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English 

Limiting access with time and resource attribute-based conditions

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9.2 You can set up time-based conditions to designate temporary access to resources in your account or allow access to resources during specific time windows, and resource attribute-based conditions to avoid creating multiple access policies to meet your access needs.

You can create time-based conditions that grant one-time temporary access for a specific time and date range, or you can set up recurring weekly access. For example, you might want to give a user access to account resources during only their working hours by specifying recurring access, or you might have a contractor or a user that needs to demo features of a service and they only need temporary access.

i Important: Time-based conditions don't account for Daylight Saving Time (DST) changes for time zones that observe DST. Administrators must update the policies according to DST changes to accurately enforce time-based conditions. For example, the Eastern time zone is UTC-4 hours during Daylight Saving Time rather than -5 hours as it is during standard time. Standard time begins in November and ends in March, when DST begins.



Select Availability: The Kubernetes Service doesn't adhere to time-based conditions. For example, a policy with a time-based condition that grants access to All Identity and Access enabled services includes access to Kubernetes Service resources. The subject of the policy has access to some Kubernetes Service resources outside of the specified time-based condition.

Time-based conditions for access policies help you apply the principle of least privilege for assigning access and reduce the attack surface if a security breach occurs.

When you create a policy with resource attribute-based conditions, you can avoid creating multiple access policies to meet your access needs. Instead, you can create a single policy by using a combination of `OR` / `AND` operators that are applied on resource attributes with literal or wildcard values. You can grant access to a resource that meets multiple criteria simultaneously (`AND`), or grant access if any of several conditions are met (`OR`). For example, with resource attribute-based conditions, you can create a single policy that allows access based on `Service instance: abc`, `OR attribute-1: xyz`, `OR (attribute-2: def AND attribute-3: hij)`.



Note: You must have a minimum of 2 conditions that use `OR`/`AND` and resource attribute-based conditions. If you need to add a single condition, see [Assigning](#)

[access to resources in the console](#) and add the condition after selecting **Specific resources**.

 **Tip:** To review a user's access, see [Reviewing assigned access in the console](#).


Condition patterns

Time-based condition patterns

The following patterns represent the allowed condition permutations:

Pattern	Example
time-based-conditions:once	Temporary access on a specific day from 9 AM to 5 PM UTC-5.
time-based-conditions:weekly:all-day	Recurring access Mon-Fri UTC-5 all day.
time-based-conditions:weekly:custom-hours	Recurring access Mon-Fri 9 AM to 5 PM UTC-5.

Table 1. Allowed condition patterns for time-based conditions.

 **Note:** IAM prevents combining one-time temporary conditions with weekly recurring conditions in the same policy definition.

Resource attribute-based condition patterns

The following patterns represent the allowed condition permutations:

Pattern	Example
<code>attribute-based-condition:resource:literal-and-wildcard</code>	Conditions based on resource attributes with literal or wildcard values (based on the operator used)

Table 2. Allowed condition patterns for resource attribute-based conditions.

Creating a temporary time-based condition by using the console

You can assign access for a finite duration by specifying a date and time range that determines when the condition grants and terminates access. For example, you might have a user that needs to present a demonstration on your account for a few hours or a contractor that needs temporary access to a service over a couple days. Complete the following steps to assign an access policy with a temporary time-based condition:

- ① In the IBM Cloud console, go to **Manage > Access (IAM)**
- ② Select **Users, Trusted profiles, Service IDs, or Access groups**, depending on the entity to which you want to assign access.
- ③ Click the entity's name from the list and go to **Access**.
- ④ Click **Assign access**.
- ⑤ Select a service and click **Next**.
 - If you want the user to be able to create any service, select **All Identity and Access enabled services**.
 - If you want to assign the user access to a specific service, select it from the list.
- ⑥ Select the resource that you want to assign the user access to, or select All resources. Click **Next**.
- ⑦ (Optional) Select a resource group access role. Click **Next**.
- ⑧ Select any combination of service access and platform access roles, and click **Next**.
- ⑨ Click **Add condition** and select **One-time**.
- ⑩ Select the time zone.

