

Workspace

Product Overview

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1 Illustration of Workspace

Illustration of Workspace

1 What Is Workspace?

Workspace is a desktop service based on cloud computing. You can create a virtual desktop environment and deploy it at a low cost. Workspace supports multiple virtual desktops for mobile office anytime and anywhere.



2 Advantages of Workspace over

2 What Is Workspace?

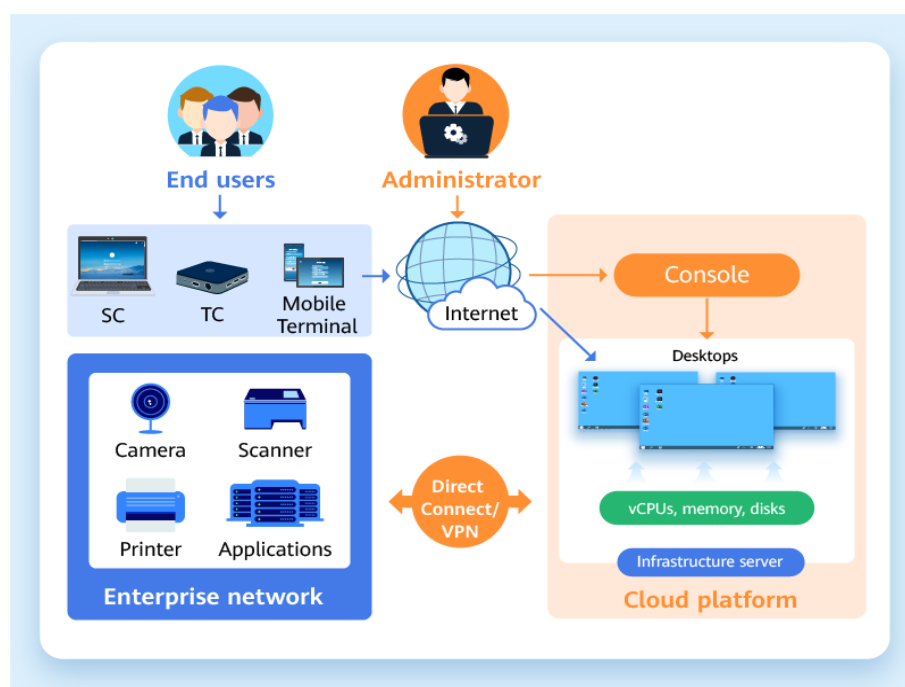
Overview

Huawei Workspace is a desktop service based on cloud computing (including edge computing). Unlike conventional PCs and VDIs, Workspace enables enterprises to quickly build office environments without investing a large amount of money and spending days in deployment. Workspace supports multiple login modes, allowing you to flexibly access files and use applications for mobile office.

Working Principles

End users can use terminals to log in to the desktops purchased by administrators on the console of the cloud platform. Users can also access network applications stored on enterprise networks through Direct Connect or VPN. **Figure 2-1** shows the working principles of Workspace.

Figure 2-1 Working principles of Workspace



3 Advantages

Workspace supports out-of-the-box desktop provisioning and seamless login from multiple terminals, providing you with a reliable, secure, flexible, and efficient office environment.

Smooth Experience

The in-house Huawei Desktop Protocol (HDP) ensures smooth HD transmission, true-color lossless display, and ultra-low desktop control latency.

Flexible and Efficient

Workspace supports on-demand scaling and purchase of computing power, centralized resource management, and fast desktop deployment.

Secure and Reliable

Data is stored in the cloud for end-to-end security protection. Security policies and chip-level encrypted storage enhance the system security.

Open Ecosystem

Open Workspace APIs and SDKs spare the needs for developing underlying technologies and allow migrating your office system to the cloud from scratch.

4 Scenarios

Traditional PCs and VDIs are expensive and difficult to deploy and manage. Workspace does not require initial investment or continuous infrastructure management. You only need to pay certain fees for a complete set of cloud desktop computing services, including computing and persistent storage. It also allows you to provide your users with a secure desktop experience and diverse access options in a simple and cost-effective manner.

Workspace can be applied to mainstream industries including government and public utilities, telecommunications, energy, finance, transportation, healthcare, education, broadcasting, media, and manufacturing. It is applicable to a wide range of scenarios, such as common OA, secure OA, branch OA, and public terminals (call centers, business halls and training classrooms).

Mobile OA

You can use mobile devices to log in to Workspace anytime, anywhere, which is applicable to employees who are frequently on business trips and work at different locations.

Temporary OA

Workspace and necessary application system services can be configured for temporary employees of an enterprise. After a temporary employee leaves, the services can be terminated.

Secure OA

Workspace provides office solutions that meet enterprise security standards and effectively controls employees' access to physical devices. In addition, data is not stored locally, which enhances enterprise data security.

Branch OA

Employees at the branches or outside the company can access the applications at the headquarters by logging in to Workspace. The data is not stored locally. It is applicable to the office of employees at branches and external employees.

5 Service Process

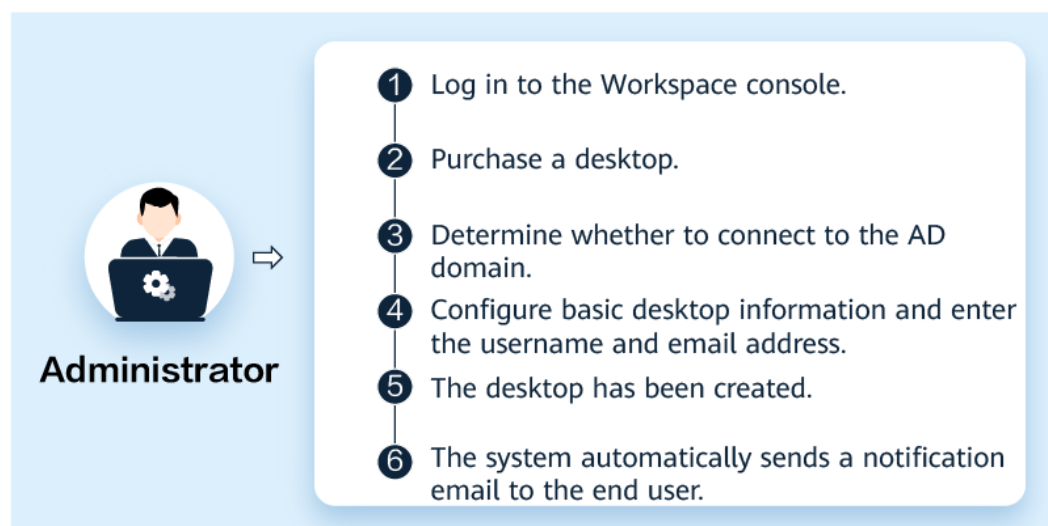
The user who provisions desktops to end users is an administrator. [Figure 5-1](#) shows the operation process.

Desktop users are end users. [Figure 5-2](#) shows the operation process.

For Administrators

An administrator can purchase a desktop on the Workspace console. During the purchase, the administrator can determine whether to connect to the AD domain, and assign the desktop to a specific user. After purchasing the desktop, the system automatically sends a desktop provisioning email to the end user.

