

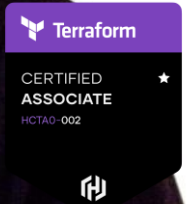


Azure Container Apps



Who am I?

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Containers on Azure





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Management and governance

Media

Containers

Develop and manage your containerized applications faster with integrated tools



Azure Kubernetes Service (AKS)

Deploy and scale containers on managed Kubernetes



Azure Red Hat OpenShift

Deploy and scale containers on managed Red Hat OpenShift



Azure Container Apps

Build and deploy modern apps and microservices using serverless containers



Azure Functions

Execute event-driven serverless code functions with an end-to-end development experience



Web App for Containers

Run containerized web apps on Windows and Linux



Azure Container Instances

Launch containers with hypervisor isolation



Azure Service Fabric

Deploy and operate always-on, scalable, distributed apps



Azure Container Registry

Build, store, secure, and replicate container images and artifacts

Chat with Sales



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Why so many choices?



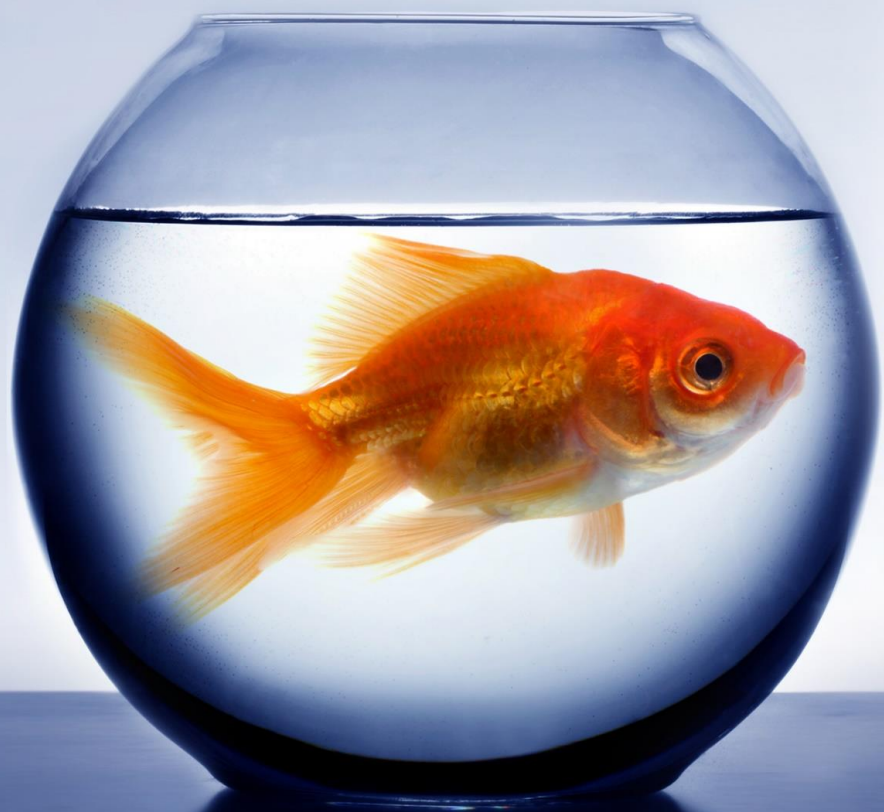
Azure Container Registry

Build, store, and replicate container images and artifacts



The right tool for the right job





Azure Container Apps



Container Apps

- Serverless container platform powered by Kubernetes
 - General availability in June 2022
- Optimized for running general purpose containers
- Supports Kubernetes-style apps and microservices
- Enables event-driven application architectures
- Scale based on traffic included
- Support of long running processes

So it's a serverless
Kubernetes service
or not?

bound task



Container Apps - Workloads

Web Apps

- HTTP/S
- Scaling by concurrent HTTP requests

API Apps

- WebSocket, gRPC
- Scaling by CPU or memory load

Background Processes

- Continuously running
- Scaling by CPU or memory load

Event-Driven Processes

- Continuously running
- Event-driven scaling
- Scaling by Keda scalers



Container Apps - Features

- HTTP, HTTPS, WebSocket, gRPC
- Visibility
 - External or internal only
- Auto scaling
 - Scaling to zero incur no charges
 - Supports Keda event-driven autoscaling
- Multi containers
 - While the multi container pod pattern is supported, the preferred method is to deploy containers individually
- Health Probes



