Instance templates

An instance template is a resource (/compute/docs/reference/latest/instanceTemplates) that you can use to create Virtual Machine (VM) instances and managed instance groups (MIGs).

Instance templates define the machine type, boot disk image or container image, labels, and other instance properties. You can then use an instance template to create a MIG (/compute/docs/instance-groups/creating-groups-of-managed-instances) or to create individual VMs (/compute/docs/instances/create-vm-from-instance-template). Instance templates are a convenient way to save a VM instance's configuration so you can use it later to create VMs or groups of VMs.

An instance template is a global resource that is not bound to a zone or a region. However, you will specify some zonal resources in an instance template, which restricts the template to the zone where that resource resides. For example, if you include a read-only persistent disk from `us-central1-b` in your instance template, you cannot use that template in any other zone because that specific disk exists only in zone `us-central1-b`. For more information about zonal resources, see Regions and zones (/compute/docs/regions-zones/regions-zones).

Please note that labels defined within an instance template are applied to all instances that are created from that instance template. The labels do not apply to the instance template itself.

To learn how to create an instance template, read Creating instance templates (/compute/docs/instance-templates/create-instance-templates).

When to use instance templates

Use instance templates any time you want to quickly create VM instances based off of a preexisting configuration. If you want to create a group of identical instances, you must use an instance template to create a MIG (/compute/docs/instance-groups#types_of_managed_instance_groups).

How to update instance templates

Instance templates are designed to create instances with identical configurations. So you cannot update an existing instance template or change an instance template after you create it.

If an instance template goes out of date, or you need to make changes to the configuration, create a new instance template (/compute/docs/instance-templates/create-instance-templates). You can create a template based on an existing instance template, or based on an existing instance. You can also override instance template fields (/compute/docs/instances/create-vm-from-instance-template#creating_a_vm_instance_from_an_instance_template_with_overrides) when creating a VM instance from an instance template.

What's next

- Create an instance template (/compute/docs/instance-templates/create-instance-templates) from scratch, based on an existing instance, or based on an existing instance template.

- Use an instance template to create a VM instance (/compute/docs/instances/create-vm-from-instance-template).

- Use an instance template to create a MIG (/compute/docs/instance-groups/creating-groups-of-managed-instances).