



E-Commerce architecture deep dive

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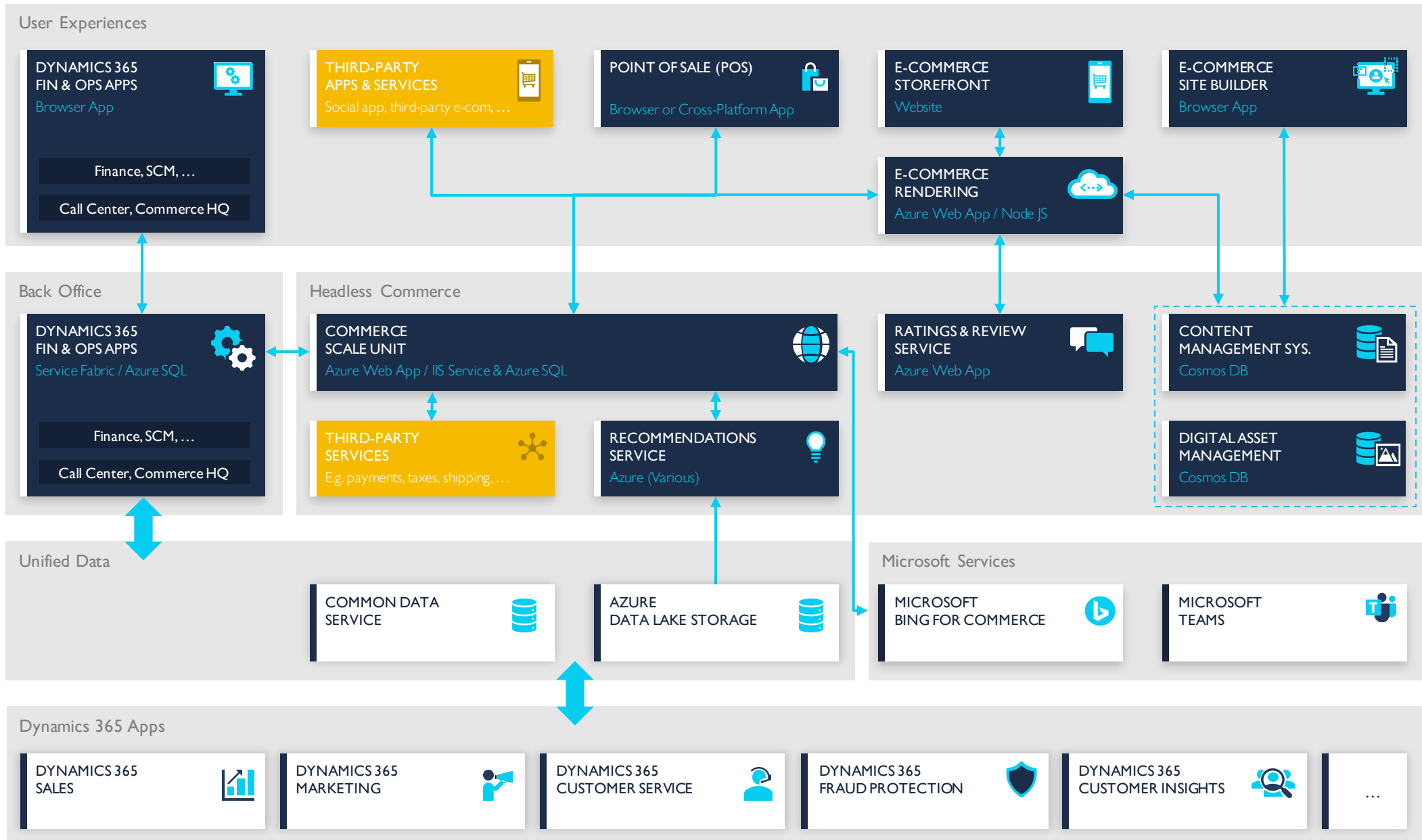
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Dynamics 365 Commerce*