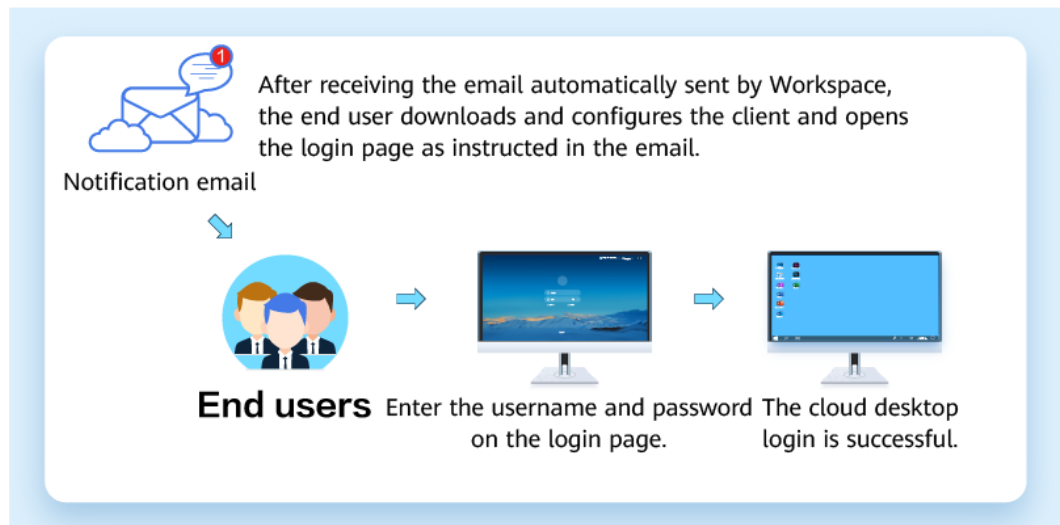
Figure 5-1 Operation process for administrators



For End Users

End users can use different terminals to log in to and use desktops, as shown in [Figure 5-2](#).

Figure 5-2 Operation process for end users



6 Related Concepts

Desktop

A desktop is a virtual computer system that is installed with desktop agent software and can interact with desktop management components. Workspace hosts and manages all desktops in the data center in a unified manner. End users can log in to a desktop using soft clients (SCs), mobile terminals, and thin clients (TCs) to obtain PC-like desktop experience.

You can purchase a dedicated desktop for each end user so that they can exclusively use their own desktops.

Desktop Pool

A desktop pool is a collection of image desktops of the same specifications. It provides administrators with unified management and O&M capabilities for the next batch of desktops in a project. Desktop pools are classified into dynamic pools and static pools.

- A dynamic pool is a desktop group of the M:N pool type. The binding relationship between a VM in the desktop pool and a VM user is not fixed. Each time a VM user logs in to the desktop pool through the client, Workspace randomly assigns an available VM to the user.
- A static pool is a desktop group of the 1:1 pool type. Originally, the binding relationship between VMs in the desktop pool and VM users is not fixed. However, the binding relationship between a VM and a VM user is fixed after the VM user logs in to the VM for the first time. After that, the VM user will be assigned the same VM each time the user logs in to the desktop pool, and the VM will not be assigned to other users.

User

Users are classified into end users and administrators based on their permissions. An end user is a user who uses the desktop and has the permission for logging in to and using the desktop. An administrator is a tenant, that is, a user who assigns desktops to users who use desktops. The administrator has the permissions for purchasing desktops, deleting desktops, configuring policies, and managing users.

User Group

A user group is a collection of users. By assigning users to different groups, you can easily manage and control resource access. A user group can also have its own permissions and settings to control the behavior of its users.

Policy

Policies are classified into protocol policies and access policies.

A protocol policy is a set of security rules configured for desktops, including USB redirection, file redirection read/write permission, clipboard read/write permission, watermark, client automatic reconnection interval, and image display. A policy is used to control data transmission between user terminals and desktops and peripheral access permission.

An access policy is a group of rules configured for determining whether desktops are accessed from an Internet access address or Direct Connect access address.

Priority

The priority is the basis for Workspace to determine the execution sequence or weight of desktop policies. The priority is represented by a positive integer. A smaller value indicates a higher priority.

Software Client

A software client (SC) is a Workspace client installed on a local PC so that users can access desktops from the PC.

Thin Client

A thin client (TC) is a small-sized commercial PC that is designed based on the PC industry standard. It uses a professional embedded processor, small local flash memory, and simplified OS for desktop access. The TC sends the inputs of the mouse and keyboard to the background server for processing. Then the server returns the processing result to the monitor connected to the TC for display. The performance, peripheral interfaces, and operation GUIs of TCs vary depending on models, meeting requirements for common OA, security-sensitive OA, and high-performance graphics design.

Mobile Terminal

A mobile terminal is a Workspace client installed on a mobile device so that users can access the desktop through the mobile device. The mobile device is called a mobile terminal. Currently, only Android smart devices are supported.

AD Management Server

The Active Directory (AD) management server is the infrastructure component where the AD service is deployed. It provides a series of directory service functions that allow users to manage and access network resources in a unified manner. Workspace can connect to your own AD server to implement authentication and authorization of Workspace.

Region and AZ

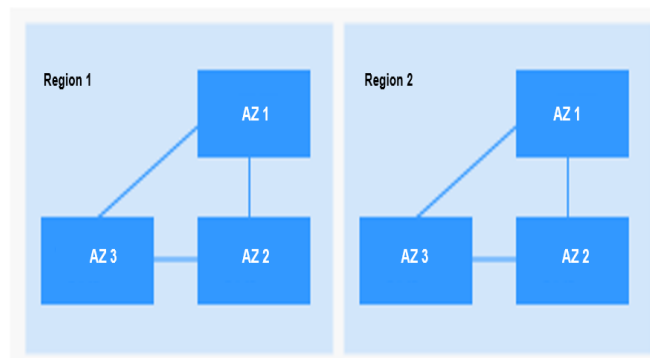
A region and availability zone (AZ) identify the location of a data center. You can purchase desktops in a specific region or AZ.

Regions are determined based on geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP, and Image Management Service (IMS), are shared within the same cloud region. Regions are classified as universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides only services of the same type or provides services only for specific tenants.

An AZ contains one or more physical data centers. Each AZ has independent cooling, fire extinguishing, antimoisture, and electricity facilities. The computing, network, storage, and other resources in an AZ are logically divided into multiple clusters. AZs in a region are interconnected through high-speed optic fiber, so systems deployed across AZs can achieve higher availability.

Figure 6-1 shows the relationship between regions and AZs.

Figure 6-1 Regions and AZs



Huawei Cloud provides services in many regions around the world. Select a region and AZ as needed.

Project

Projects group and isolates resources (including compute, storage, and network resources) across physical regions. A default project is provided for each region, and subprojects can be created under each default project. Users can be granted permissions for accessing all resources in a specific project. If you need more refined access control, you can create subprojects under a default project and purchase resources in subprojects. Then you can assign required permissions for users to access only resources in specific subprojects.

Multi-factor Authentication

Multi-factor authentication (MFA) provides an additional layer of protection on top of the username and password. If you enable MFA, users need to enter the username and password as well as a verification code when logging in to a desktop.

Virtual MFA Device

A virtual MFA device generates 6-digit verification codes in compliance with the Time-based One-time Password Algorithm (TOTP). Virtual MFA devices used by Workspace are software-based applications that can run on mobile devices such as smartphones. Virtual MFA is one of the MFA modes.

7 Supported OSs

Supported OSs

You can purchase desktops running the OSs listed in [Table 7-1](#).

Table 7-1 Supported OSs

OS Version	OS Type	Description
Windows Server 2016	64-bit	Workspace supports common Windows desktops. In the future, Workspace will support desktops running more OS versions to facilitate your office work. Workspace does not provide default images. You need to create private images by referring to Creating a Windows Private Image .
Windows Server 2019	64-bit	
Windows 10	64-bit	

Supported SCs

You can log in to the desktop using any of the SCs listed in [Table 7-2](#).

Table 7-2 Supported SCs

Terminal OS	Description
Windows 10	PCs running Windows 10 can be used to log in to desktops through the installed client.
64-bit macOS 10.14-12.4	PCs running 64-bit macOS 10.14-12.4 can be used to log in to desktops through the installed client.

Supported TCs

Multiple types of Workspace-compatible TCs can be used to log in to desktops. For example, you can use any of the TCs listed in [Table 7-3](#) to log in to Workspace.

