

# DNS Cluster

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## Overview

A DNS cluster is a group of nameservers that share records, which allows you to physically separate nameservers that handle the DNS requests from your web servers. This interface allows you to configure a DNS cluster and add servers to an existing DNS cluster.

### Note:

For more information about the types of DNS cluster configuration and why you may wish to use a DNS cluster, read our [Guide to DNS Cluster Configurations](#) documentation.

## DNS cluster requirements

To configure your DNS cluster, you must meet the following minimum requirements:

- Clusters **must** include at least two servers.
- You **must** have at least one web server with cPanel & WHM installed. A DNS cluster that includes multiple cPanel DNSONLY™ servers and cPanel & WHM servers is also acceptable.
- All machines in the DNS cluster **must** have cPanel & WHM or cPanel DNSONLY version 11 or higher installed. Some features may not work with older versions of cPanel & WHM.
- All machines configured with PowerDNS **must** have DNSSEC disabled.

### Notes:

- WHM's *DNS Cluster* feature only provides redundancy for DNS. It does **not** add Apache or any other services to a DNS cluster configuration.
- If you set a server in a DNS cluster to the write-only role, WHM will **not** check whether a DNS zone exists before you create an account. Because of this, it is possible to create the same domain name on two or more of these servers. If this occurs, the servers compete for updates to that domain.
- cPanel DNSONLY software allows you to run a dedicated physical nameserver. It is essentially the "bare-bones" version of cPanel & WHM, which only replicates DNS zones to your other servers. **Only** install cPanel DNSONLY on nameservers that have **no** previous content on them. You can [download the cPanel DNSONLY software](#) for free.

## DNSSEC

cPanel & WHM does not support DNSSEC in DNS clusters.

- Servers with domains that have DNSSEC configured will be unable to configure DNS clusters.
- Servers with DNSSEC do **not** transmit DNSSEC data to cluster members in any form. This means DNS responses from the cluster members will **not** have the DNSSEC signatures. This can cause DNS resolution errors.

## DNS Clustering

To modify DNS cluster settings, log in as the `root` user. If you log in as a reseller, you will **not** see the *DNS Clustering* section of this interface.

## Modify Cluster Status

To enable or disable DNS clustering in WHM, perform the following steps:

1. Select the desired option under the *Modify Cluster Status* heading:
  - Select *Enable DNS clustering* to enable DNS clusters.
  - Select *Disable DNS clustering* to disable DNS clusters.
2. Click *Change*. A confirmation message will appear.
3. Click *Return to Cluster Status*.

**Important:**

After you enable the *DNS Cluster* feature, specify which servers you wish to include in the DNS cluster.

- You **must** sync each web server to its DNS servers.
- You do **not** need to link dedicated DNS servers to each other, or link dedicated web servers to each other.

## Global Cluster Options

The *Failure threshold for cluster members* setting allows you to specify the number of `dnsadmin` commands that may fail before WHM disables an unresponsive DNS cluster member.

**Notes:**

- We recommend that you disable unresponsive DNS cluster members in order to improve the performance of your server.
- You **must** enable DNS clustering in order to view the *Global Cluster Options* section of this interface.

To configure the *Failure threshold for cluster members* setting, perform the following steps:

1. Select an option from the *Global Cluster Options* section:
  - Select *10 (Default)* to use the default option, which allows cluster members to fail up to ten `dnsadmin` commands.

**Note:**

We recommend that you use this option.

- Select the second option to enter a custom failure threshold.

**Note:**

If server down times or network interruptions are common in your hosting environment, we recommend that you increase the failure number count so that the system does not mark certain cluster members as offline. This may also increase server and network load because the system may repeatedly send some DNS requests.

- Select *Keep all cluster members online at all times* if you wish to keep all of the servers in your DNS cluster continuously online, regardless of the number of failed `dnsadmin` commands.
2. If you wish for WHM to notify you when it disables an unresponsive member in your DNS cluster, select *Receive a notification when WHM disables an unresponsive cluster member*.