Agenda

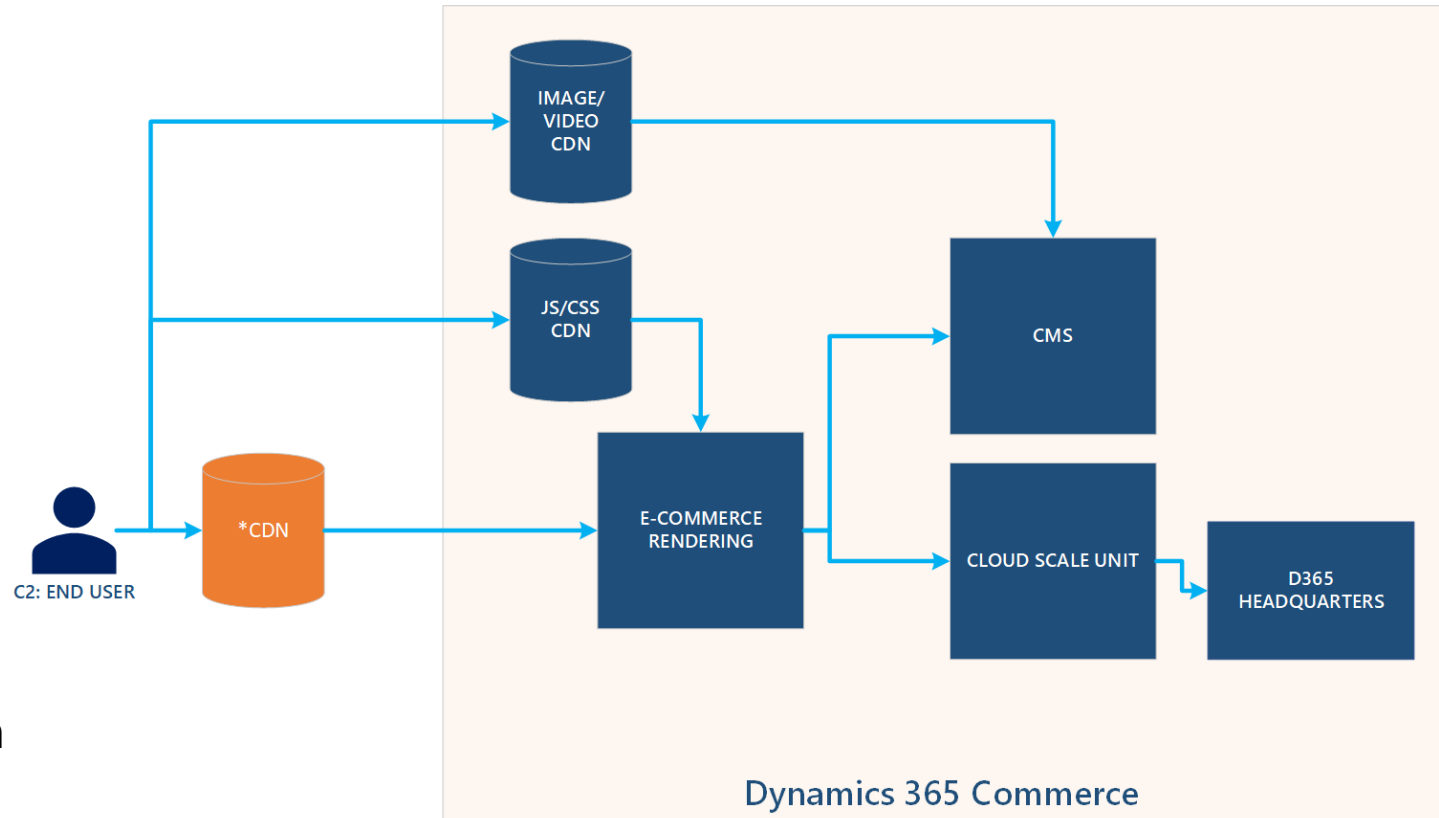
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- Architecture Overview
 - E-Commerce Storefront
 - E-Commerce Rendering
 - Deploying E-Commerce in LCS
 - Content Management System (CMS)
 - E-Commerce Site Builder
 - Commerce Scale Unit
 - Ratings and Reviews
 - Recommendations

