

Microsoft Orleans Fundamentals

Introducing Orleans

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pluralsight 
hardcore dev and IT training



High
throughput

Real time

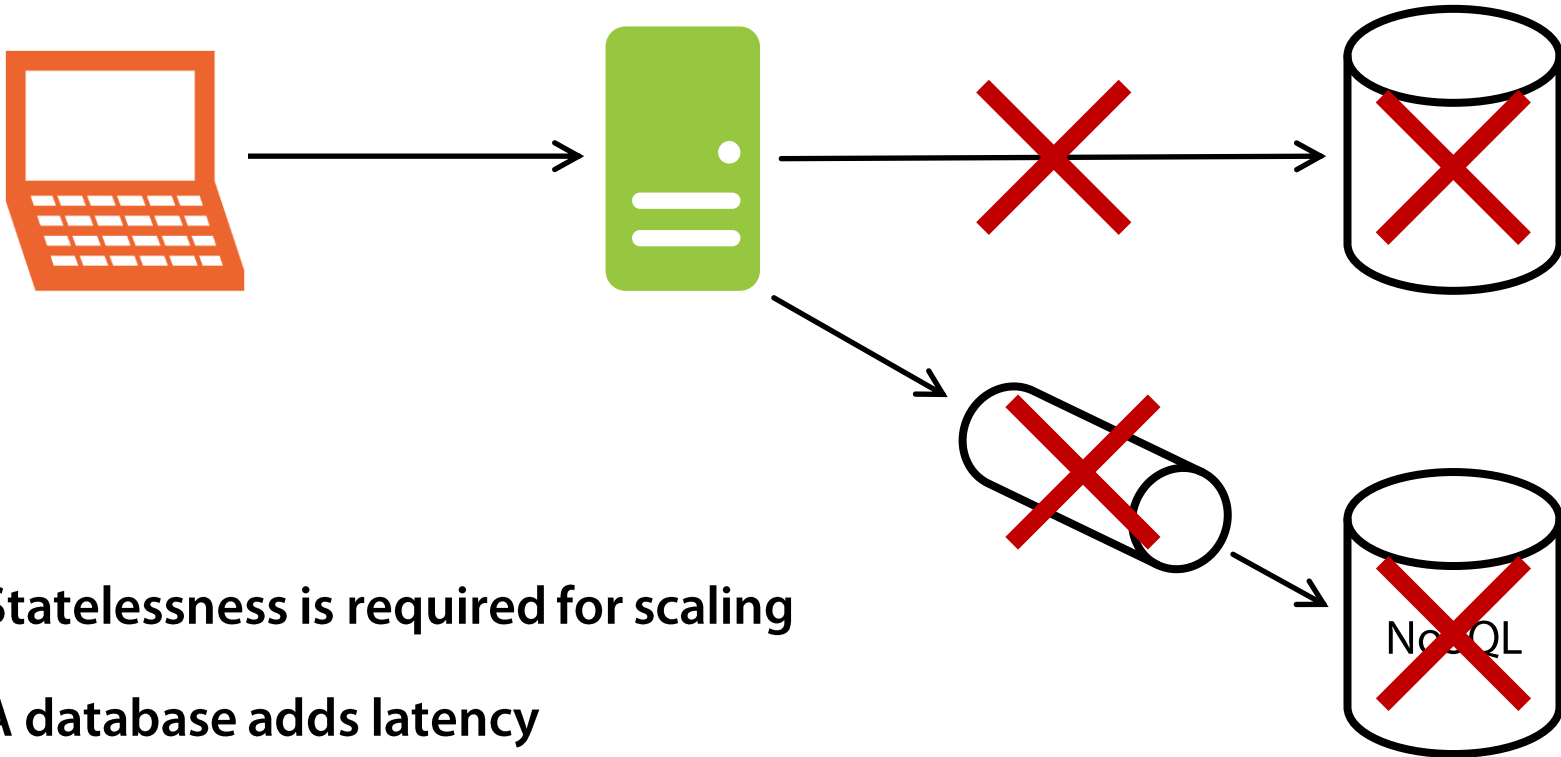
High
availability

Cloud scale

100,000 Devices

Web App

Database



Statelessness is required for scaling

A database adds latency

A database limits scalability

CQRS adds latency and eventual consistency

Microsoft Orleans

Framework for building distributed systems

**Built by the eXtreme Computing Group in
Microsoft Research**

Designed for cloud computing (Azure)

