



VMware Horizon 7—Associate Instant Clone Virtual Machines

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1. Purpose and Assumptions

This document contains instructions on how to conduct day-to-day operations after implementing the design described in the *VMware Horizon 6 Architecture Design* document.

This guide assumes that an administrator using these procedures is familiar with VMware® Horizon™ 6 concepts and terminology. The guide is not intended for administrators who do not have VMware Horizon 6 experience.

2. Log in to the vSphere MOB

To begin with the Instant Clone desktop itself, browse to the MOB (Managed Object Browser) of your vCenter (<https://vcenter-fqdn/mob>) login with valid credentials (domain\user) and do the following:

3. Locate the Instant Clone VM

1. Under Methods, click **RetrieveServiceContent**
2. On the new window that pops up, click **Invoke** which will parse all of the Service Content on the vCenter server
3. Once the *ServiceContent* table is populated, find the *rootFolder* and click on the **moid** (e.g., it is *group-d1*)
4. Locate the *childEntity* Name and click on the **moid** (e.g., it is *datacenter-2*)
5. Here we have a few options to locate the desired VM:
 - a. Choose the Datastore the VM is stored on:
 - i. Under the *datastore* Name, click on the **moid** (e.g. *datastore-937*) associated with the datastore that the VM is stored on. The name of the datastore will be in parentheses. You may have to choose (*more...*) to expand the list.
 - ii. Scroll down to the *vm* Name and locate the VM. You may have to choose (*more...*) to expand the list. Click on the **moid** (e.g. *vm-1233*) of the VM
 - b. Choose the VMFolder that the VM is located in:
 - i. Under the *VMFolder* Name, click on the **moid** (e.g. *group-v3*) associated with the folder that the VM is contained in. The name of the folder will be in parenthesis. You may have to choose (*more...*) to expand the list.
 - ii. Scroll down to *childEntity* and locate the subfolder for the VM. You may have to choose (*more...*) to expand the list. Click on the **moid** (e.g. *group-v87*) of the subfolder.
 1. Repeat until you reach the lowest subfolder for the VM
 - iii. Scroll down to *childEntity* and locate the VM. You may have to choose (*more...*) to expand the list. Click on the **moid** (e.g. *vm-1233*) of the VM.
 - c. Browse directly to the VM using the moid, e.g., **Error! Hyperlink reference not valid.**

Note: You would have to already have obtained the moid using another method (API call, PowerCLI, etc...) in order to browse directly to it with Option C.

6. Locate the *config* Name and click on **config** under *Value*.
7. Expand all of the *Values* on the row named **extraConfig** by clicking (**more...**)
8. Locate the *extraconfig["cloneprep.replica.uuid"]* and **right-click to Open link in a new tab**
 - a. Make a note of the value (e.g. **50093ca0-82e8-02ef-49e8-d30164d8eae**f) as you will reference this throughout the process. This is the InstanceUUID of the internal replica associated with this instant clone. Close this tab (or hit the back button if you didn't open a new tab)
9. Back on the **config** of your Instant Clone VM, locate the *extraconfig["cloneprep.internal.template.uuid"]* and **right-click to Open link in a new tab**
 - a. Make a note of the value (e.g. **5009611e-20c8-886c-5ea8-03ba36e168a**7) as you will reference this throughout the process. This is the InstanceUUID of the internal template associated with this instant clone. Close this tab (or hit the back button if you didn't open a new tab)
10. Back on the **config** of your Instant Clone VM, locate the *extraconfig["cloneprep.client.uuid"]* and **right-click to Open link in a new tab**
 - a. Make a note of the value (e.g. **62e63078-4014-416f-8692-430b3513549**1) as you will reference this throughout the process. This is the GUID of the Horizon Pod associated with this instant clone.
 - b. Close this tab (or hit the back button if you didn't open a new tab)

