

# Resource Access Manager

## Service Overview

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# 1 What Is RAM?

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## Overview

Resource Access Manager (RAM) helps you securely share resources among your Huawei Cloud accounts. If you have several Huawei Cloud accounts, you can create resources once in one of your Huawei Cloud accounts and use RAM to share those resources with the other accounts, eliminating the need to create duplicate resources in each account. For the specific cloud services and resource types supported by RAM, see [Cloud Services and Resource Types Supported by RAM](#).

If your account is managed by Huawei Cloud [Organizations](#), you can share resources with all the other accounts in an organization, or with only accounts in one or more specified organizational units (OUs) of the organization. You can also share resources with a specific Huawei Cloud account by account ID, regardless of whether the account is part of an organization.

## Functions

### Managing resource sharing

You can use RAM to centrally manage resource sharing. Specifically, as a resource owner, you can share a specified resource with an organization, OU, or account, and also update or delete the resource share at any time.

As a principal, you can accept or reject a sharing invitation, view the information about the resource share, and leave the resource share after the sharing ends.

### Viewing resource shares

A resource owner can view the information about the shared resources and the principals.

A principal can view the information about the shared resources and the resource owner.

### Sharing with Organizations

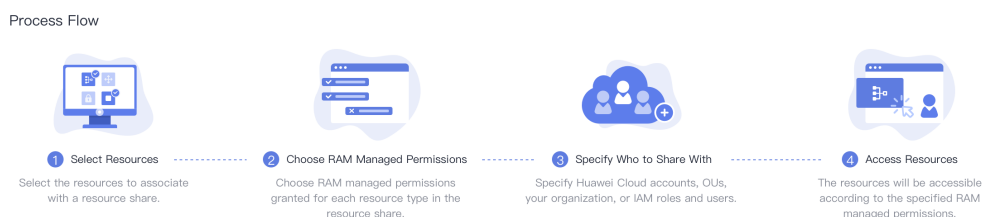
If sharing with Organizations is enabled, a resource owner can share specified resources with an organization or its OUs. By default, all accounts in the organization or OUs accept sharing invitation to gain access to the shared resources.

## How RAM Works

When you share resources with another Huawei Cloud account, you are granting access permissions for the shared resources to principals in that account. Only those permissions selected for resource sharing can be granted to principals. Permissions that can be applied to the principals are jointly determined by the RAM managed permissions and the IAM permissions configured for the principals.


The following figure demonstrates how RAM works.

**Figure 1-1** How RAM works



## Accessing RAM

You can access RAM using the management console or HTTPS-compliant application programming interfaces (APIs).

- Using the management console  
Access RAM through the management console — a browser-based visual interface. Log in to the [management console](#), click  in the upper left corner, and choose **Management & Governance > Resource Access Manager**.
- Using APIs  
Use this method if you want to integrate RAM into a third-party system for secondary development. For detailed operations, see [Resource Access Manager API Reference](#)

# 2 RAM Advantages

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## **Simplified Resource Management**

You can create a resource once in one account and use RAM to share that resource with other accounts, eliminating the need to create and provision duplicate resources in each account. This simplifies resource management and reduces operational overhead. The resource owner can use RAM to centrally manage different types of resources and configure resource shares. This improves operational efficiency and ensures consistent resource configurations.

## **Improved Management Security**

RAM has a single set of permissions preconfigured for different resource types, and principals are only allowed to access resources they have the permissions for. This improves the security of resource management while providing shared resources for resource consumers.

## **Organizational Resource Sharing**

When you use RAM to share resources with a specified organization or OU, RAM automatically grants or denies the permissions to access the shared resources in an account if the account joins or leaves that organization or OU.

# 3 Application Scenarios

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An enterprise may need to create multiple Huawei Cloud accounts and deploy different business applications in each account for administrative and billing isolation. The enterprise may also need to centrally manage certain resources and share these resources with different accounts. For example, the enterprise needs to plan, create, and manage internal networks and domain names used by all business applications in a unified manner.