ARCHITECTURE OVERVIEW



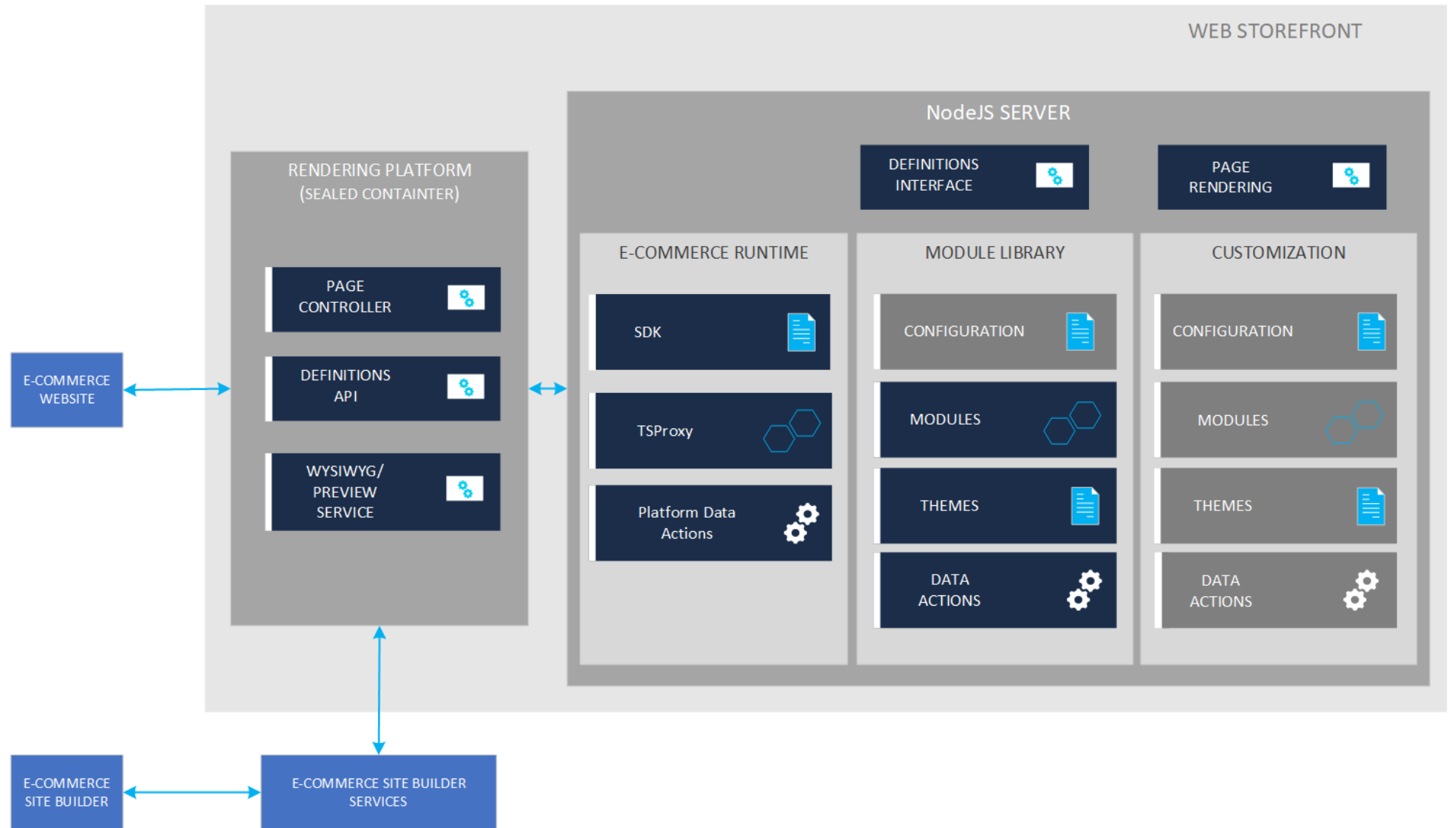
E-Commerce Storefront

- A Front Door service is utilized to serve dynamic content (html) to end users
- Customers have the option to use the Commerce provided Front Door service, Azure Front Door, or an external CDN service (*options represented by orange CDN)
- All static content (JS/CSS/Images/Video) are served from separate, Commerce internal CDN systems
- As a customer, you will coordinate SSL certificates from your owned domain with the Front Door option utilized



E-Commerce Rendering

- E-Commerce Rendering compiles environment configurations, CMS content and CSU calls within a robust service of controlled definition and components
- The system is designed to be highly customizable, while also maintaining regularly released and serviceable components



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Shoe



Store locator

Sign in



(0)

Choose a country ▾

Running **Shoe**

Leather Tuxedo **Shoe**

Leather Dress **Shoe**

Suede Walking **Shoe**

Patchwork Dress **Shoe**

Go to products



Knit Upper Wrap Running **Shoe**

\$68.00



Genuine Leather Tuxedo **Shoe**

\$150.00



Leather Tie Dress **Shoe**

\$166.00



Brown Suede Walking **Shoe**

\$114.00



Tailored Patchwork Dress **Shoes**

\$214.00

Search Shoe in categories

MenShoes

Shoes

E-COMMERCE USER AUTHENTICATION USING AZURE AD B2C AS IDENTITY PROVIDER

1. CONFIGURE AZURE AD B2C APPLICATION

1.1. IT admin creates a new Azure AD B2C application in Azure.

Note: Migration of existing customers to the Azure AD B2C instance is supported.

