

Designing for Application Redundancy



Jeff Landry

AUTHOR



Overview



Azure App Service

- Highly available web applications

App Service plans

- Provide resiliency to web apps

Asynchronous messaging

- Concept of message queuing
- Prevents loss of data

Azure Service Bus

Azure Queue Storage



Azure App Service Resiliency





Resiliency

- Ability of a system to recover
- Continue to function

Azure App Service and resiliency

- Highly available web applications
- Fully managed by Azure

App Service plan

- Different pricing tiers
 - Different features and hardware



Azure Compute Units (ACU)

- Measure of units
- Dedicated compute resources
- Current standard is 100
 - Based on a small (Standard_A1) VM

Staging slots and automated backups

- Staging test version of your web app

Create separate plans

- Production
- Development



High availability using the App Service

- Deploy at least 2 instances

A single instance is a single point of failure

Avoid vertical scaling

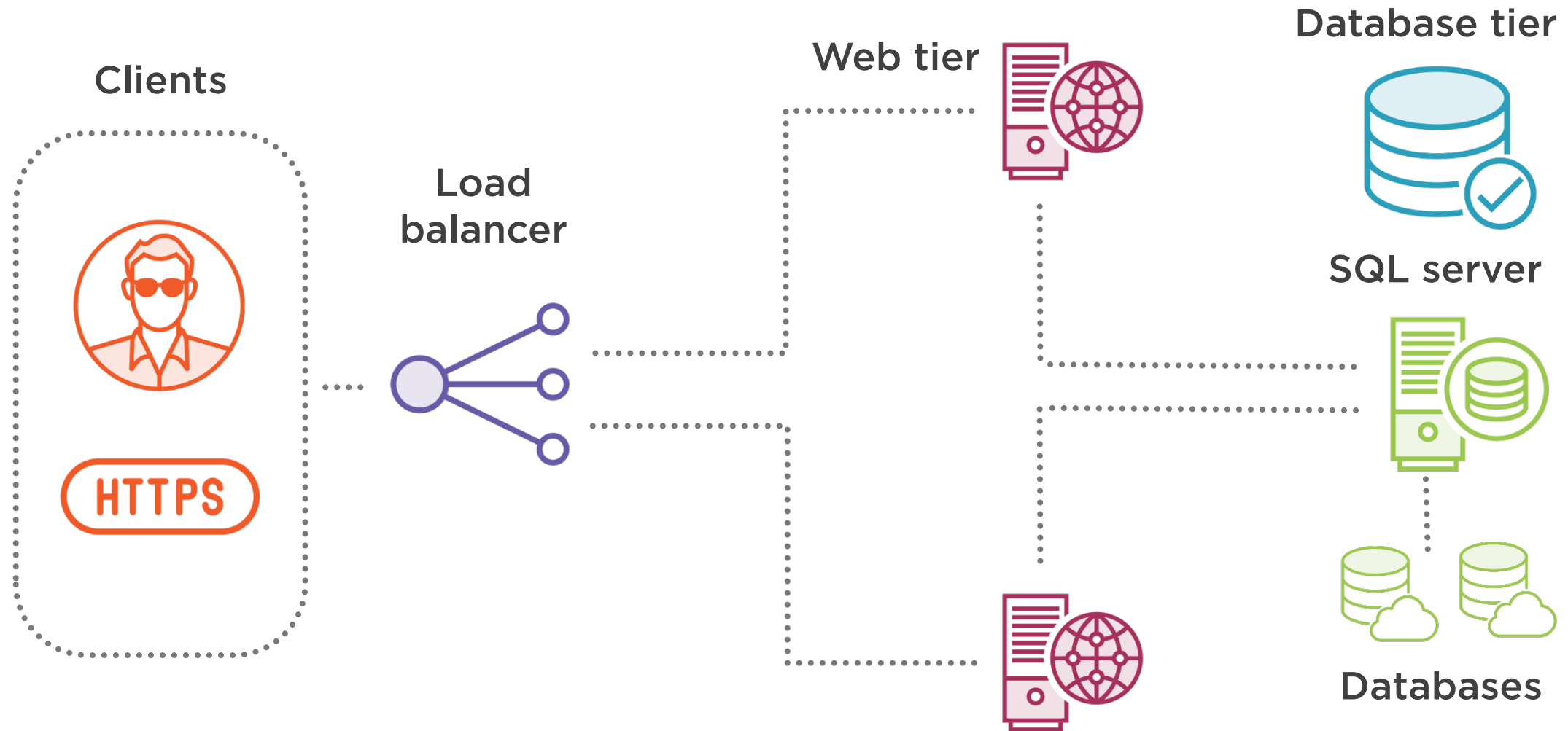
- Can cause downtime
- Select a tier meeting your requirements
- Scale in or scale out as necessary
- Transparent to users



