

## MDaemon Clustering Guide

*This guide explains how to configure the MDAemon clustering service to share configuration settings between two or more MDAemon servers.*

### Clustering Overview

#### What does MDAemon's clustering service do?

MDaemon's Cluster Service helps improve speed and efficiency by sharing configuration settings between two or more MDAemon servers on your network. Load balancing tools can then be used to distribute email and other resources across all servers in the cluster. This helps to ensure redundancy in your email systems should one of your servers suffer a hardware or software failure.

### Pre-deployment Considerations

#### Cluster Nodes

An MDAemon cluster will have one primary node and one or more secondary nodes.

- Configuration changes made on the MDAemon server acting as the primary node are replicated on all other nodes. Thus all configuration changes must be made on the primary node. Any changes made to secondary nodes will be overwritten. Consequently, most configuration options are not accessible in the user interface on secondary nodes.
- The cluster service does not replicate the following files or folders across nodes: mailbox folders, public folders, lock files, gateways, digests, or archives. All nodes share the same set of folders. Therefore, these folders must be stored at a location on your network that is accessible to all nodes.
- Any changes to email made on secondary nodes are sent to the primary node, and all other nodes are notified of the change.
- The XML-API on secondary nodes is read-only.
- Each node in the cluster should be on the same network. We do not recommend using the cluster service to cluster servers that are in different locations.
- Each node in the cluster must be running the same version of MDAemon.
- Each node in the cluster requires its own MDAemon registration key.

#### Routing

MDaemon does not handle the routing of any traffic to or from specific nodes. We recommend that you use a third-party load balancer to handle the routing of traffic.

Sticky sessions must be enabled in your load balancer so that all traffic from the same IP is routed to the same host. Sticky sessions are most important for MDAemon Remote Administration, MDAemon Webmail, and XMPP traffic as they are not yet cluster aware, which means session information is not passed between the nodes. To address this limitation:

- All MDAemon Remote Administration connections must be routed to the primary node.
- When a user logs in to MDAemon Webmail on a specific server, all traffic for that session must be routed to that same server.
- Webmail and XMPP traffic must be routed to the same server in order for Webmail's built-in chat features to work properly.
- All XMPP traffic must be routed to the same node. Users connecting to different nodes will not be able to chat with each other. Considering the above points, we recommend that all HTTP and XMPP traffic be routed to the primary node, as that is the easiest configuration and least likely to cause any problems. If you are not using some of these features, however, you could alter your configuration (although sticky sessions are still required).

## Dynamic Screening

Dynamic screening sends all requests to the primary node, and the data from the primary node is replicated to secondary nodes. If the primary node is offline, secondary nodes will use their own dynamic screening configuration, which should be identical to the configuration on the primary node at the time it went offline. When the primary node comes back online, any changes to dynamic screening made by the secondary nodes will be overwritten.

## Certificates

SSL Certificates are automatically replicated from the primary to secondary nodes.

MDaemon also replicates its certificate settings, so each server in the cluster will attempt to use the same certificate. If a node does not have the correct certificate all SSL/TLS/HTTPS traffic will fail on that node.

## Other Considerations

The following features are not compatible with the cluster service, and are therefore disabled when clustering is enabled.

- Attachment Linking
- Automatic Update Installation
- Domain name to IP address binding

All nodes in a cluster should be set to the same time zone, and set to the exact same time. If the time zone is not the same, or if the times are off by more than 1 second, a warning will be logged in the Cluster log.

## How to Configure MDaemon Clustering

### 1. Update Mailbox & Folder Paths to a cluster-accessible location

The following folders must be stored in a shared path that is accessible by each node in the cluster. The MDaemon clustering service will automatically create these folders in the shared path, however, any existing content in them must be moved manually to the shared path:

- Mail Folders (MDaemon\Users)
- Public Folders (MDaemon\Public Folders)
- Lock Files (MDaemon\LockFiles)
- Private Keys (MDaemon\PEM)
- Mail Archives
- List Digests (MDaemon\Digests)
- Gateways (MDaemon\Gateways)

**Note:** You will need to manually update the mailbox and folder paths on the primary node and move the contents of these folders to the cluster accessible location. If you are using a UNC path, you will need to run all MDaemon services as a user that has access to the network location. You can access these settings in Windows via **Control Panel | Administrative Tools | Services**.

### 2. Open an MDaemon configuration session via the Windows Start menu. Clustering settings are not available in Remote Administration.

### 3. Navigate to **Setup | Cluster Service**, and click on the **Shared Network Paths** tab in the Cluster Service configuration screen.

[Figure 1-1]

### 4. Choose whether you want to set all network paths using a common network share, or whether you prefer to set them individually.

### 5. Enter the shared network path(s) in the fields below.

### 6. If you wish to use multi-node mail routing, then check **Enable Multi-Node Mail Routing**, and enter the **Queues Folders** path. Then click **Apply** to save your changes. Multi-Node Mail Routing allows you to share mail queues between cluster nodes. Having multiple servers process and deliver the messages allows them to split the work more evenly and prevents messages from being stuck in the queues of any servers that are down.