Table 7-3 Supported TCs

TC Model	Description
HT3300	The TC runs UOS and can be used to log in to desktops through the installed client (Huawei Cloud Workspace).
HT1100	The TC runs Android and can be used to log in to desktops through the installed Workspace client.

Supported Mobile Terminals

[Table 7-4](#) lists the mobile terminal OSs that support the login to desktops.

Table 7-4 Supported mobile terminals

Mobile Terminal OS Version	Description
Android 6.0 or later	Mobile terminals running Android 6.0 or later can be used to log in to desktops through the installed client (Huawei Cloud Workspace).

8 Permissions

8.1 Creating a User and Assigning Permissions

Scenarios

This section describes how to use [IAM](#) to implement fine-grained permissions control for your Workspace resources. With IAM, you can:

- Create IAM users for employees based on the organizational structure of your enterprise. Each IAM user has their own security credentials, providing access to Workspace.
- Assign only the permissions required for users to perform a specific task.

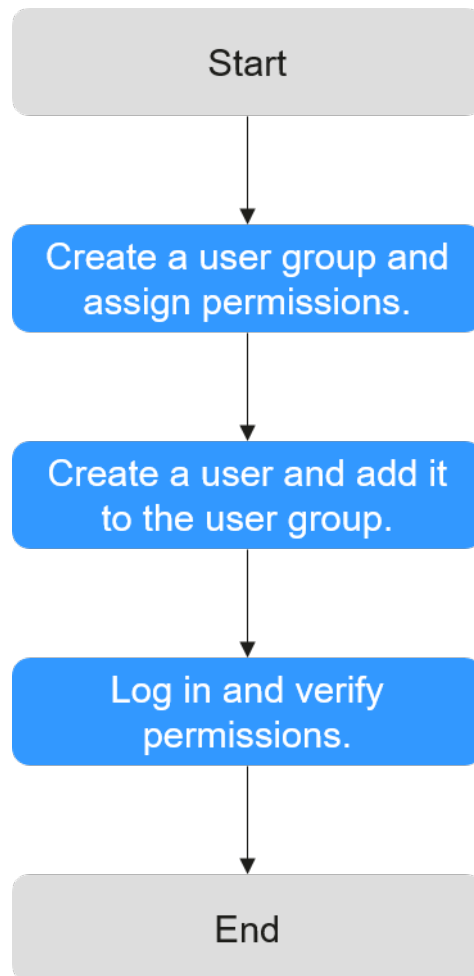
If your Huawei account does not need individual IAM users, you may skip this section.

This section takes the **Workspace ReadOnlyAccess** permission as an example to describe how to assign permissions to an IAM user.

Prerequisites

Learn about the permissions supported by Workspace and choose policies or roles as required. For the system permissions of other services, see [System Permissions](#).

Example Process



1. **Create a user group and assign permissions.**
Create a user group on the IAM console, and assign the **Workspace ReadOnlyAccess** permission to the group.
2. **Create an IAM user and add it to the user group.**
Create a user on the IAM console and add the user to the group created in **1**.
3. **Log in** and verify permissions.
Log in to the management console as the IAM user, switch to a region where the permissions take effect, and verify the permissions (assume that the user has only the **Workspace ReadOnlyAccess** permission).
 - Choose **Service List > Workspace**. On the **Desktops** page, perform operations other than query, such as starting, stopping, restarting, creating, modifying, and deleting a desktop.
Take starting or stopping a desktop as an example. If a message indicating insufficient permissions is displayed, the **Workspace ReadOnlyAccess** permission has taken effect.
 - Choose any other service in the **Service List**, such as **Virtual Private Cloud**. If a message indicating insufficient permissions to access the service is displayed, the **Workspace ReadOnlyAccess** permission has taken effect.

8.2 Creating a Custom Policy

Scenarios

Custom policies can be created as a supplement to the system permissions of Workspace.

You can create custom policies in either of the following ways:

- Visual editor: Select cloud services, actions, resources, and request conditions. You do not need to have knowledge of the policy syntax.
- JSON: Create a policy in the JSON format from scratch or based on an existing policy.

For details, see [Creating a Custom Policy](#). The following section contains examples of common Workspace custom policies.

Policy Examples

- Example 1: Assigning the permissions for desktop startup and shutdown to users.

```
{
  "Version": "1.1",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "workspace:*:get*",
        "workspace:*:list*",
        "workspace:*:export*",
        "ims:images:get",
        "ims:images:list",
        "ims:quotas:get",
        "nat:natGateways:list",
        "nat:snatRules:list",
        "vpc:bandwidths:list",
        "vpc:networks:get",
        "vpc:ports:get",
        "vpc:publicIps:get",
        "vpc:publicIps:list",
        "vpc:quotas:list",
        "vpc:securityGroupRules:get",
        "vpc:securityGroups:get",
        "vpc:subnets:get",
        "vpc:vpcs:get",
        "vpc:vpcs:list",
        "vpcep:endpoints:get",
        "dss:pools:list",
        "workspace:desktops:operate"
      ]
    }
  ]
}
```

NOTE

workspace:desktops:operate indicates desktop operations (startup, shutdown, restart, and hibernation). Other permissions are read-only and dependent permissions.

8.3 Permissions and Supported Actions

IMS provides system-defined policies. You can also create custom policies for more specific access control. Operations supported by policies are specific to APIs. The following are basic concepts related to policies:

- Permissions: allow or deny certain operations.
- APIs: APIs that can be called in a custom policy.
- Actions: specific operations that are allowed or denied in a custom policy.
- Dependencies: actions that a specific action depends on. When allowing an action for a user, you also need to allow its dependent actions for that user.
- IAM projects or enterprise projects: Applicable scope of custom policies. Policies that contain actions for both IAM and enterprise projects can be used and take effect for both IAM and Enterprise Management. Policies that contain actions only for IAM projects can be used and applied to IAM only. For details about the differences between IAM and enterprise projects, see [What Are the Differences Between IAM and Enterprise Management?](#)

Action	API	Supported Action	Project	Enterprise Project
workspace:desktops:create	POST /v2/{project_id}/desktops	Create a desktop	√	√
workspace:desktops:update	PUT /v2/{project_id}/desktops/{desktop_id}	Update a desktop	√	√
workspace:desktops:delete	DELETE /v2/{project_id}/desktops/{desktop_id}	Delete a desktop	√	√
workspace:desktops:get	GET /v2/{project_id}/desktops/{desktop_id}	Query desktop details	√	√
workspace:desktops:list	GET /v2/{project_id}/desktops	List desktops	√	√
workspace:desktops:listDetail	GET /v2/{project_id}/desktops/detail	List desktop details	√	√
workspace:desktops:batchDelete	POST /v2/{project_id}/desktops/batch-delete	Batch delete desktops	√	√

Action	API	Supported Action	Project	Enterprise Project
workspace:desktops:operate	POST /v2/{project_id}/desktops/action	Perform operations on a desktop (power-on/off, restart, and hibernation)	√	√
workspace:desktops:reboot	POST /v2/{project_id}/desktops/reboot	Restart a desktop	√	√
workspace:desktops:start	POST /v2/{project_id}/desktops/start	Start a desktop	√	√
workspace:desktops:stop	POST /v2/{project_id}/desktops/stop	Stop a desktop	√	√
workspace:desktops:getLastDeleteTime	GET /v2/{project_id}/desktops/last-desktop-delete-time	Query the time of deleting the last computer of a tenant	√	x
workspace:desktops:resize	POST /v2/{project_id}/desktops/resize	Change specifications	√	√
workspace:desktops:rebuild	POST /v2/{project_id}/desktops/rebuild	Rebuild a desktop	√	√
workspace:desktops:getActions	GET /v2/{project_id}/desktops/{desktop_id}/actions	Query desktop power-on/off information	√	√
workspace:desktops:getMonitor	GET /v2/{project_id}/desktop-monitor/{desktop_id}	Query desktop monitoring information	√	√
workspace:desktops:createConsole	GET /v2/{project_id}/desktops/{desktop_id}/remote-consoles	Obtain the URL for remote login to the console	√	√

