FileCloud Server
23.253
FileCloud ServerLink

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Introduction

FileCloud ServerLink is a feature that seamlessly replicates changes on one FileCloud site to another. Replicated data includes:

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- Files and Folders (Managed Storage Only)
- User Accounts
- User Groups
- Comments
- Favorites and Favorite Lists
- File and Folder Shares
- Folder Level Permissions
- Metadata
- Sort URLs
- ACLs
- Policies
- Retention Policies
- Notification Path Rules

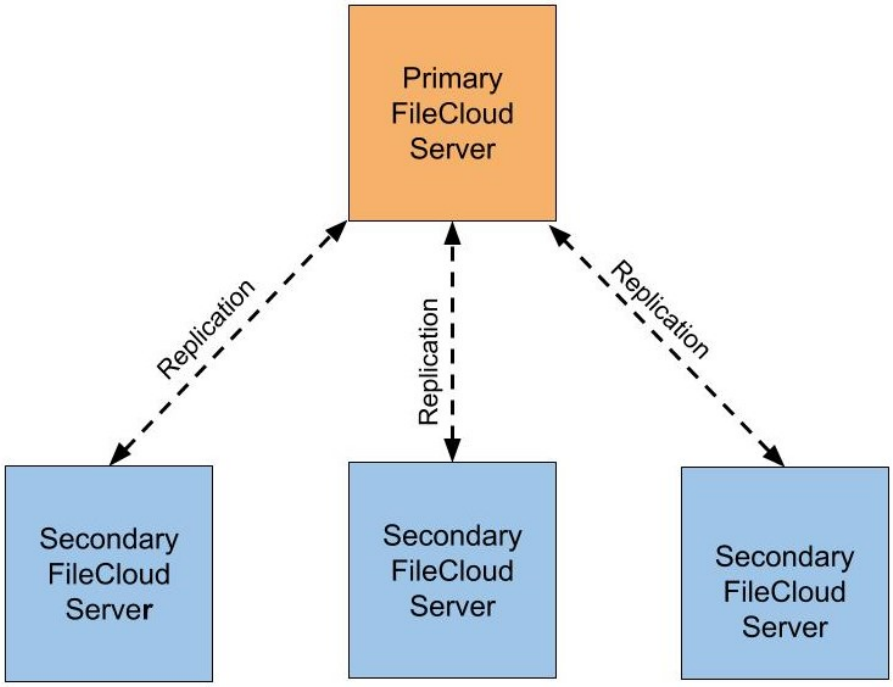
Deployment Scenarios

ServerLink can be useful in several deployment scenarios.

- An organization has headquarters in one geographic location but branches in other locations spread across the globe. If there is a single FileCloud server serving headquarters, the branch offices will observe increased latency when accessing files remotely. To alleviate the problem, each branch offices can have a secondary FileCloud Site that mirrors the primary FileCloud site at HQ.
- An organization maintains a FileCloud site locally on the LAN for fast local access and a remote site on the cloud for remote file access. In this case the local FileCloud site can be connected by ServerLink to the remote FileCloud site on the cloud to keep data replicated.
- An organization keeps an additional FileCloud site as a standby or backup so that if the main site goes down then the standby can be available for operation.

Overview

FileCloud replication involves a primary site and any number of secondary sites.



Typically, there is one primary site and multiple secondary sites. Changes that happen in the primary site are copied to the secondary site. Similarly changes that happen in a secondary site are copied to the primary site. When there are multiple secondary sites, if a change happens in one secondary site, that change is propagated to all secondary sites as well as the primary site.

Perform synchronization by running the replication client on the secondary servers. It is not necessary to run a replication client on the primary server.

ServerLink Deployment Considerations

- ServerLink keeps entire sites in sync with each other. It is not possible to only keep part of a site in sync with another site.
- Although ServerLink replicates changes as soon as possible, replication is not instantaneous and there may be a delay before changes in one site are propagated to another site. Your business processes should take this into account.
- When different changes are made to a file simultaneously on primary and secondary sites, the change made in the primary site takes precedence. The file changed in the secondary site is available in previous versions, but the changes may never be copied to the primary site. Therefore, it is best to avoid working on the same sets of files in primary and secondary sites at the same time.

