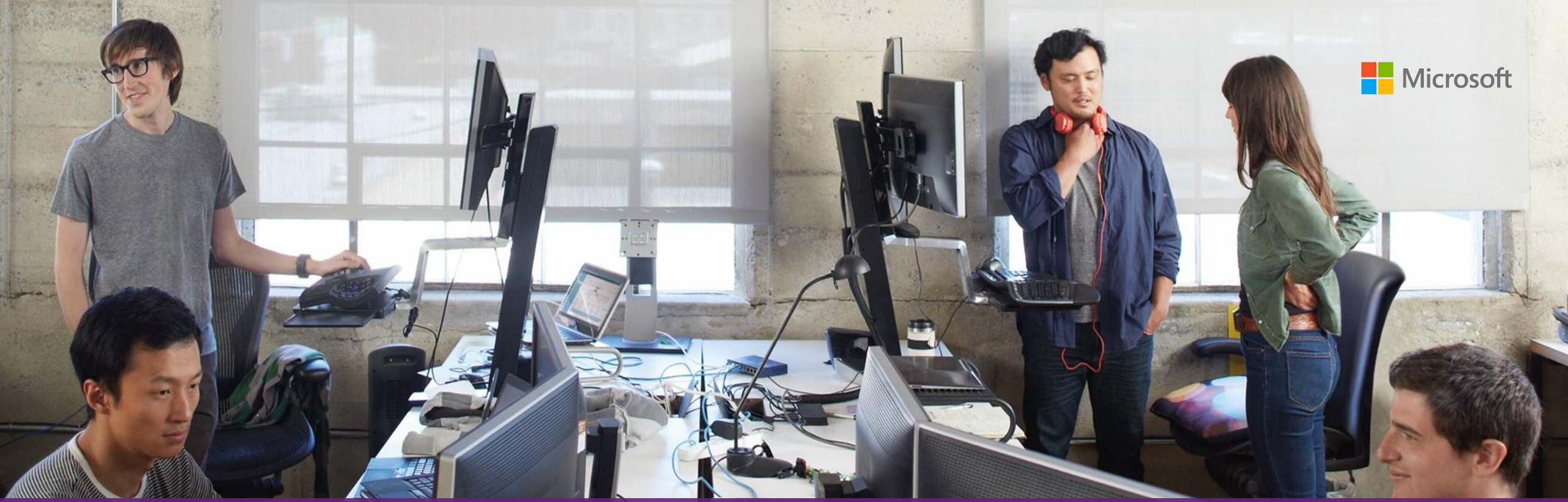
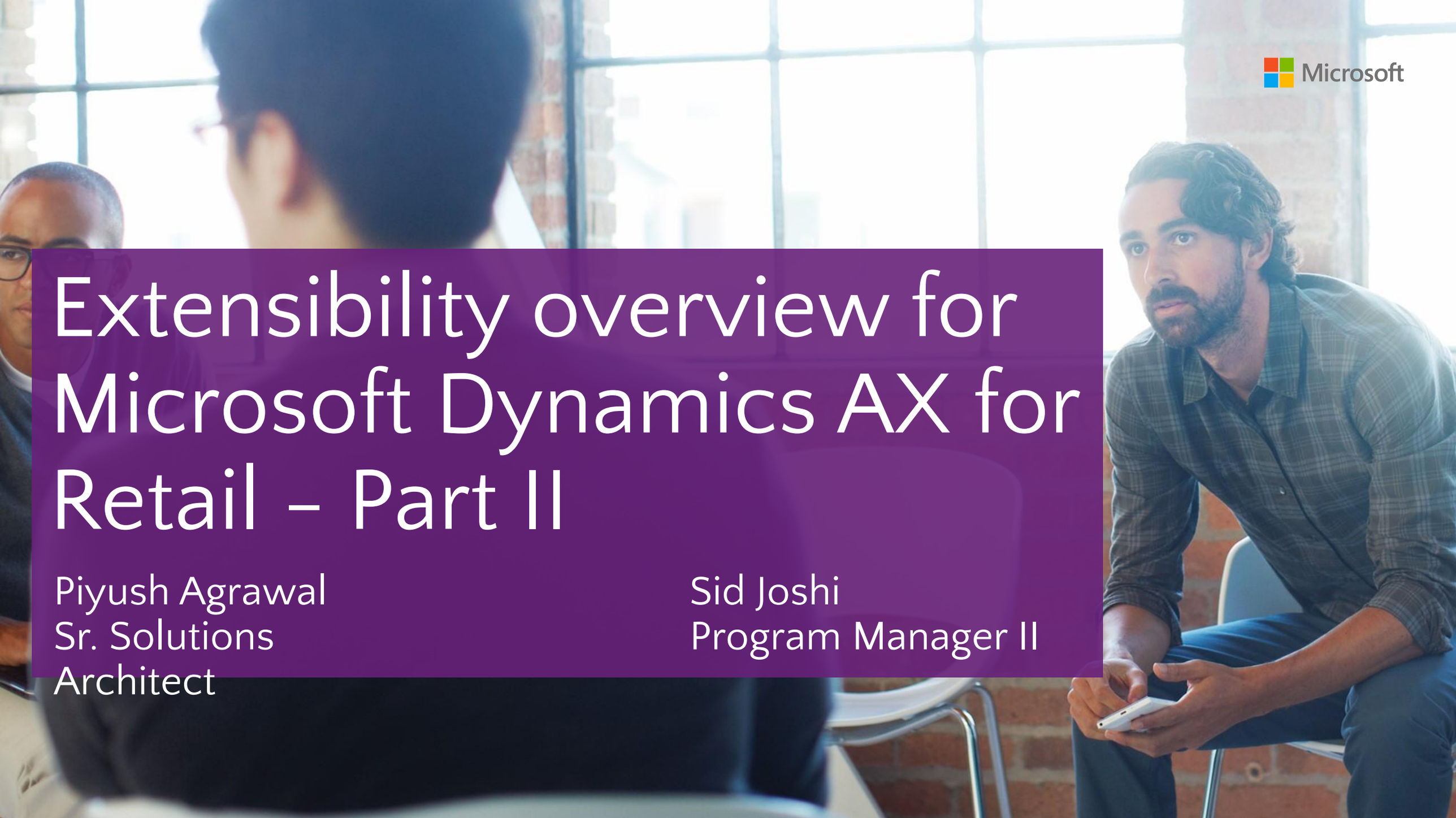