Action	API	Supported Action	Project	Enterprise Project
workspace:desktops:updateSids	PUT /v2/{project_id}/desktops/sids	Update a desktop SID	√	√
workspace:desktops:rejoinDomain	POST /v2/{project_id}/desktops/{desktop_id}/rejoin-domain	Rejoin the AD domain	√	√
workspace:desktops:createlmage	POST /v2/{project_id}/desktops/desktop-to-image	Convert a desktop to an image	√	x
workspace:desktops:export	GET /v2/{project_id}/desktops/export	Export a desktop list	√	√
workspace:desktops:detach	POST /v2/{project_id}/desktops/detach	Unbind a user	√	√
workspace:desktops:attach	POST /v2/{project_id}/desktops/attach	Assign desktops to a user	√	√
workspace:desktops:getSysprepVersion	GET /v2/{project_id}/desktops/{desktop_id}/sysprep	Query Sysprep version information	√	x
workspace:desktops:getConnectStatus	GET /v2/{project_id}/connections/status	Query desktop login status statistics	√	x
workspace:agencies:create	POST /v2/{project_id}/agencies	Create an agency	√	x
workspace:agencies:get	GET /v2/{project_id}/agencies	Query an agency	√	x
workspace:desktops:verifyDesktopName	POST /v2/{project_id}/verification/desktop-name	Verify the desktop name	√	x
workspace:desktops:getAdStatus	GET /v2/{project_id}/ad/status	Query the AD network status	√	x
workspace:desktopPools:create	POST /v2/{project_id}/desktop-pools	Create a desktop pool	√	√

Action	API	Supported Action	Project	Enterprise Project
workspace:desktopPools:update	PUT /v2/{project_id}/desktop-pools/{pool_id}	Modify desktop pool attributes	√	√
workspace:desktopPools:delete	DELETE /v2/{project_id}/desktop-pools/{pool_id}	Delete a desktop pool	√	√
workspace:desktopPools:get	GET /v2/{project_id}/desktop-pools/{pool_id}	Query desktop pool details	√	√
workspace:desktopPools:list	GET /v2/{project_id}/desktop-pools	List desktop pools	√	√
workspace:desktopPools:expand	POST /v2/{project_id}/desktop-pools/{pool_id}/expand	Expand the disk capacity of a desktop pool	√	√
workspace:desktopPools:resize	POST /v2/{project_id}/desktop-pools/{pool_id}/resize	Modify desktop pool specifications	√	√
workspace:desktopPools:rebuild	POST /v2/{project_id}/desktop-pools/{pool_id}/rebuild	Recompose system disks in a desktop pool	√	√
workspace:desktopPools:batchAddVolumes	POST /v2/{project_id}/desktop-pools/{pool_id}/volumes/batch-add	Batch add disks to a desktop pool	√	√
workspace:desktopPools:batchDeleteVolumes	POST /v2/{project_id}/desktop-pools/{pool_id}/volumes/batch-delete	Batch delete disks from a desktop pool	√	√

Action	API	Supported Action	Project	Enterprise Project
workspace:desktopPools:batchExpandVolumes	POST /v2/{project_id}/desktop-pools/{pool_id}/volumes/batch-expand	Batch expand the disk capacity of a desktop pool	√	√
workspace:desktopPools:operate	POST /v2/{project_id}/desktop-pools/{pool_id}/action	Perform operations on a desktop pool	√	√
workspace:desktopPools:authorizeUsers	POST /v2/{project_id}/desktop-pools/{pool_id}/users	Authorize users and user groups to use a desktop pool	√	√
workspace:desktopPools:listUsers	GET /v2/{project_id}/desktop-pools/{pool_id}/users	Query authorized users and user groups of a desktop pool	√	√
workspace:desktopops:tag	POST /v2/{project_id}/desktops/{desktop_id}/tags	Create a desktop label	√	x
workspace:desktopops:listTags	GET /v2/{project_id}/desktops/{desktop_id}/tags	Query desktop labels	√	x
workspace:desktopops:untag	DELETE /v2/{project_id}/desktops/{desktop_id}/tags/{key}	Delete a desktop label	√	x
workspace:desktopops:listProjectTags	GET /v2/{project_id}/desktops/tags	Query project labels	√	x
workspace:desktopops:operateTags	POST /v2/{project_id}/desktops/{desktop_id}/tags/action	Batch add or delete labels	√	x

Action	API	Supported Action	Project	Enterprise Project
workspace:desktops:listByTags	POST /v2/{project_id}/desktops/resource_instances/action	Filter desktops by label	√	x
workspace:jobs:list	POST /v2/{project_id}/workspace-jobs	List jobs	√	x
workspace:jobs:get	GET /v2/{project_id}/workspace-jobs/{job_id}	Query job details	√	x
workspace:jobs:listSubJobs	GET /v2/{project_id}/workspace-sub-jobs	List subjobs	√	x
workspace:jobs:retry	POST /v2/{project_id}/workspace-jobs/{job_id}/actions	Retry a job	√	x
workspace:jobs:deleteSubJobRecords	POST /v2/{project_id}/workspace-sub-jobs/batch-delete	Delete subjob records	√	x
workspace:networks:createNat	POST /v2/{project_id}/internet	Enable network access of the NAT Gateway	√	√
workspace:networks:listNats	GET /v2/{project_id}/internet	Query network access of the NAT Gateway	√	√
workspace:networks:createEips	POST /v2/{project_id}/eips	Create an EIP	√	√
workspace:networks:listEips	GET /v2/{project_id}/eips	List EIPs	√	√
workspace:networks:bindEips	POST /v2/{project_id}/eips/binding	Bind an EIP	√	√
workspace:networks:unbindEips	POST /v2/{project_id}/eips/unbinding	Unbind an EIP	√	√
workspace:networks:getEipQuota	GET /v2/{project_id}/eips/quotas	Query the EIP quota	√	√
workspace:networks:listVpcs	GET /v2/{project_id}/vpcs	Query VPCs	√	√

Action	API	Supported Action	Project	Enterprise Project
workspace:networks:listSubnets	GET /v2/{project_id}/subnets	Query subnets	√	√
workspace:networks:listSecurity Groups	GET /v2/{project_id}/security-groups	List security groups	√	√
workspace:networks:getAvailableIp	GET /v2/{project_id}/subnets/{subnet_id}/available-ip	Query available IP addresses of a subnet by subnet ID	√	√
workspace:orders:create	POST /v2/{project_id}/periodic/subscribe/order	Subscribe to a yearly/monthly order	√	√
workspace:orders:change	POST /v2/{project_id}/periodic/{desktop_id}/change/order	Create a request for changing the subscription	√	√
workspace:renderDesktops:create	POST /v2/{project_id}/render-desktops	Create a rendering desktop	√	√
workspace:renderDesktops:delete	DELETE /v2/{project_id}/render-desktops	Delete a rendering desktop	√	√
workspace:renderDesktops:list	GET /v2/{project_id}/render-desktops	List rendering desktops	√	√
workspace:renderDesktops:action	POST /v2/{project_id}/render-desktops/action	Perform operations on a rendering desktop	√	√
workspace:renderDesktops:createConsole	GET /v2/{project_id}/render-desktops/{desktop_id}/remote-consoles	Obtain the URL for remote login to the console	√	√

