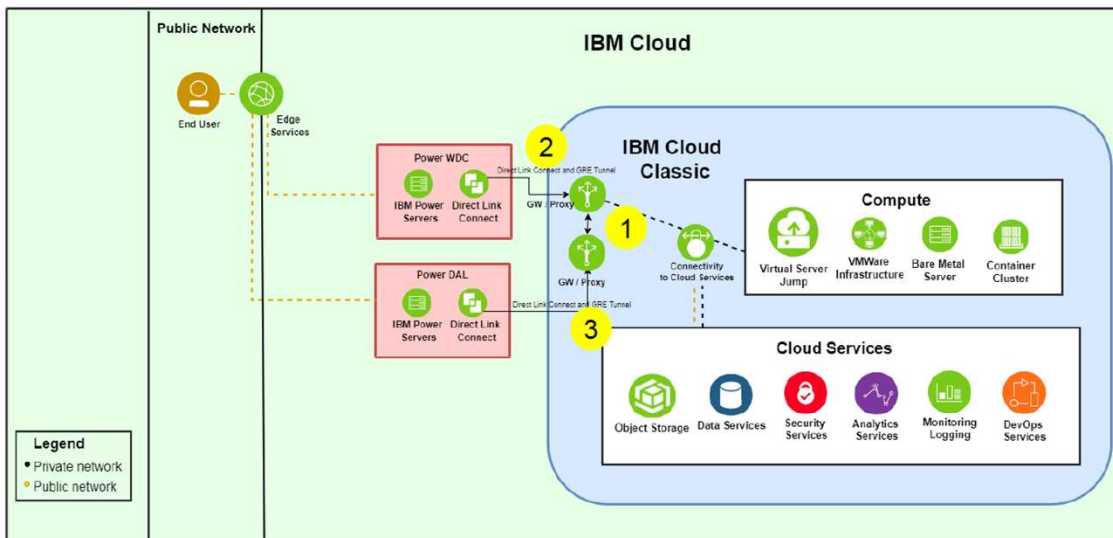
- 1 Similar to Scenario 3, Direct Link is used to connect the enterprise to the IBM Cloud network.
- 2 Inside the IBM Cloud network, an Edge Gateway device is used to connect to the Power Systems Virtual Instance. An Edge Gateway must be used to control routing between IBM Cloud and the PVS-LOC where IBM Power Systems resides
- 3 Direct Link Connect is used to connect IBM Power Systems to the IBM Cloud Network
- 4 GRE Service is configured on the IBM Power Server Network to establish a GRE Tunnel enabling BYOIP to the Power Server environment.

Scenario 5a: Power VS IaaS Locations connectivity using Cloud Connect or Megaport



1 In the case where more than one PVS-LOC is required for resiliency, PVS-LOC1 to PVS-LOC2 connectivity can occur outside of IBM cloud. PVS-LOC1 to PVS-LOC2 connectivity can be established using Megaport (client circuit) or IBM Cloud Connect (**available only in U.S.**)

Scenario 5b: Power VS IaaS Locations Connectivity via IBM Cloud Classic Network as Transit using Proxy



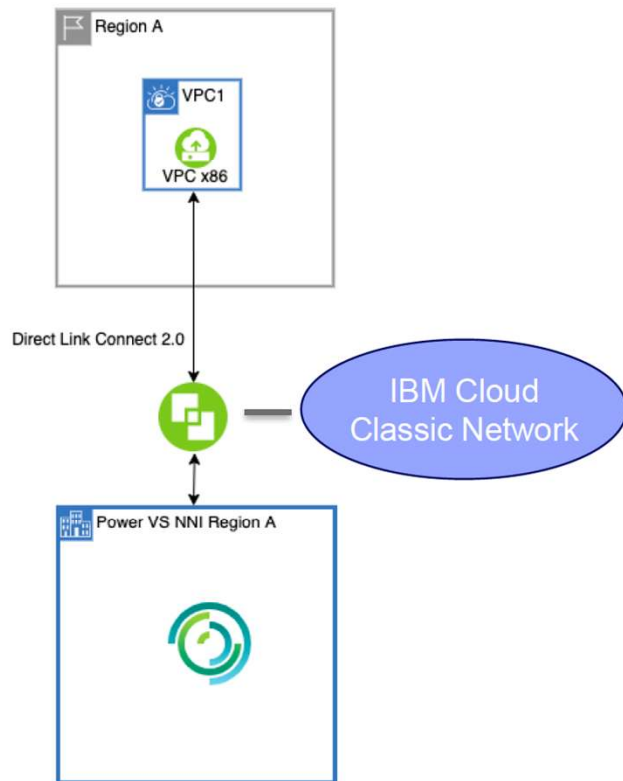
1 In the case where more than one PVS-LOC is required for resiliency, PVS-LOC to PVS-LOC connectivity can occur via IBM Cloud Network using proxy servers. GRE tunnels are needed for the transit.

2 3 Direct Link Connect with GRE configuration are required at both the locations for the connectivity.

Key considerations

1. This configuration is still to be tested by Power VS. Therefore, customers are required to test their configuration prior to production use.
2. Network BW and latency depends on Direct Link Connect. Proxy GW and IBM Cloud Network.

Power VS Direct Link 2.0 Connect – Plan Overview



- Supports Power VS to VPC NextGen and Classic x86 Compute and Services.
 - VPC is BYOIP capable.
- Automated configuration in Cloud Network allowing much faster provisioning of Direct Link.
- Currently available in DAL13, DAL12, WDC04, FRA04, FRA05, LON06, LON04, SYD05 and SYD04
- <https://cloud.ibm.com/docs/power-iaas?topic=power-iaas-ordering-direct-link-connect>

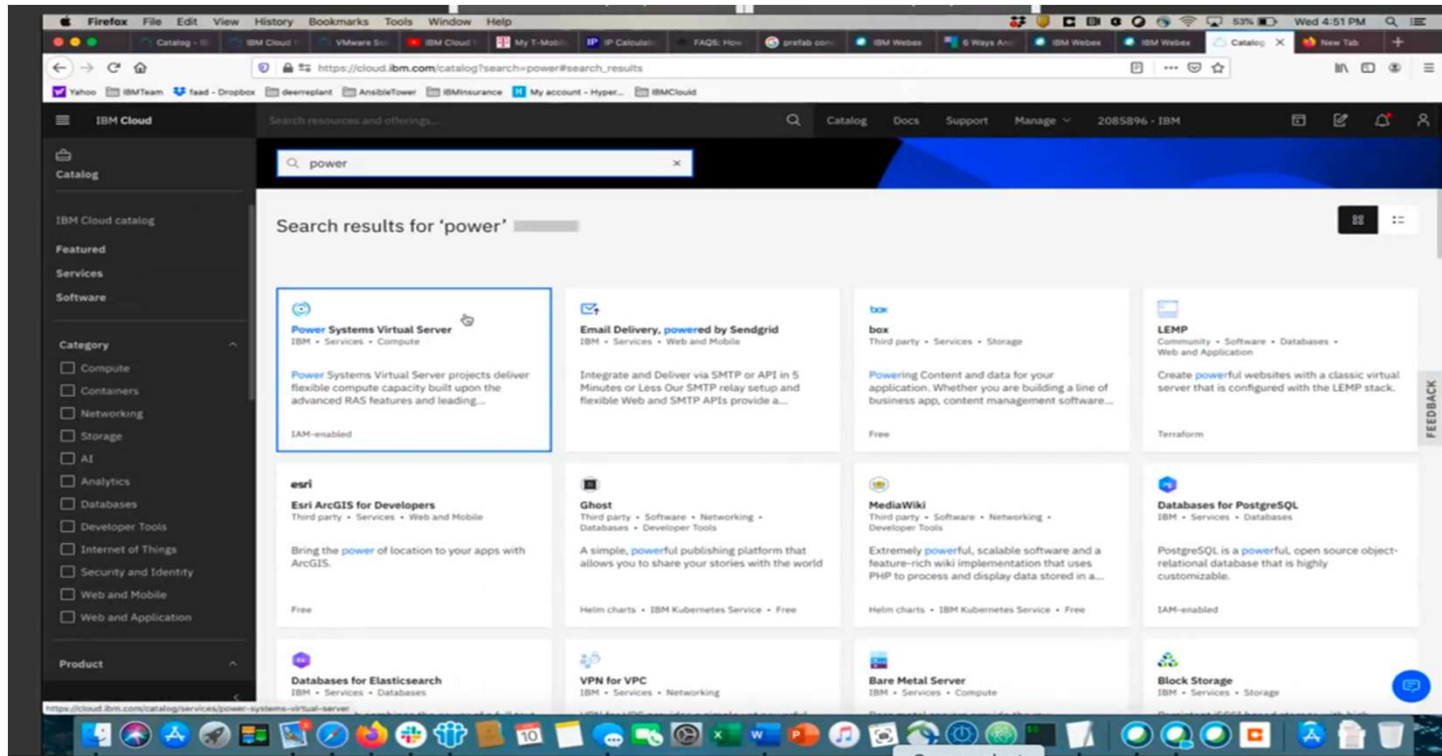
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Power Virtual Server Initial Configuration