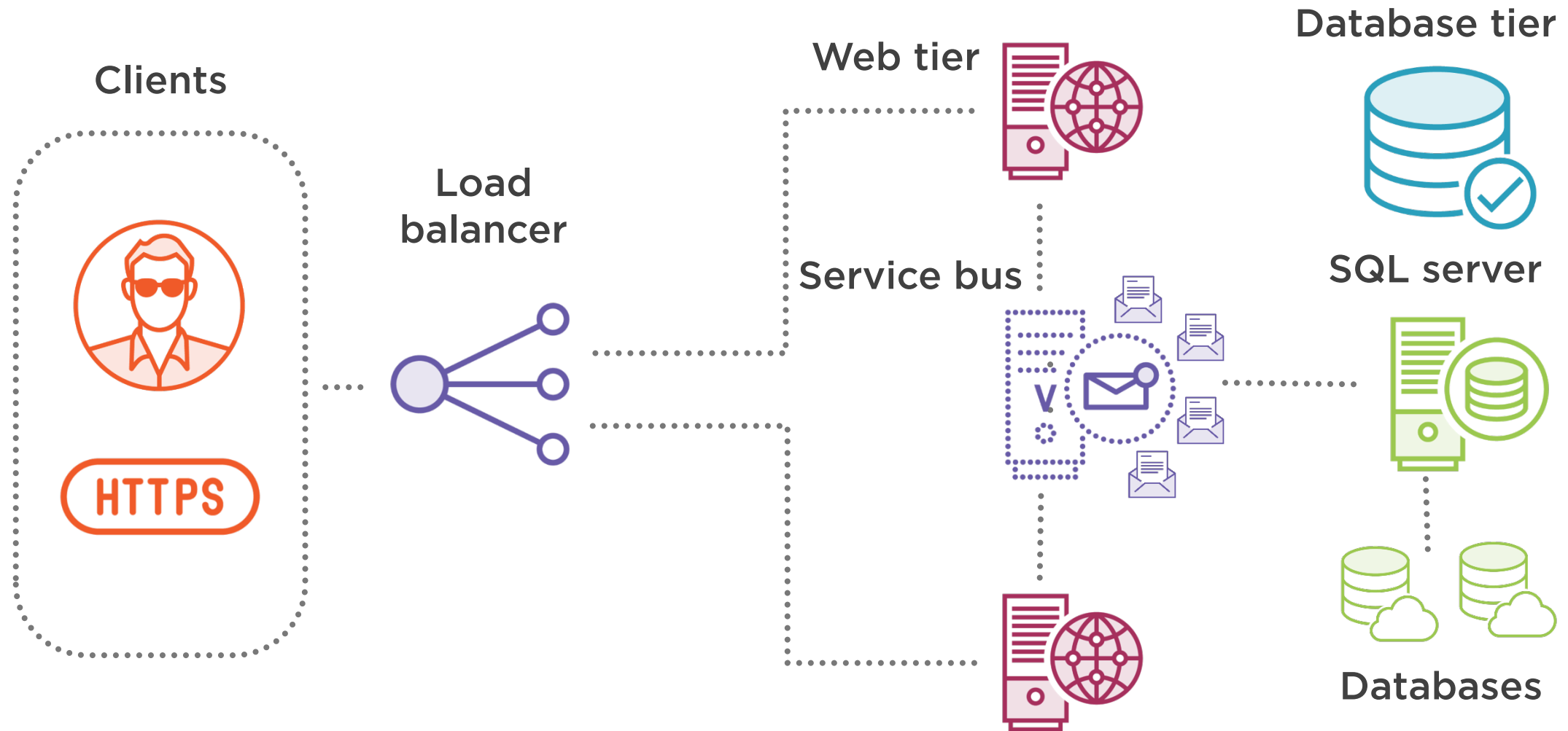
Asynchronous Messaging and High Availability



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Asynchronous Messaging and High Availability





Messages are text files

- Example: JSON, XML
- Very small in size
- Can queue a large quantity

In the event of a failure with database tier

- Messages are queued
 - Remain accessible

Decoupled applications





Azure Service Bus

- Secured platform
- Transfer of data between services

Service Bus redundancy

- Must have a failover plan

Service Bus namespace pricing tiers

- Basic
- Standard
- Premium
 - Geo-disaster recovery



Geo-disaster recovery

- Pair regions for Service Bus queues
- Failover to secondary namespace

Azure Queue Storage

- Part of Azure storage infrastructure
 - Requires a storage account

Service Bus and Azure Queue Storage

- Both technologies exist concurrently



Summary



High availability and resiliency

- Must be planned at beginning:
 - Architecture design

Azure App Service

- High availability native integration
- App Service plans:
 - Basic
 - Standard
 - Premium



Summary



Staging slots

- Deploy different versions of your app
- Different plans for dev and production

Asynchronous messaging concept

- Azure Service Bus
- Azure Queue Storage

