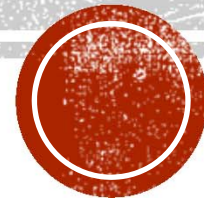# SCALABLE BROWSER NOTIFICATIONS WITH SIGNALR, SERVICE BUS AND NOTIFICATION HUBS

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MATT MILNER

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PLURALSIGHT

@milnertweet   http://mattmilner.com

NOTIFYING YOU OF WHAT WE'LL COVER

- SignalR and pushing data to browsers

- Scaling out SignalR with a back plane

- Notification Hubs

- Browser notifications (native and spec)

- http://mattmilner.com/zombies.zip

9/28/2016

SIGNAL R

- Browsers / HTML is connectionless

- Some app designs require connection

- Various solutions created over time
  - Ajax Long polling
  - Web Sockets
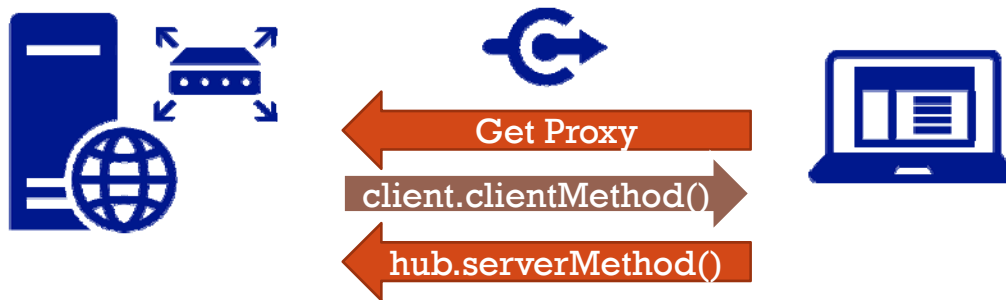 - Server Sent Events
  - Forever Frame

SIGNAL R — HOW IT WORKS

Server (ASP.NET)

- Hub
  - Server side methods
  - Client side proxies

Client (JavaScript, .NET)

- Hub proxy
  - Client side methods
  - Server side proxies

SCALING SIGNAL R

Scaling Up

Scaling Out

SIGNALR BACKPLANE

Service Bus, SQL, Redis Cache

Uses publish / subscribe pattern

Message sent to ALL servers to handle

Backplane
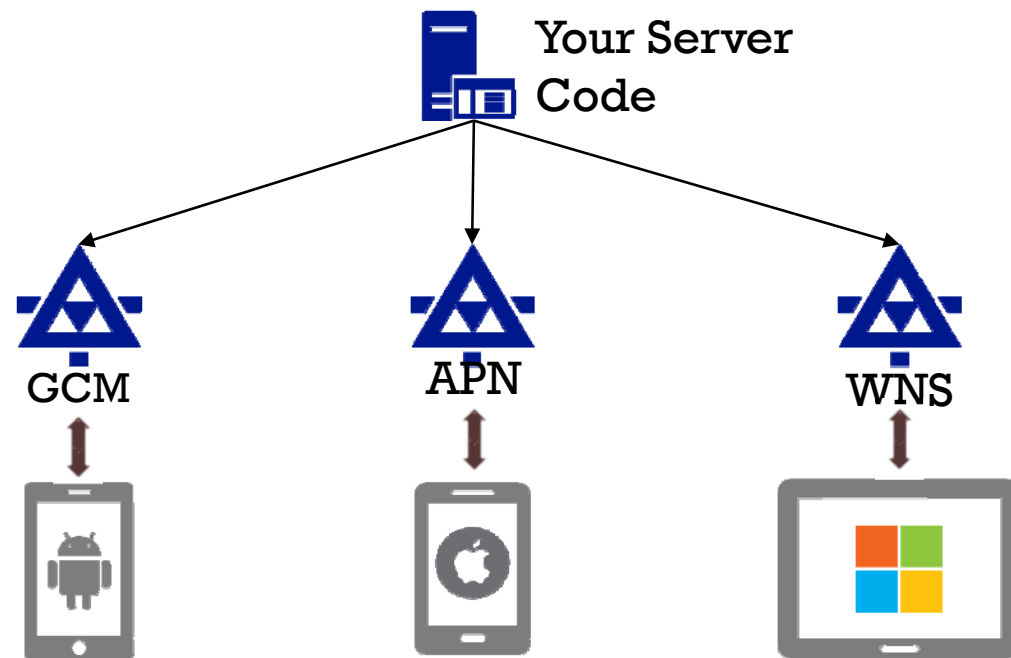
BROWSER NOTIFICATIONS

Browser push notifications

- Uses push notification services
- Requires service configuration
- Implementation varies by vendor

Local browser notifications

- Standards-based browser notifications
- Outside the main window
- Permissions required
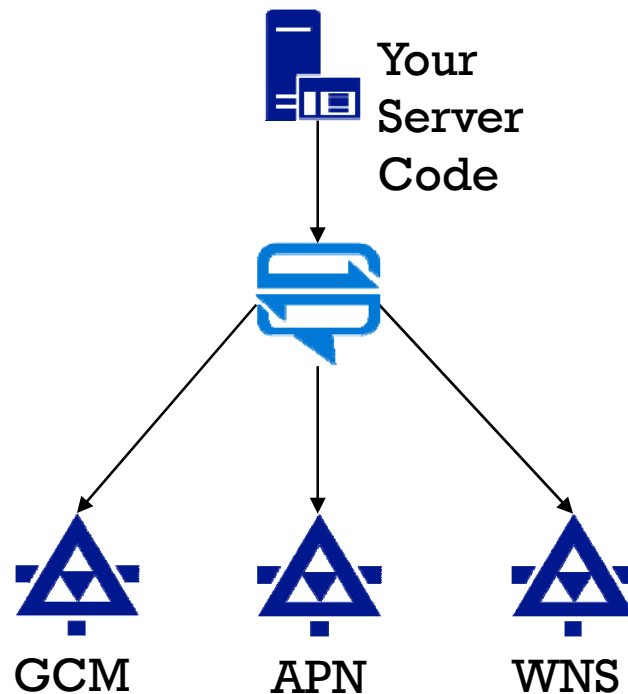- Generally supported in workers

HOW NOTIFICATIONS WORK

SERVICE BUS NOTIFICATION HUBS

Device notifications at scale

Your Server Code

GCM   APN   WNS

NOTIFICATION HUBS

- Simplify client management

- Abstract messaging services

- Provide rich subscription features

- Broadcast to millions of devices

SUPPORTED CLIENTS

Windows 8.x / 10	Windows Phone	iOS	Safari
Android	Google Chrome	Amazon Kindle	Baidu

- SignalR – server / client communication

- Notifications – displaying data to users

- Push notifications – out of band notify

SUMMARY