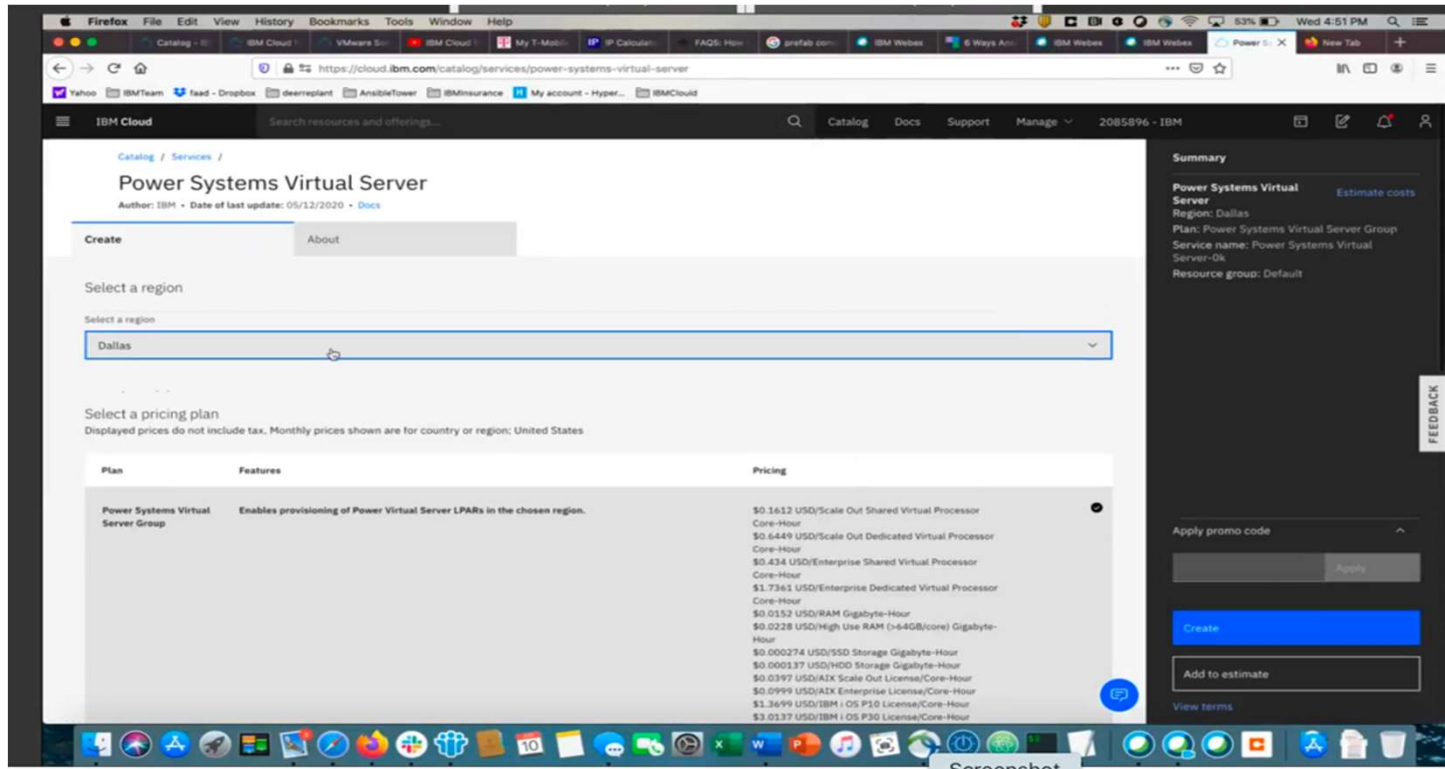


PowerVS Service



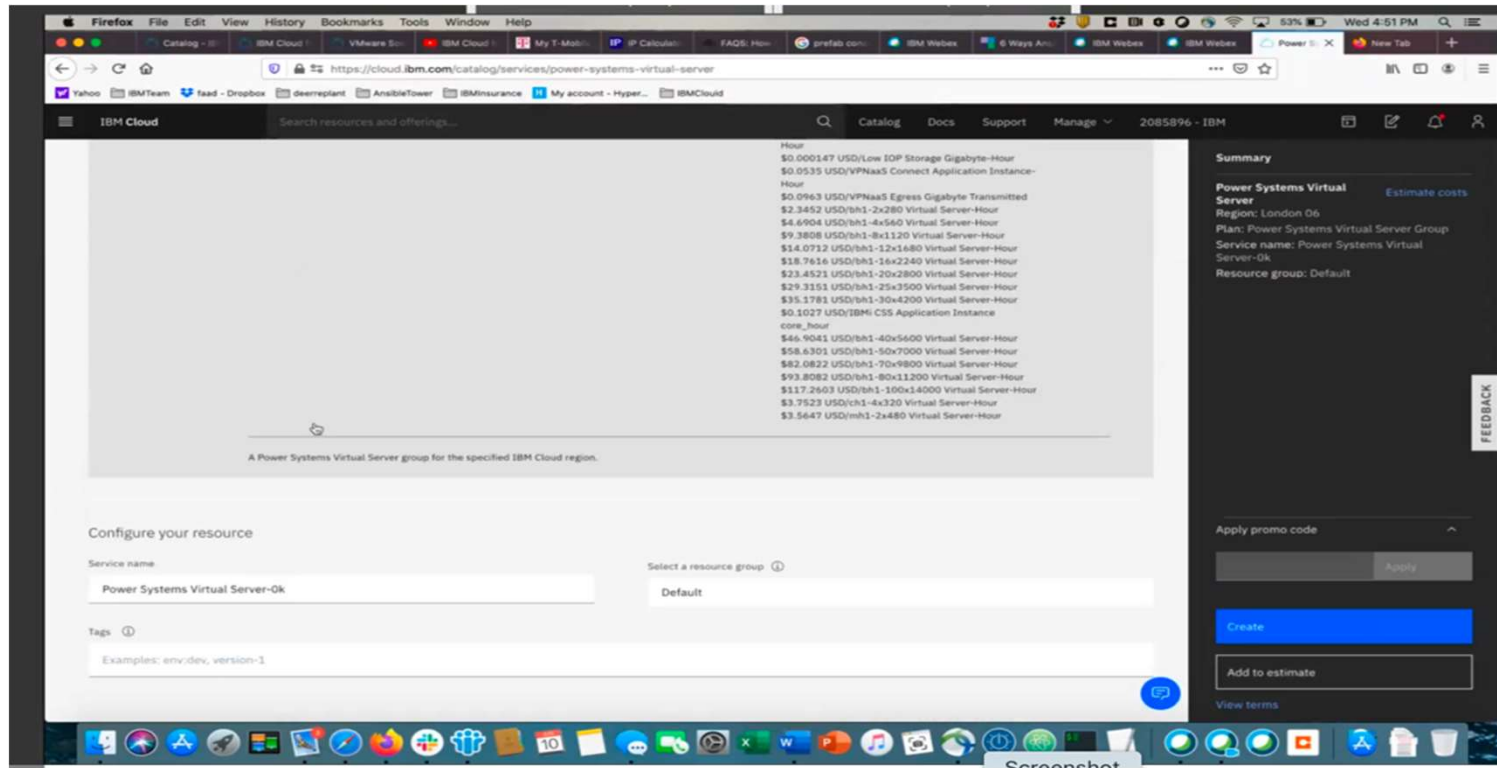
Select “Power System Virtual Server.”

PowerVS Service



Under Select Region, choose your region. You are limited to only one service per region.

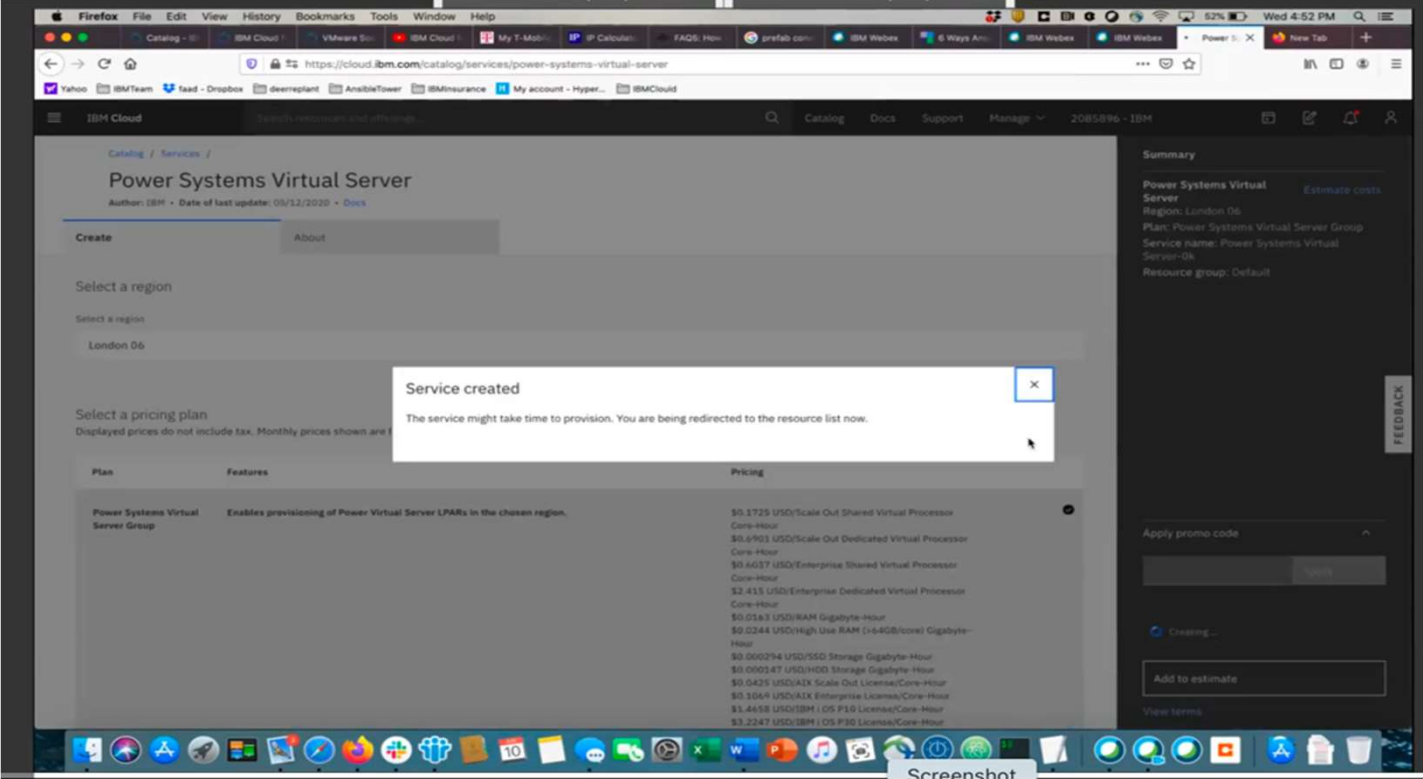
PowerVS Service



Select a "Service Name" or chose default name provided.