# 4 Permissions Management

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If you need to assign different permissions to employees in your enterprise, Identity and Access Management (IAM) is a good choice for fine-grained permissions management. IAM provides identity authentication, permissions management, and access control, helping you with secure access to your Huawei Cloud resources.

With IAM, you can use your Huawei Cloud account to create IAM users for your employees, and assign permissions to the users to control their access to RAM. If your Huawei Cloud account does not need individual IAM users for permissions management, skip over this section.

IAM can be used free of charge. You pay only for the resources in your account. For more information about IAM, see [IAM Service Overview](#).

## RAM Permissions

By default, new IAM users do not have any permissions assigned. You need to add users to one or more groups, and attach permissions policies or roles to these groups. In this way, the users can inherit permissions from the groups and perform specified operations on cloud resources.

RAM is a global service deployed in all physical regions. RAM permissions are assigned to users in the global project, and users do not need to switch regions when accessing RAM.

You can grant users permissions by using roles and policies.

- **Roles:** A coarse-grained authorization mechanism provided by IAM to define permissions based on job responsibilities. Only a limited number of service-level roles are available. When using roles to grant permissions, you also need to assign the roles that the permissions depend on. Roles are not ideal for fine-grained authorization and secure access control.
- **Policies:** A fine-grained authorization mechanism that defines permissions required to perform operations on specific cloud resources under certain conditions. This type of authorization is more flexible and is ideal for secure access control.

[Table 1](#) describes system-defined permissions for RAM.



**Table 4-1** RAM permissions

Permission	Description
RAM FullAccess	Allows principals to create, modify, delete, or view any information about resource shares.
RAM ReadOnlyAccess	Allows principals only to view information about RAM.
RAM ParticipantAccess	Allows principals to accept or reject a resource sharing invitations and to view details about the resource shares.

# 5 Limits

Your Huawei Cloud account has the following limits related to RAM.

**Table 5-1** RAM limits

Item	Maximum	Minimum
Number of resource shares in an account	20	-
Number of shared resources associated with a resource share	20	-
Number of permission policies associated with a resource share	20	1
Number of principals associated with a resource share	20	-
Number of tags allowed for a resource share	50	-
Retention period of a deleted resource share	48 hours	-
Retention period of a disassociated resource share	48 hours	-

# 6 Billing

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RAM is a free service. You will not be billed for using RAM-related functions. For details about the billing for using shared resources, see the billing description for the service that provides the shared resources.

# 7 Cloud Services and Resource Types Supported by RAM

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**Table 7-1** Cloud services and resource types supported by RAM

Cloud Service	Resource Type	Leaving a Resource Share	Reference
VPC	Subnets	Supported	<a href="#">Virtual Private Cloud User Guide</a>
DNS	Private zones	Supported	<a href="#">Domain Name Service User Guide</a>
	Resolver rules	Supported	

# 8 Basic Concepts

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## Resource owner

An account used to create and manage resources. A resource owner can use RAM to share specified resources by creating a resource share in this account.

## Principal

The entity that the resource owner shares resources with. A principal can be an individual Huawei Cloud account. When sharing with Organizations is enabled, a principal can also be an organization or organization unit (OU).

## Resource share

A unit for resource sharing. Resource shares are created by resource owners. Each resource share consists of one or more resource groups, RAM managed permissions, and principals.

## RAM managed permission

A permission that defines what actions principals can take with shared resources. There is at least one RAM managed permission for each shareable resource type. If a resource type has only one RAM managed permission, it is used automatically by default. If a resource type has more than one RAM managed permission, you can choose which one to use in a resource share.

## Resource sharing invitation

When a resource owner wants to share resources with principals, RAM issues an invitation. The principals then receive the invitation and can choose to accept or reject it. If sharing with Organizations is enabled, the resource owner shares resources with an organization or OUs. By default, all the accounts in the organization or OUs accept the sharing invitation.

# 9 Change History

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Release On	Description
2022-10-29	This issue is the first official release.