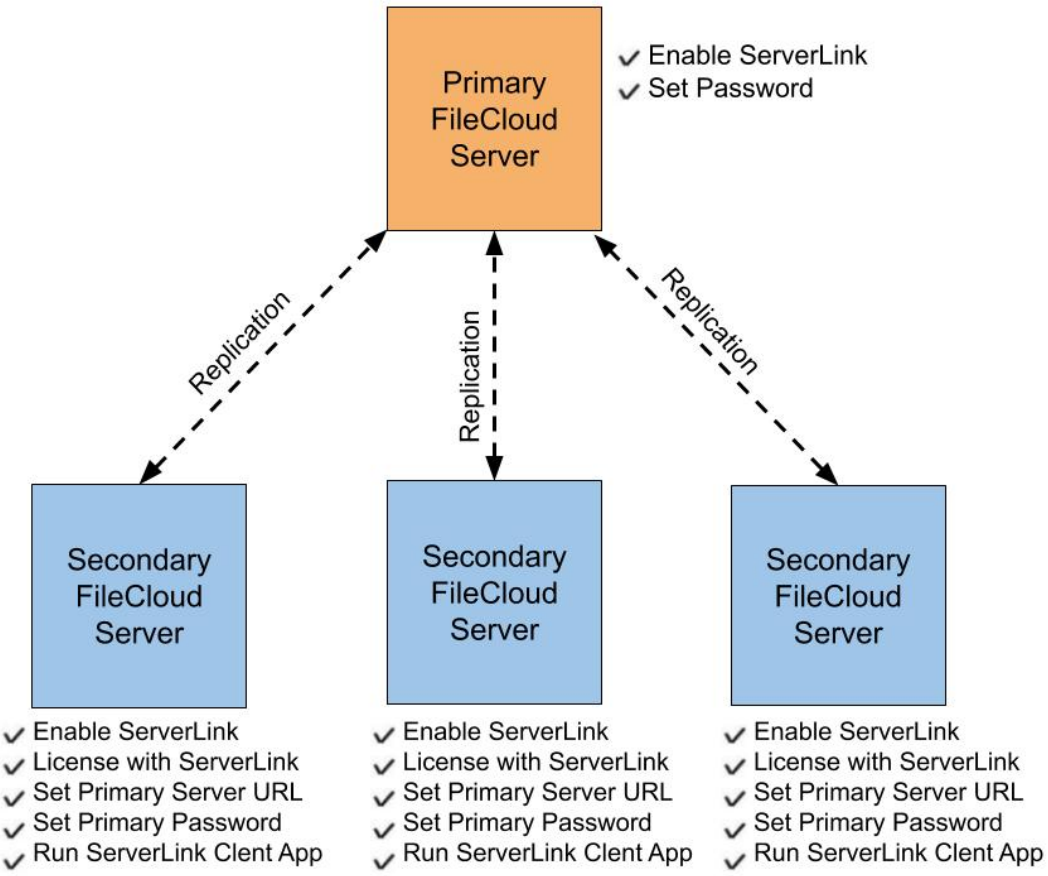
ServerLink Notes

- File Locking is not enabled by default.
- Team Folders are replicated if Team Folders are enabled in Admin settings and set up in the secondary server.
- In FileCloud versions 20.1 through 20.3, when there is a synchronization error, ServerLink sends an alert message to the admin every 4 hours until the issue is resolved.
- Starting in FileCloud version 21.1, when there is a synchronization error, ServerLink sends an alert message to the admin once an hour until the issue is resolved, up to 3 times in 24 hours. This alert procedure takes place each time a new error type occurs.
  Note: The email is sent only from the site (primary or any secondary) which is subject to the error.

ServerLink Installation and Configuration

Introduction

The main steps for ServerLink Configuration are as follows:



Configuring ServerLink on a Primary Server

Enabling ServerLink on a Primary Server

To enable ServerLink options in the Admin Portal, add the following key to cloudconfig.php

Windows Location : C:\xampp\htdocs\config\cloudconfig.php

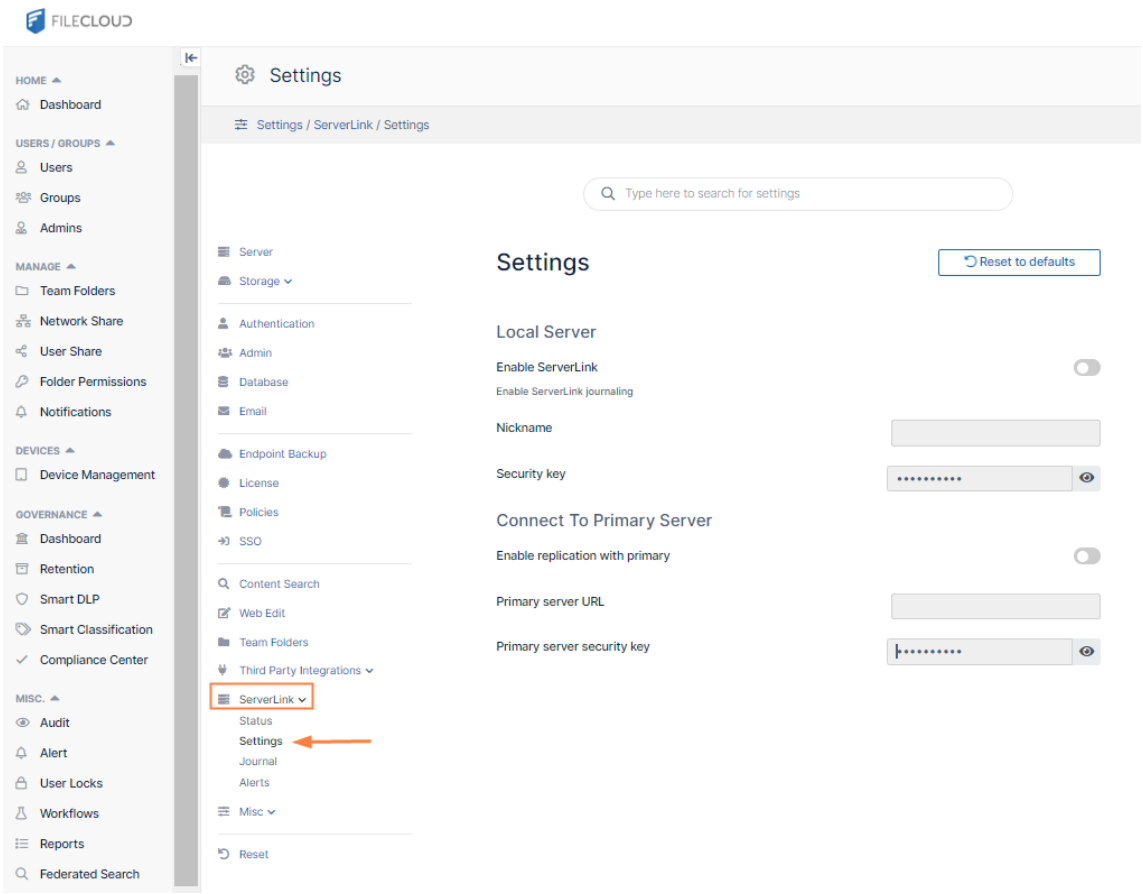
Linux Location : /var/www/html/config/cloudconfig.php

```
define("TONIDOCLOUD_SERVERLINK_SHOW", 1);
```