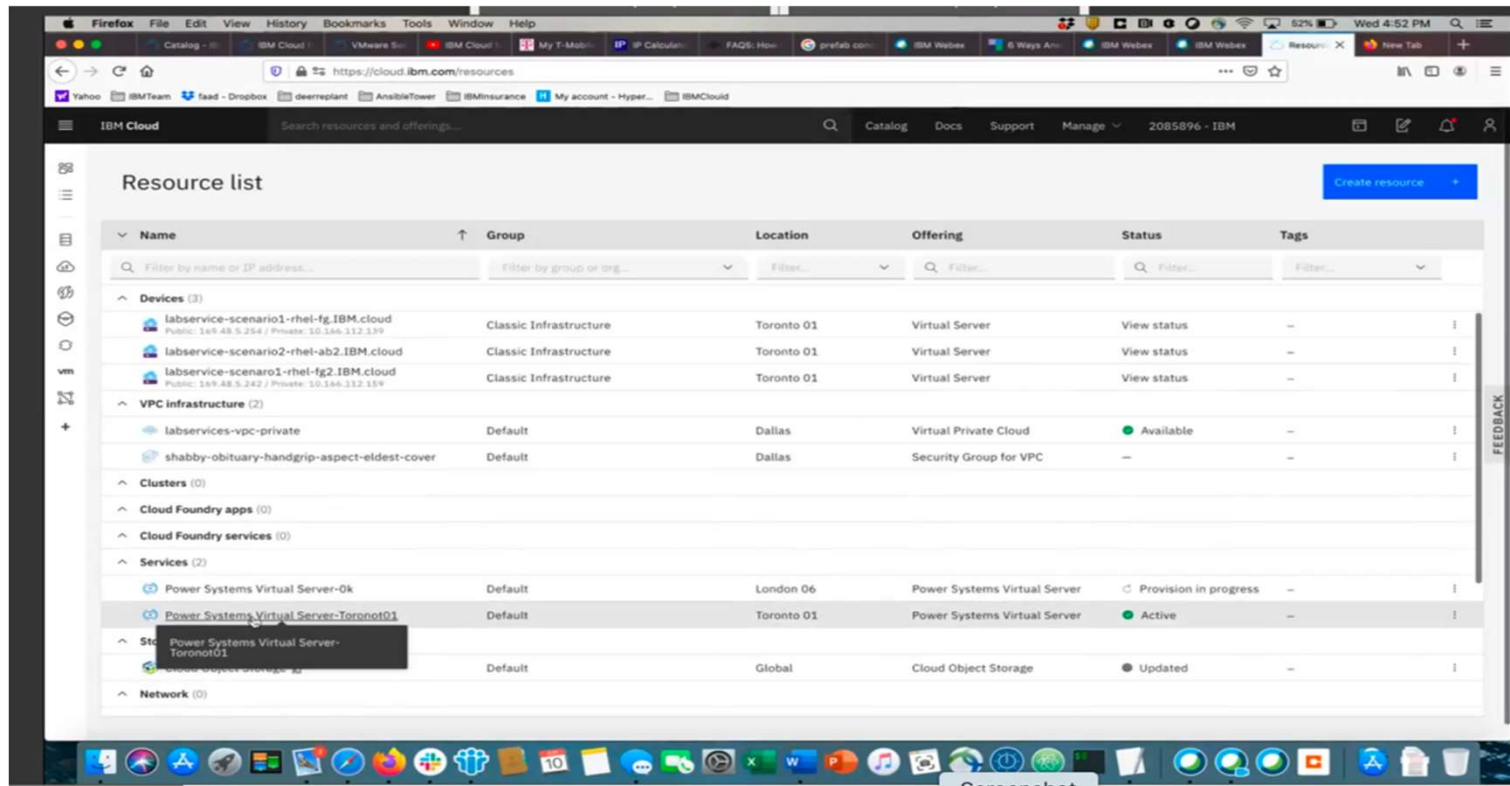
Then press "Create."

PowerVS Service



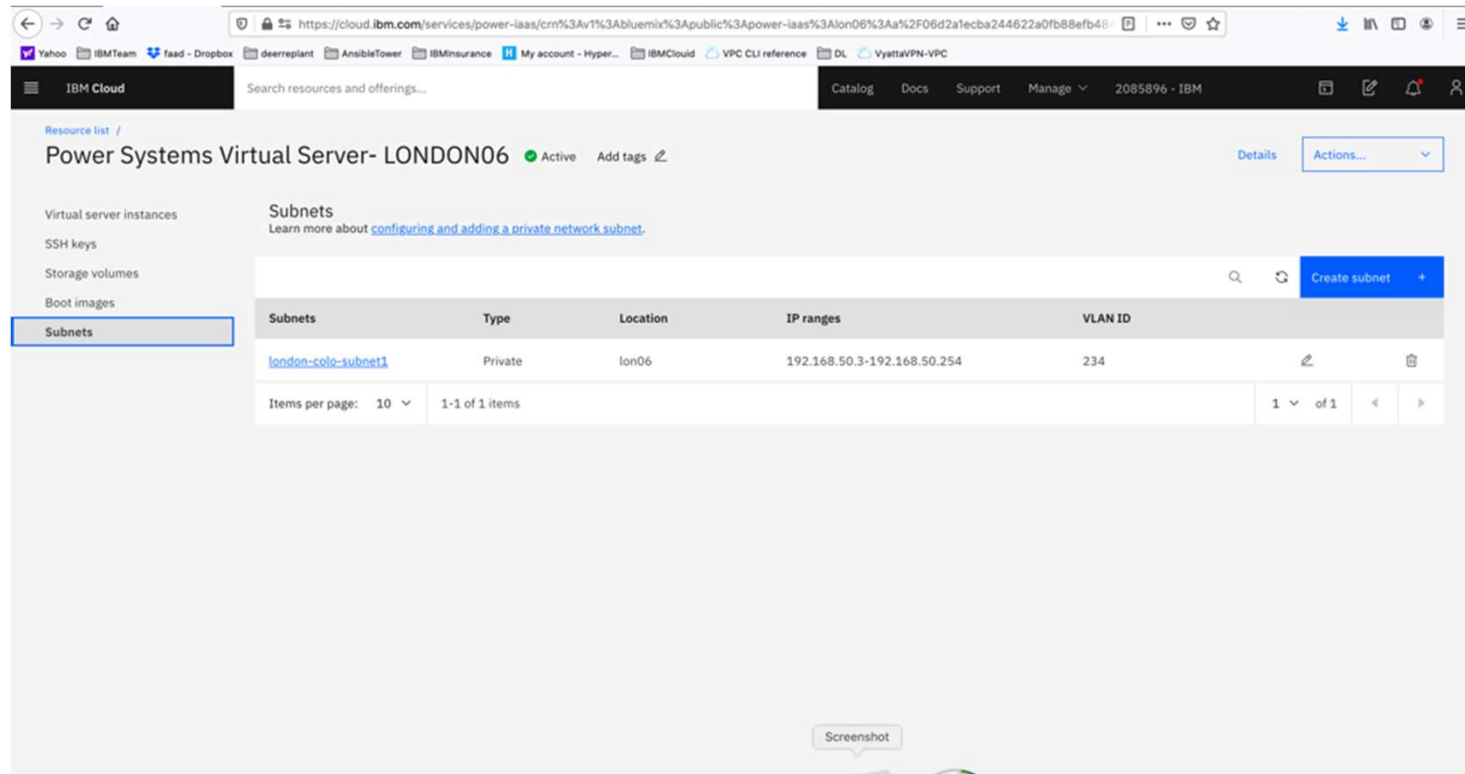
Your PowerVS service will now appear under the Services tab.

Subnet



Next you will need to click on the PowerVS service you created and provision a subnet to be used by your Power VSIs.

