🚀 SOP: Automating N8N Workflow and Credential Backups to Google Drive

Overview

This Standard Operating Procedure (SOP) walks you through creating an automated backup system for your N8N workflows and credentials. Whether you're running N8N locally via Docker or on a cloud host like Render, this guide ensures your data is safely backed up daily to Google Drive and keeps a version you can restore from. The outcome is a fully automated, fail-safe backup system that runs on a schedule and alerts you via email.

Step-by-Step Guide

1. **Create or Identify N8N Workflows to Back Up**

   a. Open your N8N instance.

   b. Create or confirm existing workflows you want to include in the backup.

   c. Save all workflows before proceeding.

2. **Start a New Workflow for Backup Automation**

   a. Create a new workflow in N8N.

   b. Add a `Schedule Trigger` node.

   c. Configure it to run daily at a convenient time (e.g., 7 PM).

3. **Add an Execute Command Node**

   a. Add an `Execute Command` node to the workflow.

   b. Insert the following command:

   ```
   n8n export:workflow --all --output=/tmp/workflows.json && n8n export:credentials --all --output=/tmp/credentials.json
   ```

c. This will generate `workflows.json` and `credentials.json` inside the container at `/tmp`.

4. **Read the JSON Files from Disk**

   a. Add a `Read Binary Files` node.

   b. Use this file pattern:

   ```
   /tmp/*.json
   ```

   c. This loads both the credentials and workflows files.

5. **Add a Switch Node to Separate File Types**

   a. Add a `Switch` node to check `file name` :
   - Route 1: `filename contains "credentials"` → label this route as "credentials".
   - Route 2: `filename contains "workflows"` → label this route as "workflows".

6. **Upload Files to Google Drive (First Time Only)**

   a. Add a `Google Drive` → `Upload File` node for each route.

   b. Set `Input Data Field Name` to `data` .

   c. Specify your target folders (e.g., `Backups/Credentials` and `Backups/Workflows`).

   d. Authorize with your Google account and test.

7. **Replace Upload with Update for Daily Backups**

   a. After initial upload, replace the `Upload File` nodes with `Update File` nodes.

   b. In each:
   - Select the matching file from Google Drive.
   - Enable `Change File Content` .
   - Set `Input Data Field Name` to `data` .

8. **Send Email Notification**

   a. Add a `Gmail` → `Send Email` node.

   b. Set subject to `N8N Backup Complete` .

   c. Message:

> Your workflows and credentials have been backed up to Google Drive.

    d. Add your email in the `To` field.

9. **(Optional) Set Up an Error Workflow**

    a. Create an error-handling workflow that sends alerts.

    b. Go to `Settings` in your backup workflow.

    c. Under `Error Workflow`, select the error-handling workflow.

    d. This will email you any time the backup process fails.

10. **Maintain Encryption Key for Future Imports**

    a. Save your current N8N instance's `N8N_ENCRYPTION_KEY`.

    b. When migrating to a new instance, use the same key in environment variables.

    c. Without it, restored credentials will be unreadable.

11. To get the encryption key of your N8n instance create a new workflow - **Use the** `Execute Command` **Node in new workflow - Add Manual Trigger → Execute Command node and then this down below.**

To list files and locate the config:

```
ls -la /home/node/.n8n
```

Then, to read the content of the config file:

```
cat /home/node/.n8n/config
```

This will print the config file contents, which may include:

```
{
  "encryptionKey": "your-encryption-key-here",
  ...
```

```
    }
```

You can output that to a `Gmail` node or just inspect it in the node response.

Warnings and Notes

- **Render Free Plan Restriction**: You cannot use `Execute Command` on Render's free plan. Upgrade to Starter or higher.

- **Google Drive API Quotas:** Ensure your Google account has adequate quota for uploads and updates.

- **Encryption Key Consistency**: Always use the same `N8N_ENCRYPTION_KEY` when moving credentials between N8N instances.

Visual Diagram

```
flowchart TD
    A[Create Backup Workflow] → B[Add Schedule Trigger]
    B → C[Execute Export Command]
    C → D[Read Files from Disk]
    D → E[Switch: Separate Credentials and Workflows]
    E → F[Upload or Update to Google Drive]
    F → G[Send Email Notification]
    G → H[Optional: Error Workflow Setup]
    H → I[Maintain Encryption Key for Import]
```