Signature Rail

User Conference 2019

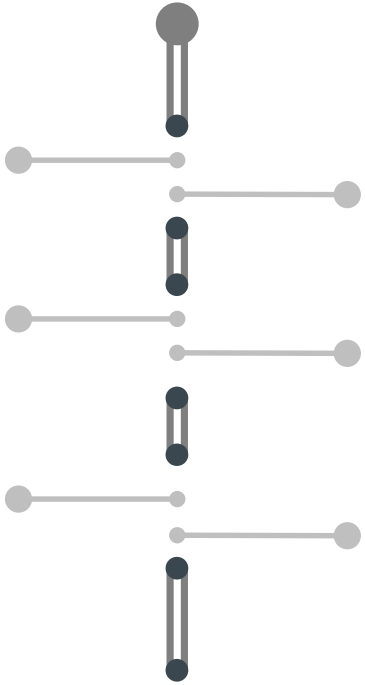
Technical Trends 7th November 2019

December 11, 2019

Technical Trends

System support

Oracle and Microsoft



Technical Overview

Architecture and Standards

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Adrian Gransbury

- Over 25 years experience in a Railway software development environment
- Started at British Rail as an Oracle developer
- Started working at the York site in the early 90’s
- Involved in development of:
  - TrainPlan
  - ResourcePlan
  - ResourceManager
- Moved from a developer to a team leader and then into management

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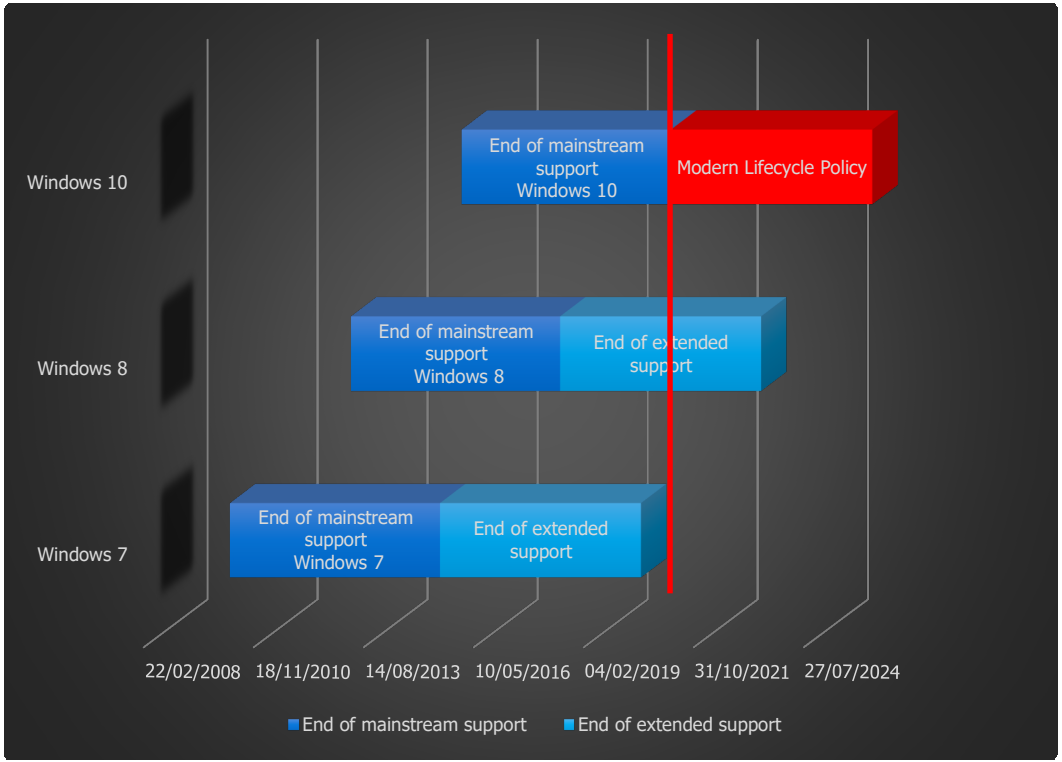
System Support