Subnet



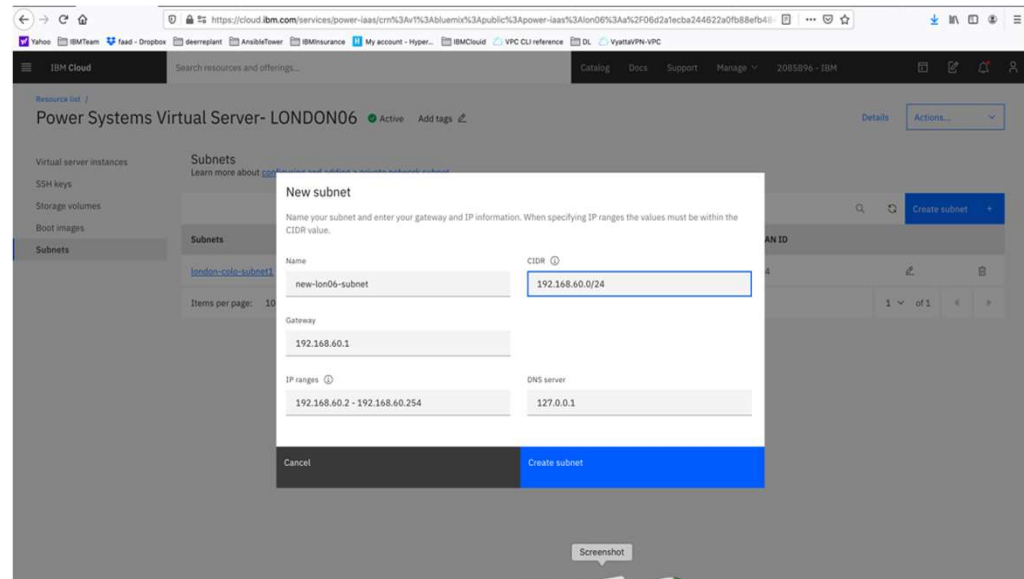
Choose "Subnets" from the menu on the left.

Subnet

Provide the following information:

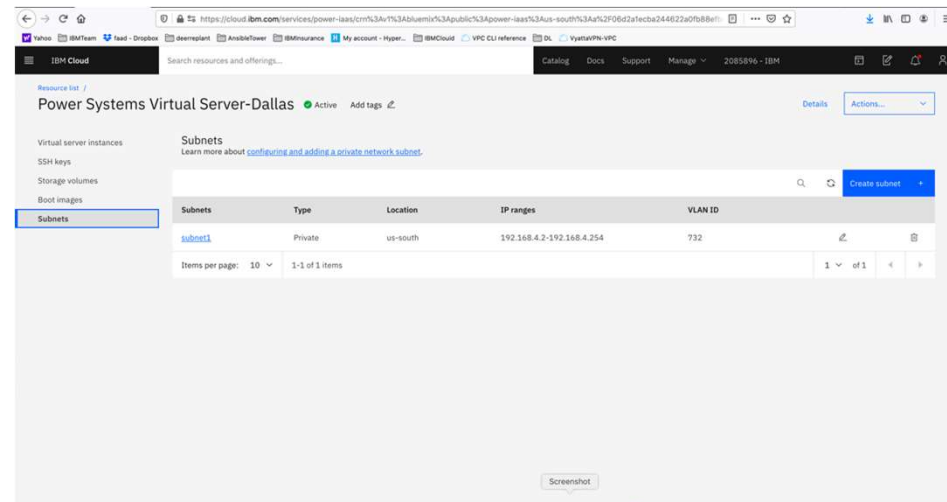
- *Name for your subnet*
- *CIDR range. This can be any private IP subnet ranges. For example, 192.168.5.0/24. You may choose /21 to /30 based on how many IPs you will require. You may use your own private CIDR if you wish.*
- *The rest of the fields will be automatically populated based on the CIDR you provided.*

Press “Create Subnet.”

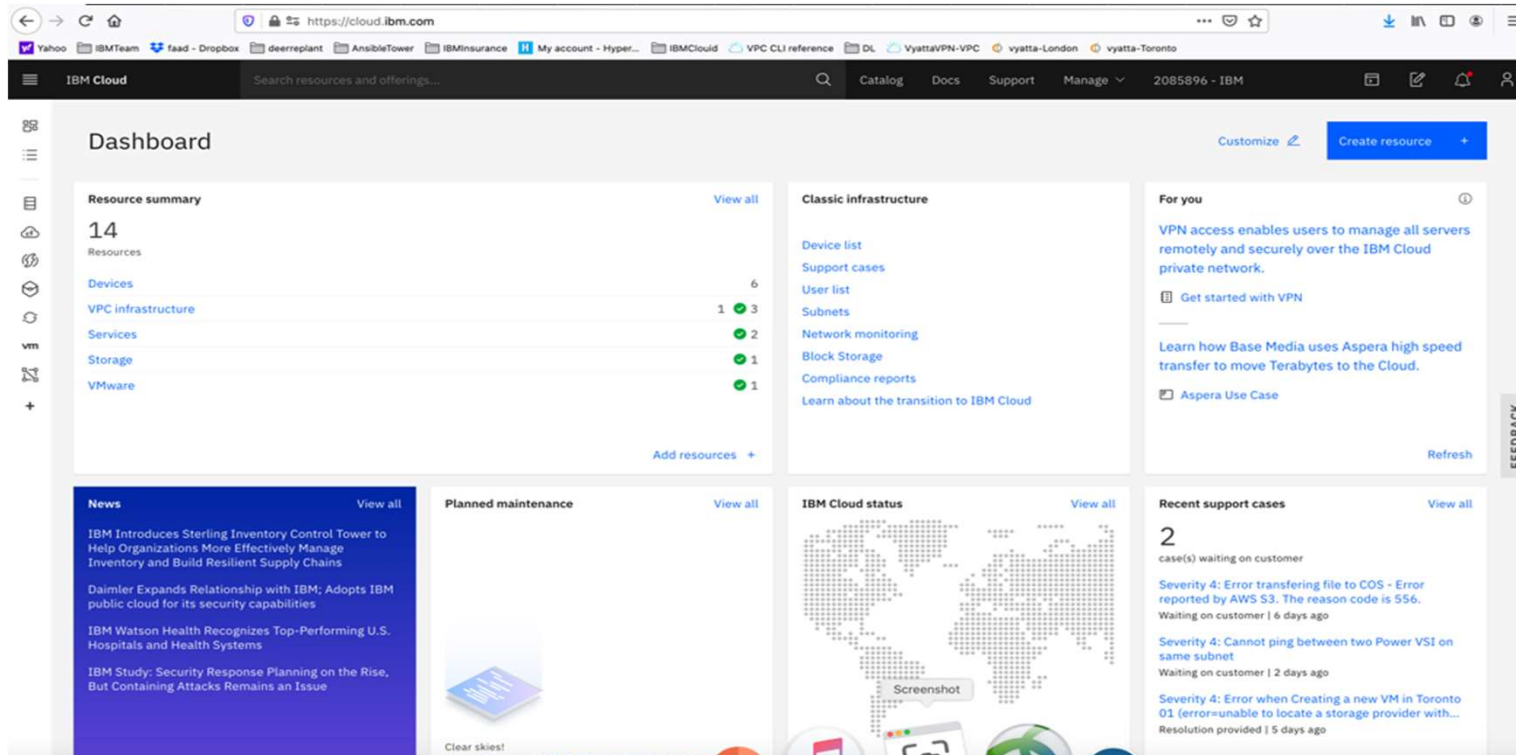


Subnet

- There should be a VLAN ID associated with the subnet.
- At this point, you will need to open a Support Ticket with PowerVS Support to request that the subnet be configured to allow local communication between any Power VSI you create in this PowerVS location service. Provide your PowerVS location service location, and your subnet in the ticket.
- Without this step, the Power VSIs you create will not be able to ping between each other even if they are on same subnet in the same PowerVS location.



VSI



The process for creating AIX and IBM i VSIs is the same. Here we show creating an AIX one. Go to the IBM Cloud Catalog and press the “IBM Cloud” on top left side of the UI.

VSI

The screenshot shows the IBM Cloud 'Resource list' page. The browser address bar is <https://cloud.ibm.com/resources>. The page features a search bar and a 'Create resource' button. A table lists resources with columns for Name, Group, Location, Offering, Status, and Tags. Two 'Power Systems Virtual Server' resources are visible: one in LONDON06 and one in Toronto 01, both with an 'Active' status. A 'Screenshot' tooltip is visible over the bottom of the table.

Name	Group	Location	Offering	Status	Tags
Power Systems Virtual Server- LONDON06	Default	London 06	Power Systems Virtual Server	Active	-
Power Systems Virtual Server-Torontot01	Default	Toronto 01	Power Systems Virtual Server	Active	-

Click on the service for datacenter in which you have created a PowerVS service. In this case we will choose Torontot01 PowerVS service.

VSI

Resource list / Power Systems Virtual Server-Toronot01 Active [Add tags](#)

Virtual server instances

Learn more about [Getting started](#) and [Creating a virtual server instance](#).