❗ **Tip:** As an example, let's say that you're creating a conditional policy for a developer that is based in Dublin. In this case, select `UTC+1` so that the date and time range that you select in the next step enforces access at the correct time for that location.
- ⑪ Complete the fields for the date and time range that that determines when the condition grants and terminates access.
- ⑫ Click **Create**.
- ⑬ Click **Review**.
- ⑭ Click **Add** to add your policy configuration to your policy summary.
- ⑮ Click **Assign**.

- ① **Note:** Temporary policies aren't automatically removed. To avoid reaching the policy limit in the account, administrators can remove the policy manually after it expires.

For more information about time-based conditions for access policies, see [Conditions in access policies](#).

Creating a recurring time-based condition by using the console

You can assign recurring access at a weekly cadence. You might want to give users access to account resources during only their working hours. Complete the following steps to assign an access policy with a recurring time-based condition:

- ① In the IBM Cloud console, go to **Manage > Access (IAM)**
- ② Select **Users, Trusted profiles, Service IDs, or Access groups**, depending on the entity to which you want to assign access.
- ③ Click the identity's name from the list and go to **Access**.
- ④ Click **Assign access**.
- ⑤ Select a service and click **Next**.
 - If you want the user to be able to create any service, select **All Identity and Access enabled services**.
 - If you want to assign the user access to a specific service, select it from the list.
- ⑥ Select the resource that you want to assign the user access to, or select All resources. Click **Next**.
- ⑦ (Optional) Select a resource group access role. Click **Next**.
- ⑧ Select any combination of service access and platform access roles, and click **Next**.
- ⑨ Click **Add condition** and select **Weekly**.
- ⑩ Select the time zone for the conditional policy.

- ① **Tip:** As an example, let's say that you're creating a conditional policy for a developer that is based in Dublin. In this case, select `UTC+1` so that the date and time range that you select next is enforced at the correct time for that location.

- ⑪ Select the days of the week that you want the condition to grant access.
 - (Optional) Set the **All day** toggle to **No** to specify a timeframe for the days that you select.

- ⑫ Click **Create**.
- ⑬ Click **Review**.
- ⑭ Click **Add** to add your policy configuration to your policy summary.
- ⑮ Click **Assign**.

For more information about time-based conditions for access policies, see [Conditions in access policies](#).

Creating a resource attribute-based condition by using the console

You can assign access by specifying a resource attribute that determines which resources the condition grants access to. For example, you might have a user that needs to present a demonstration in your account by using specific resources. For more information and examples about available operators, see [Resource attribute-based conditions](#).

- ❗ **Important:** You can have up to 10 conditions and nesting up to 2 levels by using OR.

Complete the following steps to assign an access policy with an attribute resource-based condition:

- ① In the IBM Cloud console, go to **Manage > Access (IAM)**
- ② Select **Users, Trusted profiles, Service IDs, or Access groups**, depending on the entity to which you want to assign access.
- ③ Click the entity's name from the list and go to **Access**.
- ④ Click **Assign access**.
- ⑤ Select a service, and click **Next**.

- ❗ **Important:** Not all services support resource attribute-based conditions. To continue, select a service that supports resource attribute-based conditions. For example, **Cloud Object Storage**.

- ⑥ Select the resource that you want to assign the user access to, or select **All resources**. Click **Next**.
- ⑦ (Optional) Select a resource group access role. Click **Next**.
- ⑧ Select any combination of service access and platform access roles, and click **Next**.
- ⑨ Click **Add condition** and select **Advanced condition builder > Next**.
- ⑩ Add the resource conditions and click **Create**.



Tip: As an example, let's say that you're creating a conditional policy for a developer that needs access to everything under the `dev/David/` and the `dev/Secret/` folders OR any path that begins with the `devOps/` or `cicd/`. In this case, select **Prefix, string matches any of**, and add `dev/David/*` and `dev/Secret/*`. Then, add an OR condition and select **Path, string matches any of**, and add `devOps/*` and `cicd/*`.

- ① Click **Create** > **Review** > **Add** to add your access configuration to your access summary.
- ② Click **Assign**.

Service-specific documentation

For more information about how Cloud Object Storage uses resource attribute-based conditions, see [Controlling access to individual objects in a bucket](#).

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