4. Identify Associated Parent VM

1. Open your vSphere client, and make note of which ESXi host your Instant Clone VM is currently hosted on (e.g. ESXi01)
2. Open the Related Objects to that ESXi host, and make a note of any Instant Clone Parent (e.g. **cp-parent-7a79136c-45e6-40a1-a966-831add598003** and **cp-parent-707f8563-dfae-483c-82e1-45d7d2eaba4d**)
3. In your vSphere MOB window, locate the chosen parent VM, using Step 5 from the "Locate the chosen Instant Clone VM".
4. Locate the *config* Name and click on **config** under *Value*.
5. Expand all of the *Values* on the row named **extraConfig** by clicking (**more...**)
6. Locate the *extraconfig["cloneprep.replica.uuid"]* and **right-click to Open link in a new tab**
 - a. Make a note of the value (e.g. **50093ca0-82e8-02ef-49e8-d30164d8eae**f) as you will reference this throughout the process. This is the InstanceUUID of the internal replica associated with this Parent VM.

Note: *If this value matches that of your Instant Clone VM, then this parent is associated with your Instant Clone VM. If not you can start this process over at Step 2 with the next parent vm on the same ESXi host.*

Close this tab (or hit the back button if you didn't open a new tab)

7. Back on the **config** of your Parent VM, locate the *extraconfig["cloneprep.internal.template.uuid"]* and **right-click to Open link in a new tab**
 - a. Make a note of the value (e.g. **5009611e-20c8-886c-5ea8-03ba36e168a**7) as you will reference this throughout the process. This is the InstanceUUID of the internal template

associated with this parent vm.

Note: *If this value matches that of your Instant Clone VM, then this parent is associated with your Instant Clone VM. If not you can start this process over at Step 2 with the next parent vm on the same ESXi host.*

Close this tab (or hit the back button if you didn't open a new tab)

8. Back on the **config** of your Parent VM, locate the `extraconfig["cloneprep.master.metadata"]` and **right-click** to **Open link in a new tab**
 - a. Make a note of the value (e.g. `cbr%3Dtrue%26disks%3D%5B%5D%26domain.fqdn%3Dhlab.com%26master.uuid%3D5009d6a4-7120-ad7e-15cf-08ec68cb09b7%26ss.id%3D9`) as you will reference this throughout the process. This is the InstanceUUID and snapshotId of the original Master VM that you created and that associated with this parent vm.

Note: *If this value matches that of your Instant Clone VM, then this parent is associated with your Instant Clone VM. If not you can start this process over at Step 2 with the next parent vm on the same ESXi host.*

Close this tab (or hit the back button if you didn't open a new tab)

9. Back on the **config** of your Parent VM, locate the `extraconfig["cloneprep.client.uuid"]` and **right-click** to **Open link in a new tab**
10. Make a note of the value (e.g. `62e63078-4014-416f-8692-430b35135491`) as you will reference this throughout the process. This is the GUID of the Horizon Pod associated with this parent vm.

Note: *This value should match the "cloneprep.client.uuid" value of your Instant Clone VM (Though this value does not mean it is directly associated with your Instant Clone VM, as all Instant Clone replicas, templates, parents, and clones should have the same value. If for some reason this value IS different, then that means this is remnant from another Horizon POD. You should only EVER have **ONE HORIZON POD** per vCenter server)*

Close this tab (or hit the back button if you didn't open a new tab)

5. Identify Associated Replica VM

1. Open your vSphere client, and make note of any replica VMs (e.g., `cp-replica-8112c0e1-0542-45dc-b0a6-717e54d2bf74` and `cp-replica-f359ff84-988f-4a8f-a886-923e2c0721c1`)
2. In your vSphere MOB window, locate the chosen replica VM, using [Step 5](#) from the "Locate the chosen Instant Clone VM".
3. Locate the `config` Name and click on **config** under `Value`.
4. Locate the `instanceUuid` Name and make note of the `Value` (e.g., `50093ca0-82e8-02ef-49e8-d30164d8eaef`)

Note: *This value should match the cloneprep.replica.uuid of both your Instant Clone VM and your*

Parent VM. If so, then this is the associated Replica VM. If not, then start over with Step 1 using the next replica on your list.