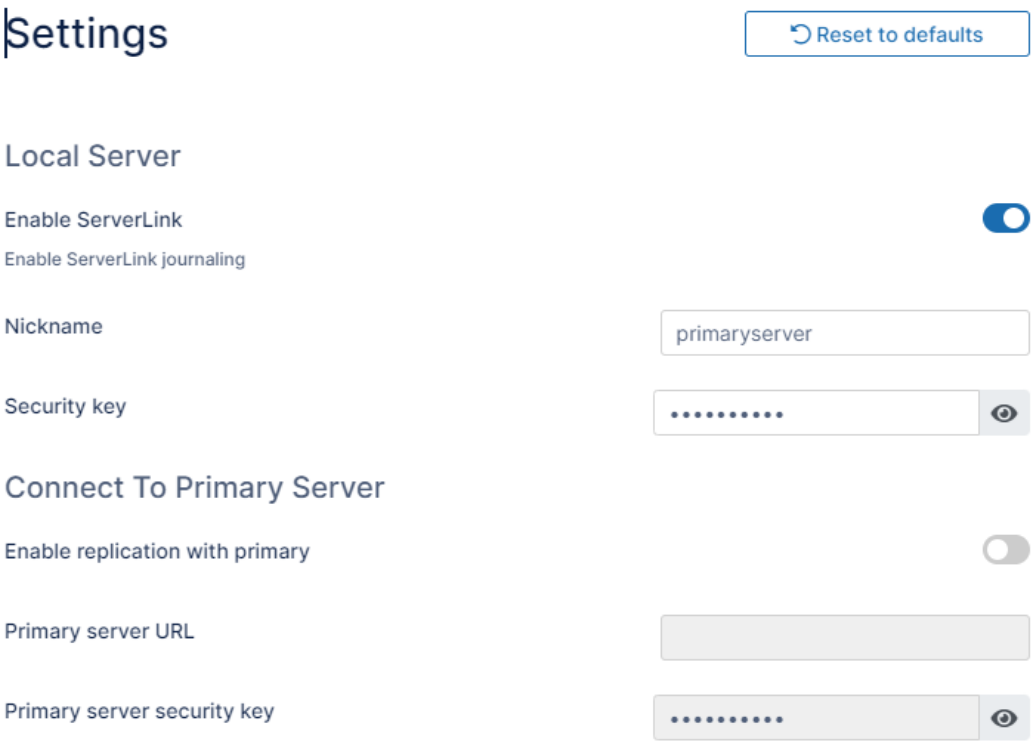
If ServerLink is disabled, any local data changes that follow are not replicated to other servers even if ServerLink is later re-enabled.

1. In the FileCloud admin portal's left navigation bar, scroll down and click **Settings**. Then, on the **Settings** navigation page, click **ServerLink**  The **ServerLink Status** page opens by default.

2. In the inner navigation bar on the the left of the Settings page, expand the **ServerLink** menu, and click **Settings**, as shown below.



3. Enable the field **Enable ServerLink**.
4. Enter a ServerLink **Nickname** for this server. Once set, this name cannot be changed. Make sure this name is unique among all the servers performing ServerLink. replication. For example: you can set a name like **newyorkhq** for the headquarters and names like **parisbranch**, **singaporebranch** for the branch offices.
5. Enter a strong ServerLink security key. This key is used for all ServerLink communications.



6. Click **Save**.

Configuring ServerLink on a Secondary Server

If you are setting up a secondary server for an existing primary server, it is important that you copy the primary site completely to the secondary site first.
Enabling ServerLink on a site without an original copy of primary data may result in data missing on the secondary site if the primary data is not fully replicated.

For every secondary FileCloud ServerLink server, the following **steps** must be done:

1. Copy all data from primary ServerLink server (primary should have ServerLink enabled when copy is done).
2. Install a license with ServerLink component enabled.
3. Enable ServerLink.
4. Set the primary URL and the primary Password.
5. Run the ServerLink client app.

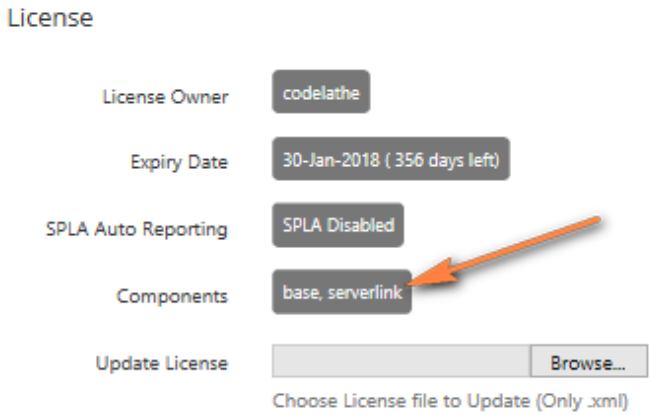
Step 1: Copy data from the Primary ServerLink server

To start a secondary server, make sure first to enable ServerLink on the primary and then copy the file data as well as the MongoDB databases to the secondary server. In many cases, it might be simple just to clone the primary (if it is a virtual machine).
It is important to ensure that the copy is done only after ServerLink is enabled. Making a copy without enabling ServerLink will mean changes made after the copy might not get replicated to the secondary servers.