Oracle and Microsoft

Microsoft Operating System Support

- Windows 10 - Modern Lifecycle Policy
  - Customers must stay current as per the servicing and system requirements published for the product or service



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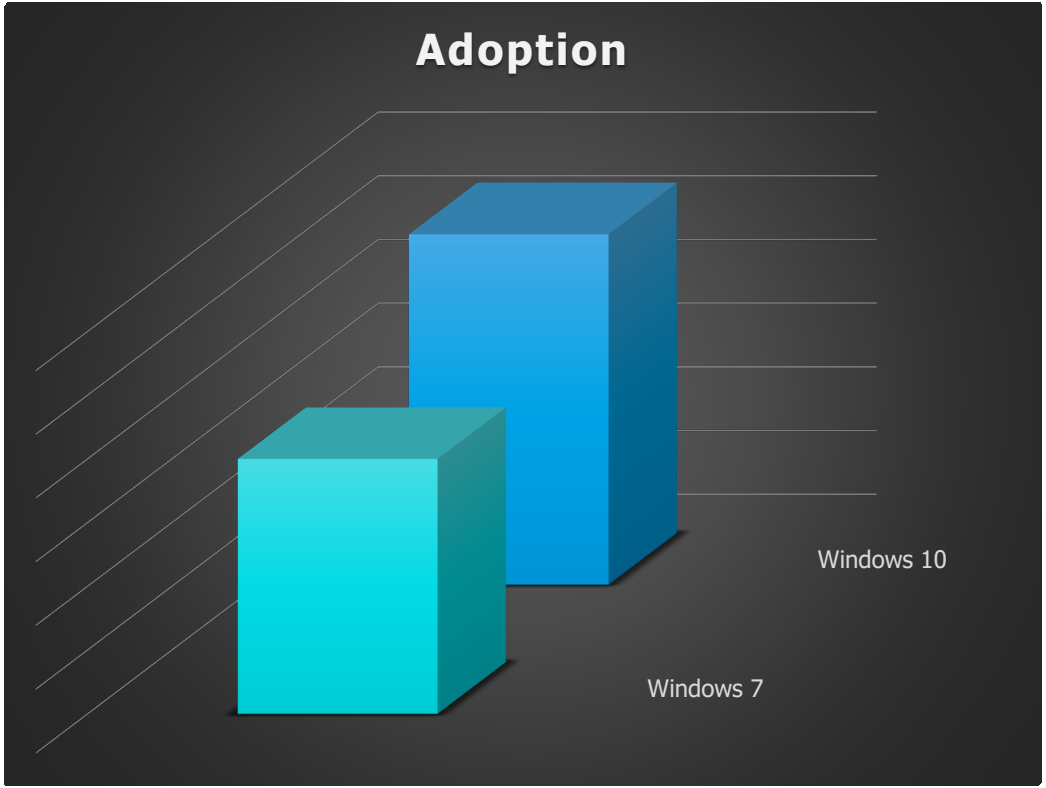
Microsoft Operating System Support