Container Apps - Features

- Linux-based x86-64 (linux/amd64) container image only
- Revisions
 - Traffic split
- Secrets
- Darp integration
- Support for Managed Identities
- Easy Auth
- Publish revision using GitHub Actions



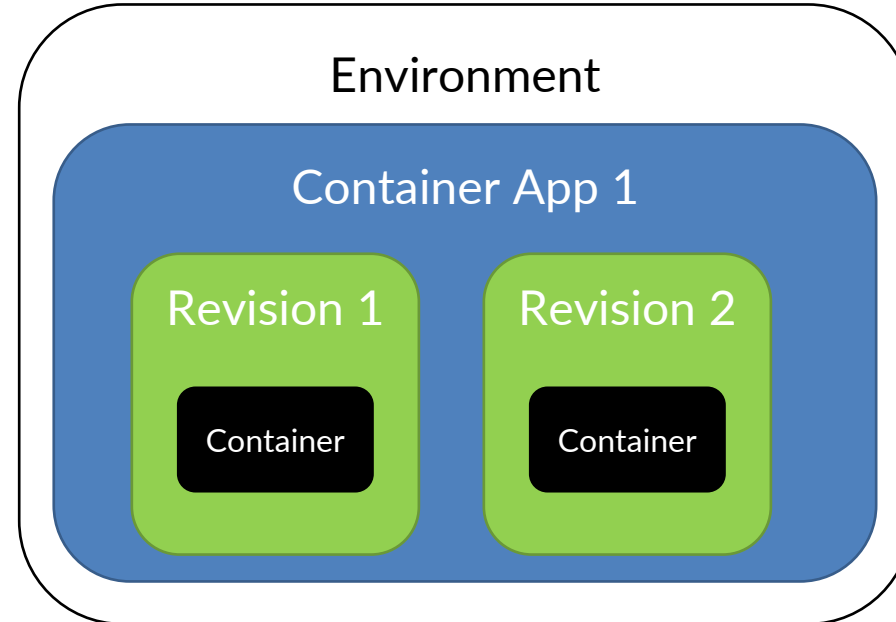
Container Apps - Billing

- Resource consumption
 - The amount of resources allocated to your container app on a per-second basis, billed in vCPU-seconds and GiB-seconds
- HTTP requests
 - The number of HTTP requests your container app receives
- The following resources are free during each calendar month, per subscription:
 - The first 180,000 vCPU-seconds
 - The first 360,000 GiB-seconds
 - The first 2 million HTTP requests