Action	API	Supported Action	Project	Enterprise Project
workspace:renderDesktops:resize	PUT /v2/{project_id}/render-desktops/resize	Change rendering desktop specifications	√	√
workspace:scheduledTasks:create	POST /v2/{project_id}/scheduled-tasks	Create a scheduled task	√	x
workspace:scheduledTasks:list	GET /v2/{project_id}/scheduled-tasks	List scheduled tasks	√	x
workspace:scheduledTasks:update	PUT /v2/{project_id}/scheduled-tasks/{task_id}	Update a scheduled task	√	x
workspace:scheduledTasks:delete	DELETE /v2/{project_id}/scheduled-tasks/{task_id}	Delete a scheduled task	√	x
workspace:scheduledTasks:get	GET /v2/{project_id}/scheduled-tasks/{task_id}	Query scheduled task details	√	x
workspace:scheduledTasks:getFuture	POST /v2/{project_id}/scheduled-tasks/future-executions	Query the future execution time of a scheduled task	√	x
workspace:scheduledTasks:batchDelete	POST /v2/{project_id}/scheduled-tasks/batch-delete	Batch delete scheduled tasks	√	x
workspace:scheduledTasks:listRecords	GET /v2/{project_id}/scheduled-tasks/{task_id}/records	Query the execution records of a scheduled task	√	x

Action	API	Supported Action	Project	Enterprise Project
workspace:scheduledTasks:getRecord	GET /v2/{project_id}/scheduled-tasks/{task_id}/records/{record_id}	Query details about the execution records of a scheduled task	√	x
workspace:scheduledTasks:exportRecords	POST /v2/{project_id}/scheduled-tasks/{task_id}/records/export	Export details about the execution records of a scheduled task	√	x
workspace:statistics:getRunState	GET /v2/{project_id}/desktops/statistics/run-state	Collect operating status statistics	√	x
workspace:statistics:getLoginState	GET /v2/{project_id}/desktops/statistics/login-state	Collect login status statistics	√	x
workspace:statistics:getUnused	GET /v2/{project_id}/desktops/statistics/unused	Query desktops not used in a specified period	√	x
workspace:statistics:getUsed	POST /v2/{project_id}/desktops/statistics/used	Query the duration of using a desktop	√	x
workspace:bindingPolicies:getConfig	GET /v2/{project_id}/terminals/binding-desktops/config	Query the configuration of terminal-desktop binding	√	x
workspace:bindingPolicies:createConfig	POST /v2/{project_id}/terminals/binding-desktops/config	Configure terminal-desktop binding	√	x

Action	API	Supported Action	Project	Enterprise Project
workspace:bindingPolicies:get	GET /v2/{project_id}/terminals/binding-desktops	List the configurations of terminal-desktop binding	√	x
workspace:bindingPolicies:add	POST /v2/{project_id}/terminals/binding-desktops	Add terminal-desktop binding	√	x
workspace:bindingPolicies:update	PUT /v2/{project_id}/terminals/binding-desktops	Modify terminal-desktop binding	√	x
workspace:bindingPolicies:delete	POST /v2/{project_id}/terminals/binding-desktops/batch-delete	Delete terminal-desktop binding	√	x
workspace:bindingPolicies:getTemplate	GET /v2/{project_id}/terminals/binding-desktops/template	Download the template for terminal-desktop binding	√	x
workspace:bindingPolicies:import	POST /v2/{project_id}/terminals/binding-desktops/template/import	Batch import terminal-desktop binding	√	x
workspace:bindingPolicies:export	GET /v2/{project_id}/terminals/binding-desktops/template/export	Export information about terminal-desktop binding to an Excel file	√	x
workspace:volumes:add	POST /v2/{project_id}/desktops/{desktop_id}/volumes	Add a desktop disk	√	√

Action	API	Supported Action	Project	Enterprise Project
workspace:volumes:delete	POST /v2/{project_id}/desktops/{desktop_id}/volumes/batch-delete	Delete a data disk	√	√
workspace:volumes:batchAdd	POST /v2/{project_id}/desktops/volumes	Add disks to multiple desktops	√	√
workspace:volumes:batchAdd	POST /v2/{project_id}/volumes	Add a desktop disk	√	√
workspace:volumes:expand	POST /v2/{project_id}/desktops/{desktop_id}/volumes/{volume_id}/expand	Expand disk capacity	√	√
workspace:volumes:batchExpand	POST /v2/{project_id}/volumes/expand	Expand the disk capacity of a desktop	√	√
workspace:volumes:listDssPoolsDetail	GET /v2/{project_id}/dss-pools/detail	List details of dedicated distributed storage pools	√	√
workspace:wdh:listDesktops	GET /v2/{project_id}/hosts/{host_id}/servers	Query desktops of a workspace host	√	√
workspace:wdh:getType	GET /v2/{project_id}/hosts/types	Query workspace host types	√	√
workspace:wdh:create	POST /v2/{project_id}/hosts	Buy a workspace host	√	√
workspace:wdh:get	GET /v2/{project_id}/hosts	List workspace hosts	√	√
workspace:wdh:update	PUT /v2/{project_id}/hosts	Update a workspace host	√	√

Action	API	Supported Action	Project	Enterprise Project
workspace:tenants:get	GET /v2/{project_id}/workspaces	Query details about the workspace service	√	x
workspace:tenants:open	POST /v2/{project_id}/workspaces	Subscribe to the workspace service	√	x
workspace:tenants:update	PUT /v2/{project_id}/workspaces	Modify the attributes of the workspace service	√	x
workspace:tenants:delete	DELETE /v2/{project_id}/workspaces	Deregister the workspace service	√	x
workspace:tenants:checkEnterpriseIds	POST /v2/{project_id}/workspaces/enterprise-ids/check	Check whether the enterprise ID has been used	√	x
workspace:tenants:updateEnterpriseId	PUT /v2/{project_id}/workspaces/enterprise-id	Modify an enterprise ID	√	x
workspace:tenants:getRealms	GET /v2/{project_id}/workspaces/realms	Query tenant domain information	√	x
workspace:tenants:getLockStatus	GET /v2/{project_id}/workspaces/lock-status	Check whether the workspace service has been locked	√	x
workspace:tenants:unlock	PUT /v2/{project_id}/workspaces/lock-status	Unlock the workspace service	√	x

Action	API	Supported Action	Project	Enterprise Project
workspace:tenants:getRoles	GET /v2/{project_id}/tenants/roles	Query tenant roles	√	x
workspace:natMappings:getConfig	GET /v2/{project_id}/nat-mapping-configs	Query NAT mapping configuration items of a tenant	√	x
workspace:natMappings:updateConfig	PUT /v2/{project_id}/nat-mapping-configs	Modify NAT mapping configuration items of a tenant	√	x
workspace:sites:get	GET /v2/{project_id}/sites	Query site information	√	x
workspace:sites:add	POST /v2/{project_id}/sites	Add a site	√	x
workspace:sites:delete	DELETE /v2/{project_id}/sites/{site_id}	Delete a site	√	x
workspace:sites:updateAccessMode	PUT /v2/{project_id}/sites/{site_id}/access-mode	Modify the site access mode	√	x
workspace:sites:updateSubnets	PUT /v2/{project_id}/sites/{site_id}/subnet-ids	Modify a site service subnet	√	x
workspace:privacystatements:sign	POST /v2/{project_id}/privacystatement	Sign the privacy statement	√	x
workspace:quotas:get	GET /v2/{project_id}/quotas	Query tenant quota	√	x
workspace:authConfigs:get	GET /v2/{project_id}/auth-config/method-config	Query the configuration of the authentication login mode	√	x