1.2. IT admin adds the Azure AD B2C application to the accepted identity provider list in Finance and Operations apps.

1.3. IT admin configures the Azure AD B2C application in Commerce site builder.

2. SIGN IN TO E-COMMERCE SITE

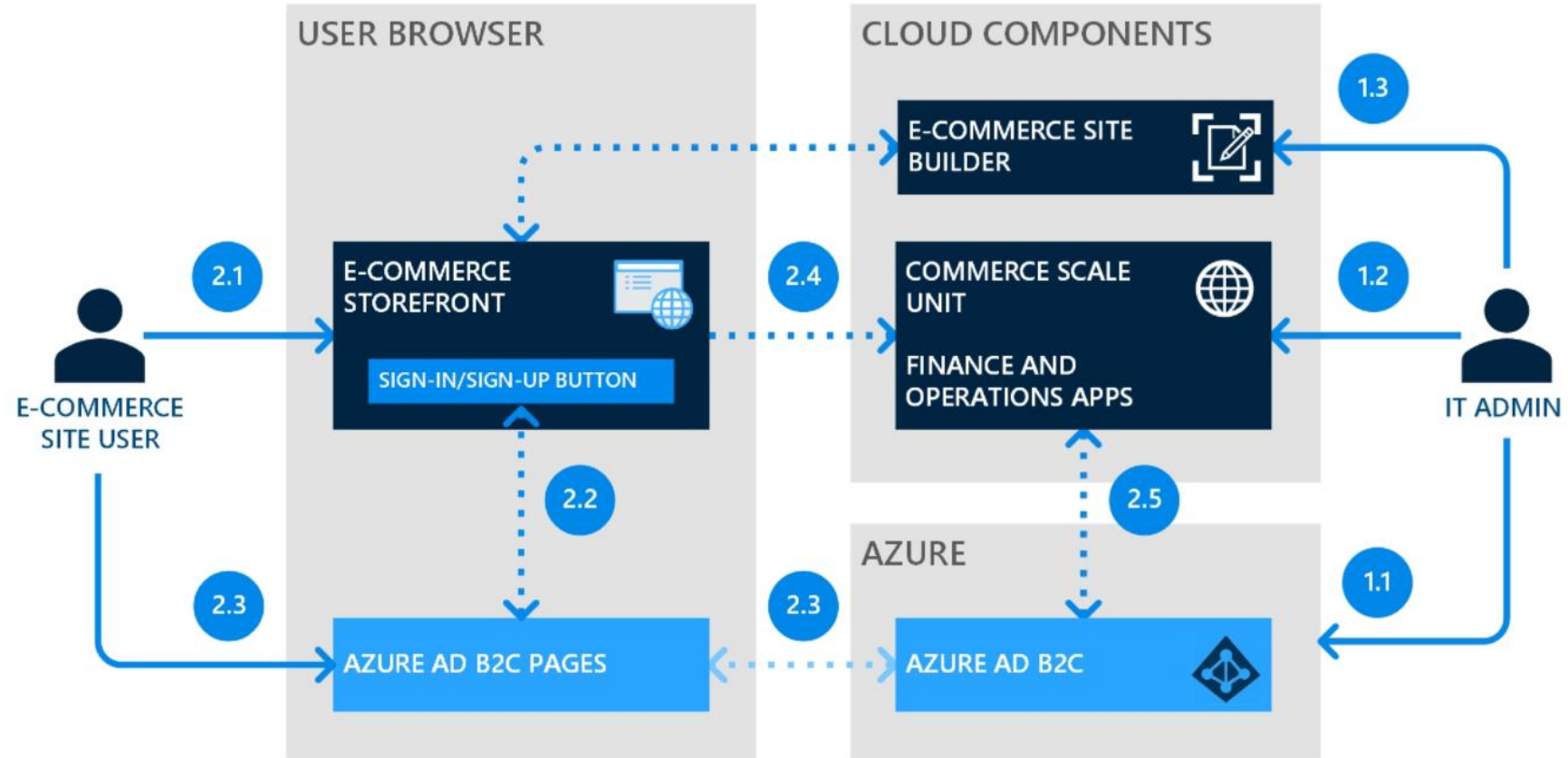
2.1. E-Commerce site user selects the sign-in/sign-up button on the e-Commerce site.