Name	IPs	Image	CPUs	RAM	Status		
labservices-scenario1-private-aix-fg2	192.168.6.136	7200-04-01	0.5 cores	2 GB	Active	✔	⋮
pc-tor01-glym-02a	192.168.6.167	7200-04-01	1 cores	4 GB	Active	✔	⋮
i922brmc-ibmi-cs		Image not found	0.5 cores	4 GB	Active	✔	⋮
i9TARGET	192.168.6.151, 192.168.142.78	IBMi-73-07-001	0.5 cores	4 GB	Active	✔	⋮
IBMiHADR-kb	192.168.6.219, 192.168.142.77	IBMi-74-01-001	1 cores	4 GB	Active	✔	⋮
labservices-scenario1-private-aix-fg	192.168.6.190	7200-04-01	0.5 cores	2 GB	Active	✔	⋮
labservices-scenario2-aix72-ab3	192.168.6.186, 192.168.142.75	7200-04-01	1 cores	2 GB	Warning	⚠	⋮
labservice-scenario2-aix72-ab2	192.168.6.112	7200-04-01	1 cores	2 GB	Active	✔	⋮
pc-tor01-glym-01a	192.168.6.163	7200-04-01	1 cores	4 GB	Active	✔	⋮
IBMiProd-kb	192.168.6.118, 192.168.142.74	IBMi-74-01-001	1 cores	4 GB	Active	✔	⋮

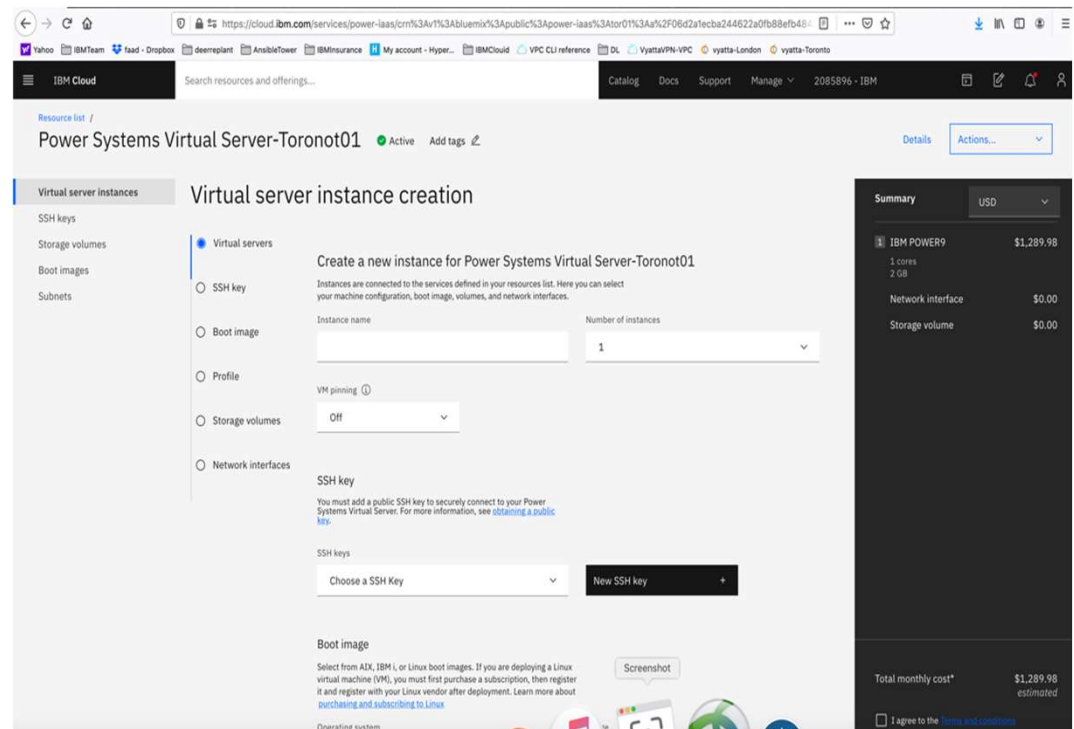
Items per page: 10 1-10 of 10 items

Since we have already provisioned several VSIs, we see the list show above. If you are creating VSIs for the first time, your list will be empty.

Press “Create Instance” on upper right-hand side.

VSI

- This is where you provision AIX or IBM i VSIs.
- Choose a name for your VSI, i.e., AIX-72-Tor01 and select how many VSIs you need to configure. The names of the VSI will be appended with a “-1”, “-2” etc. if you select more than one VSI.
- You may leave VM pruning and SSH key as is since the VSIs will have no passwords when you create them for the first time. You will need to create a password via the OS command.
- Scroll down to choose other options.



VSI

Resource list / Power Systems Virtual Server-Toronot01 Active Add tags

Virtual server instances **Virtual server instance creation** Details Actions...

- Virtual server instances
- SSH keys
- Storage volumes
- Boot images
- Subnets

Virtual servers

- Virtual servers
- SSH key
- Boot image
- Profile
- Storage volumes
- Network interfaces

Boot image

Select from ATX, IBM i, or Linux boot images. If you are deploying a Linux virtual machine (VM), you must first purchase a subscription, then register it and register with your Linux vendor after deployment. Learn more about [purchasing and subscribing to Linux](#).

Operating system Image

ATX
 IBM i
 Linux - Client supplied subscription

Select an image

Profile

Choose your machine type, processor, memory and cores.

Machine type Processor

Choose a type Dedicated Shared uncapped Shared capped

Cores (CPUs) Memory (GB)

1 2

Storage volumes

Please select an image before creating and attaching a new storage volume. You can attach existing volumes after you provision the instance.

Summary USD

IBM POWER9	\$1,365.10
1 cores	
2 GB	
ATX	
Network interface	\$0.00
Storage volume	\$0.00

Total monthly cost* \$1,365.10
estimated

I agree to the [terms and conditions](#)

Resource list / Power Systems Virtual Server-Toronot01 Active [Add tags](#)

Details [Actions...](#)

Virtual server instance creation

- Virtual server instances
- SSH keys
- Storage volumes
- Boot images
- Subnets

Virtual servers

register it and register with your Linux vendor after deployment. Learn more about [purchasing and subscribing to Linux](#)

Operating system: IBM i

Image:

IBM i Licenses:

- IBM i Cloud Storage Solution
- IBM i Power HA
- Rational Dev Studio for IBM i

Profile: Choose your machine type, processor, memory and cores.

Machine type: Processor:

Summary		USD
1	IBM POWER9 1 cores 2 GB IBM i	\$4,462.49
	Network interface	\$0.00
	Storage volume	\$0.00
	Software Licenses IBM i Cloud Storage Solution	\$72.12
Total monthly cost*		\$4,534.61 <i>estimated</i>

I agree to the [Terms and conditions](#)

Cancel Create instance

On IBM i VSIs, scroll down and choose “IBM i Cloud Storage Solutions” in order to perform backups using Backup Recovery and Media Services (BRMS) to Cloud Object Storage (COS).

VSI

The screenshot shows the IBM Cloud console interface for creating a virtual server instance. The main heading is "Virtual server instance creation". A modal dialog titled "Attach an existing network" is open, prompting the user to attach an existing network and specify an IP address. The dialog includes a dropdown menu for "Existing networks" with "lab-services-subnet2" selected. Below this, there are radio buttons for "Automatically assign IP address from address range" (which is selected) and "Specify an IP address". An "IP address" input field is visible below the radio buttons. At the bottom of the dialog are "Cancel" and "Attach" buttons. In the background, a "Summary" panel on the right displays the estimated monthly cost of \$139.97 for the instance configuration, which includes 1 core, 2 GB of memory, and 20 GB of storage. The instance is named "Power Systems Virtual Server-Toronot01" and is currently in an "Active" state.

Next you will scroll down to choose your subnet on which these VSIs will be provisioned. It is assumed you have already created one or more subnets prior to this step.

Click on the “Attached Existing” under networks.

VSI

Resource list / Power Systems Virtual Server-Torontot01 Active [Add tags](#)

Virtual server instances

- SSH keys
- Storage volumes
- Boot images
- Subnets

Virtual server instance creation

- Virtual servers
- SSH key
- Boot image
- Profile
- Storage volumes
- Network interfaces

Storage volumes
Create and attach new storage volumes. You can attach existing volumes after you provision the instance.

[New storage volume](#) +

Network interfaces
A public network uses a public VLAN to connect to your virtual server instance. Under private networks, you can connect to existing subnets to move on-premises workloads to the Cloud. To create a new subnet you must go to the subnet tab, your progress here will be saved.

Public networks
 Off

Private networks
[Attach existing](#) +

Attached private networks

Name	IP address	IP range	CIDR

[Screenshot](#)

Summary USD

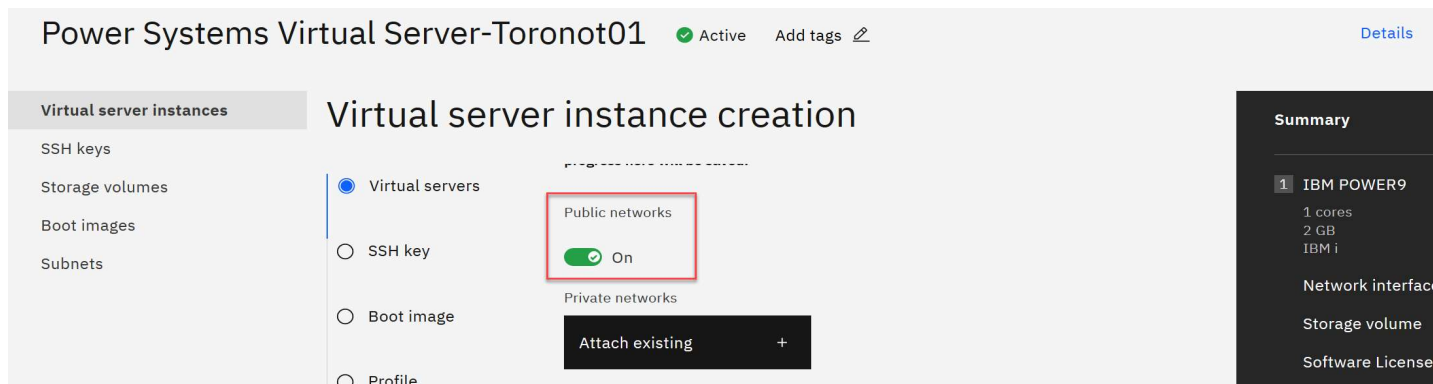
- 1 IBM POWER9 s922 \$137.97
 - 1 cores
 - 2 GB
 - AIX
- Network interface \$0.00
- Storage volume \$2.00
 - 20 GB

Total monthly cost* \$139.97 *estimated*

I agree to the [Terms and conditions](#)

Choose the subnet you wish to attach, then click “Attach.”