Microsoft

Microsoft Dynamics Technical Conference

February 2–4, 2015 | Seattle, WA



Extensibility overview for Microsoft Dynamics AX for Retail – Part II

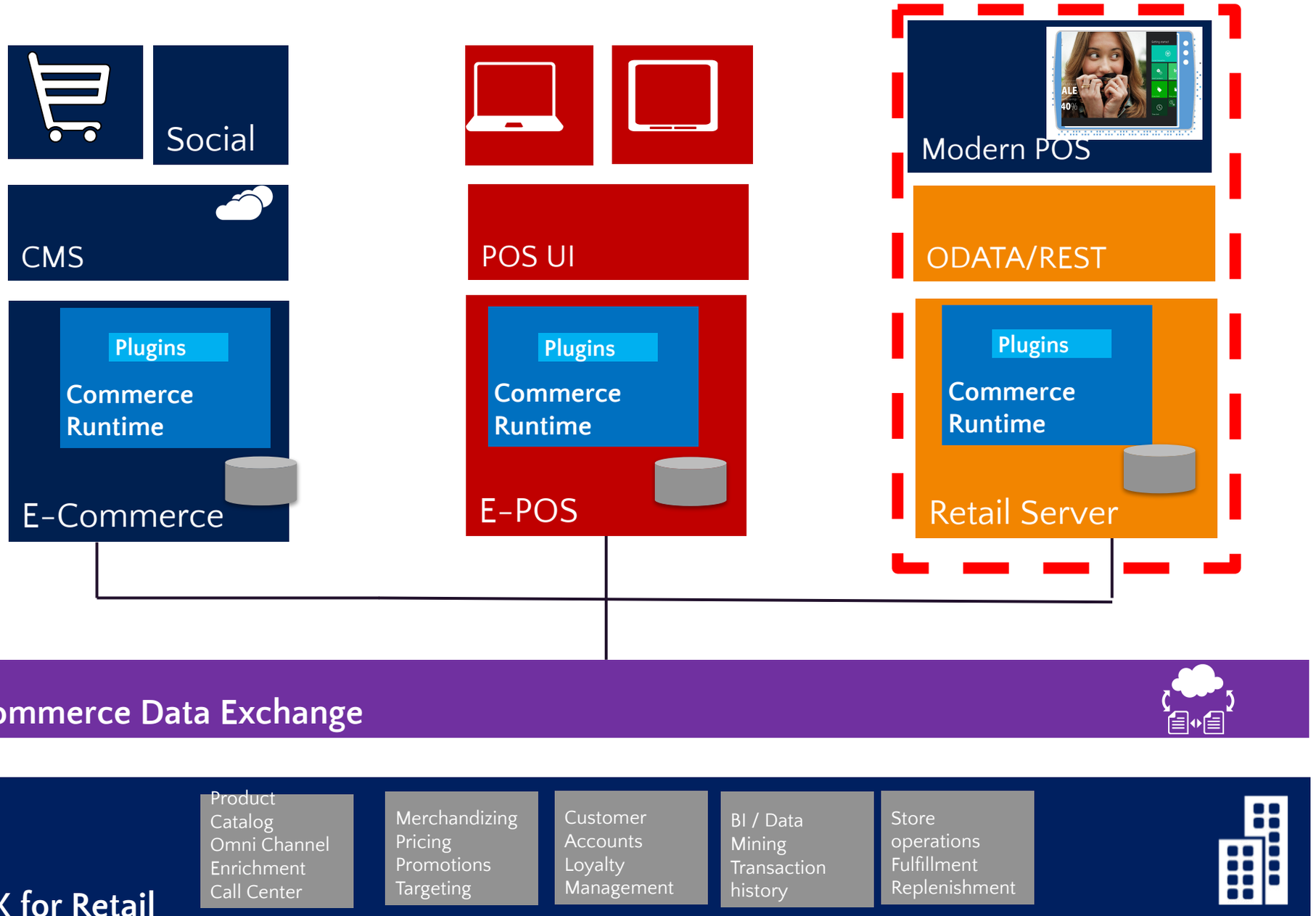
Piyush Agrawal
Sr. Solutions Architect

Sid Joshi
Program Manager II

Agenda

- Commerce Runtime extensibility
- Retail Server extensibility
- Modern POS extensibility
- Demo

Extensible Omni-Channel Retail



Commerce runtime

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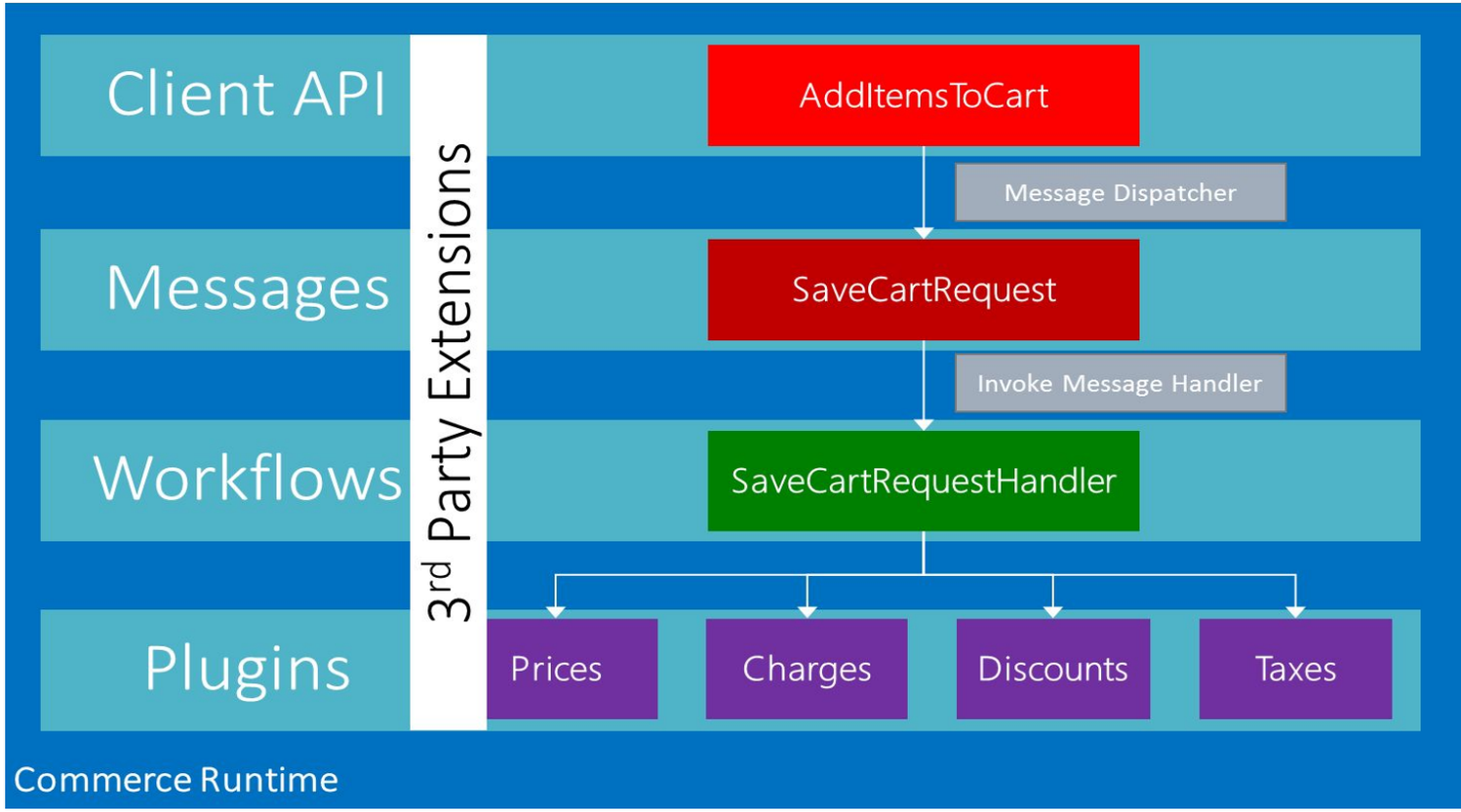
Commerce Runtime