2.2. User is redirected to the Azure AD B2C sign-in/sign-up page.

2.3. E-Commerce site user signs in or signs up on the Azure AD B2C sign-in/sign-up page and receives user token.

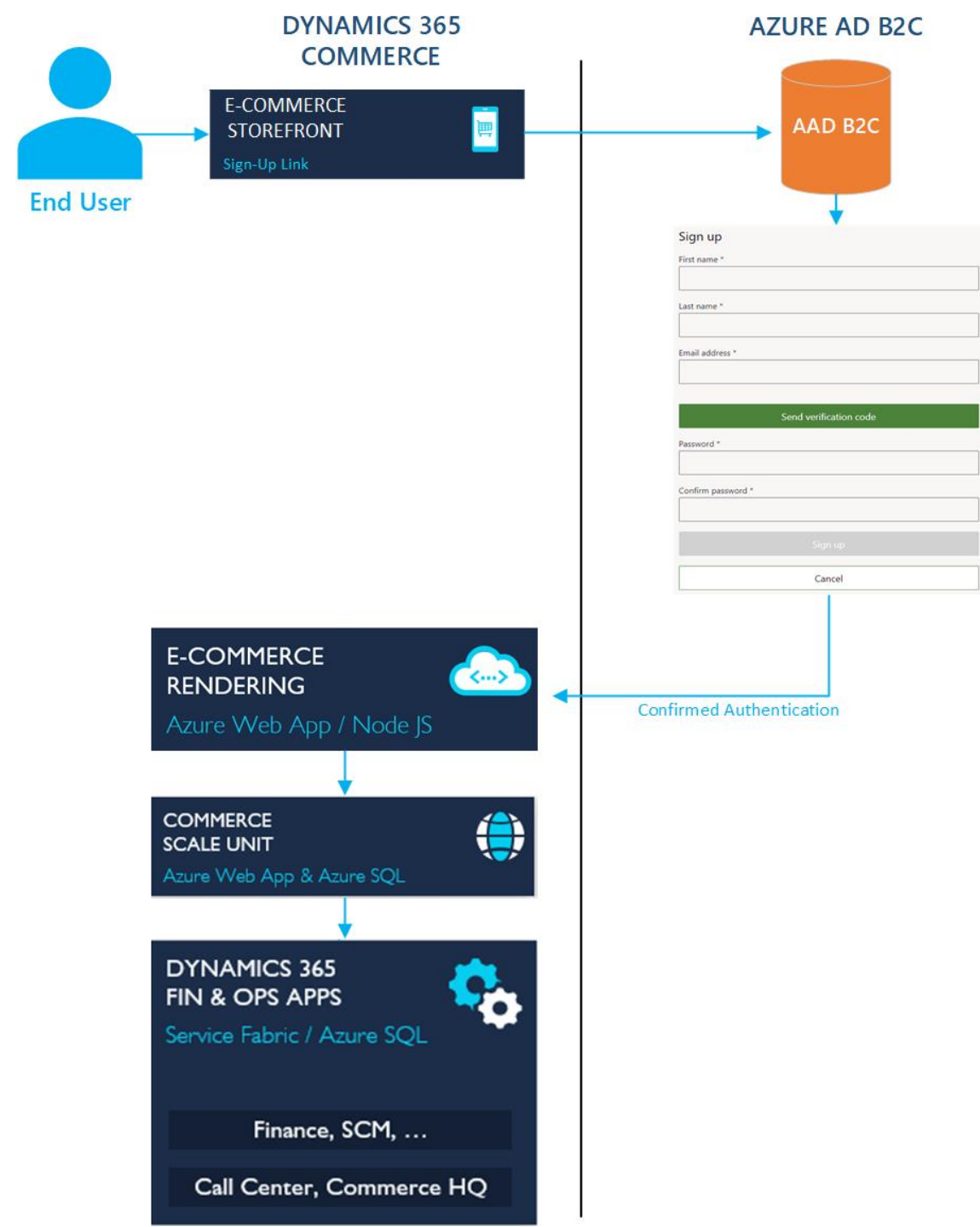
2.4. Call is made to Commerce Cloud Scale Unit to validate the user.

2.5. Commerce Scale Unit validates Azure AD B2C user token and creates a new customer record if it does not exist.



Customer Creation

- An end-user navigates to the E-Commerce Storefront and clicks the 'Sign Up and Sign In' link
- They are redirected to the AAD B2C tenant for sign-up
- Upon successful sign-in and authentication, tokenized callback to the E-Commerce Storefront occurs
- E-Commerce Rendering Service calls the Commerce Scale Unit to create the customer account
- The customer is stored in the Channel Database and synchronizes back to Headquarters
- The AAD B2C record is automatically linked to the Dynamics customer record



PAYMENT SECURITY FLOWS: E-COMMERCE & CALL CENTER

1. DYNAMICS HQ SETUP

1.1. **Dynamics Admin** configures the payment provider's merchant information during initial setup of the Retail Channel.

