

Zerto

White Paper

Private Cloud for the Enterprise User

Version 1.0

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1. Overview

This document provides an outline on how to architect & deploy the Zerto Cloud manager in an enterprise environment. The document provides step by step instructions on how to deploy the Cloud Manager as well as configuring it for multi-tenancy purposes. It is intended for those users who are looking to offer internal disaster recovery services to their organization.

1.1 Use Cases

The steps within this document are intended for customers who already have Zerto Virtual Replication installed in their environment and are replicating from a VMware environment to a VMware environment or performing self-replication to a VMware environment.

Note: In an ICDR environment with just vCenter resources Zerto leverages VMware Resource Pools to mask ESXi hosts. To utilize the ICDR configuration covered in this white paper the environment must have at least one resource pool in the production vCenter and one in the recovery vCenter. For more information on VMware Resource Pools please reference the VMware documentation specific to the version of vSphere in your environment.

1.2 Proof of Concept

It is recommended when following this document to deploy in a lab environment to become familiar with the deployment process.

2. Prerequisites

2.1 Zerto Prerequisites

Before adding a Zerto Cloud Manager to an environment the environment must have Zerto Virtual Replication installed and fully functioning. If the environment does not have Zerto Virtual Replication (ZVM / VRA's) deployed yet please review and perform the Zerto Virtual Replication [Enterprise Guidelines](#) and [Installation Guidelines](#).

2.2 Requirements before Installing ZCM

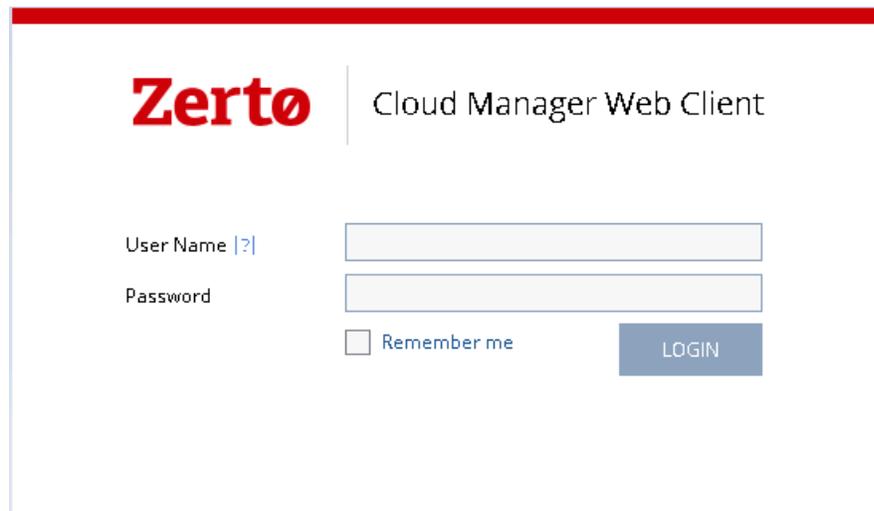
Please review the [Prerequisites & Requirements for Cloud Service Providers](#) before beginning installation of the ZCM.

3. ZCM Installation

3.1 Installation Process

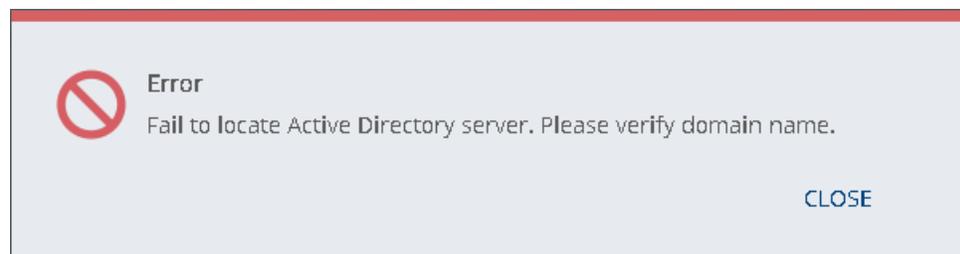
The ZCM is installed on a separate Windows OS than the ZVM's and its installation instructions can be found in our [Zerto Cloud Manager: Installation Guide](#). As the ZCM install steps are covered in depth in our ZCM Installation guide this article will skip past the installation itself and start with configuring the ZCM in the environment. For the remainder we will be referencing the production vCenter as "Prod_Site" and the recovery vCenter as "DR_Site".

