

# Lecture 17

## Cloud API Gateway

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- Cloud API Gateway is a fully managed service that makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale.
- APIs act as the "front door" for applications to access data, business logic, or functionality from your backend services.
- Using API Gateway, you can create RESTful APIs and WebSocket APIs that enable real-time two-way communication applications.
- API Gateway supports containerized and serverless workloads, as well as web applications.

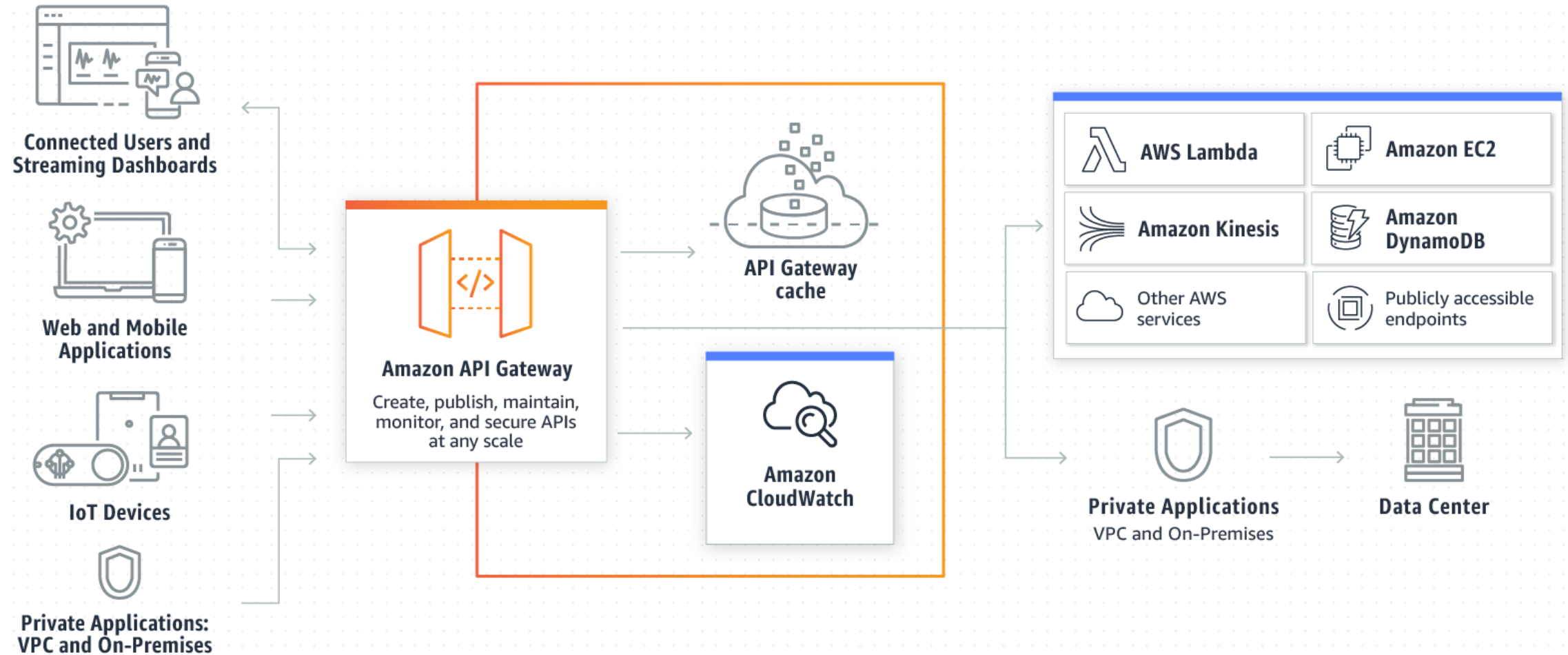
# Cloud API Gateway

- API Gateway handles all the tasks involved in accepting and processing up to hundreds of thousands of concurrent API calls, including traffic management, CORS support, authorization and access control, throttling, monitoring, and API version management.
- API Gateway has no minimum fees or startup costs. You pay for the API calls you receive and the amount of data transferred out and, with the API Gateway tiered pricing model, you can reduce your cost as your API usage scales.

# Types of API Gateway

- **RESTful APIs:** Build RESTful APIs optimized for serverless workloads and HTTP backends using HTTP APIs. HTTP APIs are the best choice for building APIs that only require API proxy functionality. If your APIs require API proxy functionality and API management features in a single solution, API Gateway also offers REST APIs.
- **WEBSOCKET APIs:** Build real-time two-way communication applications, such as chat apps and streaming dashboards, with WebSocket APIs. API Gateway maintains a persistent connection to handle message transfer between your backend service and your clients.

# Working of API Gateway



# Benefits of API Gateway

- **Efficient API development:** Run multiple versions of the same API simultaneously with API Gateway, allowing you to quickly iterate, test, and release new versions. You pay for calls made to your APIs and data transfer out and there are no minimum fees or upfront commitments.
- **Performance at any scale:** Provide end users with the lowest possible latency for API requests and responses by taking advantage of our global network of edge locations using Amazon CloudFront. Throttle traffic and authorize API calls to ensure that backend operations withstand traffic spikes and backend systems are not unnecessarily called.
- **Cost savings at scale:** API Gateway provides a tiered pricing model for API requests. With an API Requests price as low as \$0.90 per million requests at the highest tier, you can decrease your costs as your API usage increases per region across your AWS accounts.

# Benefits of API Gateway

- **Easy monitoring:** Monitor performance metrics and information on API calls, data latency, and error rates from the API Gateway dashboard, which allows you to visually monitor calls to your services using [Amazon CloudWatch](#).
- **Flexible security controls:** Authorize access to your APIs with AWS Identity and Access Management (IAM) and Amazon Cognito. To support custom authorization requirements, you can execute a Lambda authorizer from [AWS Lambda](#).
- **RESTful API options:** Create RESTful APIs using HTTP APIs or REST APIs. HTTP APIs are the best way to build APIs for a majority of use cases—they're up to 71% cheaper than REST APIs. If your use case requires API proxy functionality and management features in a single solution, you can use REST APIs.





Thank You