2. E-COMMERCE PAYMENTS

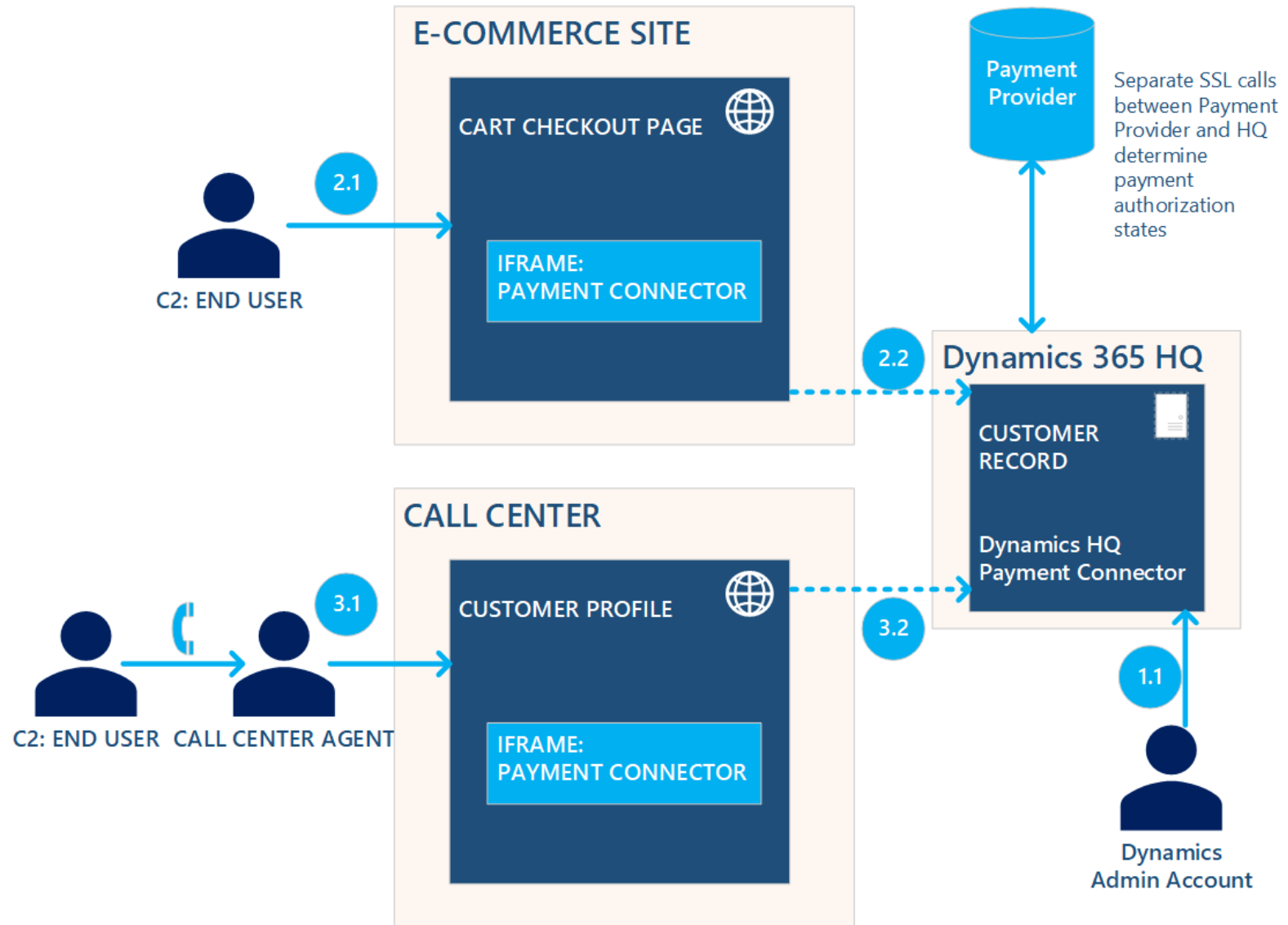
2.1. **C2 End User** navigates to the cart checkout page in the e-Commerce site. Payment information is input via iFrame directly into the Payment Connector.

2.2. Cart Token is stored with the customer record in HQ. A customer reference is the only obscured reference to the customer information associated to the Payment Provider's record.

3. CALL CENTER

3.1. **C2 End User** calls Call Center and speaks with a **Call Center Agent**. The authenticated Agent inputs customer information using Dynamics Call Center pages. Any payment info is input through an iFrame directly into the Payment Connector.

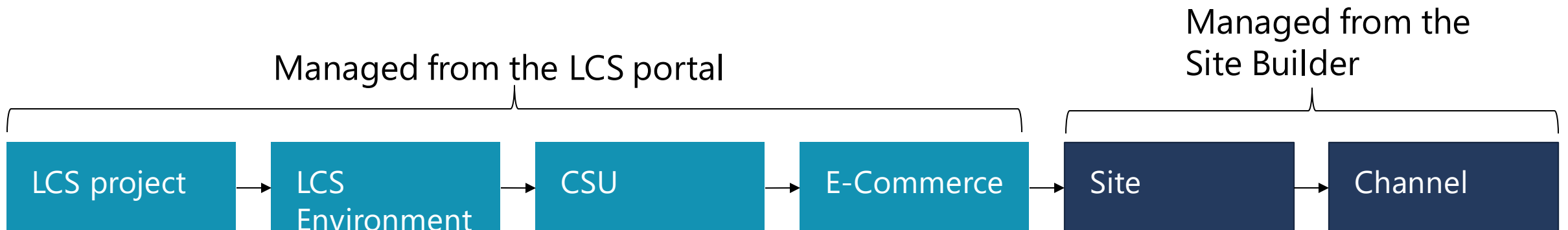
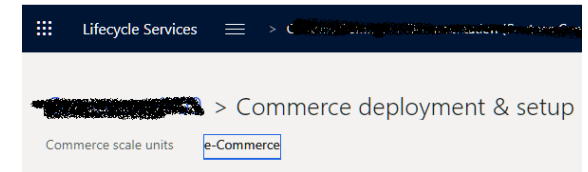
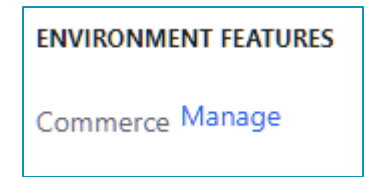
3.2. Cart Token is stored with the customer record in HQ. A customer reference is the only obscured reference to the customer information associated to the Payment Provider's record.