Let's start by logging into the ZCM user interface. To do this you'll need to open up a web browser and navigate to the following URL: https://ZCM_IP:9989. Make sure to replace the "ZCM_IP" with the actual IP address of your ZCM. If you have DNS configured properly and can resolve the ZCM's hostname from the machine you've opened the browser from feel free to use the fully qualified domain name (FQDN) instead of the IP address. Once you've enter the URL you're going to get to the ZCM Web Client log on as displayed below.

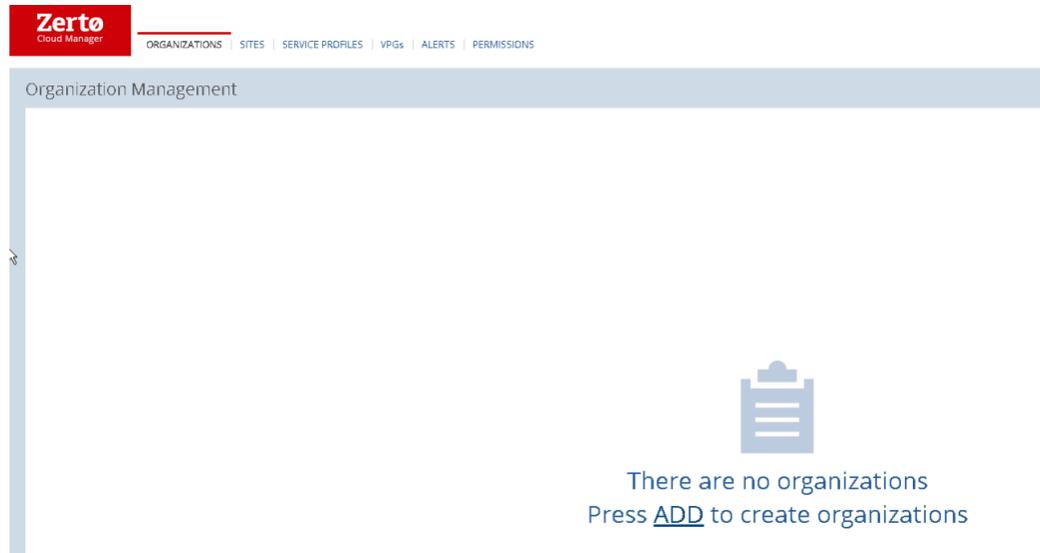


The screenshot shows the Zerto Cloud Manager Web Client login interface. It features the Zerto logo in red on the left and the text "Cloud Manager Web Client" on the right. Below the logo, there are two input fields: "User Name" with a help icon and "Password". To the right of the password field is a checkbox labeled "Remember me" and a blue "LOGIN" button.

Now this is where you're going to start seeing some differences between the ZCM and the Zerto Virtual Manager (ZVM). When logging into the ZCM you want to use an account which has permissions to log into the Windows operating system the ZCM has been installed on. So if you are using an active directory account you want to make sure that account can log into the ZCM VM's OS. Otherwise you're going to get an error message like the following:



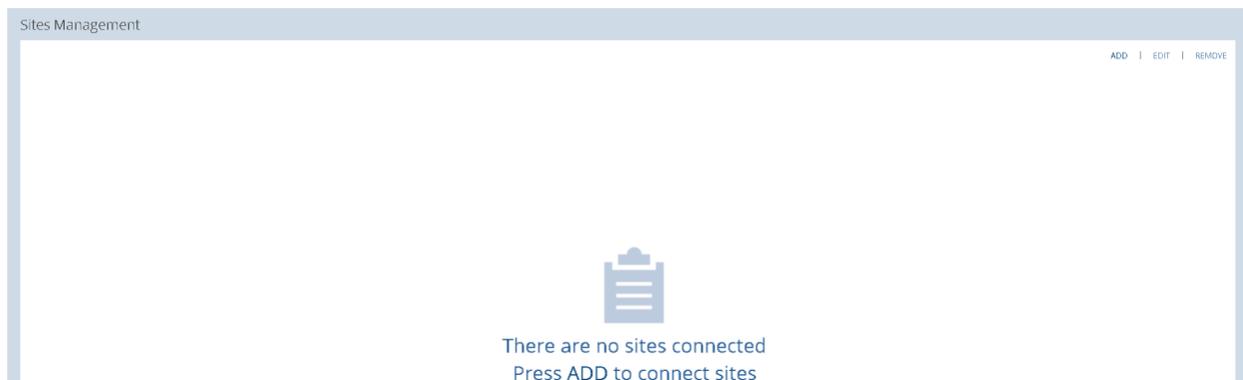
Once you've successfully logged in you will be brought to the Organizations tab of the ZCM UI:



We're going to create Zerto Organizations (ZORGs) in a little bit but before doing so you'll need to let your ZCM know which ZVM's in your environment it's going to be working with.

3.2 Adding a Cloud Site

To add a Cloud Site select the SITES option in the upper left hand corner of your screen, to the right of the red Zerto Cloud Manager icon.



From the message in the center of the screen you can see that there aren't any sites connected to the ZCM. Go ahead and press the [ADD](#) button in the center of the screen or the [ADD](#) button displayed in the upper right hand corner of the image. The Add Cloud Site dialog box will be displayed.

Go ahead and enter the IP address of either of your ZVMs, the order you add them doesn't matter but in my environment I'll start with my Prod_Site ZVM. You can leave the port as Default for now. When you're ready hit Save and as long as the ZCM has network access to communicate with the ZVM you've specified it will contact the ZVM and add it as a Site under the Sites Management tab. If you have any connection issues make sure to check the connectivity between your ZVM and ZCM, and ensure port 9669 is open between them. For more information on network port requirements you can refer to the Open Firewall Ports section of our [Enterprise Guidelines](#).

Connection Status	Site Name	Version	Host Name	Port	Type	# of ZORGs	ZVM Interface
<input checked="" type="radio"/> Connected	Prod_Site	5.5.10		9669	VCenter	0	Open

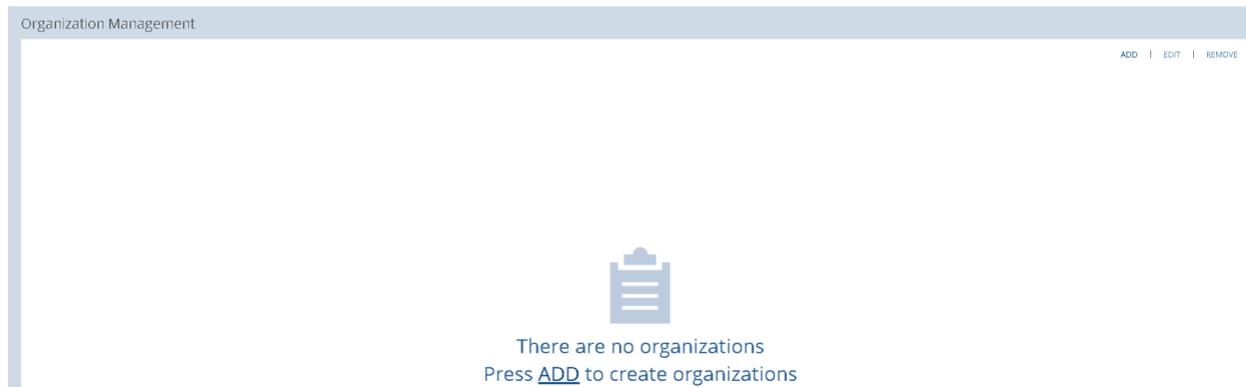
You've gotten one of your ZVMs added for your ICDR architecture. If you're intending to add a second ZVM go ahead and select the ADD button and add your other ZVM to the ZCM. Once complete under your Site Management tab in your ZCM it should look like the example below.