- Core business logic for commerce across Channels
- Composition pattern for “plug-and-play”
- Symmetric schema across channels
- Built on .Net stack (C#)
- Fully extensible
- PCL complaint (in CU8)

CRT internals

- **Client** – entry point to the CRT
- **Messages** – contains contracts
- **Workflows** – orchestration layer
- **Plugins** – service implementations that represent atomic operations



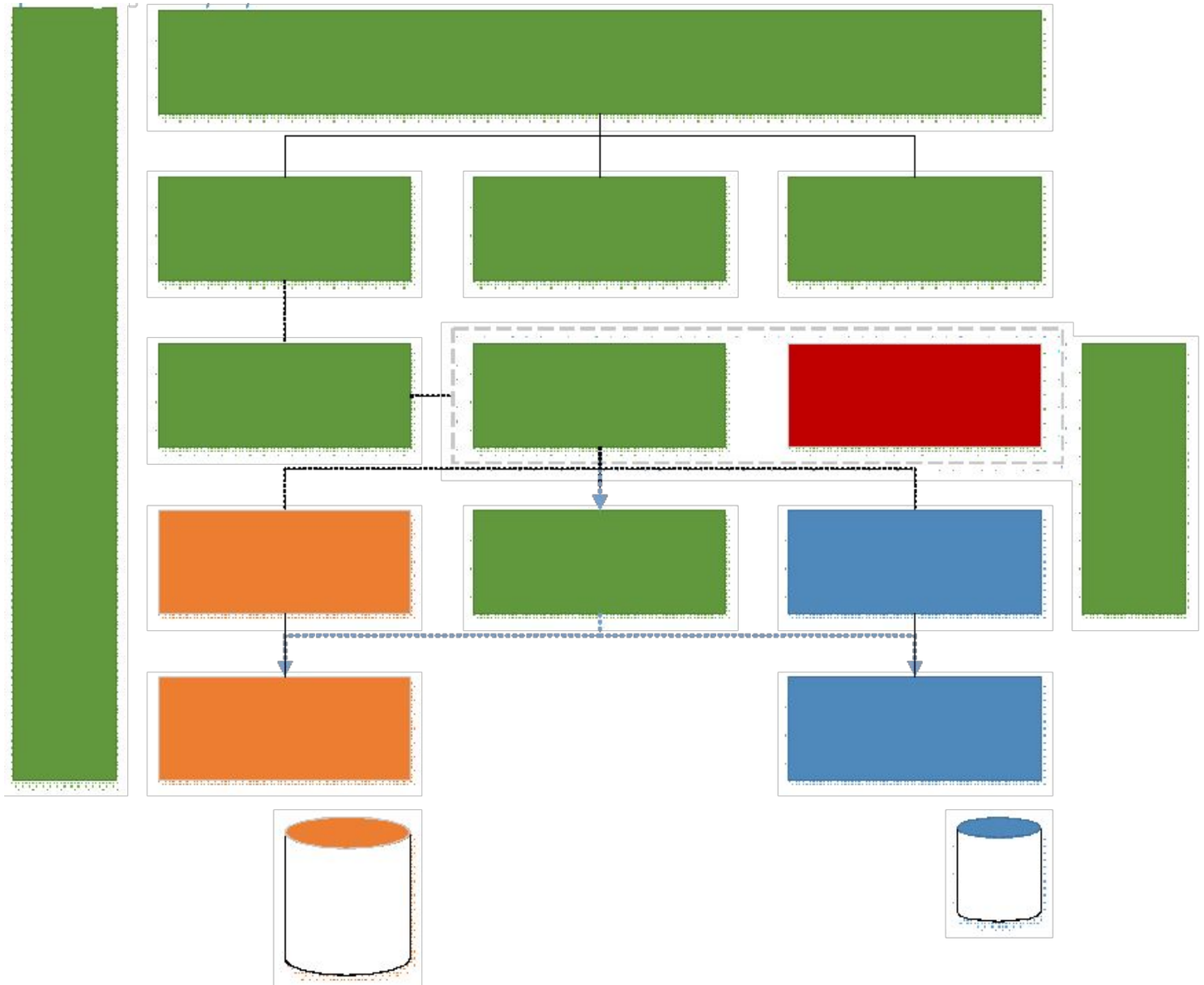
Extensibility

- All workflows and plugins are implemented using the request and response pattern.

- Handlers can be registered with the runtime and each incoming request is dynamically dispatched to the appropriate handler for execution.

- Handlers are loaded dynamically by the CRT using the Managed Extensibility Framework (MEF).