**Important:**

You **must** manually reenable a disabled cluster member.

3. Click *Change*. A confirmation message will display.
4. Click *Return to Cluster Status*.

**Important:**

If a cluster member in the sync role is offline for an extended period of time, resynchronize the other server's zones. This ensures that the cluster member is up-to-date.

## Servers in your DNS cluster

This section allows you to view, add, and delete servers from your DNS cluster.

The *Servers in your DNS cluster* table displays the following information about each server in your DNS cluster:

Column	Description
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<i>Hostname</i>	The server's hostname.
<i>IP address</i>	The server's IP address.
<i>Username</i>	The WHM username that you used when you configured this server in the DNS cluster. Typically, this is either <code>root</code> or the username of a reseller account.
<i>Type</i>	The type of server: <i>cPanel</i> , <i>SoftLayer</i> , or <i>VPS.NET</i> .
<i>Status</i>	The version of cPanel & WHM that the server currently runs, and an icon that indicates the server's status.
<i>DNS role</i>	<p>The server's DNS role. You can choose from the following options:</p> <ul style="list-style-type: none"> <li>• <i>Standalone</i> — This method fetches DNS records from the remote server, but does <b>not</b> write records from the local server to the remote server.</li> <li>• <i>Synchronize</i> — This method synchronizes records between the local server and the remote server. Most administrators use this setting.</li> <li>• <i>Write-only</i> — This method pushes the local server's records to write to the remote server, but does <b>not</b> query records from the remote server to write to the local server.</li> </ul> <div style="border: 1px solid red; padding: 5px; margin: 10px 0;"> <p><b>Important:</b> A <i>Write-only</i> server pushes records to the remote server <b>without</b> conflict resolution or checks. Two <i>Write-only</i> servers that attempt to write changes to a matching record on the same remote DNS server will cause a conflict and may corrupt data.</p> </div> <p>You can use the menu in this column to <a href="#">change a server's DNS role</a>.</p>
<i>Actions</i>	You can use the icons in this column to <a href="#">modify a DNS cluster server</a> or to <a href="#">delete a server from the DNS cluster</a> .

## Add a new server to the cluster

To add a a cPanel & WHM or cPanel DNSONLY server to the DNS cluster, perform the following steps:

1. Select the server type from the *Backend Type* menu.

**Note:**

To enable DNS clustering with SoftLayer or VPS.NET, you must first obtain an API username and key from VPS.net or SoftLayer. Then, choose *SoftLayer* or *VPS.NET* from the *Type* menu.

2. Click *Configure*. The *cPanel DNS Remote Configuration* interface will appear.
3. Enter the hostname or IP address of the nameserver that you wish to link in the *Remote cPanel & WHM DNS host* text box.
4. Enter the WHM username for the nameserver in the *Remote server username* text box.
5. Enter the nameserver's API token hash or remote access key in the *Remote server access hash* text box.
  - Enter an API token hash that you saved on your workstation or create a new API token in WHM's *Manage API Tokens* interface ( *WHM >> Home >> Development >> Manage API Tokens* ).

**Warning:**

Make **certain** that after you create an API token, you save the token hash a safe location on your workstation so that you can use it with other features. The *API Tokens* table in WHM's *Manage API Tokens* interface ( *WHM >> Home >> Development >> Manage API Tokens* ) **only** displays the API tokens' names, rather than the tokens' hashes .

- You can find the server's remote access key in WHM's *Remote Access Key* interface ( *WHM >> Home >> Clusters >> Remote Access Key* ).

**Note:**

We deprecated WHM's *Remote Access Key* feature in cPanel & WHM version 64. We **strongly** recommend that you

use API tokens instead.