Step 2: Install a ServerLink enabled License

To enable serverlink on a secondary server, you need a special license file, as ServerLink is licensed separately from the main product.

To use ServerLink for a secondary FileCloud Server, you need a license with ServerLink functionality enabled. Once installed, you can check if the functionality is enabled by opening your Settings->License Tab and verifying the component shown.



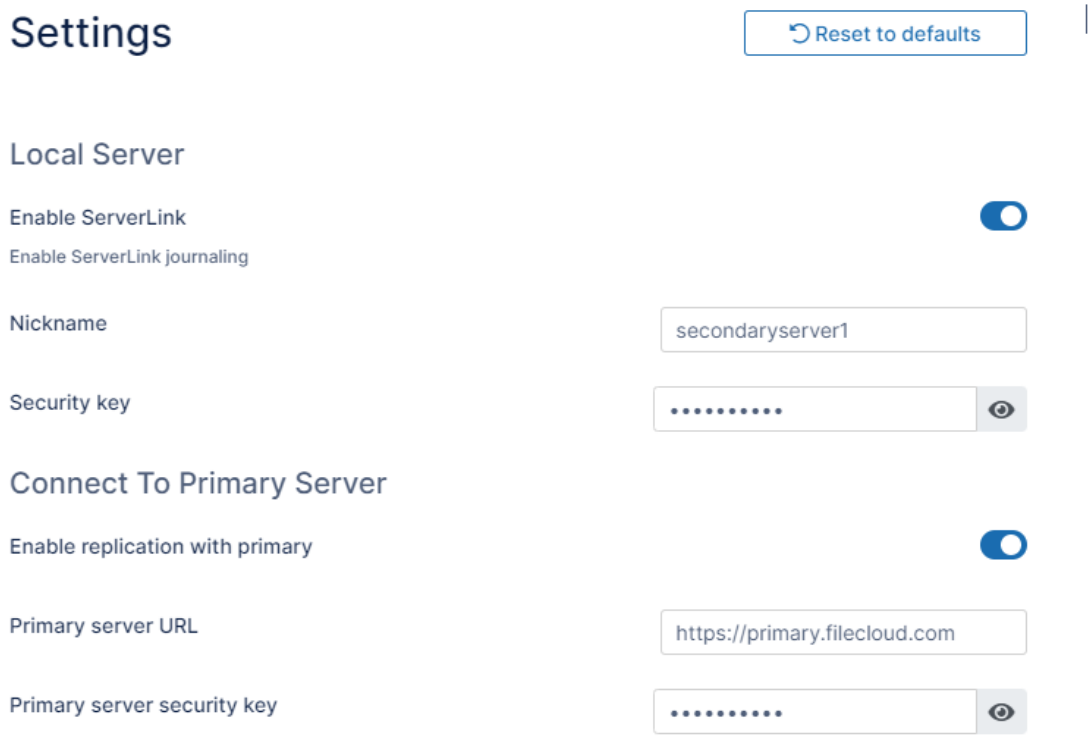
Step 3: Enable ServerLink on the secondary server

To enable ServerLink on the secondary server:

1. Add the following key to cloudconfig.php

```
define("TONIDOCLOUD_SERVERLINK_SHOW", 1);
```

2. Access the ServerLink Settings sub-page using the instructions above, under **Configuring ServerLink on a Primary Server**
3. Enable the field **Enable ServerLink**.
4. Enter a ServerLink **Nickname** for the secondary server.Once set, this name cannot be changed. Make each of the ServerLink server names unique.
5. Enter a strong ServerLink security key for the secondary server. This key is used for all ServerLink communications.
6. Enable the field **Enable replication with primary**.
7. Enter the primary server URL in **Primary server URL**. This should be publicly available and accessible from the secondary site.
8. Enter the primary Server's security key; this should match what was entered as the security key on the primary site. ServerLink will not work if the security key doesn't match.



9. Click **Save**.

Step 4: Running the ServerLink Client

Windows

1. Open an Administrator command prompt
2. Navigate to the XAMPP folder

```
cd c:\xampp
```

3. Register the ServerLink Client service

```
slclient.exe /registerService /displayName="FileCloud ServerLink Client Service"
```

4. Start the ServerLink Client service. The server link client is now running and server-to-server replication should start.

```
net start slclient
```

5. To stop the ServerLink Client Service

```
net stop slclient
```

6. To completely remove the ServerLink Client Service

```
slclient.exe /unregisterService
```

Ubuntu

For Ubuntu versions of Linux, run the following commands:

```
curl --location https://patch.codelathe.com/tonidocloud/live/3rdparty/slclient/deb/
slclient.service -o /etc/systemd/system/slclient.service
systemctl daemon-reload
systemctl enable slclient.service
service slclient start
```

RHEL

For RHEL versions of Linux, run the following commands:

```
curl --location https://patch.codelathe.com/tonidocloud/live/3rdparty/slclient/rpm/
slclient.service -o /etc/systemd/system/slclient.service
systemctl daemon-reload
systemctl enable slclient.service
```

```
service slclient start
```