Action	API	Supported Action	Project	Enterprise Project
workspace:authConfigs:update	PUT /v2/{project_id}/auth-config/method-config	Update the authentication policy configuration	√	x
workspace:assistAuthConfigs:get	GET /v2/{project_id}/assist-auth-config/method-config	Query the configuration of auxiliary authentication	√	x
workspace:assistAuthConfigs:update	PUT /v2/{project_id}/assist-auth-config/method-config	Update the configuration of auxiliary authentication	√	x
workspace:accessPolicies:create	POST /v2/{project_id}/access-policy	Create an access policy	√	x
workspace:accessPolicies:delete	DELETE /v2/{project_id}/access-policy	Delete a specified access policy	√	x
workspace:accessPolicies:get	GET /v2/{project_id}/access-policy	Query access policies	√	x
workspace:accessPolicies:getTarget	GET /v2/{project_id}/access-policy/{access_policy_id}/objects	Query the target object of a specified access policy	√	x
workspace:accessPolicies:updateTarget	PUT /v2/{project_id}/access-policy/{access_policy_id}/objects	Update the target object of a specified access policy	√	x
workspace:availabilityZones:list	GET /v2/{project_id}/availability-zones	Query supported AZs	√	x

Action	API	Supported Action	Project	Enterprise Project
workspace:availabilityZones:getSummary	GET /v2/{project_id}/availability-zones/summary	Query the summary of AZs	√	x
workspace:availabilityZones:get	GET /v2/{project_id}/availability-zones/detail	Query AZ details	√	x
workspace:connections:securityList	GET /v2/{project_id}/connections/desktops	Query connection information	√	x
workspace:connections:securityExport	GET /v2/{project_id}/connections/desktops/export	Export connection records	√	x
workspace:connections:securityList	GET /v2/{project_id}/desktops/connections	Query connection information	√	x
workspace:connections:securityExport	GET /v2/{project_id}/desktops/connections/export	Export connection records	√	x
workspace:policyGroups:create	POST /v2/{project_id}/policy-groups	Add a policy group	√	x
workspace:policyGroups:delete	DELETE /v2/{project_id}/policy-groups/{policy_group_id}	Delete a policy group	√	x
workspace:policyGroups:update	PUT /v2/{project_id}/policy-groups/{policy_group_id}	Modify a policy group	√	x
workspace:policyGroups:list	GET /v2/{project_id}/policy-groups	List policy groups	√	x
workspace:policyGroups:get	GET /v2/{project_id}/policy-groups/{policy_group_id}	Query policy groups	√	x
workspace:policyGroups:export	POST /v2/{project_id}/policy-groups/export	Export a policy group	√	x
workspace:policyGroups:import	POST /v2/{project_id}/policy-groups/import	Import a policy group	√	x

Action	API	Supported Action	Project	Enterprise Project
workspace:policyGroups:listPolicies	GET /v2/{project_id}/policy-groups/{policy_group_id}/policies	Query policy items in a policy group	√	x
workspace:policyGroups:updatePolicies	PUT /v2/{project_id}/policy-groups/{policy_group_id}/policies	Modify policy items in a policy group	√	x
workspace:policyGroups:listTargets	GET /v2/{project_id}/policy-groups/{policy_group_id}/targets	Query the target object of a policy group	√	x
workspace:policyGroups:updateTargets	PUT /v2/{project_id}/policy-groups/{policy_group_id}/targets	Modify the target object of a policy group	√	x
workspace:policyGroups:listDetail	GET /v2/{project_id}/policy-groups/detail	List policy group details	√	x
workspace:policyGroups:getQuotas	GET /v2/{project_id}/policy-groups/quotas	Query the maximum number of policy groups	√	x
workspace:policyGroups:getMaxPriority	GET /v2/{project_id}/policy-groups/max-priority	Query the maximum priority of a policy group	√	x
workspace:policyGroups:getOriginalPolicies	GET /v2/{project_id}/policy-groups/original-policies	Query initial policy items	√	x
workspace:policyGroups:createTemplate	POST /v2/{project_id}/policy-groups/policy-template	Create a policy template	√	x

Action	API	Supported Action	Project	Enterprise Project
workspace:policyGroups:updateTemplate	PUT /v2/{project_id}/policy-groups/policy-template/{policy_group_id}	Update a policy template	√	x
workspace:userGroups:create	POST /v2/{project_id}/groups	Create a user group	√	x
workspace:userGroups:list	GET /v2/{project_id}/groups	Query user groups	√	x
workspace:userGroups:update	PUT /v2/{project_id}/groups/{group_id}	Modify a user group	√	x
workspace:userGroups:delete	DELETE /v2/{project_id}/groups/{group_id}	Delete a desktop user group	√	x
workspace:userGroups:batchDelete	POST /v2/{project_id}/groups/batch-delete	Batch delete user groups	√	x
workspace:userGroups:operate	POST /v2/{project_id}/groups/{group_id}/actions	Perform operations on a user group	√	x
workspace:userGroups:getUsers	GET /v2/{project_id}/groups/{group_id}/users	Query users in a user group	√	x
workspace:ous:create	POST /v2/{project_id}/ous	Add OU information	√	x
workspace:ous:delete	DELETE /v2/{project_id}/ous/{ou_id}	Delete OU information	√	x
workspace:ous:update	PUT /v2/{project_id}/ous/{ou_id}	Update OU information	√	x
workspace:ous:get	GET /v2/{project_id}/ous	Query OU information	√	x
workspace:users:create	POST /v2/{project_id}/users	Create a user	√	x
workspace:users:delete	DELETE /v2/{project_id}/users/{user_id}	Delete a specified user	√	x

Action	API	Supported Action	Project	Enterprise Project
workspace:users:update	PUT /v2/{project_id}/users/{user_id}	Modify user information	√	x
workspace:users:list	GET /v2/{project_id}/users	Query users	√	x
workspace:users:get	GET /v2/{project_id}/users/{user_id}	Query user details	√	x
workspace:users:operate	POST /v2/{project_id}/users/{user_id}/actions	Indicate operations (locking, unlocking, and resetting passwords)	√	x
workspace:users:resetPassword	POST /v2/{project_id}/users/password	Reset a user password	√	x
workspace:users:resendEmail	POST /v2/{project_id}/users/{user_id}/resend-email	Resend an email	√	x
workspace:users:batchDelete	POST /v2/{project_id}/users/batch-delete	Batch delete users	√	x
workspace:users:uploadTemplate	POST /v2/{project_id}/users/template-upload	Upload a user template file	√	x
workspace:users:getTemplate	GET /v2/{project_id}/users/desktop-users/template	Download a user template file	√	x
workspace:users:importUser	POST /v2/{project_id}/users/desktop-users/action/import	Import users	√	x
workspace:users:checkExist	POST /v2/{project_id}/users/exist	Check whether the user exists	√	x
workspace:users:listOtps	GET /v2/{project_id}/users/{user_id}/otp-devices	Query OTP devices	√	x

Action	API	Supported Action	Project	Enterprise Project
workspace:users:deleteOtps	DELETE /v2/{project_id}/users/{user_id}/otp-devices	Unbind an OTP device	√	x
workspace:users:getImportTemplate	GET /v2/{project_id}/users/template/download	Download a user template	√	x
workspace:users:import	POST /v2/{project_id}/users/import	Import a user	√	x
workspace:users:export	POST /v2/{project_id}/users/export	Export a user	√	x
workspace:users:batchCreate	POST /v2/{project_id}/users/batch-create	Batch create users	√	x
workspace:users:randomPassword	GET /v2/{project_id}/users/{user_id}/random-password	Reset a random password for a user	√	x
workspace:images:list	GET /v2/{project_id}/images	List product images	√	√

9 Constraints

This section describes constraints on using Workspace.