Commerce Runtime (CRT) Architecture



Retail server

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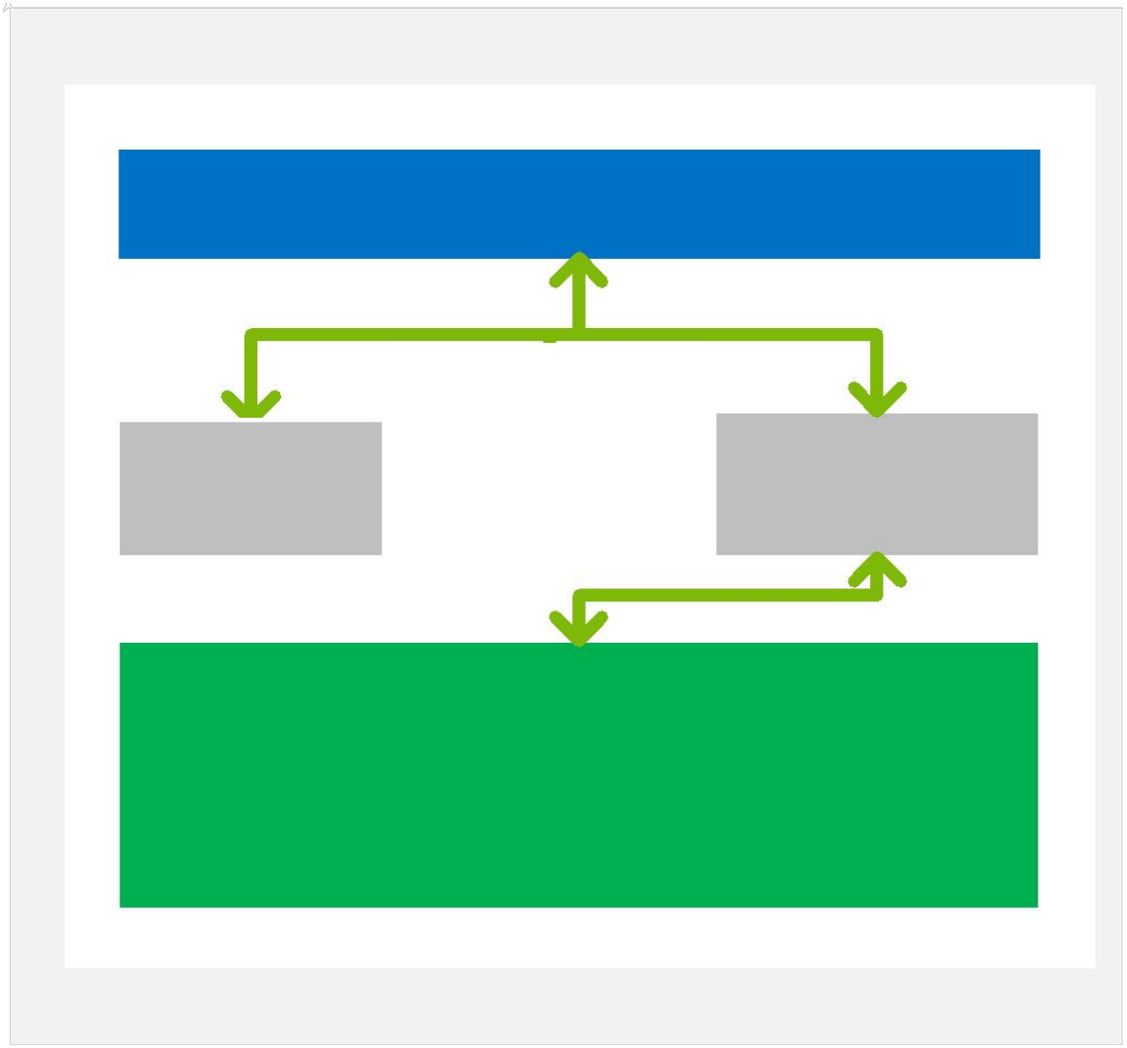
Retail Server (RS)

- Stateless web service that exposes CRT functionality through an OData web interface.

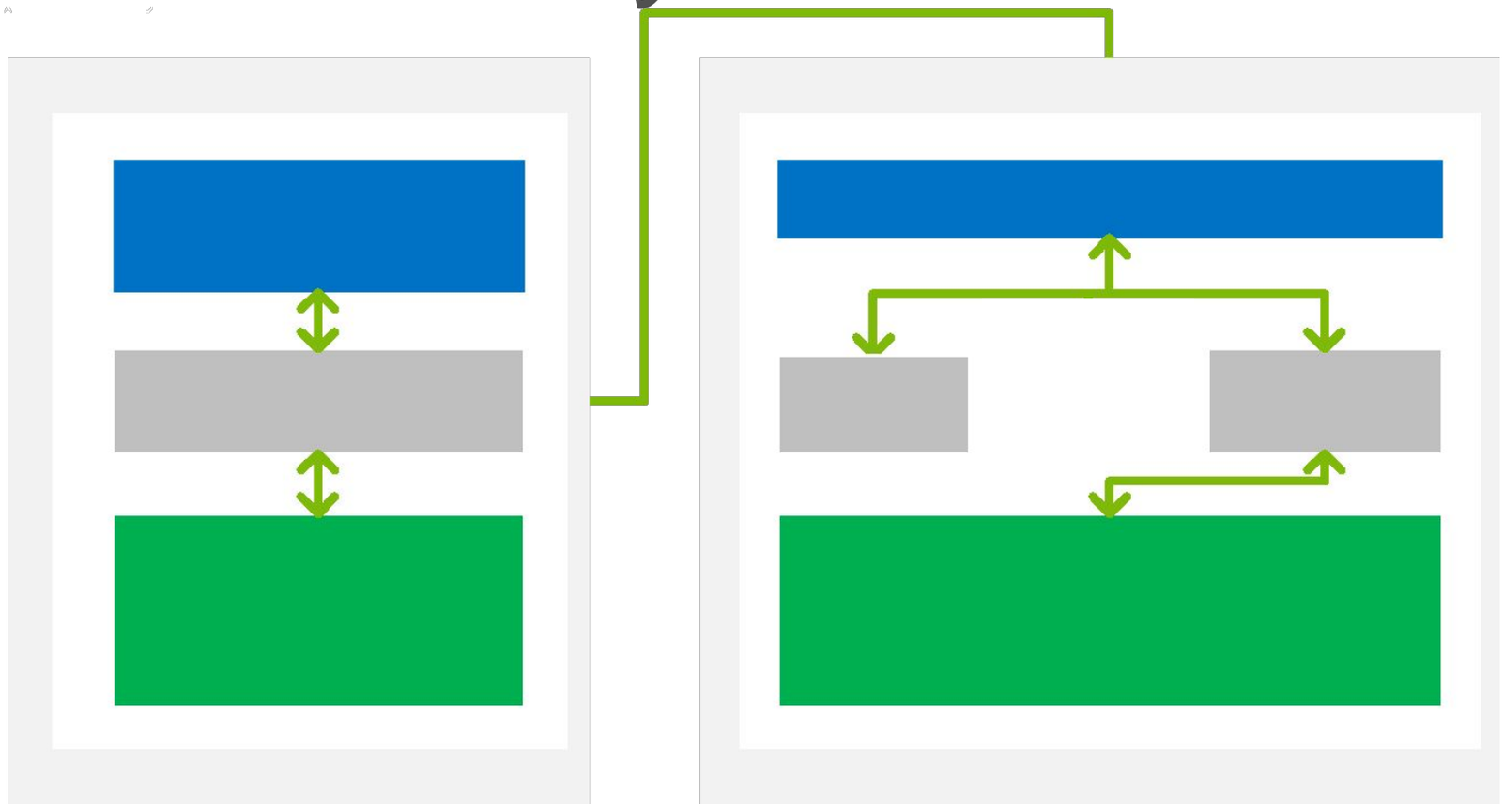
- Anything outside of CRT is web specific implementation details including but not limited to authentication, authorization, OData extensibility.