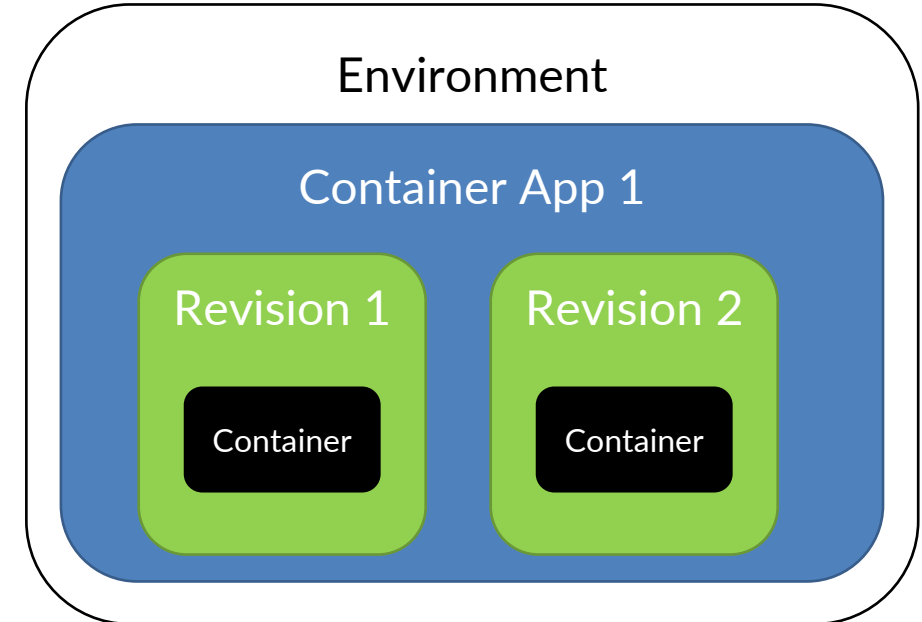
Container Apps - Environment

- Secured boundary around groups of container apps
- Deployed to the same VPC
- Write logs to the same Logs Analytics workspace



Container Apps - Containers

- Any Linux-based x86-64 (linux/amd64) container image
- Containers from any public or private container registry
- If a container crashes, it automatically restarts
- Can't run privileged containers



Container Apps - Containers

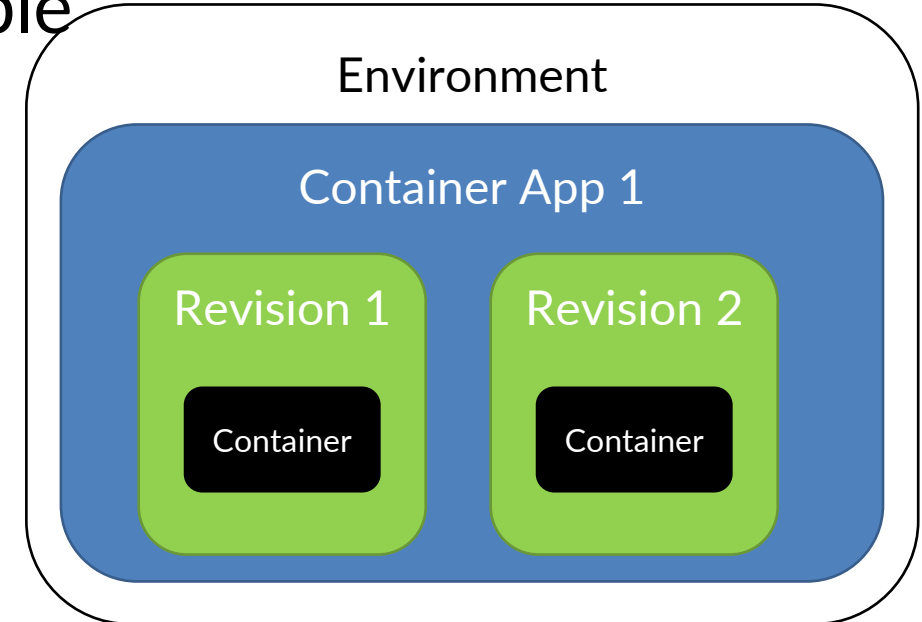
- The containers in a container app share hard disk and network resources and experience the same application lifecycle
- vCPU/Memory is limited to the following selection

vCPUs (cores)	Memory
0.25	0.5Gi
0.5	1.0Gi
0.75	1.5Gi
1.0	2.0Gi
1.25	2.5Gi
1.5	3.0Gi
1.75	3.5Gi
2.0	4.0Gi



Container Apps - Revisions

- Immutable snapshot
- An image or config change will create a new revision
- You can choose whether to automatically deactivate old revisions, or allow them to remain available
- Up to 100 revisions can remain available



Container Apps - Revisions

- Immutable snapshot of a container app version
- The first revision is automatically created when you deploy your container app
- New revisions are automatically created when you make a revision-scope change to your container app
- You can run multiple revisions concurrently
 - You can split external HTTP traffic between active revisions
- You can choose whether to automatically deactivate old revisions, or allow them to remain available
 - Up to 100 revisions can remain available



What does create a revision?

