

Connector Deployment Guide - Proxmox

Cloudbrink's **Hybrid Access as a Service** enables enterprises to deliver best-in-class quality of experience and security for their end users in the new mobile-first and cloud-native world. Cloudbrink achieves this through three simple components:

1. The Brink App is installed on end user devices, with all major platforms supported.
2. Enterprise access points are automatically created via machine learning in close proximity to the end user, enabling Cloudbrink's revolutionary overlay protocol to overcome the most challenging last-mile network conditions, delivering best-in-class, hi fidelity quality of experience for the end-user no matter the network they are connected to.
3. To provide end-to-end security, a Cloudbrink Connector is deployed in the customer's data center or cloud environment, creating a dark tunnel connection from the end user to their applications.

Introduction

This document will guide in deploying Cloudbrink Connector(s) in Proxmox.

Prerequisites

- Proxmox Hypervisor Deployed
- Proxmox Connector Image
- Cloudinit ISO - Generated here: <https://cloudinit.cloudbrink.pro>
- IP, Netmask, Gateway, and DNS information for Cloudbrink Connector VM(s)
- Outbound ports 443, 9090 (TCP) and 9993/9994 UDP to Cloudbrink SaaS and Edges



Connector VM Requirements

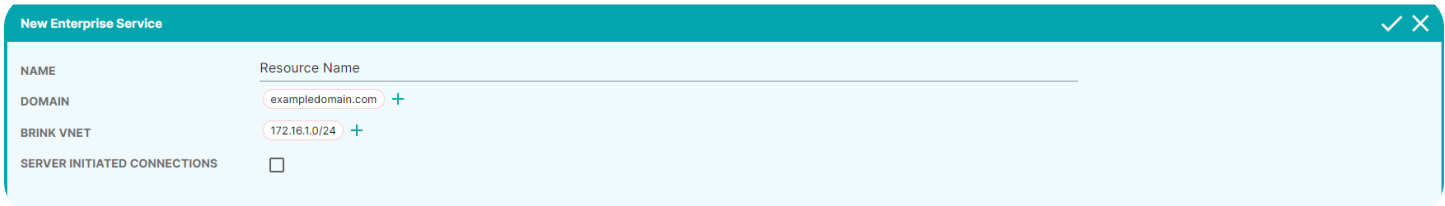
Overall Connector Throughput	vCPU	RAM	Disk	Expected no. of concurrent user sessions
0.5-to-2 Gbps	4	8GB	50GB	400 sessions; 5Mbps/session avg throughput
2-to-4 Gbps	8	16GB	50GB	800 sessions; 5Mbps/session avg throughput
4-to-7 Gbps	16	32GB	50GB	1400 sessions; 5Mbps/session avg throughput

Create Connector Portal Configuration

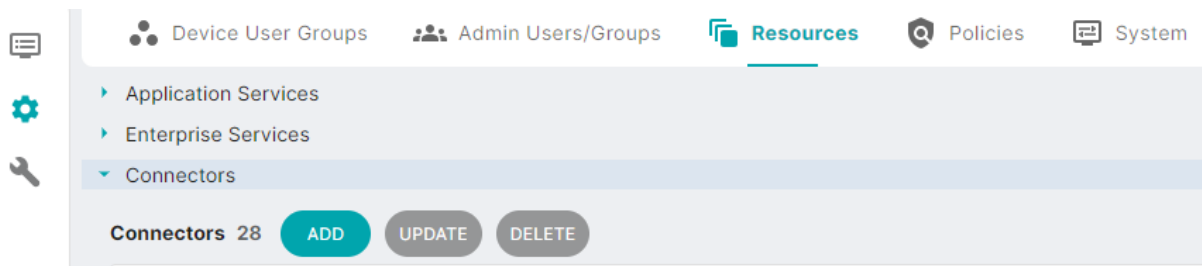
When deploying a connector on any platform, you need to pre-stage the configuration in your Tenant first. Start by publishing at least 1 Enterprise Service.

1. Navigate to **Configure > Resources > Enterprise Services**.


2. Expand the window and click the  symbol in the bottom right corner.
3. Provide a Name, Domain and Brink VNET. Multiple Domains or Brink VNET's may be specified for the Enterprise Service.
 - a. Server initiated connections allow tools like InTune or JAMF to initiate a connection to users running Cloudbrink
 - b. By default, only inbound traffic from Agents is allowed.
4. Once complete click the  check mark in the upper right corner.




5. Navigate to **Configure > Resources > Connectors**, and select ADD from the menu.



Fill in the necessary fields.