Upgrade process for ServerLink with high-availability clusters

1. Stop the Web server (Apache) on all servers in the primary cluster and the disaster recovery (DR) cluster.
2. Stop ServerLink in the DR server. (Only one server will have ServerLink service running.)
3. Upgrade the MongoDB cluster in the primary cluster.
   a. Enter one of the following commands to check the status of the cluster. Replace **IP** with your Mongo bind IP.
   On Windows:

   ```
   cd C:\xampp\mongodb\bin
   mongosh --host IP
   ```

   On Linux:

   ```
   mongosh  --host IP
   ```

   On Windows or Linux, then run:

   ```
   rs.status()
   ```

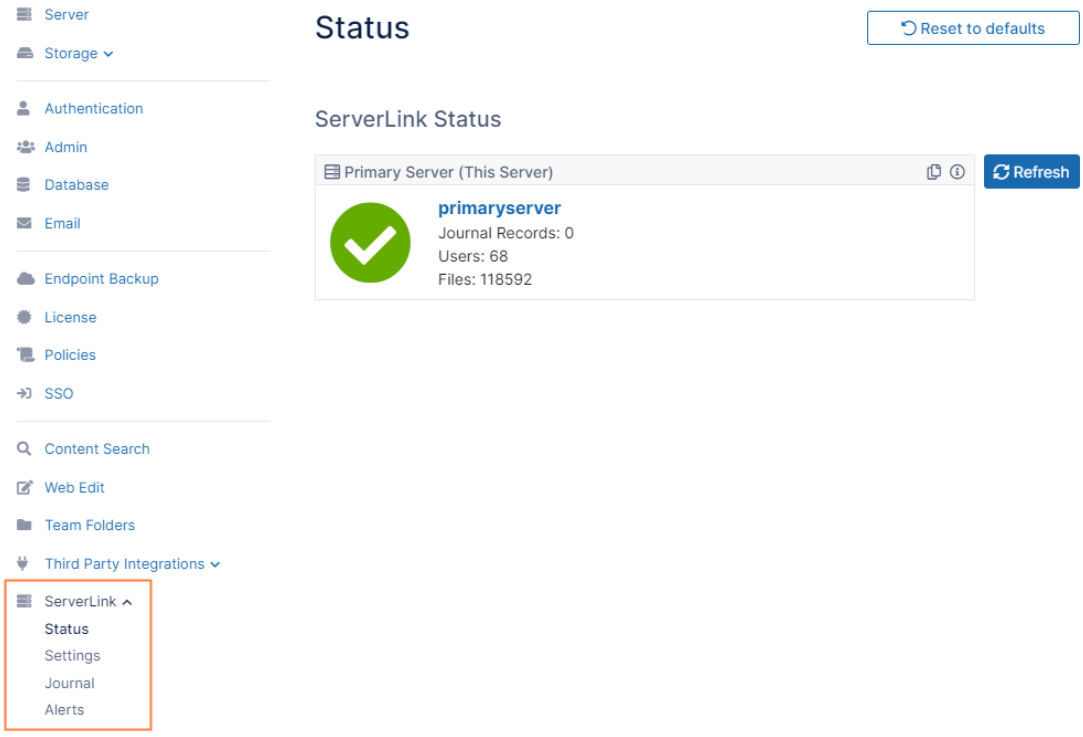
   To confirm that all nodes are in sync, check if their timestamps are the same.
   b. Upgrade one of the secondary servers.
   c. Upgrade each secondary server.
   d. Upgrade the primary server..
   e. Check the status of the cluster using the commands in 3a.
4. Upgrade the Web nodes in the primary cluster.
5. Upgrade Solr Server in the primary cluster
6. Follow steps 3 to 5 for the DR cluster.
7. Start all services.
8. Start ServerLink in the DR server

Viewing ServerLink Information

To view information about ServerLink's configuration and execution:

1. In the FileCloud admin portal's left navigation bar, scroll down and click **Settings**. Then, on the **Settings** navigation page, click **ServerLink** 

