

# AZURE CONTAINER APPS - PART 1 - ARCHITECTURE OVERVIEW



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# Agenda

- **INTRODUCTION**

Container Apps overview

- **ENVIRONMENT**

external vs internal

- **INFRASTRUCTURE**

deploy basic setup using  
Azure Bicep

- **LOAD-BALANCING  
OPTIONS**

HTTPS ingress vs FrontDoor  
Standard/Premium

# Overview

Azure Container Apps is a platform that allows developers to create serverless microservices by leveraging containers. This solution is specifically designed to run general-purpose containers, making it ideal for applications that use multiple microservices deployed in containers. To provide additional functionality, Container Apps is powered by open-source technologies such as:

- Kubernetes
- Dapr
- KEDA
- Envoy

It supports Kubernetes-style apps and microservices, including features like service discovery and traffic splitting. Additionally, Container Apps enables event-driven architectures through its ability to scale based on traffic and pull from event sources like queues, and even supports scaling down to zero. Finally, Container Apps offers support for long-running processes and background tasks.

## External

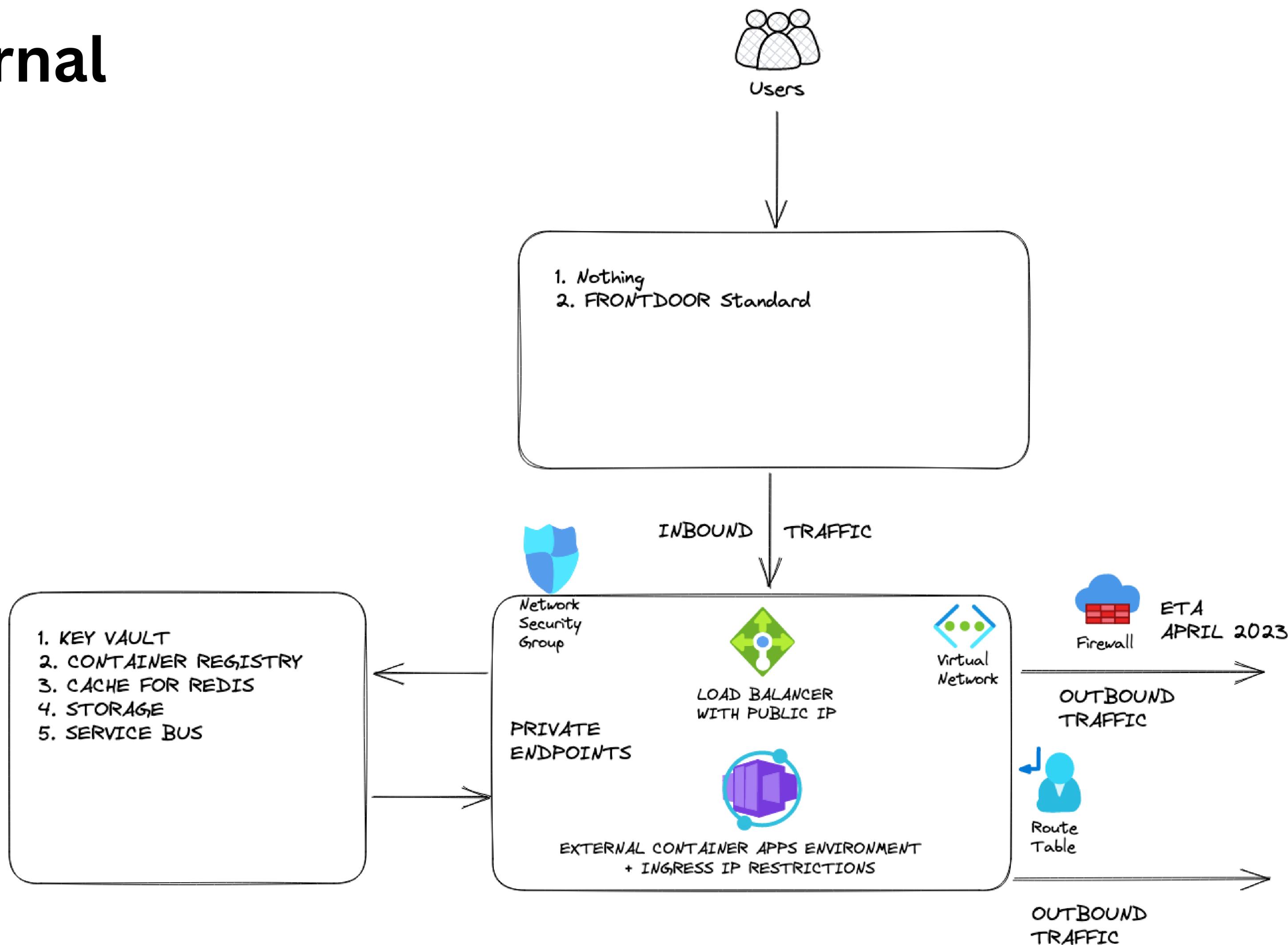
Container Apps environments deployed as external resources are available for public requests.