- Exposes metadata from which a cross-platform client proxy is generated.

Retail Server architecture



Retail Proxy



- Retail proxy abstracts the interface between Retail server and Commerce Runtime
- Handles Local, Remote
  - Local context –> CRT
  - Remote context –> Retail Server
- All the clients use proxy API to interact with the server
- Cross – platform – available both in Java script as well as C#

Modern POS

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Extensibility Scenarios

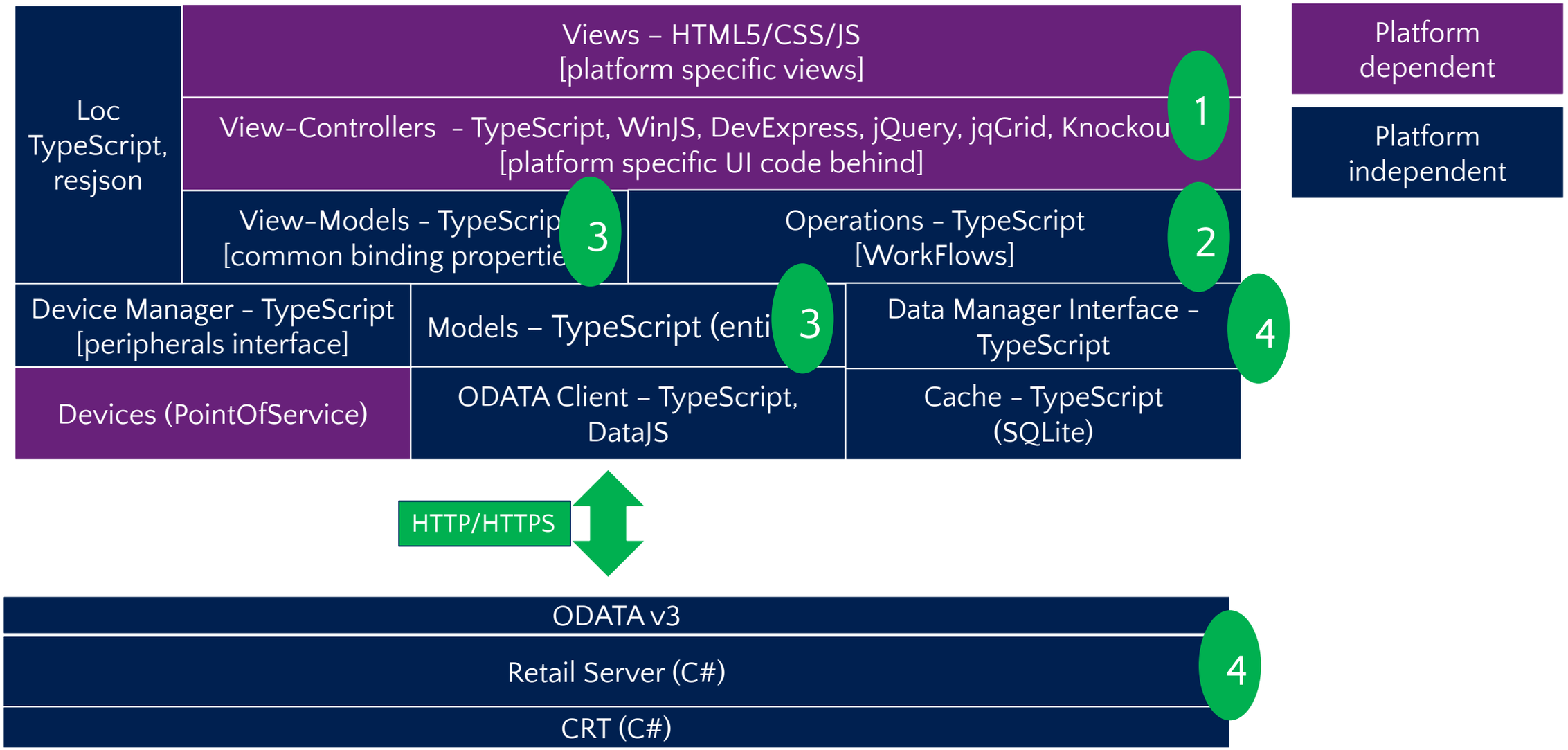
Look and Feel

Workflow Changes

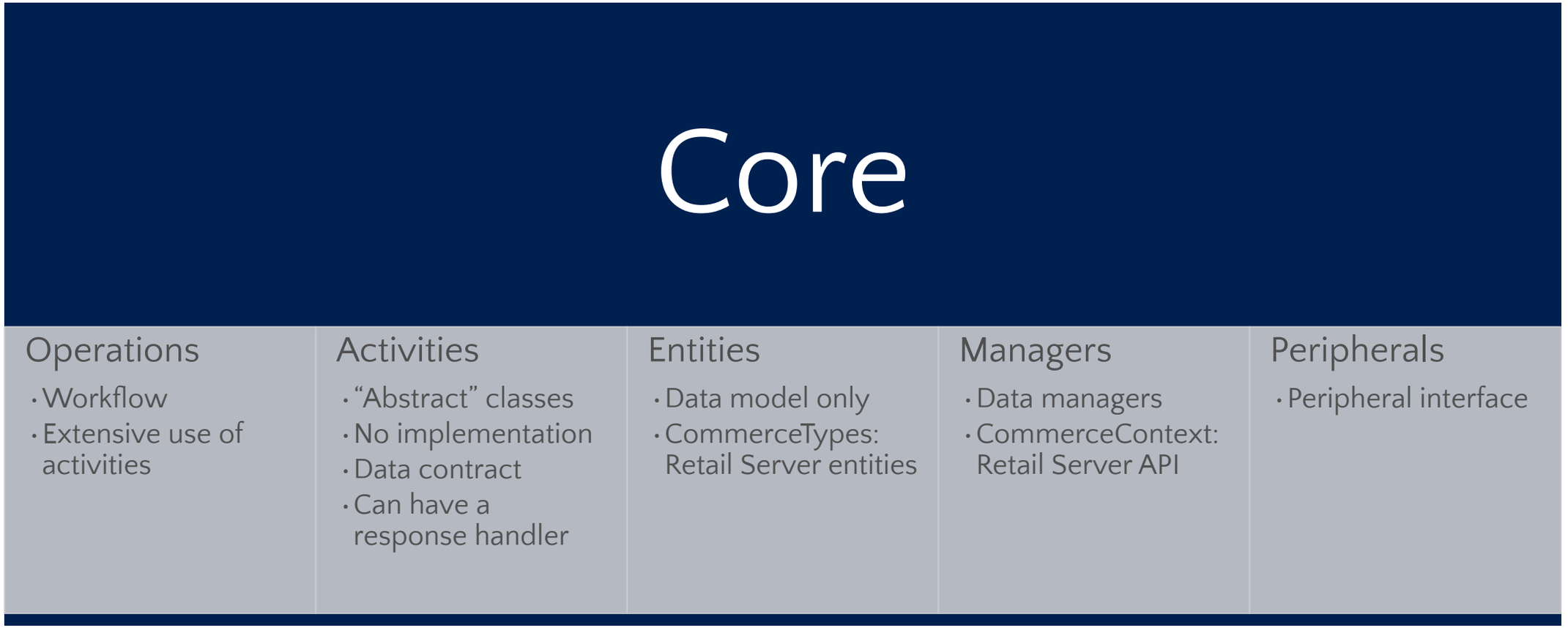
Extend Retail Entities

Additional Functionality

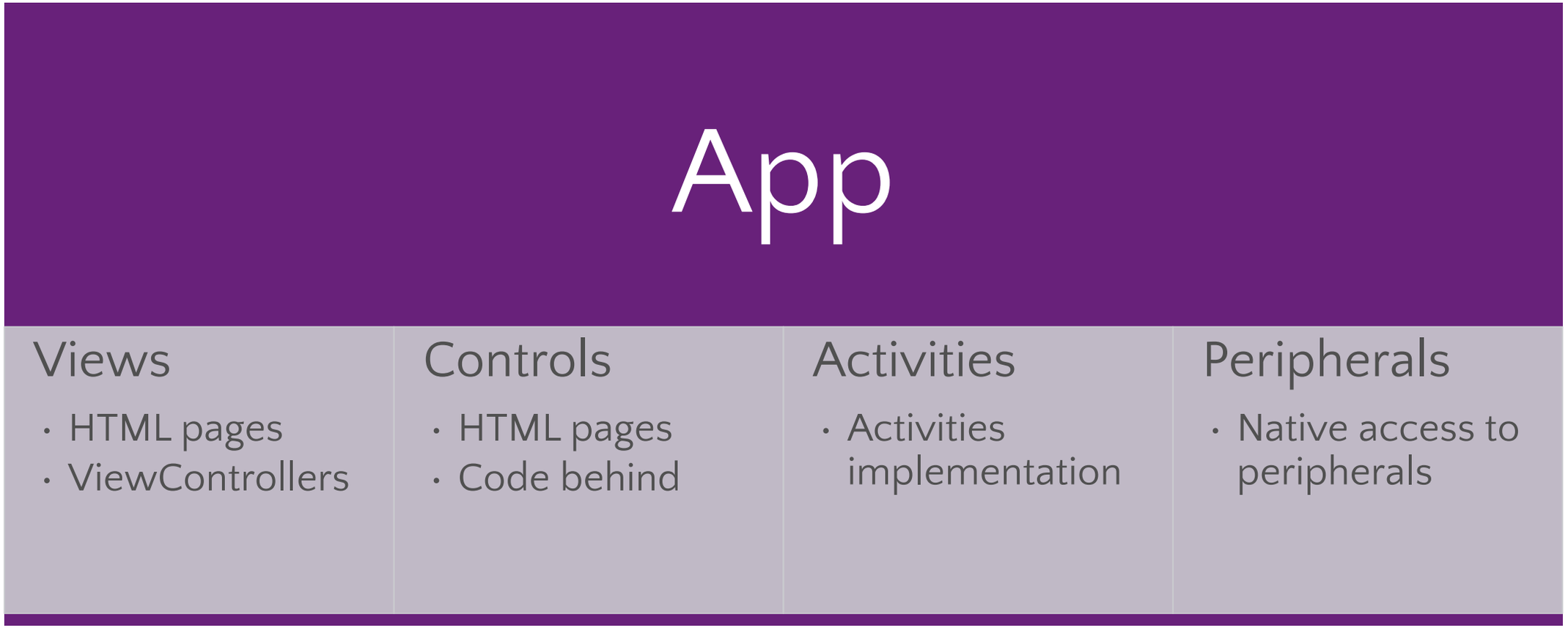
Modern POS Architecture



Modern POS Solution: Core



Modern POS Solution: App



Look and Feel Extensibility (View)

Scenario –

- A Fashion retailer wants to brand the POS for their needs. The retailer wants to change the look and feel of POS. They also have different placement and sizes of the various buttons that appear on the home page.
  - HomeScreen View and TransactionScreen view can be designed from the Screen layout designer within AX with support for landscape and portrait orientations

HomeScreen view
- Button grids
- Banner

TransactionScreen view
- Button grids
- Totals panel
- Customer panel
- Line items and payment grid
- Tab control
- Custom controls
- NumPad
- Image

  - All other views needs to be changed in place

Entities extensibility

Scenario

- Contoso wants to collect customer's email preference for email marketing. This is an additional property/attribute on the Customer entity

Entities can be extended in a programmatic way

- Entities can be extended using Extensibility Helper
- The design can be leveraged to automatically create properties on the fly
- The main target is class types from CommerceTypes (because they contain ExtensionProperties property)

Entities extensibility

ExtensibilityHelper Class

```
class ExtensibilityHelper {
    public extend(typeToExtend: any, propertyName: string, key: string, propertyType: PropertyTypeEnum, enumerable: boolean = false);
}
```

Extending Customer entity to add email preference property

```
export interface IExtendedCustomer extends Model.Entities.Customer {
        emailPrefOptIn: number;
    }
ExtensibilityHelper.extend(Model.Entities.CustomerClass, “IsPreferred", “ISPREFERRED", PropertyTypeEnum.BooleanValue);
var customer = new Model.Entities.Customer();

 var extendedCustomer = <IExtendedCustomer>this.customer();
                                this.emailOptIn(extendedCustomer.emailPrefOptIn == 1);
```