- Revision-scope changes
 - Changes to containers
 - Add or update the scaling rules
 - Changes to the Dapr settings
 - Any change to the parameters in the properties.template section of the container app resource template
- Application-scope changes
 - The changes are globally applied to all revisions
 - A new revision isn't created
 - Triggers
 - Changes to traffic splitting rules & labels
 - Turning Ingress on/off
 - Changes to secrets



Revision modes

- Single revision mode
 - Default mode
 - Only one revision is active at a time
 - When a new revision is created, the latest revision replaces the active revision
- Multiple revision mode
 - New revisions are activated alongside current active revisions
 - For an app implementing external HTTP ingress, you can control the percentage of traffic going to each active revision



Traffic Split

Manage traffic

Revision 1 *
Latest healthy revision ▼ Serving

Revision 2 *
hello-00001-zan ▼

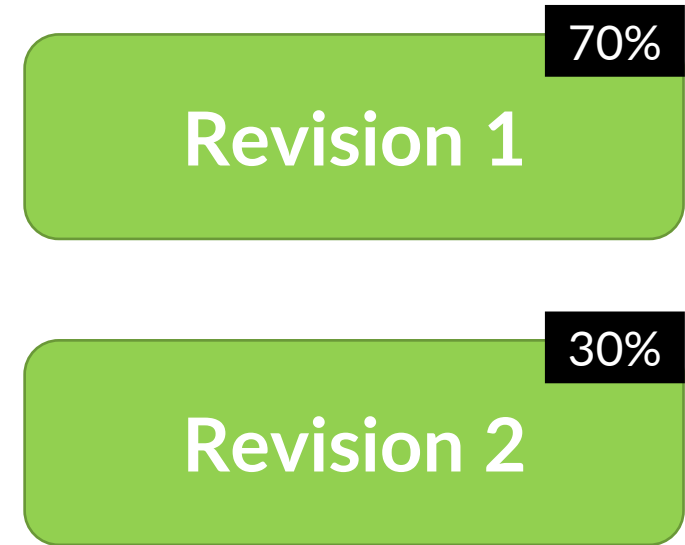
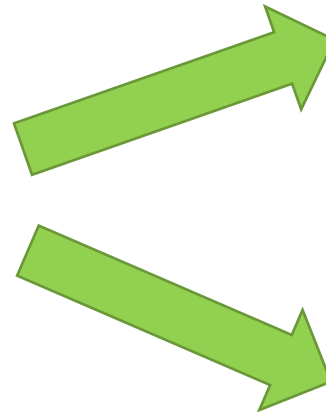
+ ADD REVISION

Traffic ...
70 %(Currently: 100%)

Traffic 2
30 %(Currently: 0%)

CANCEL

SAVE



Multi containers

- Running multiple containers in a single container app is an advanced use case
- You should use this pattern only in specific instances in which your containers are tightly coupled
- In most situations, deploy each service as a separate container app



Shutdown

- The containers are shut down in the following situations:
 - As a container app scales in
 - As a container app is being deleted
 - As a revision is being deactivated
- When a shutdown is initiated, the container host sends a SIGTERM message to your container
- If your application does not respond within 30 seconds to the SIGTERM message, then SIGKILL terminates your container



HTTPS ingress

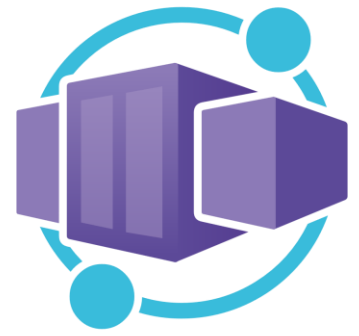
- Supports TLS termination
- Supports HTTP/1.1 and HTTP/2
- Supports WebSocket and gRPC
- HTTPS endpoints always use TLS 1.2, terminated at the ingress point
- Endpoints always expose ports 80 (for HTTP) and 443 (for HTTPS)
 - By default, HTTP requests to port 80 are automatically redirected to HTTPS on 443
- Request timeout is 240 seconds



Scaling

- Min: 0, Max: 30 replicas
- Scale triggers
 - HTTP traffic
 - CPU or Memory
 - Event-driven (KEDA)
- No usage charges are incurred when an application scales to zero