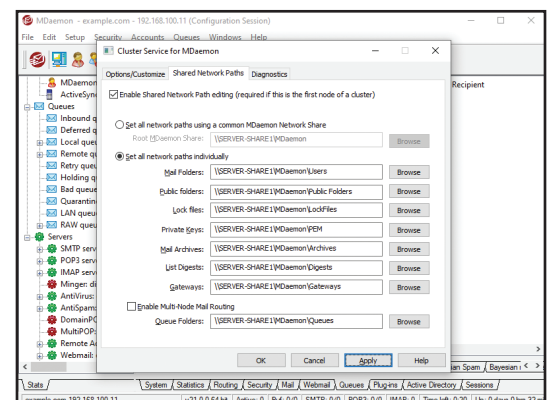


Figure 1-1

- Manually move the contents of all shared folders from their previous locations to the paths specified under the **Shared Network Paths** tab.

The cluster service will update the MDAemon.ini file (located in the MDAemon\App directory) with the network folder paths for the mailboxes and public folders that you provide in your cluster service configuration. Also, the new account template (under **Accounts | Groups & Templates**) will be updated with the mailbox path provided in the cluster service configuration.

- Install MDAemon on a secondary node using a unique registration key.
- On both nodes (primary and secondary), go to **Setup | Cluster Service**, and check the **Enable the Cluster Service** box. [Figure 2-1]
- Right-click the list of Registered Servers, and click **Add new MDAemon server to cluster** (this may take a few moments because it is searching the network for available servers). [Figure 2-2]

- In the **Server Name** field, enter the NETBIOS name, IP address, or DNS name of the secondary node MDAemon is installed on, or select the server from the drop-down list (there may be a delay as it searches the network for available servers). [Figure 2-3]

- Click **Ok**.

**Note:** Once the secondary server has been added to the cluster, all settings on that server will be over-written.

- Check the **Plug-ins / Cluster** log (via the **Plug-ins** tab at the bottom of the MDAemon window) on both servers to ensure the two servers have successfully connected and that replication is occurring.

**Example** (on the primary node)

```
21/04/02 16:02:02.900 Debug D65ACCE8 0x41511220 Secondary cluster node added: Cluster Service on WIN-ABC123DE will now restart.
```

```
21/04/02 16:02:04.095 Debug 1065A3CD 0x41510270 Completed re-building current replication file list
```

**Example** (on the secondary node)

```
21/04/02 16:02:05.105 Debug 24D2AF55 0x4151020C Replication Signal from: DESKTOP-ABC123
```

```
21/04/02 16:02:06.318 Info 00000106 0x41510618 Replication Job Completed
```

- Go to **Setup | Cluster Service** on the secondary node to confirm that the primary and secondary nodes are both listed under **Registered Servers**.
- Configure your load balancing hardware or software to route traffic to the cluster as discussed under *Pre-deployment Considerations | Routing* in the first section of this guide.

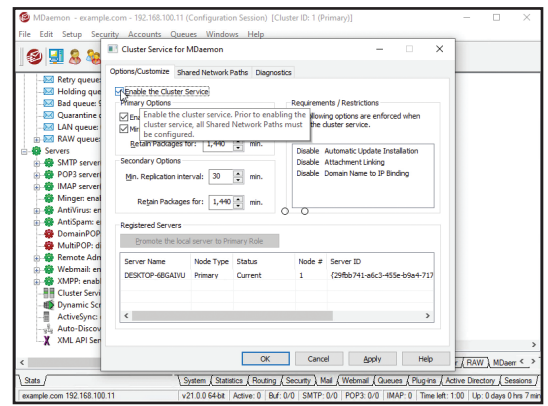


Figure 2-1

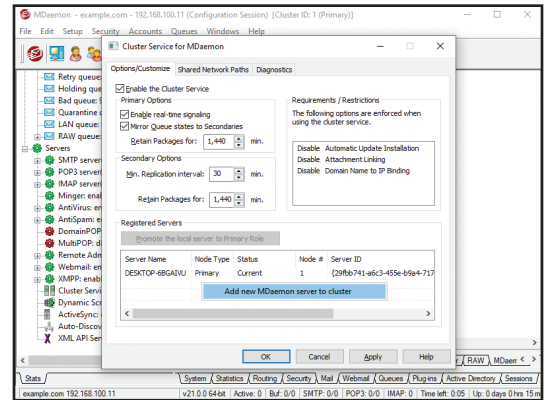


Figure 2-2

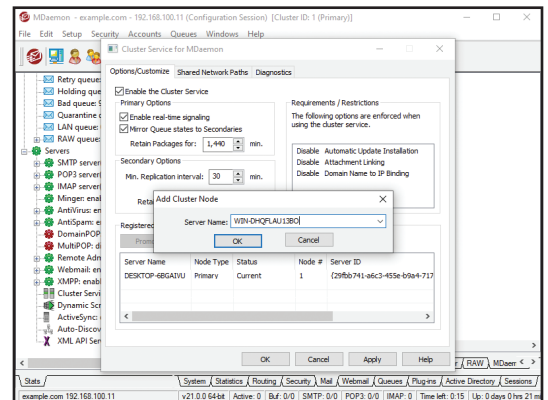


Figure 2-3