Existing workflow changes

- An operation is composed of multiple activities
- A specific activity can be replaced / added / deleted
- A complete operation may be replaced

Operations and Activities

Total Discount Operation workflow

Adding New Functionality

- Adding new operation in AX
- Add a button in button grid of screen layout and map it to the operation
- Create an operation handler which defines the workflow for the new functionality
- Add client side activity implementation

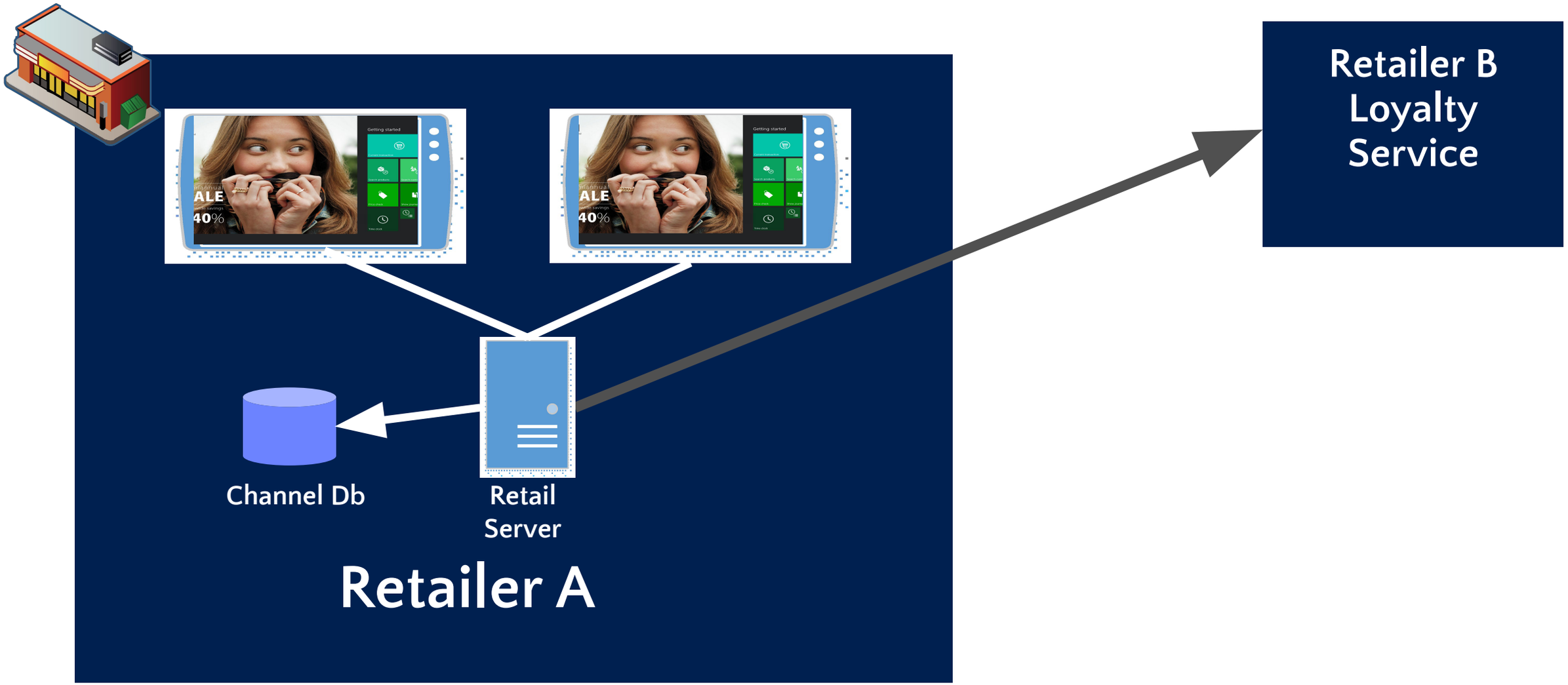
Demo Scenario

- Third Party Cross Loyalty

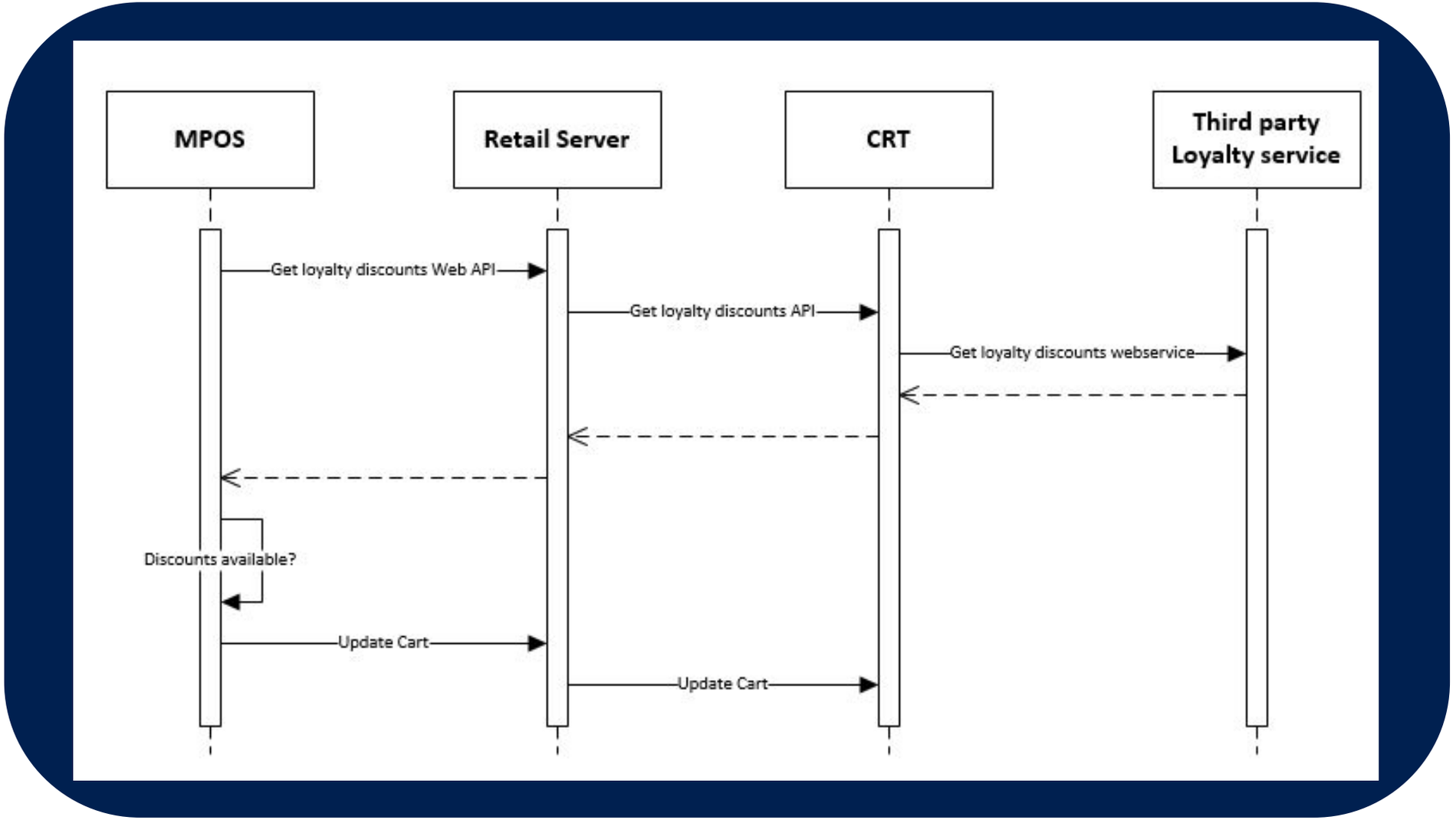
Retailer A had a recent partnership with a leading retailer B and as a part of it, Retailer B's customers can enjoy extra discounts while purchasing from Retailer A.