VSI



Choose “Public networks” if you wish to attach to a public network and change to “On.” Note that we typically do not recommend VSIs with public IP addresses for security reasons.

Now check the box “I agree to the ...” And press “create Instance” in lower right-hand side.

Your VSI is now being provisioned.

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Managing LPARs in PowerVS



Change CPU and Memory

Resource list / PowerVS-SLS Active [Add tags](#)

Details Actions...

Virtual server instances

Virtual server instances
Learn more about [Getting started](#) and [Creating a virtual server instance](#).

SSH keys
Storage volumes
Boot images
Subnets

Search Refresh Create instance +

Name	IPs	Image	CPUs	RAM	Status		
bp-test88	192.168.131.205, 10.150.1.42	7200-04-01	1 cores	2 GB	Active	✓	⋮
sls-demo-test01	192.168.131.206, 10.150.1.104	7100-05-05	0.5 cores	4 GB	Active	✓	⋮
IBMi-test	10.0.0.123	IBMi-72-09-003	0.25 cores	8 GB	Active	✓	⋮

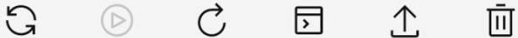
Items per page: 10 1-3 of 3 items 1 of 1 ◀ ▶

From the main IBM Cloud dashboard, click on **Services** and then on the service you would like to manage.

Change CPU and Memory

sls-demo-test01:
details

Active



Shutdown

Server details

Name	sls-demo-test01
ID	275ef8d7-a49d-41fe-8ad0-489b98e4484f
IPs	192.168.131.206 10.150.1.104
Date created	April 20, 2020, 10:01:55 AM
Machine type	s922

Processor type	Uncapped shared process
Size	0.5 cores 4 GB
Boot image	7100-05-05
Pin virtual server	Off
Pin type	None

[Edit details](#)



Click on the virtual server instance (VSI) you would like to manage, then click on **Edit details**.

Change CPU and Memory

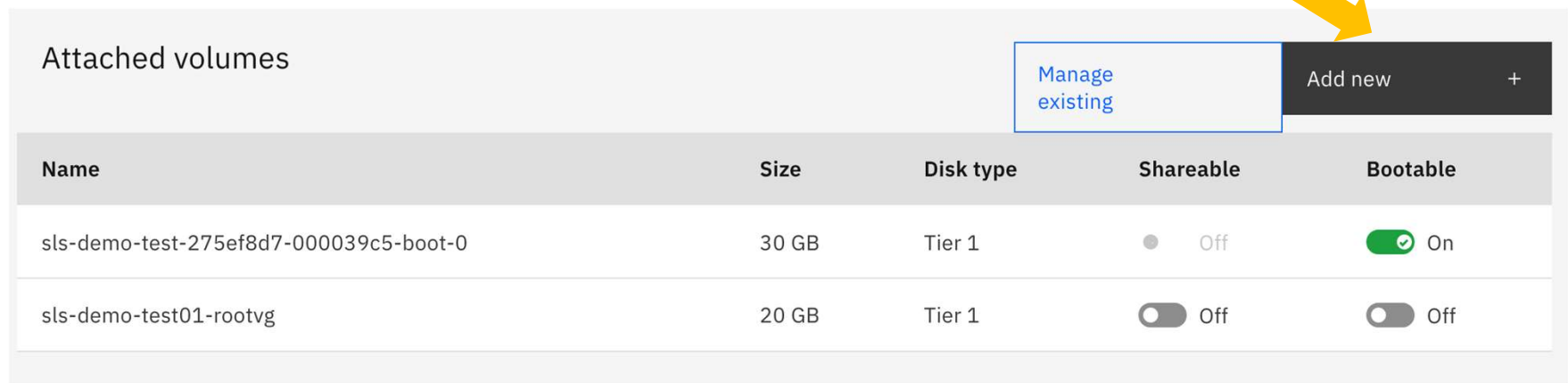
Edit server details

Processor type can only be edited if your instance is stopped. Changes will be reflected in your monthly billing.

Name	VM pinning ⓘ
sls-demo-test01	Off
Processor	
<input type="radio"/> Dedicated	
<input checked="" type="radio"/> Shared uncapped	
<input type="radio"/> Shared capped	
Cores (CPUS)	Memory (GB)
0.6	8

Change the CPU and/or memory and click **Complete and Order** (button not shown).

Add Disk



Attached volumes

Manage existing

Add new +

Name	Size	Disk type	Shareable	Bootable
sls-demo-test-275ef8d7-000039c5-boot-0	30 GB	Tier 1	<input type="checkbox"/> Off	<input checked="" type="checkbox"/> On
sls-demo-test01-rootvg	20 GB	Tier 1	<input type="checkbox"/> Off	<input type="checkbox"/> Off

After clicking on the VSI you would like to manage, scroll down to the disk section. Click on **Add new**.

Add Disk

New storage volume

Create and attach new storage volumes. Volumes can be shareable or bootable but not both.

Name

demo

Shareable



Size (10GB-2TB)

100

Quantity ⓘ

1

Specify the name, size and quantity of the new volume(s). Note that you can make a volume shareable between VSIs – for example, for a PowerHA cluster with local shared disk. Local shared disks between 2 VSIs work for AIX and **not for IBM i**.

Manage Network Interfaces

Network interfaces


Public networks

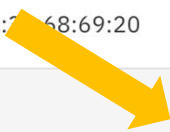
On

Name	IP address	External IP	Gateway	MAC address	VLAN ID	CIDR
public-192_168_131_200-29-VLAN_2053	192.168.131.206	161.156.153.190	192.168.131.201	fa:5c:72:68:69:20	2053	192.168.131.200/29

Private networks

Attach existing network +

Name	IP address	Gateway	MAC address	VLAN ID	CIDR	
slscloud-private	10.150.1.104	10.150.1.1	fa:5c:39:68:69:21	381	10.150.1.0/24	



After clicking on the VSI you would like to manage, scroll down to the network section. Click on **Attach existing network**. This option refers to adding a new interface to the VSI **on** an existing network.

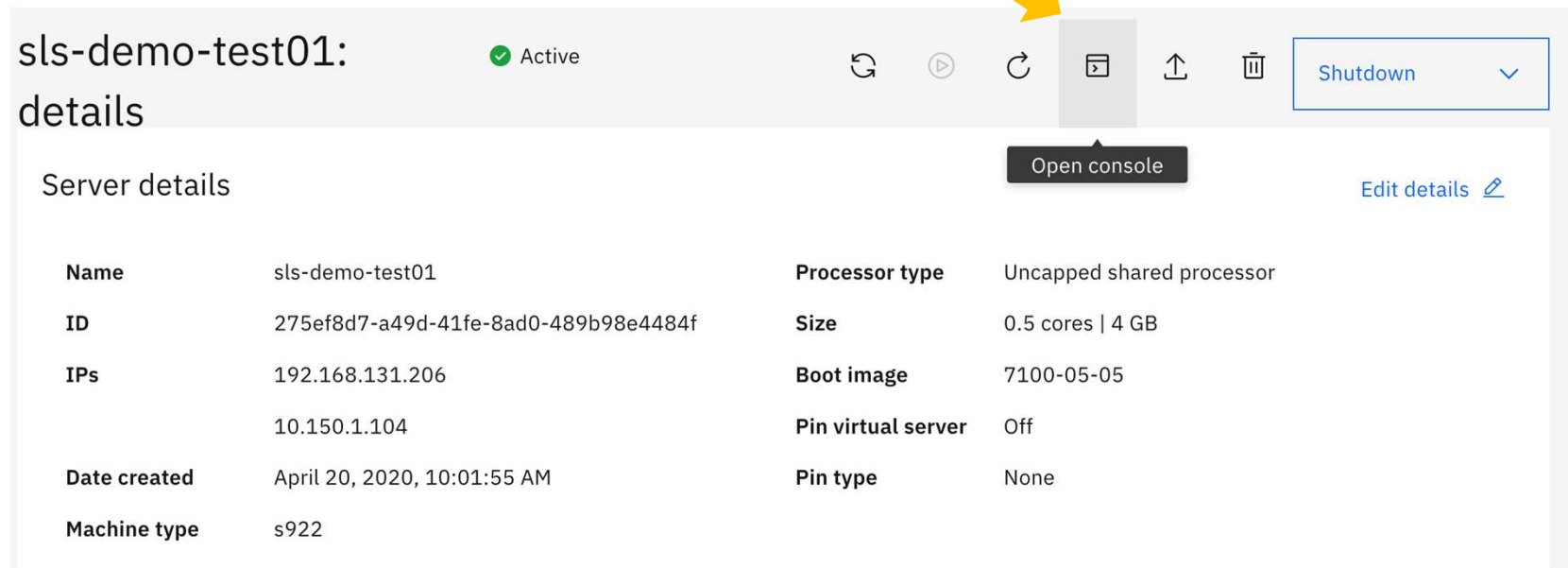
Manage Network Interfaces

The image shows two screenshots from a cloud management interface. The left screenshot is a dialog box titled "Attach an existing network" with the instruction "Attach an existing network and specify an IP address." It features a dropdown menu for "Existing networks" with "slscloud-private" selected, an "IP range" field containing "10.150.1.2-10.150.1.254", and radio buttons for "Automatically assign IP address from address range" (selected) and "Specify an IP address". At the bottom are "Cancel" and "Attach" buttons. A yellow arrow points to the "slscloud-private" dropdown. The right screenshot shows a "Resource list" for "PowerVS-SLS" (Active) with a menu of options: "Virtual server instances", "SSH keys", "Storage volumes", "Boot images", and "Subnets". A yellow arrow points to the "Subnets" option.