5. Expand all of the *Values* on the row named **extraConfig** by clicking (**more...**)
6. Back on the **config** of your Replica VM, locate the `extraconfig["cloneprep.internal.template.uuid"]` and **right-click to Open link in a new tab**
7. Make a note of the value (e.g. **5009611e-20c8-886c-5ea8-03ba36e168a7**) as you will reference this throughout the process. This is the InstanceUUID of the internal template associated with this replica vm.

Note: *If this value matches that of your Instant Clone VM, then this replica is associated with your Instant Clone VM. If not you can start this process over at Step 2 with the next replica on your list.*

Close this tab (or hit the back button if you didn't open a new tab)

8. Back on the **config** of your Replica VM, locate the `extraconfig["cloneprep.master.metadata"]` and **right-click to Open link in a new tab**
9. Make a note of the value (e.g. **cbrc%3Dtrue%26disks%3D%5B%5D%26domain.fqdn%3DIhlab.com%26master.uuid%3D5009d6a4-7120-ad7e-15cf-08ec68cb09b7%26ss.id%3D9**) as you will reference this throughout the process. This is the InstanceUUID and snapshotId of the original Master VM that you created and that associated with this replica vm.

Note: *If this value matches that of your Instant Clone VM, then this replica is associated with your Instant Clone VM. If not you can start this process over at Step 2 with the next replica on your list.*

Close this tab (or hit the back button if you didn't open a new tab)

10. Back on the **config** of your Replica VM, locate the `extraconfig["cloneprep.client.uuid"]` and **right-click to Open link in a new tab**
11. Make a note of the value (e.g. **62e63078-4014-416f-8692-430b35135491**) as you will reference this throughout the process. This is the GUID of the Horizon Pod associated with this replica vm.

Note: *This value should match the "cloneprep.client.uuid" value of your Instant Clone VM (Though this value does not mean it is directly associated with your Instant Clone VM, as all Instant Clone replicas, templates, parents, and clones should have the same value. If for some reason this value IS different, then that means this is remnant from another Horizon POD. You should only EVER have ONE HORIZON POD per vCenter server)*

Close this tab (or hit the back button if you didn't open a new tab)

6. Identify Associated Template VM

1. Open your vSphere client, and make note of any replica VMs (e.g., **cp-replica-8112c0e1-0542-45dc-b0a6-717e54d2bf74** and **cp-replica-f359ff84-988f-4a8f-a886-923e2c0721c1**)

2. In your vSphere MOB window, locate the chosen replica VM, using [Step 5](#) from the "Locate the chosen Instant Clone VM".
3. Locate the *config* Name and click on **config** under *Value*.
4. Locate the *instanceUuid* Name and make note of the *Value* (e.g., 5009611e-20c8-886c-5ea8-03ba36e168a7)

Note: *This value should match the `cloneprep.internal.template.uuid` of both your Instant Clone VM and your Parent VM. If so, then this is the associated Replica VM. If not, then start over with Step 2 using the next replica on your list.*

5. Expand all of the *Values* on the row named **extraConfig** by clicking (**more...**)
6. Back on the **config** of your Replica VM, locate the `extraconfig["cloneprep.master.metadata"]` and **right-click** to **Open link in a new tab**
7. Make a note of the value (e.g. `cbrc%3Dtrue%26disks%3D%5B%5D%26domain.fqdn%3Dlhlab.com%26master.uuid%3D5009d6a4-7120-ad7e-15cf-08ec68cb09b7%26ss.id%3D9`) as you will reference this throughout the process. This is the InstanceUUID and snapshotId of the original Master VM that you created and that associated with this replica vm.

Note: *If this value matches that of your Instant Clone VM, then this replica is associated with your Instant Clone VM. If not you can start this process over at Step 2 with the next replica on your list.*

Close this tab (or hit the back button if you didn't open a new tab)

8. Back on the **config** of your Replica VM, locate the `extraconfig["cloneprep.client.uuid"]` and **right-click** to **Open link in a new tab**
9. Make a note of the value (e.g. `62e63078-4014-416f-8692-430b35135491`) as you will reference this throughout the process. This is the GUID of the Horizon Pod associated with this replica vm.