Connection Status	Site Name	Version	Host Name	Port	Type	# of ZORGs	ZVM Interface
<input checked="" type="radio"/> Connected	DR_Site	5.5.10		9669	VCenter	0	Open
<input checked="" type="radio"/> Connected	Prod_Site	5.5.10		9669	VCenter	0	Open

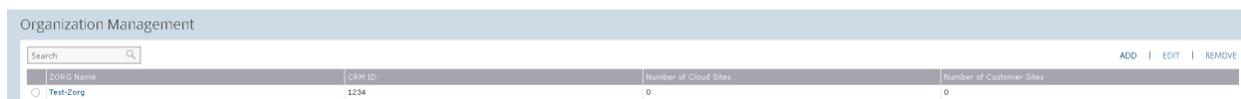
4 Provisioning Resources

4.1 Zerto Organization

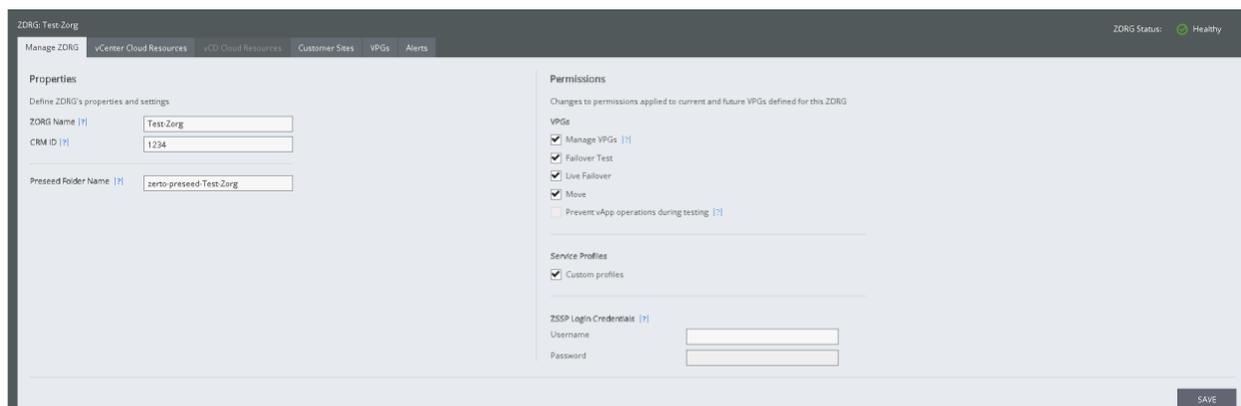
You have both of your ZVM's connected to your ZCM its time to start presenting resources that will be protected and used for replication. To do so you're going to need to create a ZORG, in your ZCM select the ORGANIZATIONS option at the top left of the screen.



Select [ADD](#) in the center of the screen or in the upper right hand corner of the screen. The Add ZORG wizard will display. You will need to create a unique name for the ZORG. For tracking or billing purposes you can also create a unique ID referred to as a CRM. When you've come up with a name for your ZORG go ahead and select SAVE. The ZCM will create the new organization for you.



Under the ZORG Name column select your ZORG, highlighted in blue. This will lead you to the ZORG configuration screen.



Note your ZORGs name and CRM in the upper left hand corner of the screen. Below that you'll see the Preseed Folder Name. This will be the default folder under the recovery datastore that recovery VMDK's are automatically moved to by Zerto if a user deletes a Virtual Protection Group (VPG) and selects Keep Target Disks.

Once you've decided what level of DR Service you're offering to your organizations you'll want to set the permissions. If you only want users to be able to view the VPGs you create then uncheck the four boxes selected under VPGs. If you'd like users to be able to create VPGs and perform fail over operations then leave the four boxes selected

4.2 Service Profile

Service Profiles allow you to apply default settings to VPGs within the ZORG, if you're interested in setting these navigate to the Service Profiles section and you can configure the following options:

For now go ahead and leave custom profiles checked and move on the ZSSP. If you're interested in learning more about the Service Profiles feel free to review our [Zerto Cloud Administration Guide](#) for more details.