Table 9-1 Constraints on using Workspace

Scenario	Constraint	Description
Purchasing a desktop	Account	You can purchase a desktop only after logging in to the Workspace console using an account.
	Connection to the AD	<ul style="list-style-type: none"> After purchasing a desktop, you cannot change the status of connection to the AD. To connect to the AD, ensure that the Workspace network can communicate with the Microsoft AD network.
	Region	Desktops in different regions cannot communicate with each other over the intranet, and desktops need to be managed by region.
	CPU architecture	x86 computing is supported.
	Desktop OS	Currently, Workspace supports Windows Server 2016/2019 and will support more OSs in the future.
	System Disk	Due to resource restrictions in the selected region, the system disk size must range from 80 GB to 1,020 GB.
	Data Disk	Due to resource restrictions in the selected region, a maximum of 10 data disks can be added, and the size of each data disk must be an integer multiple of 10 between 10 GB to 1,020 GB.

Scenario	Constraint	Description
	Network	The 172 network segment is reserved for running internal services. Therefore, do not select a VPC network starting with 172. Otherwise, desktops cannot be purchased.
	Desktop user	Each desktop belongs to only one user.
Logging in to a desktop	Mobile device	Mobile terminals running Android 6.0 or later are supported.
	TCs and PC SCs	You can log in to a desktop from TCs (running UOS and Android) that are compatible with Workspace and PC SCs running Windows 10 and 64-bit macOS 10.14–12.4.
Configuring a desktop	Policy	<ul style="list-style-type: none"> • The desktop policy will take effect upon your next login to the desktop. • Unidirectional or bidirectional copy from the client to the server or from the server to the client is supported. <ul style="list-style-type: none"> – Rich text copy and file copy are supported only when both the client (TC/SC) and desktop run Windows. A maximum of 500 files can be copied at a time. – If the OS of a client (TC/SC or mobile client) or desktop is not Windows, only text can be copied. • Rendering acceleration only applies to multimedia video editing. • The default policy is a preset common policy and its priority cannot be changed. • When you create multiple policies, the default policy has the lowest priority. • By default, a maximum of 50 policies can be configured in a region.

Scenario	Constraint	Description
	Network access	<ul style="list-style-type: none"> • Workspace supports Internet access and Direct Connect access at the same time. At least one access mode must be enabled. • Workspace uses the 172.20.0.0/16 to 172.31.0.0/16 network segment as the reserved network segment of the desktop management NIC. When using Direct Connect to communicate with PCs on the enterprise intranet, to prevent access failures caused by route conflicts, do not use this network segment on the enterprise intranet. • To use Direct Connect, you need to create a VPC endpoint.
	Allowing Workspace to access the enterprise intranet	If a firewall is used, ensure that ports 8443 and 443 in the outbound direction of the firewall are enabled.
	Modifying specifications	<ul style="list-style-type: none"> • Do not perform other operations on the desktop when modifying specifications.
	Recomposing the system disk	<ul style="list-style-type: none"> • Before the system disk is recomposed, the login status of the desktop cannot be Disconnected, and the running status is Running or Stopped. • After recomposing the system disk, the data (such as the desktop and favorites) on the system disk will be lost. If the data is needed after the system disk is recomposed, notify the user to back up the data in advance. • When recomposing the system disk, if the cloud desktop uses a private image, ensure that the private image still exists.
Managing desktops	Resending a notification email	You can resend a notification email only when the user is bound to a desktop.
	Deleting a user	You can delete a user only when the user is not bound to a desktop.
	Resetting a password	If the Windows AD domain has been connected, the password of a desktop user cannot be reset.

Scenario	Constraint	Description
	Unlocking a user	If the Windows AD domain has been connected, desktop users cannot be unlocked.
Forbidden operations on Windows desktops	Processes and services	<ul style="list-style-type: none"> • Change the default services and startup options in the system configuration. • Stop the LOCAL SERVICE, NETWORK SERVICE, and SYSTEM processes in the Task Manager. • Disable HDP services. • Uninstall the following programs: <ul style="list-style-type: none"> - Access Agent - Microsoft .NET Framework x Client Profile - Microsoft .NET Framework x Extended - Microsoft Visual C++ xxx Redistributable - xxx
	Network	<ul style="list-style-type: none"> • Disable the VM NIC, and disable or modify the network configurations. • Execute the script or command, for example, route DELETE *, to modify route data. • Delete ports 28511, 28512, 28521, and 28522 from the Windows firewall exception options. • Enable software or tools that can restrict network traffic, such as Internet Protocol Security (IPsec).
	Other	<ul style="list-style-type: none"> • Delete files or folders in C:\Program Files \Huawei. • Enable hibernation on VMs. VM hibernation is disabled by default. • Modify the configuration file of the HDP client (AccessAgent). • Run Rabbit Magic or Wopti Utilities to clean or optimize the registry. • Installing a changeable screensaver is resource-consuming. As a result, users will suffer from latency when logging in to the desktop again. Exercise caution when performing this operation.
Using Workspace	Connecting Workspace to the Internet	Workspace is connected to the Internet using the IP address of the data center. Some entertainment websites restrict the access of the IP address of the data center for their operations needs. As a result, Workspace cannot access those websites, such as Youku and Taobao.

10 Packages and Billing

Billing Overview

When you purchase a cloud desktop, the desktop instance specifications that you specify determine the host hardware configuration of the instance. Workspace instances provide various specifications. Each instance type provides different computing capabilities. You can select the computing capability and storage space of an instance based on the service scale to be provided.

Billing Modes

Workspace specifications include compute resources (vCPUs and memory) and storage resources (system disks and data disks). You can determine the specifications, quantity, and region distribution of desktop instances based on the access user plan and desktop application scenario plan to enjoy the premium service we provide. Workspace supports the yearly/monthly and pay-per-use billing modes.

- **Yearly/Monthly:** Huawei Cloud allows Workspace to be billed on a yearly or monthly basis. This billing mode provides a larger discount than pay-per-use and is recommended for long-term users. A yearly/monthly desktop is billed based on the purchased duration specified in the order.

Application scenario: This mode applies to scenarios where cloud desktop resources are stably used for a long time. Compared with the pay-per-use mode, this mode provides a larger discount.

- **Pay-per-use:** You can apply for Workspace resources on demand. Instances are charged from the time when they are enabled to the time when they are deleted. Instances are charged based on the actual purchase duration (accurate to seconds). You can change the billing mode to yearly/monthly. For details, see "Changing the Desktop Billing Mode (from Pay-per-Use to Yearly/Monthly)" in *Workspace User Guide*.

Application scenario: This mode is suitable for short-term service requirements. You can start or stop instances on demand to release compute resources and save more.

Billing Rules

Pay-per-use instances are not billed when they are stopped or hibernating. Instances include instances that do not contain local disks or FPGA cards, but do not include bare metal server instances. When a desktop is stopped or hibernating, it is billed as follows:

- Basic resources (vCPUs, memory, and image) are released and no longer generate costs. Its associated resources such as its EVS disks, EIPs, and bandwidth will continue to be billed.
- Pay-per-use desktops are not billed when they are stopped or hibernating. That is, the system automatically reclaims compute resources (vCPUs and memory) while retaining the desktops during the shutdown or hibernation period. In this case, only storage resources (system disks and data disks) will be billed, reducing your costs. When you restart the desktop, you will apply for vCPUs and memory again. If the resources are insufficient, the startup may fail. In this case, wait several minutes before trying to restart the desktop or modify specifications of the desktop.
- In special pay-per-use instances, desktops are still billed after being stopped. After a special desktop is stopped, its resources such as vCPUs and memory will be retained.

NOTE

Special instances include:

- Desktops attached with local disks, such as disk-intensive desktops and ultra-high I/O desktops.
- Public/Private NAT gateways are billed based on the public NAT gateway type and service duration. For pricing details, see [NAT Gateway Price Calculator](#).
- Public images (except special ones) are free of charge. If a public image is converted to a private image, the image fee will be billed based on the KooGallery price.
- After you delete or unsubscribe from a desktop (for details, see "Unsubscribing from a Desktop" in the *User Guide*), the EIP of the desktop is automatically unbound, and the EIP is retained and billed. You can manually delete the EIP on the [EIP](#) page.