- a. **Name:** Provide a name for the Connector
 - b. **Hosting Environment:** Choose the platform. In this case Private for Proxmox
 - c. **Deployment Mode:** Choose non-ha for stand-alone appliance or active-standby if you plan to deploy them in a pair
 - d. **Region:** private
 - e. **DNS Servers:** Provide a primary and secondary DNS server
 - f. **Deployment Mode:** Select if you'd like to use DHCP or SourceNAT for client connections
 - g. **Enterprise Resources:** Add the enterprises resources you would like to access through the connector
6. Click the  in the upper right corner when finished.

The screenshot shows the 'Connectors' configuration page. At the top, there's a teal header with a back arrow and a checkmark. The form is organized into sections: NAME (Connector Name), HOSTING ENVIRONMENT (Private), DEPLOYMENT MODE (non-ha), REGION (private), MGMT IP, DNS Servers (DNS PRIMARY IP: 10.10.0.1, DNS SECONDARY IP: 1.1.1.1), User IP Management (DEPLOYMENT MODE: Source NAT), Enterprise Resources (Resource Name), and VLAN Tagging. A key symbol is visible in the top right corner.

7. After you have saved your Connector configuration click the  key symbol in the upper right corner to generate your Connector Key. Save this key, as you will need this later in the deployment process.
 - a. If generating an HA Pair, click the key again to generate a second separate key.

Deploy Connector Services from Proxmox:

1. Download and extract the connector file provided from Cloudbrink.
2. Using your preferred copy method, copy only the .qcow2 disk file into the template directory in Proxmox. Below is an example using SCP from the source machine copying into the proxmox host.

```
scp ~/Downloads/connector-ubuntu-2004-amd64-v13.4.21/image/connector-latest.qcow2 root@proxmox:~/var/lib/vz/template/qcow/connector-latest.qcow2
```

```
connector-latest.qcow2
100% 2997MB 15.0MB/s 03:20
```

- SSH to the proxmox host and verify the md5sum to ensure it matches.

Note: This will vary depending on version:

```
root@proxhost:~# md5sum /var/lib/vz/template/qcow/connector-latest.qcow2
3e666c2284ac2a398243625400043aa9  /var/lib/vz/template/qcow/connector-latest.qcow2
```

- Deploy a new VM in Proxmox
- Name it appropriately. To make sure it is always available after host restarts, ensure "Start at boot" is checked

The screenshot shows the 'Create: Virtual Machine' dialog box in Proxmox VE, with the 'General' tab selected. The dialog has a dark theme and a close button in the top right corner. The 'General' tab is highlighted in blue. Below the tabs, there are several fields: 'Node' is set to 'demo-bee', 'VM ID' is '120', and 'Name' is 'CB-Connector-Proxmox'. To the right of these is a 'Resource Pool' dropdown. Below these fields, there is a 'Start at boot' checkbox which is checked. To the right of this are three more fields: 'Start/Shutdown order' set to 'any', 'Startup delay' set to 'default', and 'Shutdown timeout' set to 'default'. At the bottom left, there is a 'Tags' section with 'No Tags' and a '+' button. At the bottom right, there is an 'Advanced' checkbox which is checked, and 'Back' and 'Next' buttons. A 'Help' button is at the bottom left.

Create: Virtual Machine

General OS System Disks CPU Memory Network Confirm

Node: demo-bee Resource Pool:

VM ID: 120

Name: CB-Connector-Proxmox

Start at boot: ☒ Start/Shutdown order: any

Startup delay: default

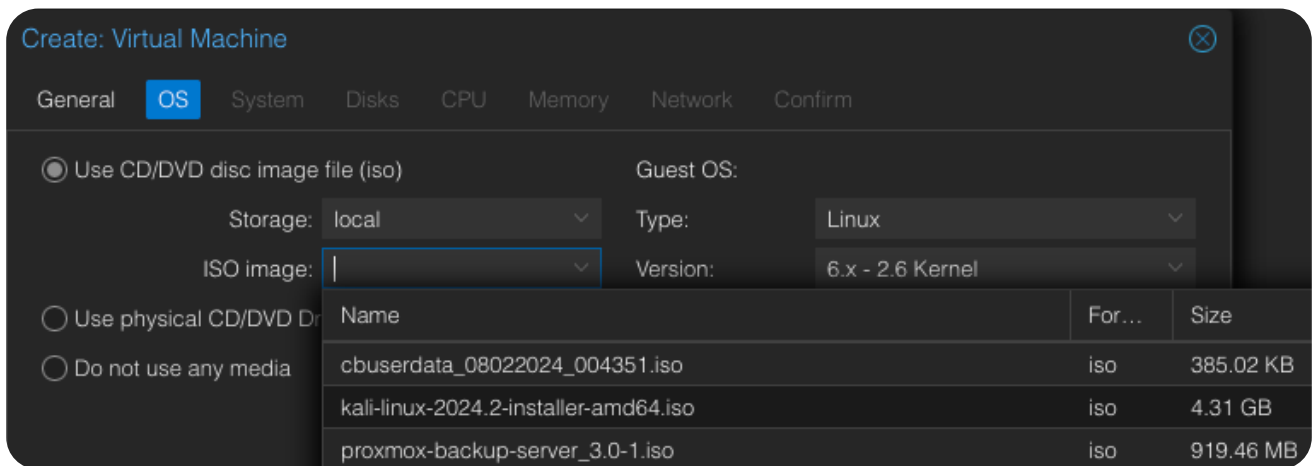
Shutdown timeout: default

Tags

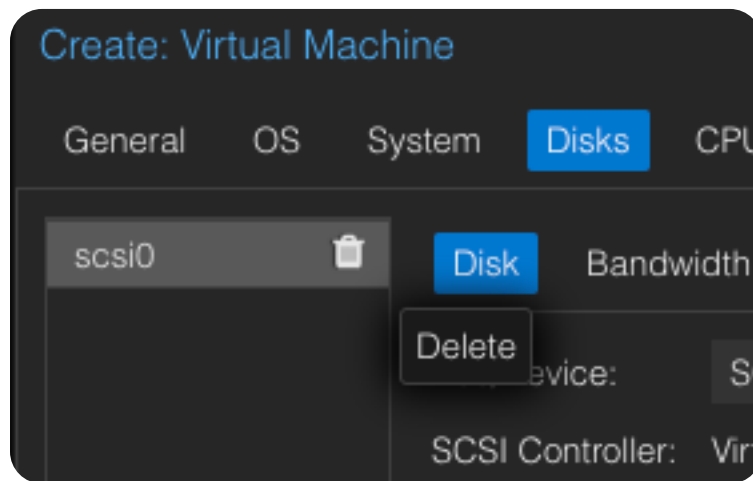
No Tags +

? Help Advanced ☒ Back Next

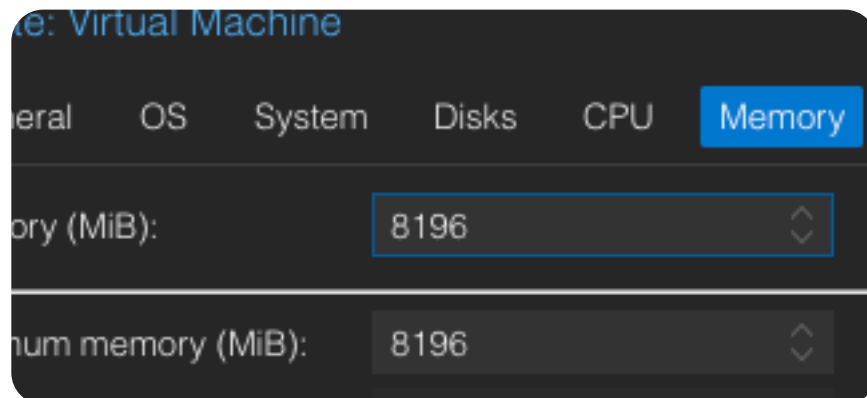
- Under OS, select the Cloudinit .iso file you created earlier



- Under disks, remove the existing scsi0 disk



- Configured the CPU based on the desired performance detailed in the above table. Minimum 4 CPU's should be configured. For optimal performance, consider changing the CPU type to "host".



9. On the network tab, ensure the "Firewall" box is unchecked.

The screenshot shows the 'Create: Virtual Machine' dialog with the 'Network' tab selected. The 'Firewall' checkbox is unchecked. Other settings include Bridge: vmbr0, Model: VirtIO (p), VLAN Tag: no VLAN, and MAC address: auto.