NOTE: Input within the iFrame is input as clear text data from the end user entering information into the Payment Connector; Payment Gateway uses SSL for data transfer.

Deploying E-Commerce in Lifecycle Services (LCS)

- Dynamics 365 Commerce's **E-Commerce** and **Ratings and Reviews** components are deployed from the Lifecycle Services (LCS) portal
- After the Commerce Scale Unit has been deployed, E-Commerce can be initialized from the LCS under Environment Features management view
- When initializing E-Commerce, user is requested to enter the following information
 - E-Commerce environment name ("friendly name")
 - Supported host names ("vhosts")
 - Primary geography (NA, Europe, Asia)
 - Admin security group (AAD SG)
 - Provisioning of Ratings and Reviews (yes/no)
 - Moderator security group (AAD SG)
- Environments are provisioned with the Module Library; the out-of-box set of modules and Fabrikam demo site.

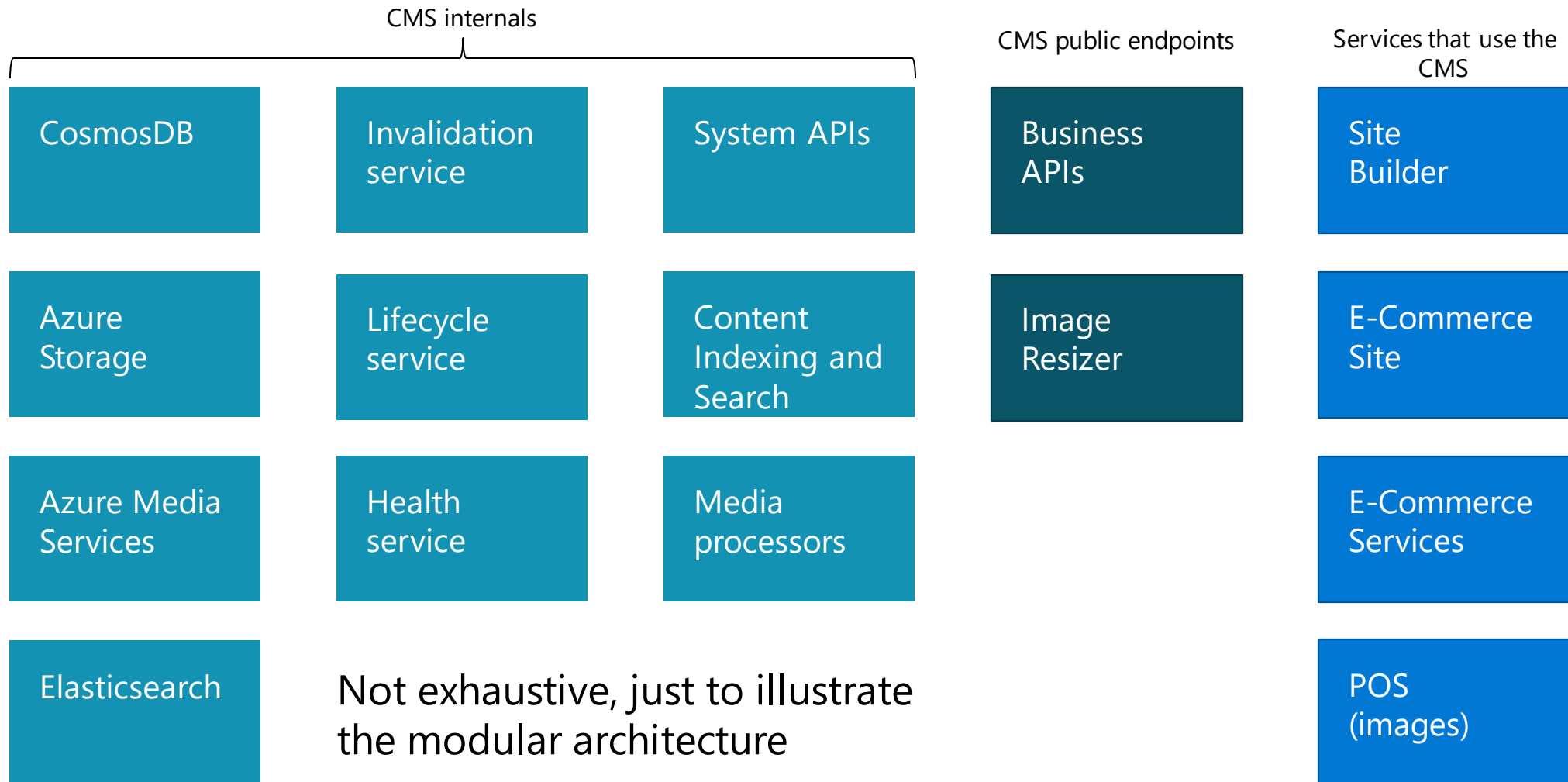


Content Management System (CMS)