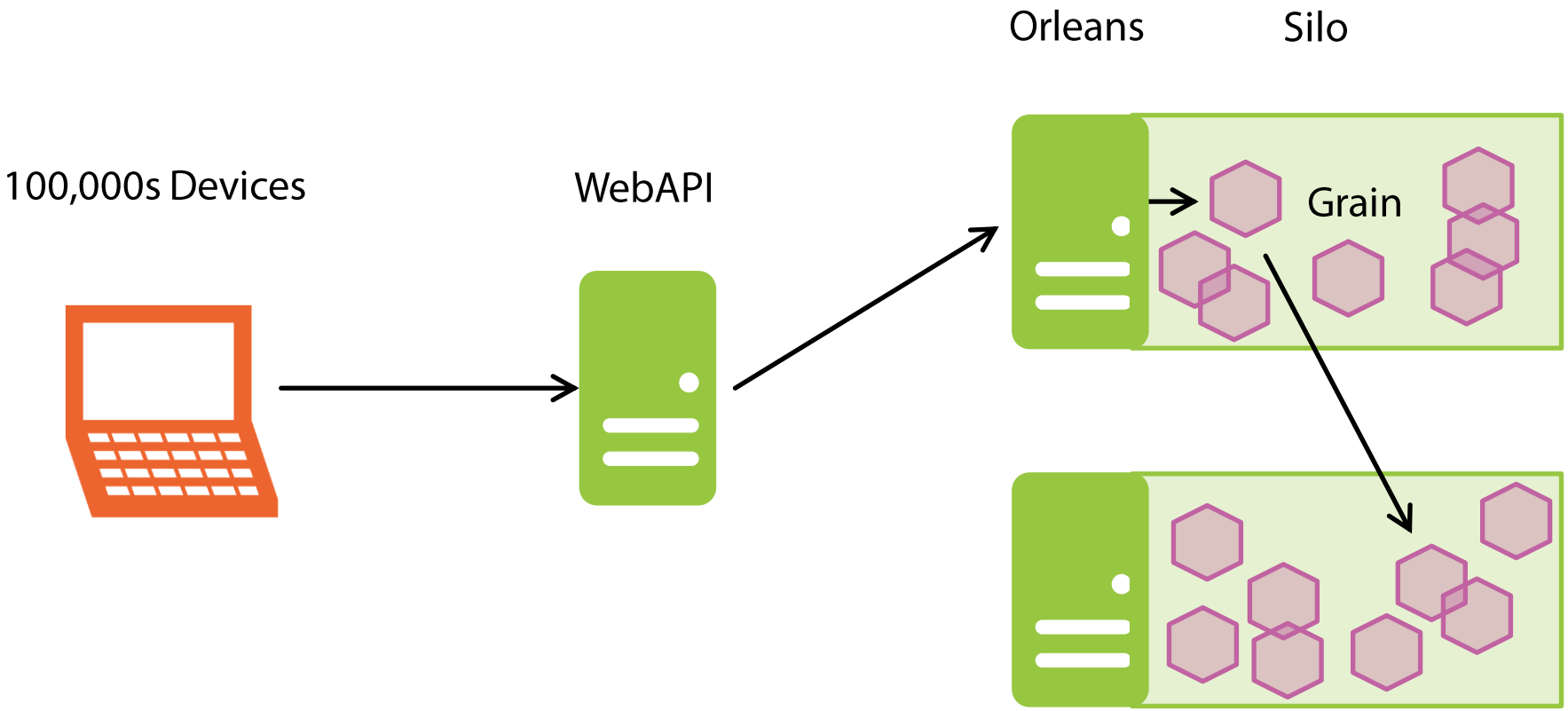
.NET implementation of the Actor Model

Why Orleans?

High scale, low latency, high availability

Simple, single threaded programming model

Designed for the cloud



Grains

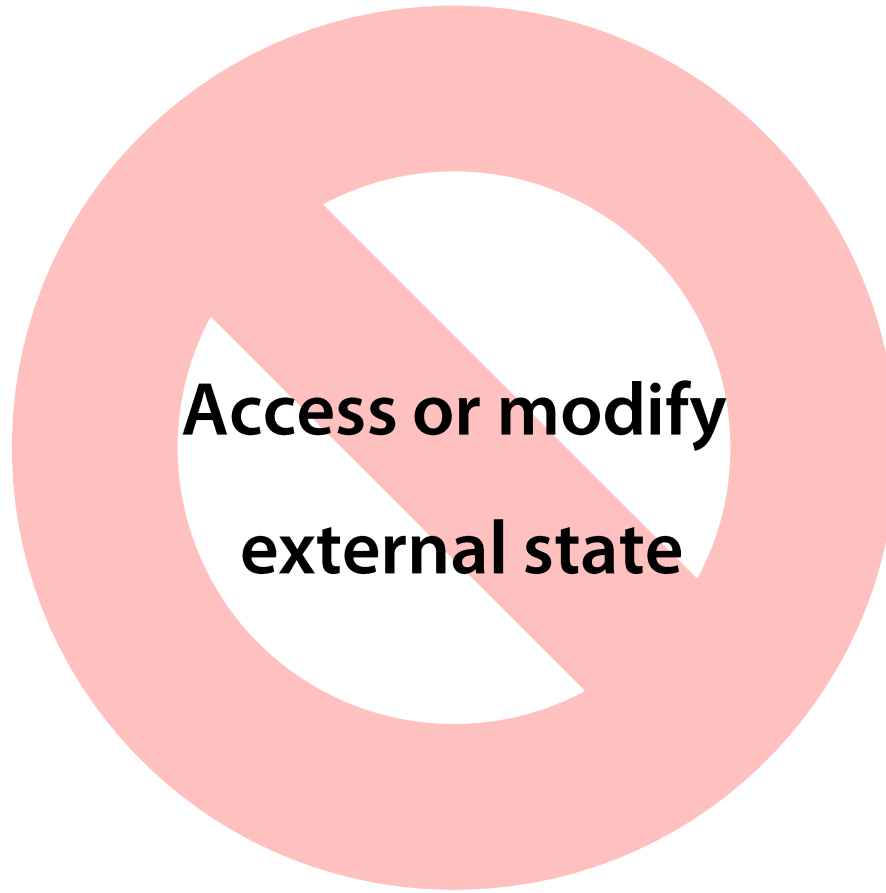
C# class

Single threaded and asynchronous

Communication via message passing

Messages are queued

What Can a Grain NOT Do?



Silos

Hosts grains

Manages grain lifecycle

.NET DLL / Console application

Designed to work together (clustered)