Field	Value
Bridge:	vmbr0
Model:	VirtIO (p)
VLAN Tag:	no VLAN
MAC address:	auto
Firewall:	<input type="checkbox"/>

10. Continue to the confirmation screen. Ensure "Start after created" is not checked. Confirm all other settings as well. Note the "vmid" number that will be created as you will need that in the next step.
11. From an SSH or Console session to the proxmox host, run the below command to copy the disk image to the VM.

```
qm importdisk <vmid> /var/lib/vz/template/qcow/connector-latest.qcow2 <storage>
```

Example: `qm importdisk 123 /var/lib/vz/template/qcow/connector-latest.qcow2 local-lvm`

12. Once the disk image is completed, navigate back to the Proxmox UI. Select your VM, then select Hardware, and double click on the "Unused Disk".

The screenshot shows the 'Virtual Machine 123 (CB-Proxmox-Connector) on node 'demo-bee'' configuration page. The 'Hardware' tab is selected. The 'Unused Disk 0' is highlighted, showing its path as 'local-lvm:vm-123-disk-0'.

Component	Value
Memory	8.00 GiB
Processors	4 (1 sockets, 4 cores) [host]
BIOS	Default (SeaBIOS)
Display	Default
Machine	Default (i440fx)
SCSI Controller	VirtIO SCSI single
CD/DVD Drive (ide2)	local:iso/cbuserdata_08082024_173127.iso,media=cdrom,size=370K
Network Device (net0)	virtio=BC:24:11:51:DD:78,bridge=vmbr0
Unused Disk 0	local-lvm:vm-123-disk-0

13. Click "Add" to make the disk active.

Add: Unused Disk

Disk | Bandwidth

Bus/Device: SCSI 0 Cache: Default (No cache)

SCSI Controller: VirtIO SCSI single Discard: ☐

Disk image: local-lvm:vm-123-disk-C IO thread: ☒

Help Advanced Add

14. Select the disk, and towards the top, click "Disk Action" and "Resize".

Virtual Machine 123 (CB-Proxmox-Connector) on node 'demo-bee' No Tags

Summary Console Hardware Cloud-Init Options Task History Monitor Backup Replication

Add Detach Edit Disk Action Revert

Memory Processors BIOS Display Default Machine Default (i440fx) SCSI Controller VirtIO SCSI single CD/DVD Drive (ide2) local:iso/cbuserdata_08082024_173127.iso,media=cdrom Hard Disk (scsi0) local-lvm:vm-123-disk-0,iothread=1,size=10G Network Device (net0) virtio=BC:24:11:51:DD:78,bridge=vmbro

Move Storage Reassign Owner Resize

15. Under size increment, type in "40" to increase the disk size from 10 GiB to 50 GiB in total

Resize disk

Disk: scsi0

Size Increment (GiB): 40

Resize disk

16. Select "Options" on the left hand side panel. Then double click on "Boot Order". Check the box for the scsi0 disk drive, and uncheck the box for the virtio network interface.

Virtual Machine 123 (CB-Proxmox-Connector) on node 'demo-bee' No Tags

Summary Console Hardware Cloud-Init **Options** Task History Monitor Backup Replication Snapshots Firewall Permissions

Edit Revert

Name CB-Proxmox-Connector

Start at boot No

Start/Shutdown order order=any

OS Type Linux 6.x - 2.6 Kernel

Boot Order ide2, net0

Use tablet for pointer Yes

Hotplug Disk, Network, USB

ACPI support Yes

KVM hardware virtualization Yes

Freeze CPU at startup No

Use local time for RTC

RTC start date

SMBIOS settings (type1)

QEMU Guest Agent

Protection

Spice Enhancements

VM State storage

Edit: Boot Order

#	Enabled	Device	Description
1	<input checked="" type="checkbox"/>	ide2	local:iso/cbuserdata_08082024_173127.iso,media=cdro...
2	<input type="checkbox"/>	net0	virtio=BC:24:11:51:DD:78,bridge=vmbro
3	<input checked="" type="checkbox"/>	scsi0	local-lvm:vm-123-disk-0,ioread=1,size=50G

Drag and drop to reorder

Help OK

17. Power on the VM.

Deployment Verification

The following steps may be taken to verify the connector is online and able to successfully pass traffic.

- Navigate to the admin portal, then **Configuration > Resources > Connectors** > The newly created connector should show as "Active," with its IP address in green. If an HA pair has been deployed, both IPs will be displayed, with the "Active" IP in green.
- If the connector does not progress to the "Active" state from "Configured", the most common issues are due to outbound connectivity not establishing, or with and invalid or expired OTP being used.
- If after verifying those things have been configured correctly, please reach out to support at the address below to assist.

us-west-1	N/A	172.31.16.225	Active
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Support Information

We would love to hear from you! For any questions, concerns, or feedback regarding deploying Proxmox connectors, please reach out at support@cloudbrink.com