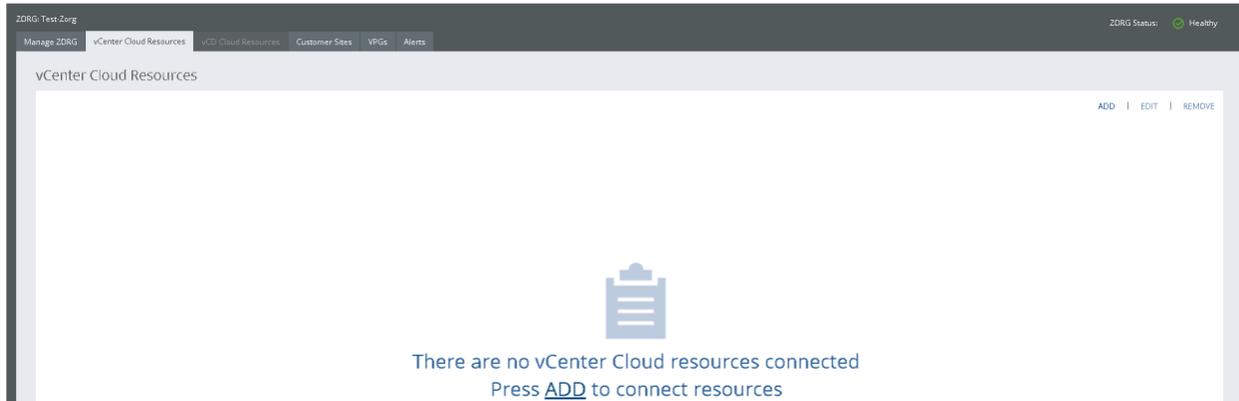
4.3 Zerto Self Service Portal Permissions

In an ICDR environment you may decide that you do not want users logging directly into the production ZVM to access their Zerto environment. Zerto provides the capability of a Self Service Portal (ZSSP) to handle this type of architecture. You will need to create a ZSSP user account (one per ZORG) and provide the account information, ZORG Name, and the production ZSSP URL (https://Prod_ZVMIP:9779) for your end user to be able to log in to create the environment. As long as the production ZVM is up and running the user will be able to perform recovery operations. If the production ZVM is not running, then you will want to give them the DR ZVM ZSSP URL as well (https://DR_ZVMIP:9779) to log into when they have a DR event. If you're looking for more granularity for user permissions pertaining to VPGs they can be found in our [Cloud Administration Guide](#) under Role Based Access Control.

When you're ready go ahead and save the ZORG configuration on the Manage ZORG tab.

4.4 vCenter Cloud Resources

It's time to add the vCenter resources for your replication. Navigate to the vCenter Cloud Resources tab and let's start adding them. Since there are no resources let's go ahead and select ADD in the center of the screen or the upper right hand corner.



Once you hit add the Add vCenter Cloud Resource wizard will display. There are a few key items we're going to cover as we go through this screen. First, the resources you select from this wizard are the **ONLY** resources the end user will be able to see from the ZSSP when they go to create a VPG. You as the "Cloud Administrator" are masking which resources they can and can't use for replication. So you need to take some consideration in what you're adding.

When adding vCenter resources at a minimum per ZVM you need to add 1 Resource Pool, 1 Network, and 1 Datastore. So when you create your ZORG there should be 6 vCenter resources if you have two ZVMs. Otherwise when your user goes into the ZSSP and tries to create a VPG they may only see resources from the production or recovery vCenter and won't be able to create the VPG.

When it comes to using ICDR in a vCenter environment Zerto leverages VMware Resource Pools to be able to mask the hosts. The Resource Pool, network, and datastore you select from the production vCenter for your ZORG have to be the resources which the production VM that you want to protect is utilizing. If the VM you want to protect doesn't show up, then double check the ZORG to make sure the resources the VM uses in production are in the ZORG. You won't be able to select individual ESXi hosts to add as resources.

For example if you have a VM called AppDB which resides in a production Resource Pool called Customer1. When you create your ZORG you need to make sure that if you want your end user to be able to protect the VM AppDB in the ZSSP URL, that you add the vCenter Resource Pool Customer1 to the appropriate ZORG, as well as the corresponding network and datastore.

Another important note is that a resource pool can only be in one ZORG, it can't span across multiple ZORGs. If you add a resource pool to your first ZORG and hit Add when you go to create a second ZORG you'll notice the resource pool isn't in the Add vCenter Cloud Resource wizard. That is by design, as mentioned earlier in a vCenter ICDR environment Zerto is leveraging the Resource Pool to mask the underlying hosts. When it comes to networking and storage you are allowed to have the same vCenter network and datastore across multiple ZORGs.