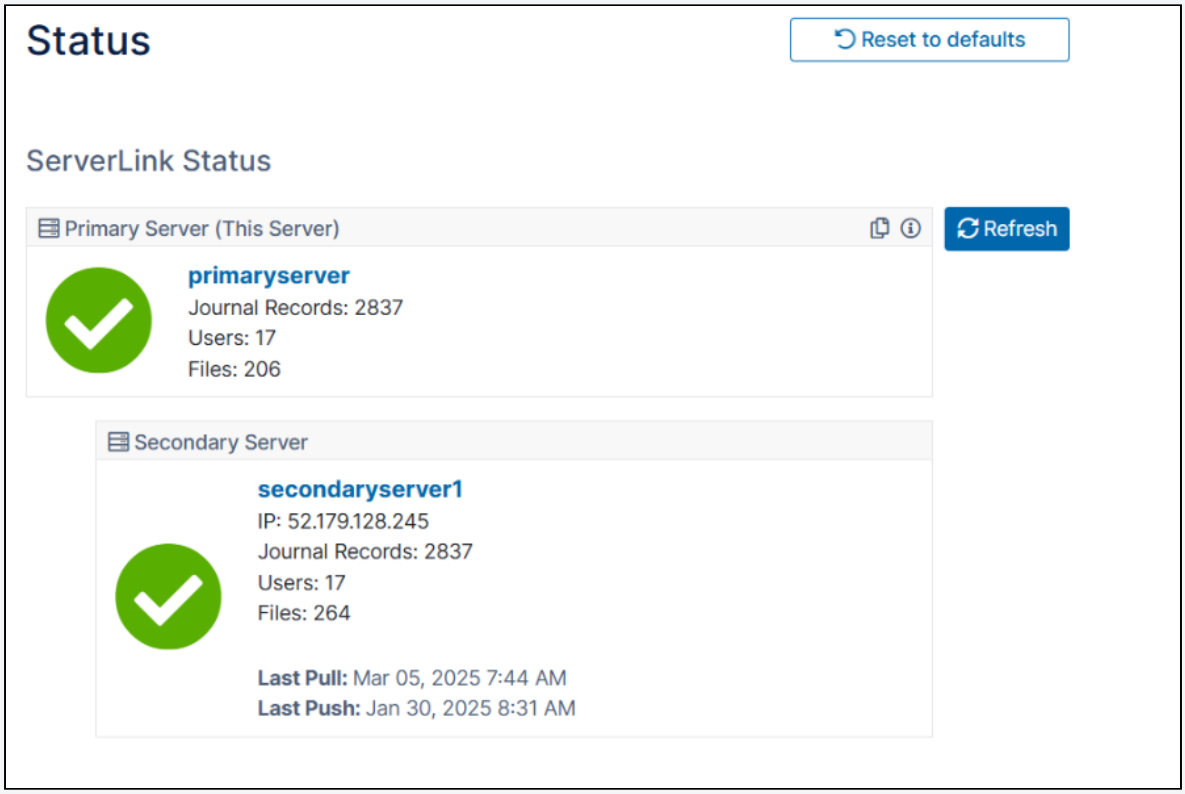
. The **ServerLink Status** page opens by default.
2. To access other pages of ServerLink information, in the inner navigation bar on the left of the **Settings** page, expand the **ServerLink** menu, and click the name of the **ServerLink** page.



ServerLink Status

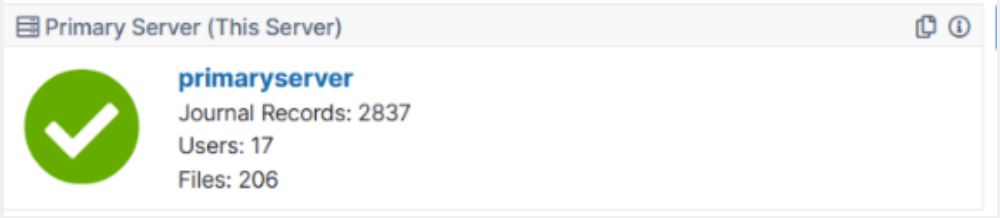
The Status page displays information about the primary server and each of its secondary servers. The following images display a configuration with one primary server and one secondary server; if there were additional secondary servers, boxes representing each of them would also appear for them in the images.

User is signed in to the secondary server



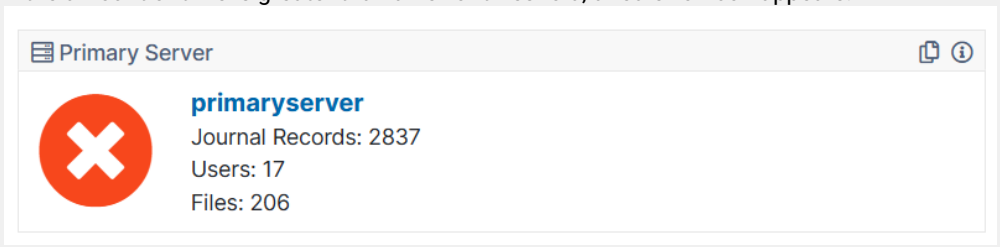
The following information is displayed for the servers:

- (This Server) - indicates which of the represented servers is your server. For example, if you were logged into one of the secondary servers, its node would display (This Server).
- Copy icon - when you click this icon, you can copy the primary and secondary servers' status information.
- Info icon - displays ServerLink internal information about node journal version.
- Icon in box - indicates server status.
  If the server is running, a check on a green background appears:

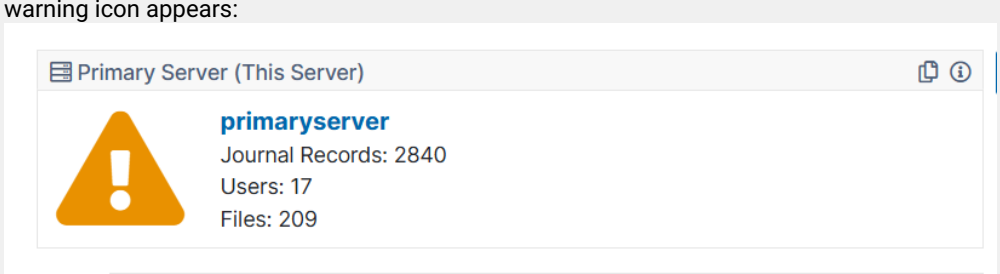


Depending on the time lapse found in certain time settings on the nodes, a red error icon or a yellow warning icon is displayed.
Hover over the icon for information about the error or warning.

If the amount of time is greater than an error threshold, a red error icon appears:



If the amount of time is greater than a warning threshold but less than an error threshold, a yellow warning icon appears:



Understanding warning and error messages

When you hover over the red or yellow icon you may see one of the following messages:

- **Last pull date older than the given threshold**
  This indicates that the secondary node is not communicating with the primary node.
  If the last pull date was older than the error threshold, an error icon is shown; if the last pull date was older than the warning threshold but more recent than the error threshold, a warning icon is shown.