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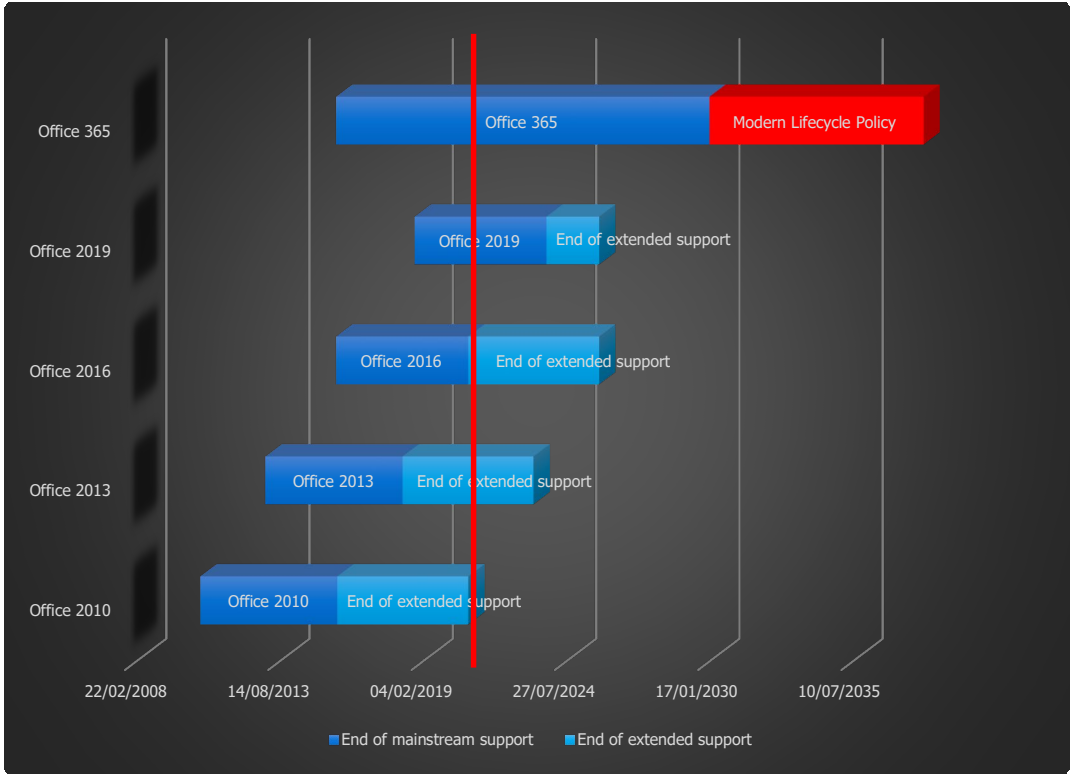
Microsoft Office Support

- Office 365- Modern Lifecycle Policy
  - Customers must stay current as per the servicing and system requirements published for the product or service



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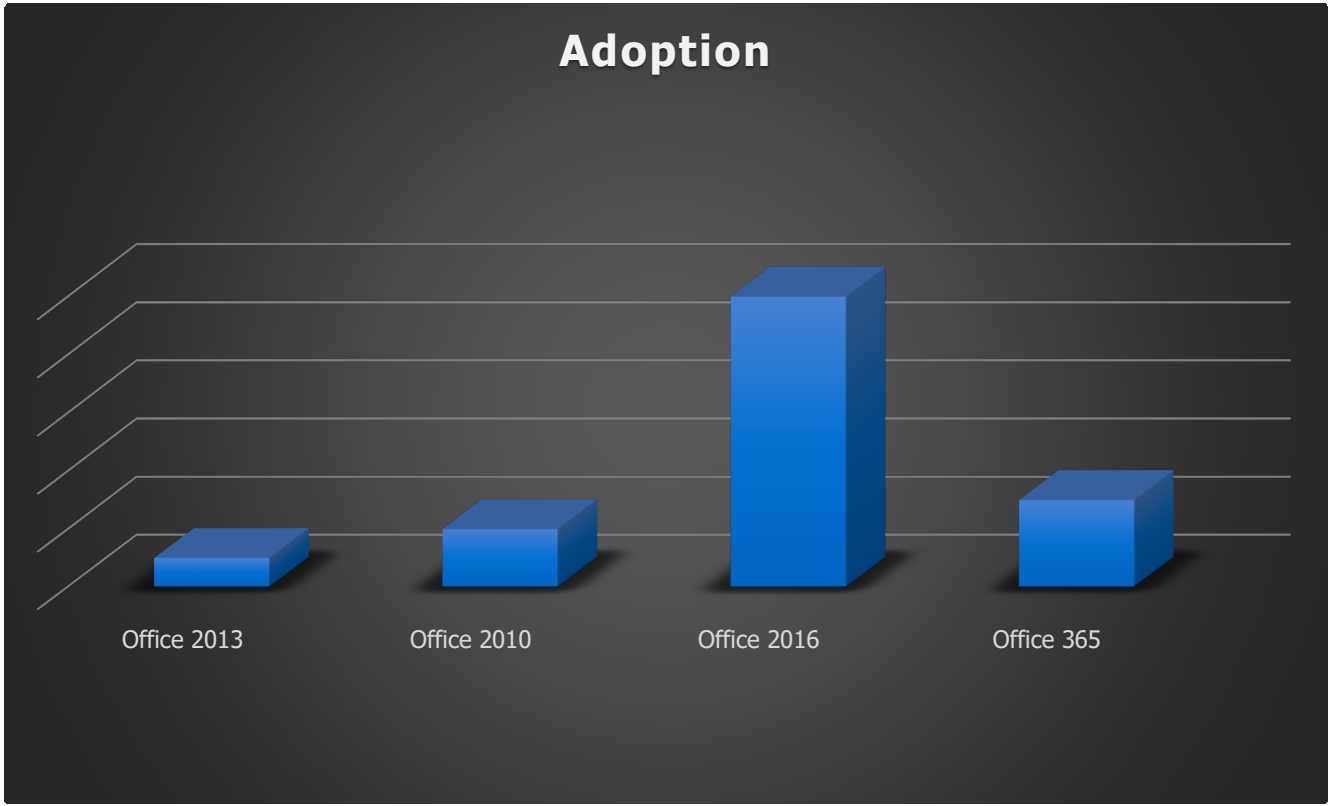
Microsoft Office Support



