ProtonDrive Authentication

Overview

This application uses **rclone** to authenticate with ProtonDrive. Rclone is a powerful command-line tool that handles the authentication flow securely.

Authentication Methods

ProtonDrive supports two authentication methods through rclone:

1. Standard Login (Username + Password)

- Your regular ProtonMail email and password
- Recommended for accounts without 2FA
- Simplest setup process

2. Two-Factor Authentication (2FA)

- Required if you have 2FA enabled on your Proton account
- Uses app-specific passwords
- More secure for sensitive data

Setup Process

First-Time Configuration

The application provides a guided setup wizard:

1. **Launch Setup:**
   ```bash
   ./run.sh
   ```
   - The wizard appears automatically on first run
   - Or manually trigger via "Configure ProtonDrive" button

2. **Rclone Configuration Opens:**
   - A terminal window launches automatically
   - You'll see the rclone interactive configuration

3. **Follow Rclone Prompts:**
   ```
   n) New remote
      name> protondrive
      Storage> protondrive
   ```

4. **Enter Credentials:**
   - **If no 2FA:** Enter username and password
   - **If 2FA enabled:** See section below

5. **Verify Connection:**
   - The application will test the connection
   - You'll see a success message when ready

Authentication with 2FA

If you have Two-Factor Authentication enabled:

Step 1: Generate App Password

1. **Log into ProtonMail web interface**

2. **Navigate to Settings:**
   - Click on your profile (top-right)
   - Go to "Account" → "Security"

3. **Create App Password:**
   - Find "App passwords" section
   - Click "Create app password"
   - Give it a name (e.g., "Rclone Sync")
   - Copy the generated password

4. **Save Securely:**
   - Store in a password manager
   - You cannot view it again after closing

Step 2: Use App Password in Rclone

```
Username: your-email@protonmail.com
Password: [paste app password here]
```

Important: Use the app password, NOT your regular password!

Security Considerations

Password Storage

Rclone stores credentials securely:

Location:

```
~/.config/rclone/rclone.conf
```

Encryption:
- Passwords are obscured by default
- For additional security, use rclone's password encryption:
`bash`
```
rclone config password
```

Permissions:

```
chmod 600 ~/.config/rclone/rclone.conf
```

Best Practices

1. **Use App Passwords:**
   - Even if 2FA is optional, app passwords are more secure

- Allows revocation without changing main password
- Limits scope of access

2. **Enable 2FA:**
   - Protect your Proton account with 2FA
   - Prevents unauthorized access
   - Use TOTP apps (Authy, Google Authenticator, etc.)

3. **Secure Configuration:**
   - Keep rclone.conf file private
   - Don't share or commit to version control
   - Back up securely (encrypted)

4. **Regular Review:**
   - Periodically check active app passwords
   - Revoke unused passwords
   - Update if compromised

5. **Network Security:**
   - Use trusted networks
   - Consider VPN for public Wi-Fi
   - All ProtonDrive traffic is encrypted

Troubleshooting Authentication

Problem: Login fails with correct credentials

Possible causes:
- 2FA is enabled but using regular password
- App password expired or revoked
- Account locked or suspended

Solutions:
1. Verify 2FA status in Proton account
2. Generate new app password
3. Check Proton account status
4. Test login on ProtonMail web interface

Problem: Terminal doesn't open for configuration

Solutions:
1. **Manual configuration:**

```bash
rclone config
```

2. **Check terminal emulator:**

```bash
which gnome-terminal konsole xterm
```

3. **Install terminal:**
```bash
# Arch/CachyOS
sudo pacman -S gnome-terminal
```

```
# Ubuntu/Debian
sudo apt install gnome-terminal
```
```

## Problem: "No remotes found" error

**Solutions:**

1. Run configuration wizard again
2. Manually configure rclone:

 bash
```
    rclone config
```
3. Verify remote exists:

 bash
```
    rclone listremotes
```

## Problem: Authentication works but can't list files

**Possible causes:**

- Network connectivity issues
- ProtonDrive API temporary outage
- Rate limiting

**Solutions:**

1. Check internet connection
2. Verify ProtonDrive web access
3. Wait a few minutes and retry
4. Check rclone verbose output:

 bash
```
    rclone lsd protondrive: -vv
```

# Manual Rclone Configuration

If the wizard doesn't work, configure manually:

## Step-by-Step Manual Setup

1. **Open terminal:**
   bash
```
      rclone config
```

2. **Create new remote:**
   ```
   n) New remote
      name> protondrive
   ```

3. **Select ProtonDrive:**
   ```
   Storage> protondrive
   ```
   (Type the number corresponding to ProtonDrive)

4. **Enter username:**
   ```
   username> your-email@protonmail.com
   ```

5. **Enter password:**
   ```
   password> [your-password-or-app-password]
   ```

6. **Configure advanced options (optional):**
   ```
   Edit advanced config? (y/n)
       n
   ```

7. **Save configuration:**
   ```
   y) Yes this is OK
       q) Quit config
   ```

8. **Test connection:**
   ```bash
   rclone lsd protondrive:
   ```

Reconfiguring Authentication

To update credentials or reconfigure:

Method 1: Application Interface

1. Open the application
2. Go to "Settings" tab
3. Click "Configure ProtonDrive"
4. Follow the wizard

Method 2: Command Line

```
rclone config reconnect protondrive:
```

Method 3: Complete Reconfiguration

```
rclone config delete protondrive
rclone config
```

Environment Variables

For automated setups, you can use environment variables:

```
export RCLONE_CONFIG_PROTONDRIVE_TYPE=protondrive
export RCLONE_CONFIG_PROTONDRIVE_USERNAME=your-email@protonmail.com
export RCLONE_CONFIG_PROTONDRIVE_PASSWORD=your-app-password
```

Warning: Be cautious with passwords in environment variables!

Token Refresh

ProtonDrive authentication tokens:
- Are managed automatically by rclone
- Refresh before expiration
- Should not require manual intervention

If you experience frequent authentication prompts:
1. Check system clock accuracy

2. Verify internet stability
3. Consider recreating the remote

Multi-Account Support

To use multiple ProtonDrive accounts:

1. **Create additional remotes:**
   ```bash
   rclone config
   # Create: protondrive-personal, protondrive-work, etc.
   ```

2. **Configure application:**
   - Edit `~/.config/protondrive-sync/config.json`
   - Change `remote_name` to desired remote

3. **Or run multiple instances:**
   - Use different configuration directories
   - Set `XDG_CONFIG_HOME` environment variable

See Also

- ProtonDrive Setup Guide (../setup/PROTONDRIVE_SETUP.md)
- Selective Sync Documentation (selective-sync.md)
- Rclone Official Documentation (https://rclone.org/protondrive/)
- Proton Account Security Settings (https://account.proton.me/security)