- **Node journal version is older than the given threshold**
  This indications that the nodes are not synchronizing. When journal versions were checked, one of the journals was older than either the warning or the error threshold.
  If it was older than the error threshold, an error icon is shown; if it was older than the warning threshold but more recent than the error threshold, a warning icon is shown.

The default warning threshold is 15 minutes, and the default error threshold is 120 minutes. To change these:

1. Open cloudconfig.php.
   - Windows Location : C:\xampp\htdocs\config\cloudconfig.php
   - Linux Location : /var/www/html/config/cloudconfig.php
2. Add the warning or error setting below, and change the number of minutes.

```
define("TONIDOCLOUD_SERVERLINK_WARNING_THRESHOLD", 15);
```

```
define("TONIDOCLOUD_SERVERLINK_ERROR_THRESHOLD ", 120);
```

- Journal records - Number of log records for ServerLink sync operations.
- Last Pull - Last time secondary server pulls data from primary server.
- Last Push - Last time secondary server pushes data to primary server.
- Users - Users on this node
- Files - Number of files on this node.
  Note: When servers synced, number of users and files on the nodes appear the same.

ServerLink Settings

See ServerLink Installation and Configuration (see page 6).

ServerLink Journal

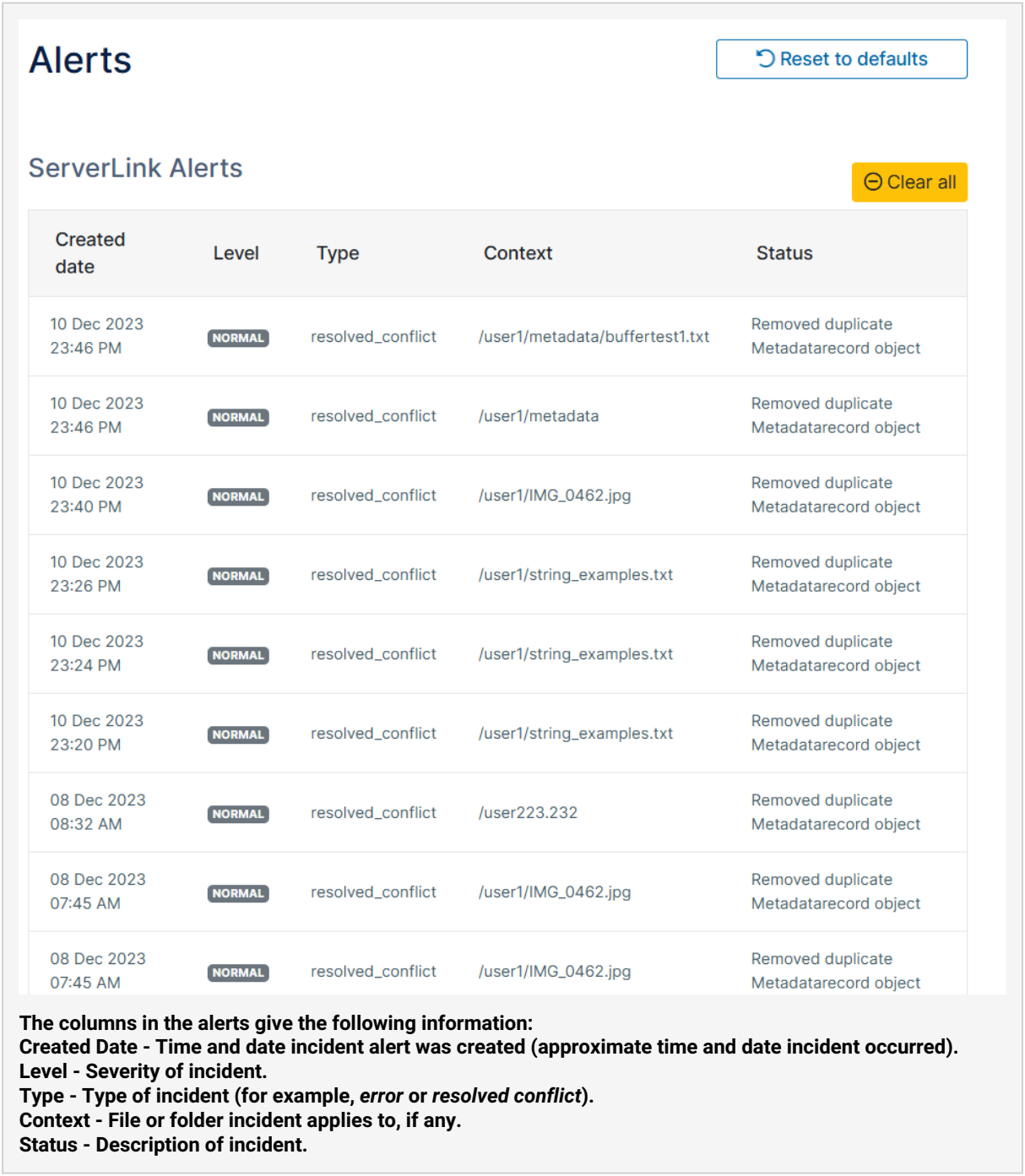
The journal is a log of all ServerLink syncing actions:

The columns in the Journal give the following information:

Created Date - Date and time that the sync action occurred.
Origin - The name of the ServerLink node where the journal record was created.
Type - Type of action.
Context - Area of system where action occurred.