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Microsoft Support

- Windows updates for Windows 10 and Office 365
  - Updates are cumulative, with each update built upon the updates preceding it
  - A device must have the latest update installed to remain supported
  - Microsoft have designed two different update types
    - Full Updates,
    - Express Updates
  - For more details see https://support.microsoft.com/en-us/help/30881/modern-lifecycle-policy

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Oracle Database Support

Oracle RDBMS	Lifecycle Start date	Premium Support Ends	Extended Support Ends
11.2	01/09/2009	01/01/2015	01/12/2020
Enterprise Edition 12.1	01/06/2013	01/07/2018	01/07/2021
Standard Edition (SE) 12.1	01/06/2013	01/08/2016	**Not Available**
Standard Edition One (SE1) 12.1	01/06/2013	01/08/2016	**Not Available**
Standard Edition 2 (SE2) 12.1	01/09/2015	01/07/2018	01/07/2021
12.2.0.1	01/03/2017	01/11/2020	**Not Available**
18c (12.2.0.2)	01/07/2018	01/06/2021	**Not Available**
19c (12.2.0.3)	01/04/2019	01/03/2023	01/03/2026

http://www.oracle.com/us/support/library/lifetime-support-technology-069183.pdf

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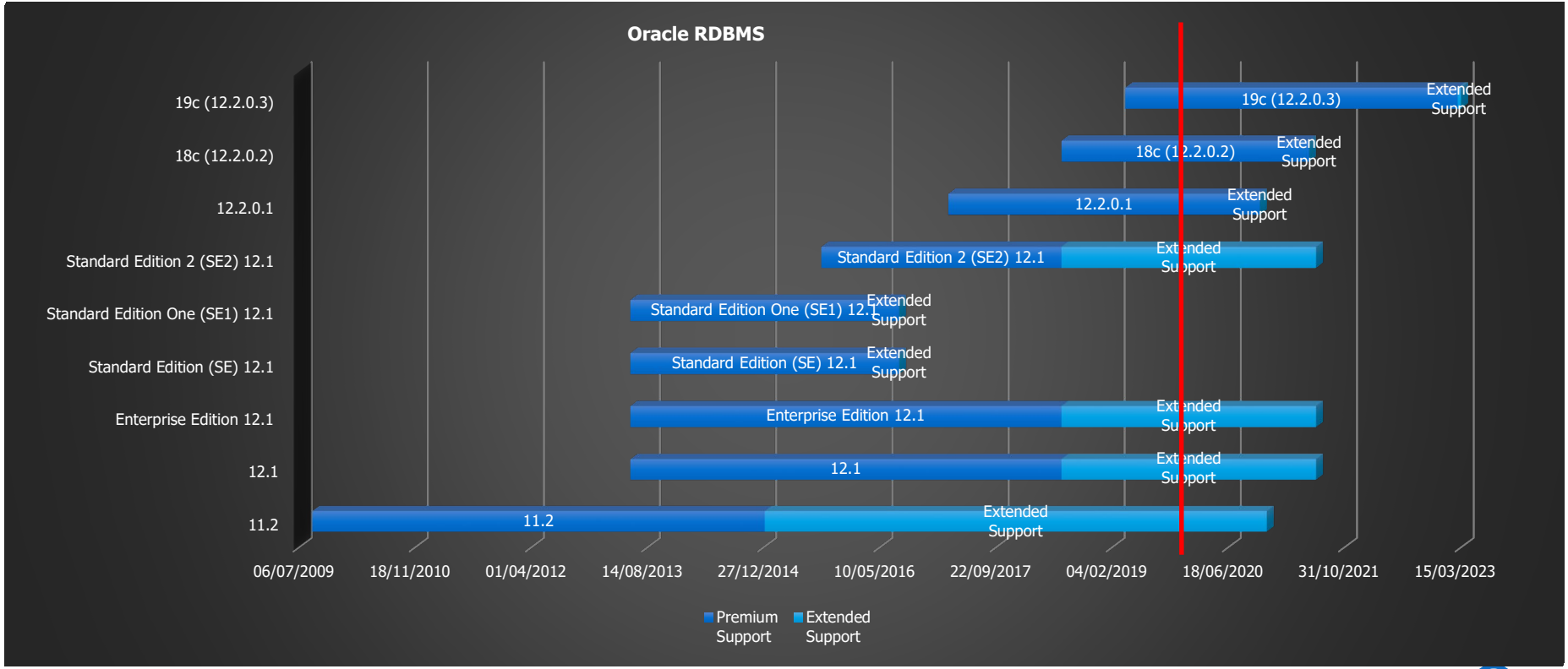
Oracle Database Support



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Technical Overview

Architecture and Standards

Technical Overview – Architecture and Standards

- Signature Rail has chosen mainstream technologies, which have long-term support lifecycles from major software vendors. The formal support lifecycle from Microsoft guarantees the next 10 years of full support and provides knowledge base's after that period.
- Oracle's support lifecycle for its core RDBMS products extends indefinitely providing upgrades are taken.
- Use the minimum number of technologies for maximum stability.
- Constantly reviewing new technologies.

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ORACLE

