Using AWS Systems Manager Parameter in AWS CloudFormation templates

SSM Parameter Store

- `AWS Systems Manager Parameter Store` (SSM) provides you with a secure way to store config variables for your applications.
- SSM can store plaintext parameters or encrypted secure strings.
- Since parameters are identified by ARNs, you can set a fine grain access control to your configuration bits with IAM.
- A Parameter Store parameter is any piece of data that is saved in Parameter Store, such as a block of text, a list of names, a password, an AMI ID, customer property config.

Types of Parameters in SSM Parameter Store

- **String**
  - `String` parameters consist of any block of text you enter.
    - test123
    - Region Name
- **StringList**
  - `StringList` parameters contain a comma-separated list of values
    - CSV,TSV,JSON
    - vpc-12345678,subnet-12345678, us-east-1a
- **SecureString**
  - A `SecureString` parameter is any sensitive data that needs to be stored and referenced in a secure manner.

> NOTE: Don't store sensitive data in a String or StringList parameter. For all sensitive data that must remain encrypted, use only the SecureString parameter type.

Create SSM Parameter Store

- Navigate to AWS Systems Manager Service > Parameter Store.
- Create a Parameter in System Manager with any name
- `instance_type_parameter` as key name and value as the `t2.micro`

> Note: There can be multiple versions of a parameter if it is edited and stored.

- To dynamically reference the value of the ssm parameter `InstanceType: '{{resolve:ssm:instance_type_parameter:1}}'`
- A public parameter is a parameter provided by an AWS service for use with that service, and stored in AWS Systems Manager Parameter Store.
- A parameter label is a user-defined alias to help you manage different versions of a parameter.

Query the SSM Parameters using aws-cli

- AWS in their own AWS Accounts maanges the EC2 AMI Creation and Updation of AMIs in different regions.

- There are different AMIs for same Linux OS (Amazon Linux 2) in different region.
- Configure Access ID and Access Keys to work with AWS ClI, and assign SSM Parameter permission access to this IAM user.
- To Display a complete list of all available public Parameter for Amazon Linux Instances

```
aws ssm get-parameters-by-path --path "/aws/service/ami-amazon-linux-latest" --
region us-east-1

aws ssm get-parameters --names /aws/service/ami-amazon-linux-latest/amzn2-ami-hvm-
x86_64-gp2 --region us-east-1

aws ec2 describe-images --owners amazon --filters "Name=name,Values=amzn*" --query
'sort_by(Images, &CreationDate)[].Name'
```

- The namespace is made up of two parts:
    - Parameter Store Prefix (tree): `/aws/service/ami-amazon-linux-latest/`
    - AMI name alias: `amzn2-ami-hvm-x86_64-gp2`
- For SSM Parameters, the reference-key segment is composed of the parameter name and version number. Use the following pattern: `'{{resolve:ssm:parameter-name:version}}'`
- To Display a complete list of all available public Parameter for Windows Instances

```
aws ssm get-parameters-by-path --path "/aws/service/ami-windows-latest" --region
us-east-1
```