Billing Units of Workspace

Billing units vary depending on the resource type. [Table 10-1](#) lists the billing units of Workspace resources.

Table 10-1 Billing units

Resource	Billing Unit
Workspace package	Desktop/year, month, or hour
Cloud system disk	GB/year, month, or hour
Cloud data disk	GB/year, month, or hour

Billing of Workspace

Refer to the billing modes displayed on the Workspace purchase page.

Table 10-2 Billing of Workspace

Billing Mode	Description	Billing Cycle
Yearly/ Monthly	When you purchase a yearly/monthly package, the system will deduct the package cost from your cloud account based on the chosen package.	The billing cycle is based on the UTC+8 time zone. The billing cycle starts when you enable your resource (accurate to seconds) and ends when the specified usage duration expires (showing: 00:00:00).
Pay-per-use	You can pay for the bill after use. Fees are deducted from your account balance based on your actual service duration in a specified period.	The billing cycle is one year and based on the UTC+8 time zone. The system automatically generates a bill on the hour (for example, 2:00:00 or 3:00:00) to calculate the fee for using the service in the specified period.

NOTE

- When an order expires, a 7-day grace period is provided. Services in the grace period are still available.
- After the grace period elapses, a 15-day reservation period is provided. Resources in the reservation period are unavailable but retained.
- The resources are automatically deleted after the reservation period elapses and the order is not renewed.

Changing the Billing Mode

- Changing the billing mode
You can change the billing mode from pay-per-use to yearly/monthly. If you change the billing mode from pay-per-use to yearly/monthly, a new order is generated. After you pay the order, the yearly/monthly resource takes effect immediately. For details, see [Changing the Desktop Billing Mode \(from Pay-per-Use to Yearly/Monthly\)](#).
- Changing desktop specifications
During the billing cycle, you can change the vCPU and memory size of the cloud desktop by [modifying the specifications](#).

Renewal

When a billing cycle expires, you can continue using the service through renewal. Alternatively, you can discontinue your service. For renewal, see [Renewing a Yearly/Monthly-Billed Desktop](#). Alternatively, renew the subscription on the [Renewal Management](#) page of the console by referring to [Renewal Management](#).

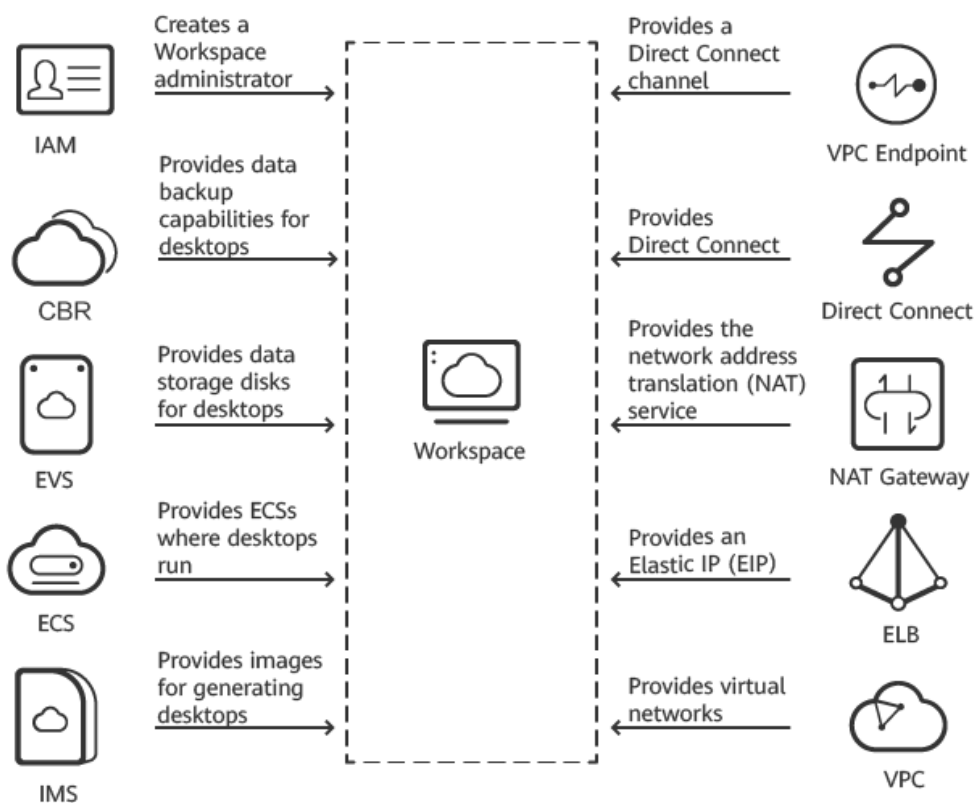
Expiration and Overdue Payment

If your account is in arrears, you can view the arrears details. To prevent related resources from being stopped or released, you need to top up your account within the specified period. For details, see [Top-Up and Repayment](#).

11 Relationships Between Workspace and Other Services

Figure 11-1 shows the relationships between Workspace and other services.

Figure 11-1 Relationships between Workspace and other services



ECS

An Elastic Cloud Server (ECS) is a computing server equipped with CPUs, memory, images, and Elastic Volume Service (EVS) disks. ECSs can be created on demand and support auto scaling. Workspace desktops run on ECSs.

IMS

Image Management Service (IMS) provides easy-to-use self-service image management functions. It provides images for generating Workspace desktops.

EVS

Elastic Volume Service (EVS) provides scalable block storage that features high reliability and high performance to meet different service requirements. It provides data storage capabilities for Workspace desktops.

Cloud Backup and Recovery (CBR)

Cloud Backup and Recovery (CBR) lets you back up EVS disks with ease. If there is a virus intrusion, accidental deletion, or software/hardware fault, data can be restored to any backup point. CBR protects your workloads by ensuring the security and consistency of your data, and provides data backup capabilities for Workspace.

ELB

Elastic Load Balance (ELB) automatically distributes access traffic to multiple ECSs to balance the load. It enables you to achieve better fault tolerance in your applications and expand application service capabilities. ELB is an entry for accessing Workspace from the Internet and provides Elastic IP (EIP) for Workspace.

VPC

A Virtual Private Cloud (VPC) provides virtual networks and advanced network services, such as Elastic IP (EIP), security groups, and virtual private networks (VPNs). A VPC logically isolates networks and provides a secure and isolated network environment for Workspace.

VPC Endpoint

VPC endpoint provides secure and private channels to connect your VPC to terminal endpoint services (cloud services or your private services), so that you can access terminal endpoint services without having to use EIPs. Connect your local data center to cloud services using a Virtual Private Network (VPN) connection or a Direct Connect connection over a private network to improve access efficiency and security with low costs. VPC endpoint provides Direct Connect streams for Workspace to connect to other services.

NAT Gateway

NAT Gateway allows multiple Workspace desktops in a VPC to share an EIP to access the Internet.

IAM

Identity and Access Management (IAM) is a basic service of Huawei Cloud that provides permissions management to help you securely control access to your

cloud services and resources. After creating an account on IAM, the administrator can control the access scope of Workspace resources in a refined manner.

Direct Connect

Direct Connect allows you to establish a dedicated network connection between your data center and the cloud platform. This service can reduce the network latency of Workspace and provide better user experience than the Internet access.

A Change History

Released On	Description
2023-08-25	This issue is the fifth official release. Added: Added billing description in "Packages and Billing."
2023-07-11	This issue is the fourth official release. Modified: Deleted package-related content from Packages and Billing .
2023-07-03	This issue is the third official release. Added: Added support for IAM fine-grained authentication in Permissions .
2023-06-15	This issue is the second official release. Modified: Added the Windows 10 OS version and Windows image description in Supported OSs .
2022-12-26	This issue is the first official release.