Container Apps Secrets

- K8s like object
- Defined at the application level, secured values are available to containers
- Referenced as environment variables
- Adding, removing, or changing secrets does not generate new revisions
- When a secret is updated or deleted, you can respond to changes in one of two ways:
 - Deploy a new revision
 - Restart an existing revision



Storage

- Container file system
- Temporary storage
 - Like emptyDir in K8s
 - Scoped to a single replica
 - Define an emptyDir volume in the revision then mount the volume in the container revision
- Azure Files
 - Multiple containers can mount the same file share, including ones that are in another replica, revision, or container app



Dapr integration

- Container Apps provides a fully managed version
- Dapr exposes its HTTP and gRPC APIs via a sidecar
- Unsupported Dapr capabilities
 - Dapr Secrets Management API
 - Use Container Apps secret mechanism as an alternative
 - Custom configuration for Dapr Observability
 - Instrument with Application Insights to visualize distributed tracing
 - Any capabilities that require use of the Dapr configuration spec
 - Advanced Dapr sidecar configurations



New Container App

1st time only

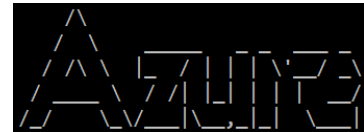
```
# add the Container App extension
az extension add --name containerapp --upgrade

# these 2 providers are required
az provider register --namespace Microsoft.App
az provider register --namespace Microsoft.OperationalInsights

# create an environment
az containerapp env create -n [envname] -g [rgname] --location [location]

# create a Container App
az containerapp create -n [appname] -g [rgname] --environment [envname] \
  --image nginx:latest \
  --target-port 80 --cpu 0.5 --memory 1.0Gi
  --ingress 'external' \
  --revision-suffix 'v1'
```





New Container App

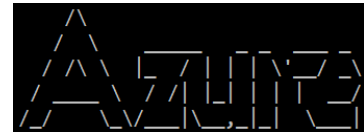
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VS Code

Search for Azure Container Apps

The screenshot displays the Visual Studio Code interface with the Extensions Marketplace open. The search bar contains 'azure container apps'. The results list several extensions, with 'Azure Container Apps' by Microsoft highlighted. The details panel on the right shows the extension's icon, name, version (v0.2.0), and a 'Preview' badge. It also displays the number of downloads (1,600) and a five-star rating. The 'Install' button is visible. Below the main title, there are tabs for 'Details', 'Feature Contributions', 'Changelog', and 'Dependencies'. The 'Details' tab is active, showing a description of the extension and a link to the 'Samples repository'. A promotional banner for a free Azure account is also present. On the right side of the details panel, there are sections for 'Categories' (listing 'Azure'), 'Extension Resources' (with links to Marketplace, Repository, License, and Microsoft), and 'More Info'.

EXTENSIONS: MARKETPLACE

azure container apps

Azure Account 401ms
A common Sign In and Subscription ...
Microsoft

Azure Container Apps 1K
An Azure Container Apps extension f...
Microsoft **Install**

Azure Functions 457ms
An Azure Functions extension for Visu...
Microsoft

Azure Storage 347ms
Manage your Azure Storage accounts...
Microsoft

Azure Resources 261ms
An extension for viewing and managi...
Microsoft

Azure Tools
Get web site hosting, SQL and Mongo...
Microsoft

Azure Databases 1036ms
Create, browse, and update globally d...
Microsoft

Azure App Service
An Azure App Service management e...

Azure Container Apps v0.2.0 **Preview**
Microsoft | 1,600 | ★★★★★
An Azure Container Apps extension for Visual Studio Code.
Install

Details Feature Contributions Changelog Dependencies

Azure Container Apps for Visual Studio Code

Use the Azure Containers extension to quickly create and deploy containerized apps directly from VS Code. Check out the [Azure Samples repository](#) to view sample projects.

Sign up today for your free Azure account and receive 12 months of free popular services, \$200 free credit and 25+ always free services [Start Free.](#)

Create your first container app

Categories
Azure

Extension Resources
[Marketplace](#)
[Repository](#)
[License](#)
[Microsoft](#)

More Info
Released: 4/12/2022



Demo



END OF LINE ■

Thank You!

