This script is used to manage infrastructure resources using Terraform, specifically creating or deleting resources, based on the given arguments. Here's a detailed explanation of its functionality:

Overview

The script helps you manage the lifecycle of Terraform-managed infrastructure resources with options for creating (`create`) or deleting (`delete`). It accepts a set of arguments to configure the specific settings needed for the Terraform configuration.

Key Features Explained

1. **Command Argument Handling (`create` or `delete`)**:
   - `create`: Deploy the infrastructure using Terraform.
   - `delete`: Tear down the infrastructure that was previously deployed.
   - If neither `create` nor `delete` is supplied, the script exits with an error and displays the correct usage.

2. **Argument Parsing**:
   - Parses multiple required arguments, including:
     - `--profile`: The AWS SSO profile name.
     - `--confluent-api-key` & `--confluent-api-secret`: The API key and secret for connecting to Confluent (likely for Kafka integration).
     - `--snowflake-warehouse`: The Snowflake warehouse name.
     - `--service-account-user`: The service account username.
     - `--day-count`: Number of days for some specific configuration.
     - `--auto-offset-reset`: Kafka offset reset behavior (`earliest` or `latest`).
     - `--number-of-api-keys-to-retain`: Number of Confluent API keys to retain.
     - `--admin-service-user-secrets-root-path`: The root path in AWS Secrets Manager for admin service user secrets.

3. **Validation Checks**:
   - Validates that all required arguments are supplied.
   - If any argument is missing, the script provides an appropriate error message and terminates.

4. **AWS SSO Login**:
   - Logs in using the specified AWS SSO profile to get temporary AWS credentials.
   - Uses `aws2-wrap` to export AWS credentials (`AWS_ACCESS_KEY_ID`, `AWS_SECRET_ACCESS_KEY`, `AWS_SESSION_TOKEN`, `AWS_REGION`, `AWS_ACCOUNT_ID`) for further use by Terraform.

5. **Creating the `terraform.tfvars` File**:
   - A `terraform.tfvars` file is generated dynamically using the supplied arguments.
   - The file contains all the necessary variables to deploy infrastructure using Terraform, such as AWS credentials, Confluent API information, Snowflake warehouse details, and other configuration settings.

6. **Terraform Actions**:
    - **Initialize**: Runs `terraform init` to initialize the working directory.
    - **Create**:
        - Uses `terraform plan` to preview changes and `terraform apply` to create/update resources.
    - **Delete**:
        - Uses `terraform destroy` to delete all resources managed by the configuration.
        - Deletes associated AWS Secrets Manager secrets used by Confluent and Snowflake.

Usage Example

The script should be run with the following syntax:

```
scripts/deploy-terraform.sh <create | delete> --profile=<SSO_PROFILE_NAME>
                                              --confluent-api-key=
<CONFLUENT_API_KEY>
                                              --confluent-api-secret=
<CONFLUENT_API_SECRET>
                                              --snowflake-warehouse=
<SNOWFLAKE_WAREHOUSE>
                                              --service-account-user=
<SERVICE_ACCOUNT_USER>
                                              --day-count=<DAY_COUNT>
                                              --auto-offset-reset=
<earliest | latest>
                                              --number-of-api-keys-to-
retain=<NUMBER_OF_API_KEYS_TO_RETAIN>
                                              --admin-service-user-
secrets-root-path=<ADMIN_SERVICE_USER_SECRETS_ROOT_PATH>
```

- **create**: Deploy infrastructure using Terraform.
- **delete**: Remove infrastructure managed by Terraform.
- `--profile=<SSO_PROFILE_NAME>`: The AWS SSO profile to use.
- `--confluent-api-key` & `--confluent-api-secret`: Credentials for Confluent API.
- `--snowflake-warehouse`: The Snowflake warehouse to use.
- `--service-account-user`: The service account username.
- `--day-count`: Number of days for some retention or lifecycle policy.
- `--auto-offset-reset=<earliest | latest>`: Specify Kafka offset reset strategy.
- `--number-of-api-keys-to-retain`: Specify the number of API keys to retain.
- `--admin-service-user-secrets-root-path`: The root path in AWS Secrets Manager for admin service user secrets.

Summary

- **Lifecycle Management**: The script allows you to create and delete infrastructure with Terraform.
- **AWS Integration**: Uses AWS SSO for secure access and manages credentials through environment variables.

- **Confluent and Snowflake Configuration**: Integrates with Confluent (Kafka) and Snowflake, and dynamically generates the necessary configuration files for Terraform.
- **Secrets Management**: Deletes associated secrets in AWS Secrets Manager when tearing down the infrastructure.

This script provides a streamlined way to manage infrastructure resources with Terraform, ensuring all configurations and credentials are correctly handled throughout the infrastructure lifecycle.