Select the correct existing network. You can specify an IP address from the pre-defined range for that network, or allow the cloud to assign an available IP address from the pre-defined range.

Note that to add a whole new subnet, you would use the option from the main screen associated with the **service**, not a specific VSI.

Open Console



The screenshot shows the details page for a virtual server instance named 'sls-demo-test01'. The instance is in an 'Active' state. A yellow arrow points to the 'Open console' button in the top toolbar. Below the toolbar, the 'Server details' section is displayed as a table.

Server details			
Name	sls-demo-test01	Processor type	Uncapped shared processor
ID	275ef8d7-a49d-41fe-8ad0-489b98e4484f	Size	0.5 cores 4 GB
IPs	192.168.131.206 10.150.1.104	Boot image	7100-05-05
Date created	April 20, 2020, 10:01:55 AM	Pin virtual server	Off
Machine type	s922	Pin type	None

After clicking on the VSI you would like to manage, click on the icon for **Open console**. The console will open in a separate browser window. Note that this is not a network session to the VSI; this is the equivalent of opening a console to an LPAR/VM on the HMC.

Open Console

The screenshot shows a web browser window with the title "noVNC - Mozilla Firefox" and the URL "https://tor01-console.power-iaas.cloud.ibm.com/console/index.html?path=%3Ftoken%3D126fbb2a-e0c0-4403-be66-0dea233dfb96". The main content is a terminal window with a black background and green text. The terminal displays a "Sign On" screen with the following information:

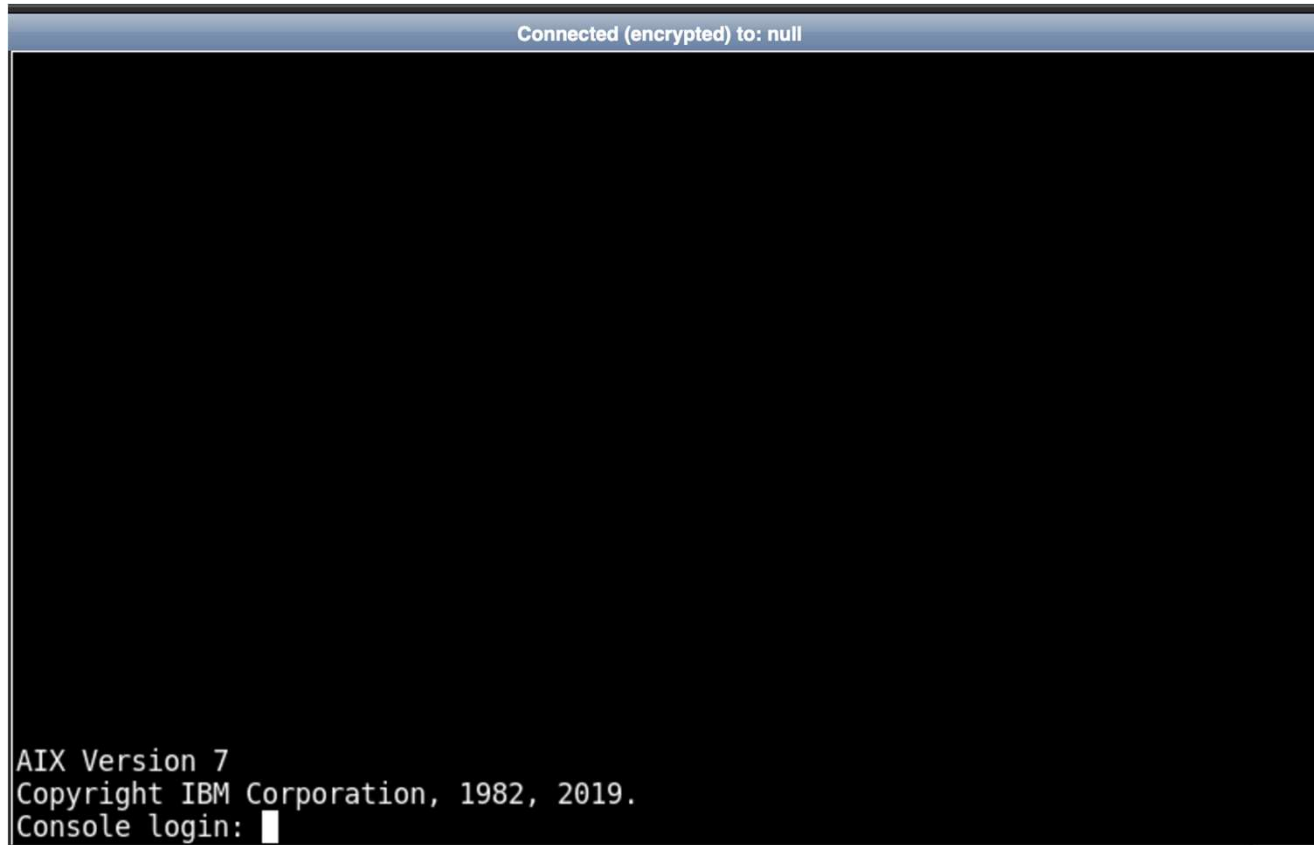
```
Sign On
System . . . . . : I9NFSVM
Subsystem . . . . . : QCTL
Display . . . . . : DSP01

User . . . . . : QSECOFR
Password . . . . . :

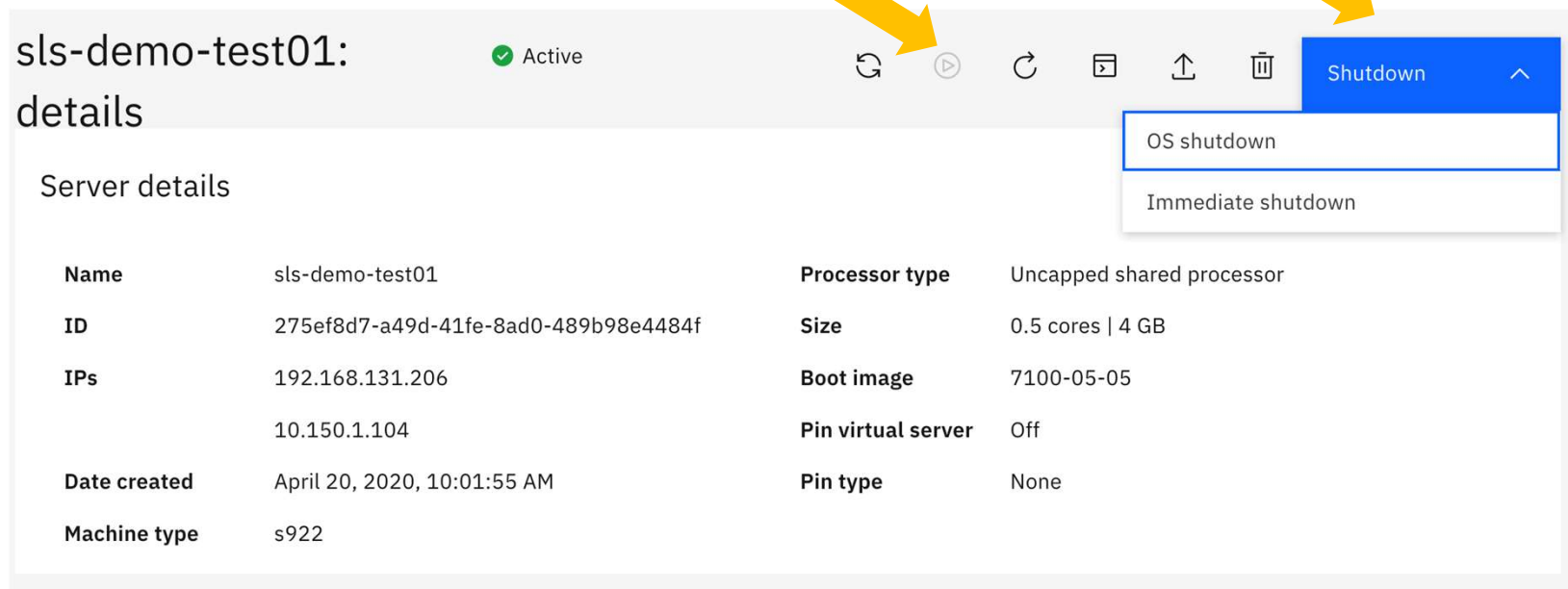
Program/procedure . . . . . :
Menu . . . . . :
Current library . . . . . :
```

At the bottom of the terminal, there is a copyright notice: "(C) COPYRIGHT IBM CORP. 1980, 2015." and a date/time stamp: "MA* A 07/053". Below the terminal is a keyboard layout with function keys (PF1-PF12), Enter, Clear, PA1, PA2, Attn, SysReq, Insert, Delete, Backt..., FldExit, NewLi..., and Next...