Now that we've discussed the keys of ZORGs go ahead and add the necessary vCenter resources to your ZORG. Remember that you need to select the appropriate Resource Pool for the VM you are trying to protect, you need vCenter resources for both production and recovery in your ZORG, and that a resource pool can only be in a single ZORG. When you're ready go ahead and add your resources. Notice in the example below there are 7 vCenter inventory objects, that's because we added a network for recovery as well as a separate isolated network from the DR site for Fail Over Test. This is because Zerto's best practice for Fail Over Tests is that the network is isolated.

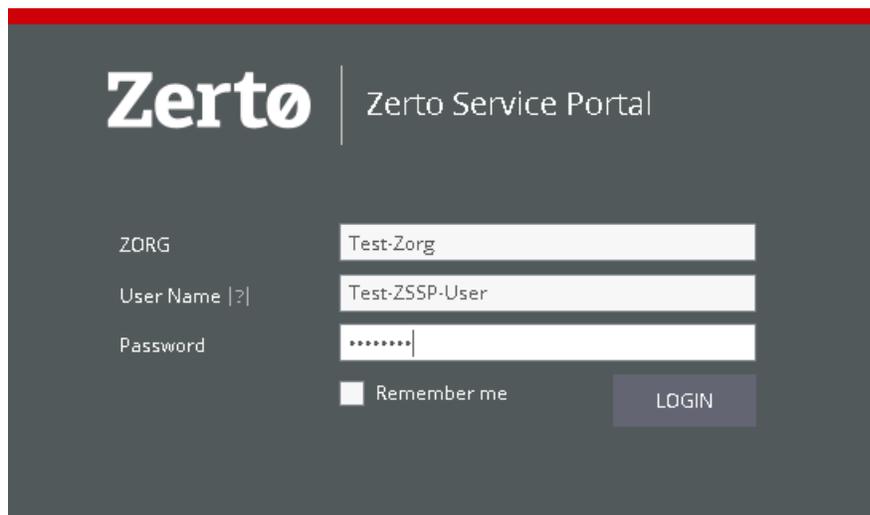


At this point you have your ZORG created and the necessary resources allocated. So it's time to let your end user create their first VPG for your DR services.

5 Accessing the UI

5.1 Zerto Self Service Portal

Go ahead and log into the production ZSSP so you can see what that will look like. Open up a Web Browser and go to the ZSSP (https://prod_ZVMIP:9779). Remember that the account is the one you created in your ZCM under ZSSP Login Credentials. When you're ready go ahead and log into the ZSSP.



6.0 Protecting VMs

6.1 Creating a VPG

You've successfully logged into the ZSSP, now go ahead and on the right hand side select New VPG so you can see what creating a VPG looks like. In my environment I'm going to select the AppDB that I mentioned earlier.

Create VPG

VPG Name:

Unprotected VMs: Select at least one vApp or VM

VMs

Search:

<input type="checkbox"/>	VM Name	Provisioned Size
<input type="checkbox"/>	ZCM	44.2 GB
<input checked="" type="checkbox"/>	AppDB	6.2 GB

Replicate To:

Recovery Site:

Resource Pool:

Recovery Datastore:

Service Profile:

[Advanced Configuration](#)

In our example we've selected the DR_Site as our recovery location, and selected the recovery Resource Pool and Datastore that we added to our ZORG. Once you hit save the VPG will be created and the initial sync process will start.

Now you're ready to go, you've got your ZCM deployed and have walked through how to create ZORGs and how your end users will access the Zerto environment to protect their VMs. Utilizing Zerto you're now ready to start building your DR service for your organization!!!

6.0 Resources

[vSphere Enterprise Guidelines - Zerto Virtual Replication](#)

[vSphere Installation Guide – Zerto Virtual Replication](#)

[Cloud Service Provider Guidelines – Zerto Virtual Replication](#)

[Installation Guide – Zerto Cloud Manager](#)

[Administration Guide – Zerto Cloud Manager](#)