External environments are deployed with a virtual IP on an external, public facing IP address

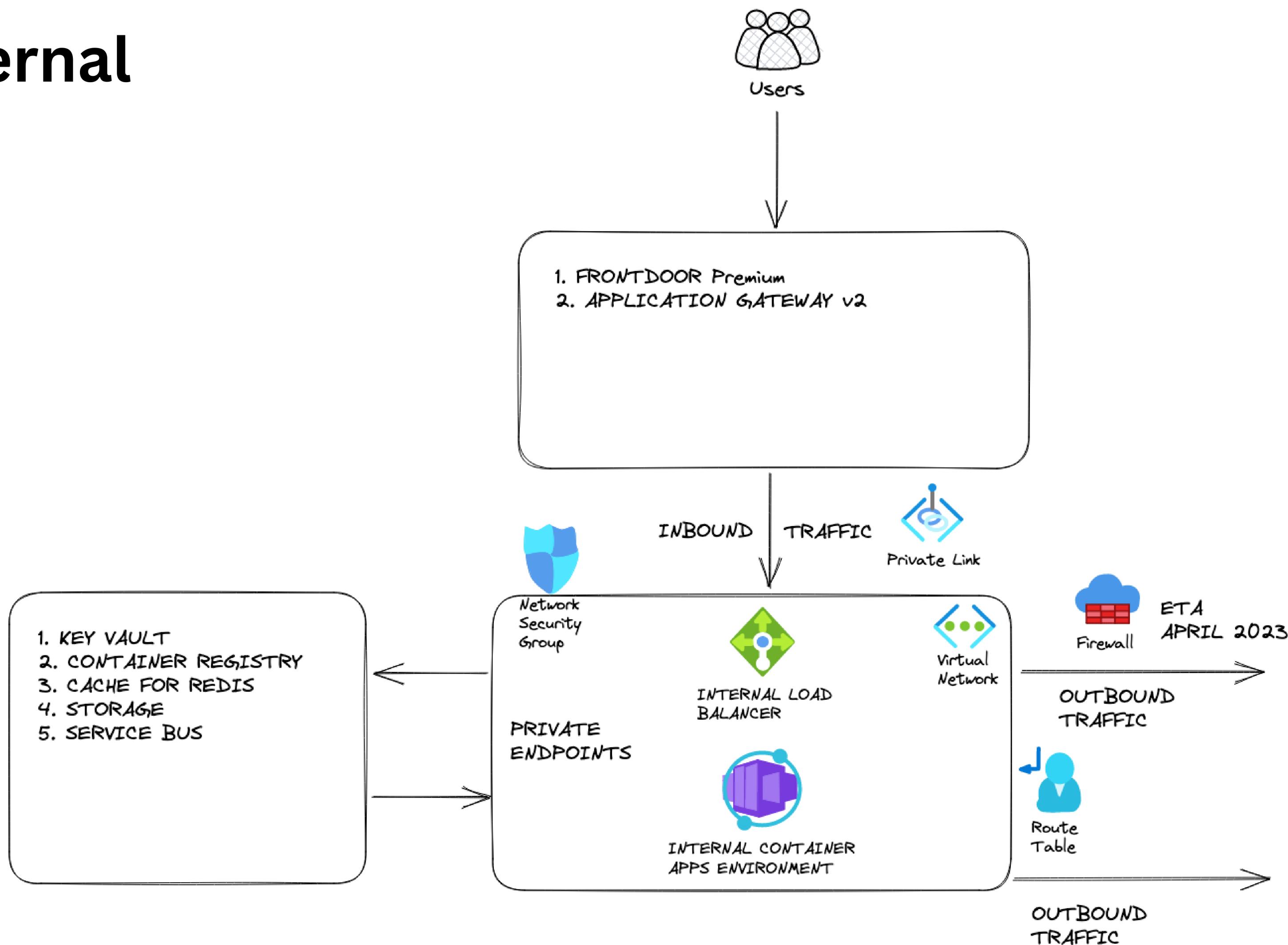
## Internal

Container Apps environments deployed as internal resources has no public endpoint. Internal environments are deployed with a virtual IP (VIP) mapped to an internal IP address. The internal endpoint is an Azure internal load balancer (ILB) and IP addresses are issued from the custom VNET's list of private IP addresses.

# External



# Internal



# Ingress

Azure Container Apps supports two types of ingress: HTTPS and TCP.

With HTTPS ingress enabled, your container app features the following characteristics:

- 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
- The container app is accessed via its fully qualified domain name (FQDN)
- Request timeout is 240 seconds

# FrontDoor

Front Door is an application delivery network that provides global load balancing and site acceleration service for web applications. It offers Layer 7 capabilities for your application like SSL offload, path-based routing, fast failover, caching, etc. to improve performance and high-availability of your applications.

Available tiers:

- Standard
- Premium

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# Costs

Azure Container Apps billing consists of two types of charges:

- **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.
- <https://azure.microsoft.com/en-us/pricing/calculator/>

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# **Demo infrastructure**

## **Prerequisites:**

- Azure CLI
- Azure Bicep
- Azure subscription
- Demo Azure Bicep code - <https://github.com/adamkielar/ct-apps-envs>

# THANKS!

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