Note: *This value should match the "cloneprep.client.uuid" value of your Instant Clone VM (Though this value does not mean it is directly associated with your Instant Clone VM, as all Instant Clone replicas, templates, parents, and clones should have the same value. If for some reason this value IS different, then that means this is remnant from another Horizon POD. You should only EVER have ONE HORIZON POD per vCenter server)*

Close this tab (or hit the back button if you didn't open a new tab)

7. Parsed Data Relationships

The below highlights show the correlation of values of each VM. Using this data, you should be able to extrapolate and build relationships between all masters, templates, replicas, parents, and clones.

Horizon POD - GUID - this should match on all associate VMs

Master VM - instanceUuid and snapshotID

Internal Template - instanceUuid

cloneprep.client.uuid → Broker's cluster guid (GUID of the managing POD)
cloneprep.master.metadata → Parse this to get master vm's instanceUuid and snapshot

id

Replica - instanceUuid

cloneprep.client.uuid → Broker's cluster guid
cloneprep.internal.template.uuid → Internal Template's instanceUuid
cloneprep.master.metadata → Parse this to get master vm's instanceUuid and snapshot

id

ParentVm -

cloneprep.client.uuid → Broker's cluster guid
cloneprep.internal.template.uuid → Internal Template's instanceUuid
cloneprep.replica.uuid → Replica's instanceUuid
cloneprep.master.metadata → Parse this to get master vm's instanceUuid and snapshot

id

Clone -

cloneprep.client.uuid → Broker's cluster guid
cloneprep.internal.template.uuid → Internal Template's instanceUuid
cloneprep.replica.uuid → Replica's instanceUuid
guestinfo.cloneprep.clone.uuid → Clone's guid used internally by NGVC (Next-Gen View Composer)

7.1 Important note about cloneprep.master.metadata

This field contains the full string to the master's InstanceUuid as well the snapshot ID and other metadata about the master. It is encoded into URI format, replacing characters with their URL friendly equivalents (e.g. [turns into %5B)

Below is our example from above, first in its original format, then decoded into ASCII characters.

```
cbrc%3Dtrue%26disks%3D%5B%5D%26domain.fqdn%3Dlhlab.com%26master.uuid%3D5009d6a4-7120-ad7e-15cf-08ec68cb09b7%26ss.id%3D9
```

```
cbrc=true&disks=[]&domain.fqdn=lhlab.com&master.uuid=5009d6a4-7120-ad7e-15cf-08ec68cb09b7&ss.id=9
```

We can break that down farther into the various fields of data:

cbrc=true

disks=[]

domain.fqdn=lhlab.com

master.uuid=5009d6a4-7120-ad7e-15cf-08ec68cb09b7 (this is the InstanceUuid of the master VM)

ss.id=9 (this is the ID of the snapshot used from the master VM to create the pool)

8. Parsing the Horizon POD GUID

Stored in the ADAM database.

The Attribute is pae-GUID at CN=Common Properties, OU=Global, OU=Properties, DC=VDI, DC=VMware, DC=Int

The screenshot displays the ADSI Edit tool. On the left, the tree view shows the hierarchy: Default naming context [localhost:389] > DC=vdi,dc=vmware,dc=int > OU=Properties > OU=Global. The right pane shows a list of objects with columns for Name and Class. The 'Attribute Editor' for 'CN=Common Properties' is open, showing a table of attributes:

Attribute	Value
pae-eventSyslogRem...	<not set>
pae-eventSyslogSlee...	<not set>
pae-eventSyslogUser...	<not set>
pae-ForcedLogoffTim...	5
pae-FQHN	<not set>
pae-GatewayImsPort	<not set>
pae-GlobalKeystore	<not set>
pae-GUID	62e63078-4014-416f-8692-430b35135491

A 'String Attribute Editor' dialog is overlaid on the Attribute Editor, showing the 'Attribute' as 'pae-GUID' and the 'Value' as '62e63078-4014-416f-8692-430b35135491'. The dialog has 'Clear', 'OK', and 'Cancel' buttons.

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