6. Select *Setup Reverse Trust Relationship* for WHM to automatically configure the DNS cluster on the remote server.

**Notes:**

- If you select this option, you will not need to log in to WHM's *DNS Cluster* interface on the remote server. However, you may do so if you wish to modify the remote server's DNS cluster configuration.
- This option automatically sets the remote server's DNS role to *Standalone*.
- The `/etc/ips.dnsmaster` file contains the system's list of trusted nameserver IP addresses. By default, this file lists the server's main IP address as the trusted IP address.
  - To use a different IP address, add it to the `/etc/ips.remotedns` file or update it in WHM's *Configure Remote Service IPs* interface (*WHM >> Home >> IP Functions >> Configure Remote Service IPs*).
  - If the IP address for a nameserver does not match a trusted IP address in one of these files, you may experience problems when users create addon or parked domains.

7. Select *Debug mode* if you want WHM to record DNS clustering transactions in the `/usr/local/cpanel/logs/error_log` file.
8. Select an option from the *DNS Role* menu to specify the server's DNS role.
9. Click *Submit* to save your settings. When you return to the *DNS Cluster* interface, the remote server will appear in the *Servers in your DNS Cluster* table.

After you add the server to the cluster, synchronize the new DNS server with the other servers in the DNS cluster in WHM's *Synchronize DNS Records* interface (*WHM >> Home >> DNS Functions >> Synchronize DNS Records*)

To confirm that the new server functions, run the following command, where `example.com` represents the server name, and `ip` represents the server's IP address:

```
dig +short example.com @ip
```

**Note:**

We do **not** recommend that you set up the nameserver to synchronize data to a web server, because this creates extraneous zones on the web server. This means that you do **not** need to log in to WHM on the nameserver and set the web server's *DNS role* to *Synchronize changes*.

## Delete a server from a DNS cluster

**Important:**

- You **must** delete a server from a DNS zone before you add a replacement server to the DNS cluster. You **cannot** have two servers with the same hostname in a DNS cluster.
- If you remove a server from a DNS cluster, the records will no longer synchronize with the other servers in the DNS cluster. The records on the deleted server will also no longer exist on the servers that remain in the DNS cluster.

To remove a cPanel & WHM or cPanel DNSONLY server from a DNS cluster, perform the following steps:

1. Log in to the server that you wish to remove from the DNS cluster.
2. Navigate to the *DNS Cluster* interface.
3. In the *Modify Cluster Status* text box, select *Disable DNS Clustering*.
4. Click *Change*.
5. Click *Return to Cluster Status*.
6. Log in to the servers that remain in the cluster.
7. Navigate to the *DNS Cluster* interface (*WHM >> Home >> Clusters >> DNS Cluster*).
8. Locate the server that you wish to delete.
9. Click the x icon (



) under the *Actions* heading.

When you return to the *DNS Cluster* interface, the server will no longer appear in the list of servers in the DNS cluster.

## Edit a server in a DNS Cluster

You can change a server's DNS role or edit the server's configuration settings at any time.


To edit a server's DNS role, perform the following steps:

1. Locate the server that you wish to edit.
2. In the *DNS Role* menu, select a new role for the server.
3. Click the save icon (



) to save your changes.

To edit a server's configuration settings, perform the following steps:

1. Locate the server you wish to edit.
2. Click the edit icon (  ) under the *Actions* heading. The *cPanel DNS Remote Configuration* interface will appear.
3. After you make your changes to the server's settings, click *Submit*.

## Additional documentation

Suggested documentation [For cPanel users](#) [For WHM users](#) [For developers](#)

- [DNS Cluster](#)
- [Remote Access Key](#)
- [Delete a DNS Zone](#)
- [The servicedomains Script](#)
- [Edit Zone Templates](#)
  
- [Track DNS](#)
- [Zone Editor](#)
  
- [DNS Cluster](#)
- [Guide to DNS Cluster Configurations](#)
- [Remote Access Key](#)
- [How to Modify Your Hosts File](#)
- [Delete a DNS Zone](#)
  
- [WHM API 1 Functions - has\\_local\\_authority](#)
- [UAPI Functions - DNS::has\\_local\\_authority](#)
- [UAPI Functions - DCV::check\\_domains\\_via\\_http](#)
- [cPanel API 2 Modules - ZoneEdit](#)
- [WHM API 1 Sections - DNS](#)