Open Console



Start and Shut down



The screenshot displays the Azure portal interface for a virtual server instance named 'sls-demo-test01'. The instance is in an 'Active' state, indicated by a green checkmark. The 'Shutdown' menu is open, showing two options: 'OS shutdown' and 'Immediate shutdown'. A yellow arrow points to the 'Start' icon (a play button) in the toolbar, and another yellow arrow points to the 'Shutdown' button. Below the toolbar, the 'Server details' section is visible, containing a table of instance properties.

Server details			
Name	sls-demo-test01	Processor type	Uncapped shared processor
ID	275ef8d7-a49d-41fe-8ad0-489b98e4484f	Size	0.5 cores 4 GB
IPs	192.168.131.206 10.150.1.104	Boot image	7100-05-05
Date created	April 20, 2020, 10:01:55 AM	Pin virtual server	Off
Machine type	s922	Pin type	None

After clicking on the VSI you would like to manage, you can use the **Shutdown** menu option, if the VSI is running. If the VSI is down, you can use the **Start** icon.

Start and Shut down

Virtual server instances
Learn more about [Getting started](#) and [Creating a virtual server instance](#).

Search Refresh Create instance +

Name	IPs	Image	CPUs	RAM	Status	
bp-test88	192.168.131.205, 10.150.1.42	7200-04-01	1 cores	2 GB	Active	✓ ⋮
sls-demo-test01	192.168.131.206, 10.150.1.104	7100-05-05	0.5 cores	4 GB	Active	✓ ⋮
IBMi-test	10.0.0.123	IBMi-72-09-003	0.25 cores	8 GB	Active	⋮

Items per page: 10 ▾ 1-3 of 3 items 1 ▾

- OS shutdown
- Immediate shutd...
- Restart
- Open console
- Delete

VSI can also be shut down or started from the main service list.

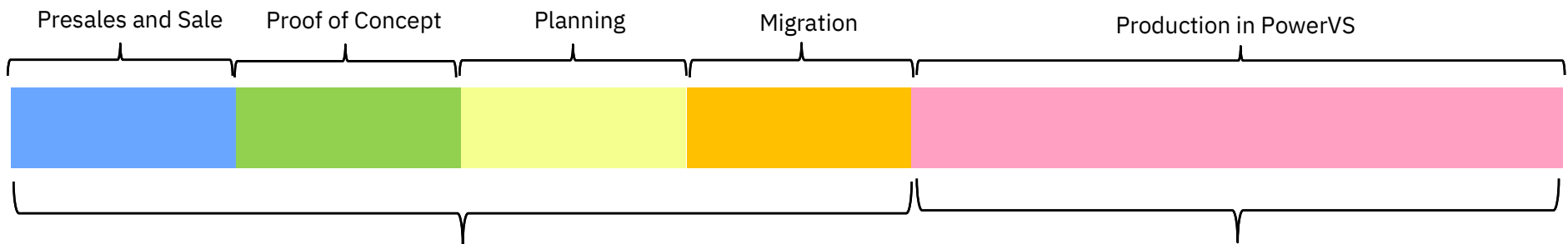
IBM Lab Services

Infrastructure expertise to help you build the foundation of a smart enterprise

Lab Services Offerings



Lifecycle of Running Power Workloads in Power Virtual Server



Stage 1 – Moving Workloads to Cloud

- Workload evaluation
- Migration planning
- **Moving AIX or IBM i workloads**
- **SAP HANA**
- Skills transfer on running AIX or IBM i in IBM Cloud

Stage 2 – Running Workloads in Cloud

Existing AIX and IBM i offerings and assets/toolkits:

- Backups
- HA/DR
- Performance
- Security

* Stages will vary. Overall services may be a collaboration between IBM Lab Services, IBM Cloud and/or IBM GTS.

Cloud Design Workshop

Overview

The Cloud Design Workshop for Power Systems can help you design a plan for private, public or hybrid multi-cloud implementation. It is designed to develop a robust blueprint for implementing Power cloud solution, either on-premises or in a public cloud.

Power to Cloud Rewards

IBM Systems
Lab Services

Target Audience

- Clients that are running Power Systems and considering a private, public or hybrid cloud.

Why Use This Service?

- Are you running AIX, IBM i or Linux on Power and want to implement a private cloud or move to a public cloud?
- Are you interested in cloud-native solutions and want to deploy self-service provisioning for DevOps?
- Are you considering using PowerVC, Ansible or VMWare vRealize for operations process automation?

Benefits

- The cloud design service is customized to a specific client's environment and goals for multiple cloud scenarios.
- The service identifies key stakeholders across compute, storage and networking teams and best practices for their cooperating for cloud provisioning.

Service Provided

- Advise on available Power private cloud solutions, including PowerVC, OpenShift and Ansible.
- Advise on available Power public cloud solutions, including IBM Cloud with Power Virtual Servers for AIX and IBM i.
- Advise on available Power hybrid cloud solutions, including with OpenShift and IBM Cloud Pak for Multi-Cloud Management.
- Analyze current virtualization and provisioning processes.
- Analyze current server, storage and network environment.
- Analyze current software stacks and virtual machine images.
- Develop use cases for cloud implementation.
- Plan possible cloud workloads and user expectations.
- Plan hardware and software environment for selected cloud implementation.

Deliverables

- Workshop creates a blueprint design document for later deployment of a selected cloud environment.
- Recommendations on how to deploy the selected Cloud solution, typically - if a private cloud - using using PowerVC for provisioning of servers, storage and networking resources.
- Skills enablement and guidance on best practices for successful cloud deployments.

Contacts

- Contact us at ibmsls@us.ibm.com or your local Lab Services team

Power Virtual Server Migration in IBM Cloud

Overview

This service will assist you with migrating your on-premise Power workloads to Power Virtual Server (PowerVS) in IBM Cloud. It will include **planning** for and **moving** Power workloads to the cloud, as well as configuring key areas such as **networking** and **backups**.

Power to Cloud Rewards

IBM Systems
Lab Services

Target Audience

- Clients running AIX, IBM i or SAP HANA considering public cloud for some of their workloads.

Why Use This Service?

- Are you considering Power in the cloud or a pay-as-you-go consumption model for Power?
- Are looking for the flexibility of a hybrid cloud model for AIX, IBM i or SAP HANA?
- Are you struggling to find AIX or IBM i skills for on-premise workload management?

Benefits

- Successful migration of Power workloads to IBM Cloud using best practices.
- The flexibility of the pay as you go model coupled with the proven reliability of Power Systems.

Service Provided

- Perform required **planning**, including requirements and use cases.
- Perform **migration** of AIX, IBM i or SAP HANA VMs (LPARs) to IBM Cloud
- Configure basic **networking** for Power workloads in the cloud.
- Implement a **backup** strategy.
- Demonstrate deployment of new Power workloads.
- Demonstrate management of CPU, memory and disk resources.

Duration

- This service is estimated at 80 hours.

Power to Cloud points required

- 10,000.
- Service also available through other Lab Services funding options.

Deliverables

- Up to two (2) client AIX, IBM i or SAP HANA LPARs/VMs up and running in IBM Cloud with basic networking in the OS and backups configured.
- Additional LPARs/VMs can be migrated with follow-on billable services.
- This service does not include any Lab Services toolkits or assets.
- HA/DR configuration is not part of this service, but is available through other Power to Cloud options or billable services.
- Skills transfer on administering AIX, IBM i or SAP HANA in the cloud as part of engagement.
- Power Virtual Server engagement summary.

Contacts

- Contact us at jbmsls@us.ibm.com or your local Lab Services team

SAP HANA on Power Implementation

Overview

If you are planning to deploy SAP HANA on the industry's most flexible and resilient platform in the industry, then use this service to help you succeed faster. Use IBM Systems Lab Services consultants to ensure your SAP HANA on Power systems implementation is designed to leverage SAP, IBM and industry best practices.

Power to Cloud Rewards

IBM Systems
Lab Services

Target Audience

- Clients that are deploying SAP HANA on IBM Power Systems, especially on Power 950 and 980 servers that include Power to Cloud Rewards.

Why Use This Service?

- Are you deploying a production SAP HANA landscape and require a certified installation of SAP HANA on Power?
- Do you have the optimal high availability tools for your SAP HANA database and infrastructure?
- Are your provisioning policies and practices aligned with industry best practices?

Benefits

- The SAP HANA implementation service results in a certified install of SAP HANA on Power.
- IBM consultants advise on the best practices for database and infrastructure resilience and performance.

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Service Provided

- Advise the client on planning and identification of data center, infrastructure, storage, networking and database requirements.
- Implement PowerVM virtual I/O servers, NPIV and SEA adapters.
- Implement Linux on Power (SUSE or Red Hat).
- Implement SAP HANA instance using Tailored Datacenter Integration (TDI) methodology.
- Perform verification test of filesystem performance and SAP HANA landscape for required SAP environment certification.
- Implement SAP HANA replication or other selected resiliency tools.

Deliverables

- Implementation of SAP HANA on Power.
- Detailed documentation suitable for ongoing management and support of the system.
- Guidance on best practices for performance and resilience.
- Skills enablement for managing SAP HANA on Power.

Contacts

- Contact us at ibmsls@us.ibm.com or your local Lab Services team
- Lab Services lead consultant: Kurt Koehle koehle@us.ibm.com