ServerLink Alerts

ServerLink alerts inform a user about certain types of incidents that occur during ServerLink syncing, such as removal of a duplicate record or a request error.



The columns in the alerts give the following information:
Created Date - Time and date incident alert was created (approximate time and date incident occurred).
Level - Severity of incident.
Type - Type of incident (for example, *error* or *resolved conflict*).
Context - File or folder incident applies to, if any.
Status - Description of incident.

Disable Metadata Syncing in ServerLink

If you are using ServerLink for data transfer only, you may disable metadata syncing to make the process more efficient.

To disable metadata syncing:

1. Open cloudconfig.php:
   Windows Location: XAMPP DIRECTORY/htdocs/config/cloudconfig.php
   Linux Location: /var/www/config/cloudconfig.php
2. Add the following :

```
define("TONIDOCLOUD_SERVERLINK_DISABLE_METADATA_SYNC",true);
```

> The setting only takes effect on the ServerLink node associated with the cloudconfig.php file. To fully disable metadata sync, add the setting to each ServerLink node's cloudconfig.php file.

ServerLink Fast Mode

In Fast mode, ServerLink performs synchronization without running services directly related to user experience, such as notification, backup, and audit.

Configuring ServerLink to run in Fast mode

You can set ServerLink to run in Fast mode by configuring some or all the recommended settings in the table below. For some of the settings you are required to manually add flags to the cloudconfig.php file; for others, you may enable or disable an option in the Admin portal's **Settings** tabs.

Depending on your system's requirements or your particular use case, you can use all the recommended settings below or leave out settings for functionality that you want to remain enabled.

Description	Setting	Location
Disabled SL metadata sync	**define("TONIDOCLOUD_SERVERLINK_DISABLE_METADATA_SYNC", true);**	**cloudconfig.php**
Disable Notifications	Uncheck **Enable File Change Notifications**	Admin portal, **Settings > Misc > Notifications**
Disable Activity Stream	**define("TONIDOCLOUD_DISABLE_ACTIVITY_STREAM", false);**	**cloudconfig.php**
Disable Search Index	If the button on the right displays **Configure**, do not click it. If the button on the right displays **Reset**, click it disable search indexing.	Admin portal, **Settings > Content Search**
Disable Content Classification	Check **Disable Content Classification**	Admin portal, **Settings > Misc > General**
Disable Workflow Processing	**define("TONIDOCLOUD_DISABLE_WORKFLOW_CALLBACK", false);**	**cloudconfig.php**
Disable Sync Database	**define("TONIDOCLOUD_DISABLE_SYNC_DATABASE_CALLBACK", false);** This disables FileCloud Sync and FileCloud ServerSync.	**cloudconfig.php**
Disable Recycle Bin	In each enabled policy, in the **General** tab, set **Store Deleted Files** to **NO**	Admin portal, **Settings > Policies**

Description	Setting	Location
Disable User Signups	Set **Allow Account Signups** to **FALSE**	Admin Portal, **Settings > Admin**
Set Audit to REQUEST mode	Set **Audit Logging Level** to **REQUEST**	Admin Portal, **Settings > Admin**

Adding settings to cloudconfig.php

1. Open cloudconfig.php:
   Windows Location: XAMPP DIRECTORY/htdocs/config/cloudconfig.php
   Linux Location: /var/www/config/cloudconfig.php
2. Add the setting from the above table.

ServerLink Logs

ServerLink Admin portal activity is logged in the FileCloud Server log.
Synchronization activity is logged separately, in **serverlink** folders.

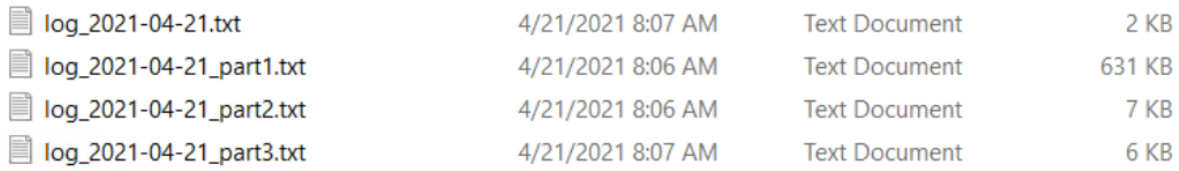
Log locations

The log file paths are:

Windows:
<DriveLetter>\xampp\htdocs\scratch\logs\serverlink\log_YYYY-MM-DD.txt
For example: c:\xampp\htdocs\scratch\logs\serverlink\log_2020-08-27.txt

Linux:
/var/www/html/scratch/logs/serverlink/log_YYYY-MM-DD.txt
For example: /var/www/html/scratch/logs/serverlink/log_2020-08-27.txt

When a log file reaches a maximum size of (1024 * 50 KB by default), a new log file is created with **part#** as a suffix. For example:



Changing Maximum Log size

You may change the default maximum log size with the TONIDOCLOUD_SERVERLINK_LIMIT_LOG_FILE_SIZE_KB setting.

To change the maximum log size:

1. Open cloudconfig.php.
   - Windows Location : C:\xampp\htdocs\config\cloudconfig.php
   - Linux Location : /var/www/html/config/cloudconfig.php
2. Add the following.

```
define("TONIDOCLOUD_SERVERLINK_LIMIT_LOG_FILE_SIZE_KB", 1024 * 50);
```

3. Change the default size of 1024 * 50.

Multitenancy

For multitenancy, each site has a serverlink folder containing sync logs.