



# HYCU for AWS Lambda

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R-Cloud Module Guide

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# About the module

With the R-Cloud (formerly HYCU Protégé) module for AWS Lambda, you can back up your code and function configurations securely and efficiently.


 **Note** The R-Cloud module for AWS Lambda provides data protection for the Lambda functions.

## Prerequisites

### Minimum set of permissions

Before you add the module to R-Cloud as a source, you must grant the minimum set of permissions to the following AWS accounts:

- Authentication IAM account:
  - `lambda:GetFunction`
  - `lambda:GetFunctionConfiguration`
  - `lambda>DeleteFunction`
  - `lambda>CreateFunction`
- Storage IAM account:
  - `s3:PutObject`
  - `s3:GetObject`

 **Note** As an alternative to granting specific permissions, you can also grant the accounts the `AWSLambda_FullAccess` and `AmazonS3FullAccess` roles.

### Permissions for protecting various configurations

In addition to the minimum set of permissions, you must grant the following sets of permissions to the authentication IAM account or assign the authentication IAM account the relevant roles if you plan to protect the following specific configurations:

Configuration	Required permissions	Relevant roles
VPC	<ul style="list-style-type: none"> <li>ec2:DescribeVpcs</li> <li>ec2:DescribeSubnets</li> <li>ec2:DescribeSecurityGroups</li> </ul>	<ul style="list-style-type: none"> <li>AmazonVPCReadOnlyAccess</li> </ul>
DeadLetter	<ul style="list-style-type: none"> <li>sqs:GetQueueUrl</li> <li>sns:GetTopicAttributes</li> </ul>	<ul style="list-style-type: none"> <li>AmazonSQSReadOnlyAccess</li> <li>AmazonSNSReadOnlyAccess</li> </ul>
EFS	<ul style="list-style-type: none"> <li>elasticfilesystem:DescribeAccessPoints</li> <li>elasticfilesystem:DescribeMountTargets</li> </ul>	<ul style="list-style-type: none"> <li>AmazonElasticFileSystemReadOnlyAccess</li> </ul>
Layers	<ul style="list-style-type: none"> <li>lambda:GetLayerVersion</li> </ul>	<ul style="list-style-type: none"> <li>AWSLambda_FullAccess</li> </ul>
Code Signing	<ul style="list-style-type: none"> <li>lambda:GetCodeSigningConfig</li> <li>lambda:GetFunctionCodeSigningConfig</li> </ul>	<ul style="list-style-type: none"> <li>AWSLambda_FullAccess</li> </ul>
KMS	<ul style="list-style-type: none"> <li>kms:Decrypt</li> <li>kms:DescribeKey</li> </ul>	<ul style="list-style-type: none"> <li>AWSKeyManagementServicePowerUser</li> <li>ROSAKMSProviderPolicy</li> </ul>

## Limitations

When adding the module and while protecting the related SaaS application, the following limitations apply:

- Certain configurable metadata cannot be backed up (for example, triggers and destinations). For the full list of configurable metadata that is protected, see [Protecting data](#).
- You cannot assign a policy that has Snapshot specified as the backup target type to this type of SaaS application.
- The restore operations that are not triggered within the source region ignore the following configurable metadata:
  - VPC configuration
  - Dead letter configuration
  - File system configurations
  - KMS key ARN
  - Layers
  - Code signing configuration

# Considerations

Before starting a restore, consider the following:

- Certain types of configurable metadata must be available for your AWS Lambda contents (for example, layers). If such configurable metadata types are missing, the corresponding data will not be restored.
- If the configurable metadata consists of multiple elements (for example, there can be multiple layers), all the elements must be available for a successful restore.

# Protecting data

R-Cloud starts protecting your code and function configurations in AWS Lambda after you add the module as a source to R-Cloud and assign a policy to the related SaaS application.

For details on how to add the module as a source, see *HYCU R-Cloud Help*.

The following configurable metadata is protected:

- Architectures
- Code signing configuration
- Dead letter configuration
- Description
- Environment variables
- Ephemeral storage
- File system configurations
- Function name
- Handler
- Image configuration
- Image URI
- KMS key ARN
- Layers
- Memory size

- Role
- Runtime
- SnapStart setup
- Tags
- Timeout
- Tracing configuration
- VPC configuration

## Backup


The only resource type that can be backed up is a Lambda function. No sub-resource types are supported.

The APIs called to create a backup are:

- `get_function`
- `get_function_configuration`
- A GET call to the download link returned by the `get_function`
- `put_object`
- `get_function_code_signing_config`

The files generated during every backup are:

- `config.json`: configured metadata of the Lambda function
- `code.zip`: code contents.

 **Note** The code contents are not backed up if the Lambda function uses an ECR image as a deployment package.

# Restore

The only resource type that can be restored is a Lambda function.

The APIs called to run a restore are:

- `create_function`
- `delete_function`
- `get_object`
- `describe_vpcs`
- `describe_subnets`
- `describe_security_groups`
- `get_queue_url`
- `get_topic_attributes`
- `describe_access_points`
- `get_layer_version_by_arn`
- `get_code_signing_config`
- `describe_key`

These are the available restore options:

- Overwrite Existing Functions (in-place restore)
- Function Region
- Function Execution Role
- Function Prefix

For details on how to restore the AWS Lambda data, see *HYCU R-Cloud Help*.



# Provide feedback

For any suggestions and comments regarding this product or its documentation, send us an e-mail to:

[info@hycu.com](mailto:info@hycu.com)

We will be glad to hear from you!