200 points or more in Retailer B Loyalty card = $4 discount in purchases from Retailer A
100 points or more in Retailer B Loyalty card = $2 discount in purchases from Retailer A

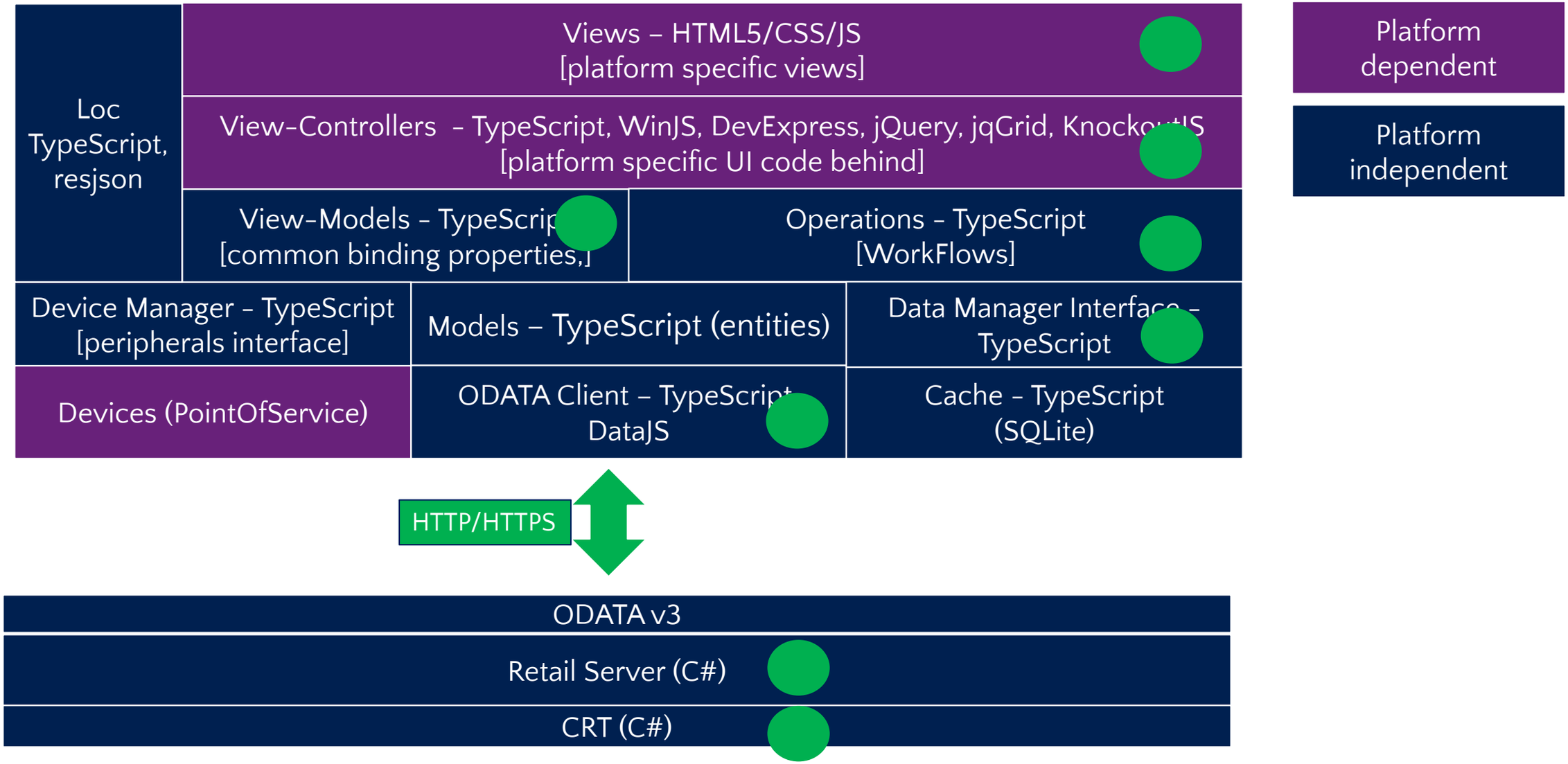
Architecture



High level flow



Modern POS Changes



Demo

Questions

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Additional Retail Sessions

Ask the Experts: Microsoft Dynamics AX for Retail ATEAX08

Wednesday, February 4 1:00 PM – 2:15 PM Room: TCC – Room 305

Microsoft Dynamics AX 2012 for Retail: Set up, mass deployment, and monitoring options to improve service and manage growth BSAX81

Wednesday, February 4 1:00 PM – 2:15 PM Room: TCC – Room LL4

Microsoft Dynamics AX Retail essentials – BSAX80

Wednesday, February 4 2:45 PM – 4:00 PM Room: TCC – Room 305

Retail Hands on Lab Training

Thursday Feb 5th & Friday Feb 6th

Microsoft Conference Center – Building 33

Hands on training in setup, configuration and usage of the Dynamics AX for Retail solution using a hosted VM

Microsoft