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Technical Overview – Architecture and Standards

- Development Platform (Desktop and Web application
  - Microsoft .NET Framework 4.6.1
  - Visual Studio 2017 (language VB.NET, C#.NET, ASP.NET)
  - Java Script
  - AngularJS - JavaScript-based open-source front-end web application framework
  - Google Material - a single underlying system that allows for a unified experience across platforms and device sizes
  - Foundation-Apps - front-end framework created for developing fully responsive web apps

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ANGULARJS by Google

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Technical Overview – Architecture and Standards

- Development Platform (Desktop and Web applications)
  - ASP.NET MVC - a powerful, patterns-based way to build dynamic websites that enables a clean separation of concerns and that gives you full control over mark-up for enjoyable, agile development
  - ASP.NET WCF - Used for web services - Windows Communication Foundation (WCF) is Microsoft's unified programming model for building service-oriented applications
  - HTML5 - a mark-up language used for structuring and presenting content on the World Wide Web
  - CSS3 - a style sheet language used for describing the presentation of a document written in a mark up language
  - SCSS - (Syntactically Awesome Stylesheets) an extension of CSS that adds power and elegance to the basic language

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Technical Overview – Architecture and Standards

- Optimisation – Powered by QAMPO
  - Cplex (Optimization Studio) and CP (constraint programming engine)
- Relational Database Management System Supported Versions
  - Oracle Client Version 11.2+
  - Oracle RDBMS Version 11.2+
- Target OS Platform
  - Windows 7(SP1)/Windows 8/Windows10
- Office Integration
  - Microsoft Office (Word and Excel) 2010, 2013, 2016 & 365

QAMPO Powered By QAMPO

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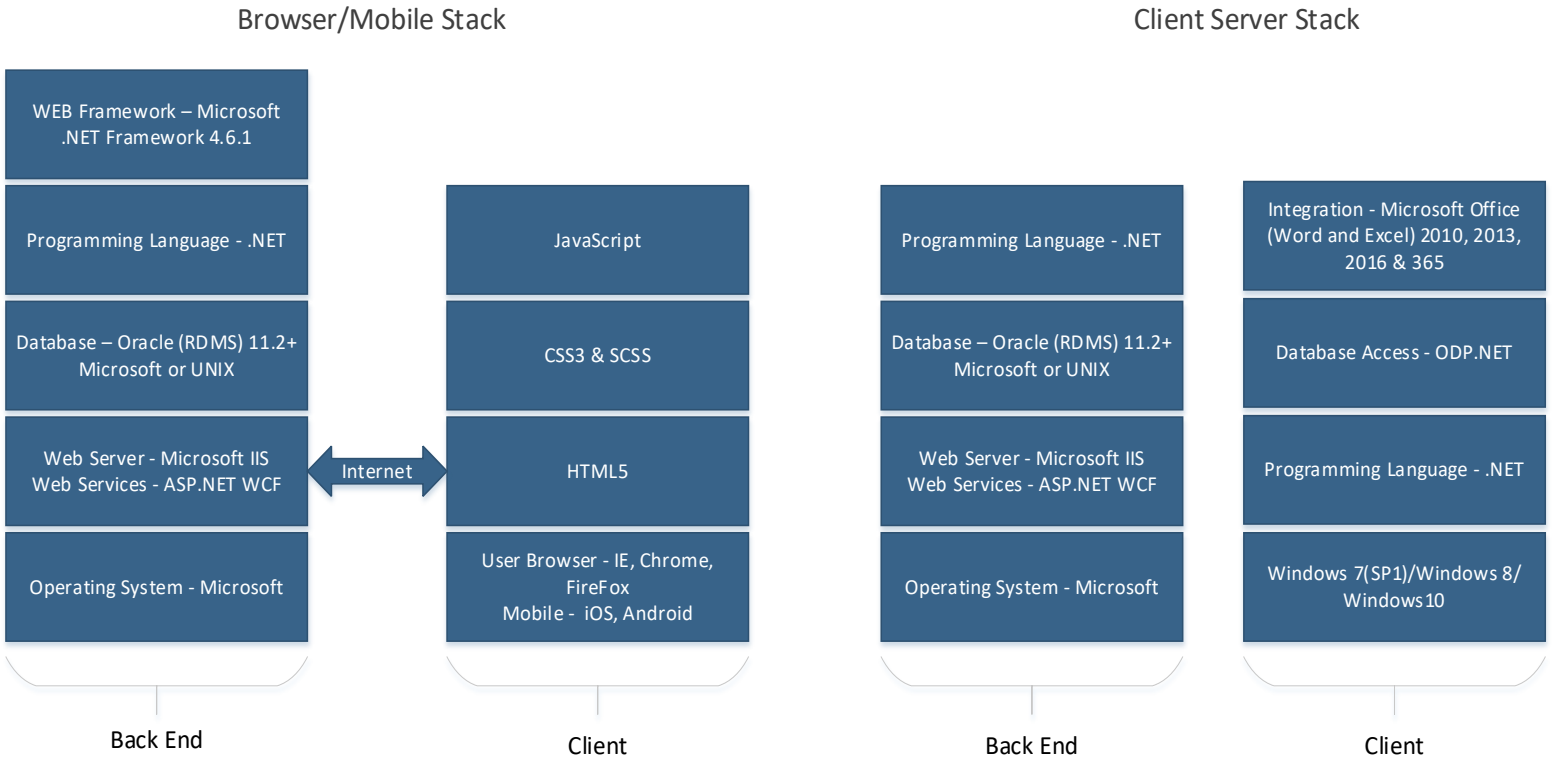
Technical Overview – Technology Stack



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