- Dynamics 365 e-Commerce includes a Headless Content Management System to organize content for site authoring; including storage of image and video media as well as file binaries
- CMS is an indexed document library with transactional and state control, strict data types, data replication, and change tracking for team collaboration
 - **Built for Volume:** System supports a billion requests per day, thousands per second
 - **Scalable:** Millions of content items supported across multiple Azure data centers
 - **Low Latency:** Local caching serves most requests
- The CMS system handles Role Based Access Control for authoring roles (Admin, Web Producer, and Reader roles)
- Documents stored on **Azure Cosmos DB**, media on **Azure Blob Storage** and leverages other latest cloud technologies
- Includes an **Image Resizing Service** for optimal serving of Images across dynamic layouts
- Video is streamed with **Azure Media Services** with variable-bit rate playback options
- The Site Builder and other E-Commerce services leverage the CMS

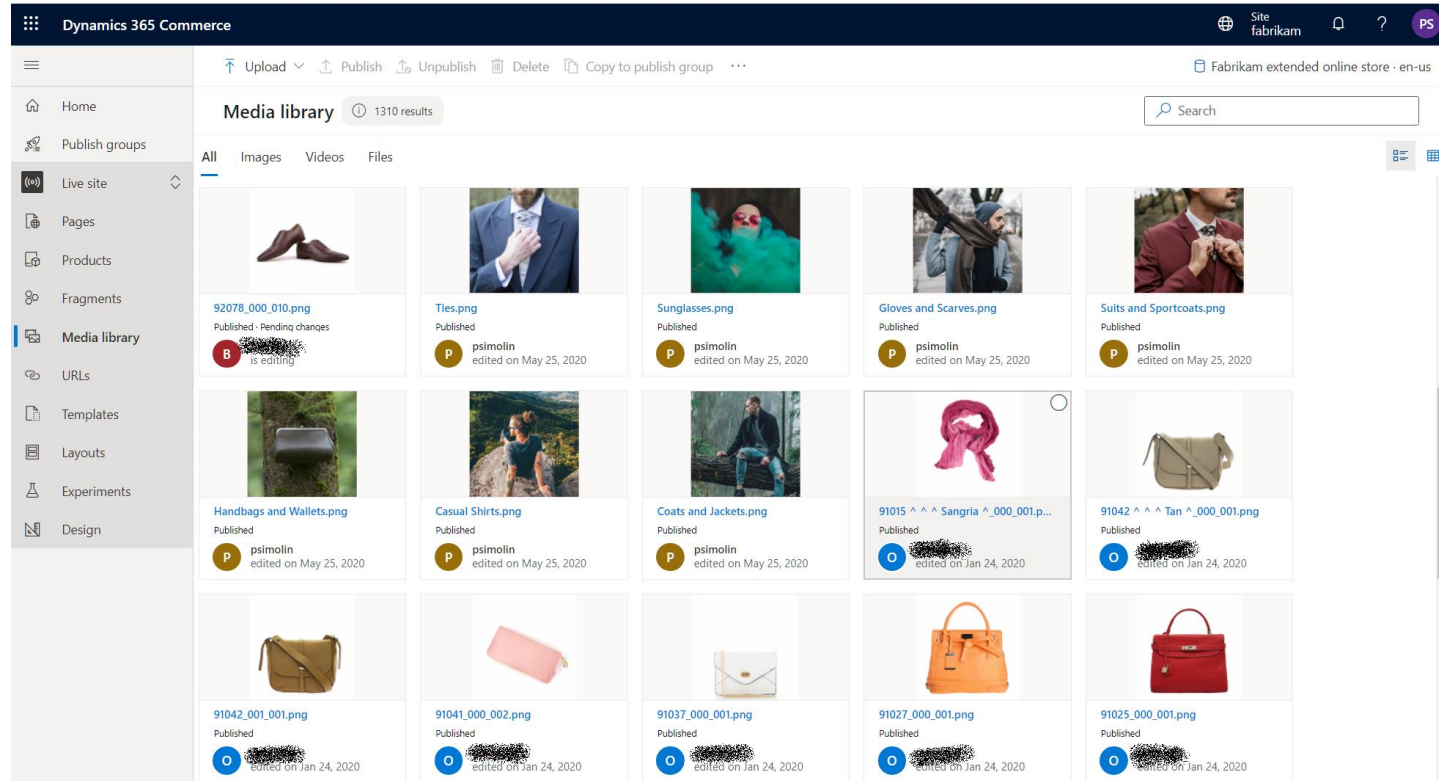
Content Management System (CMS)

- Multitenant SaaS solution
- Modular service architecture



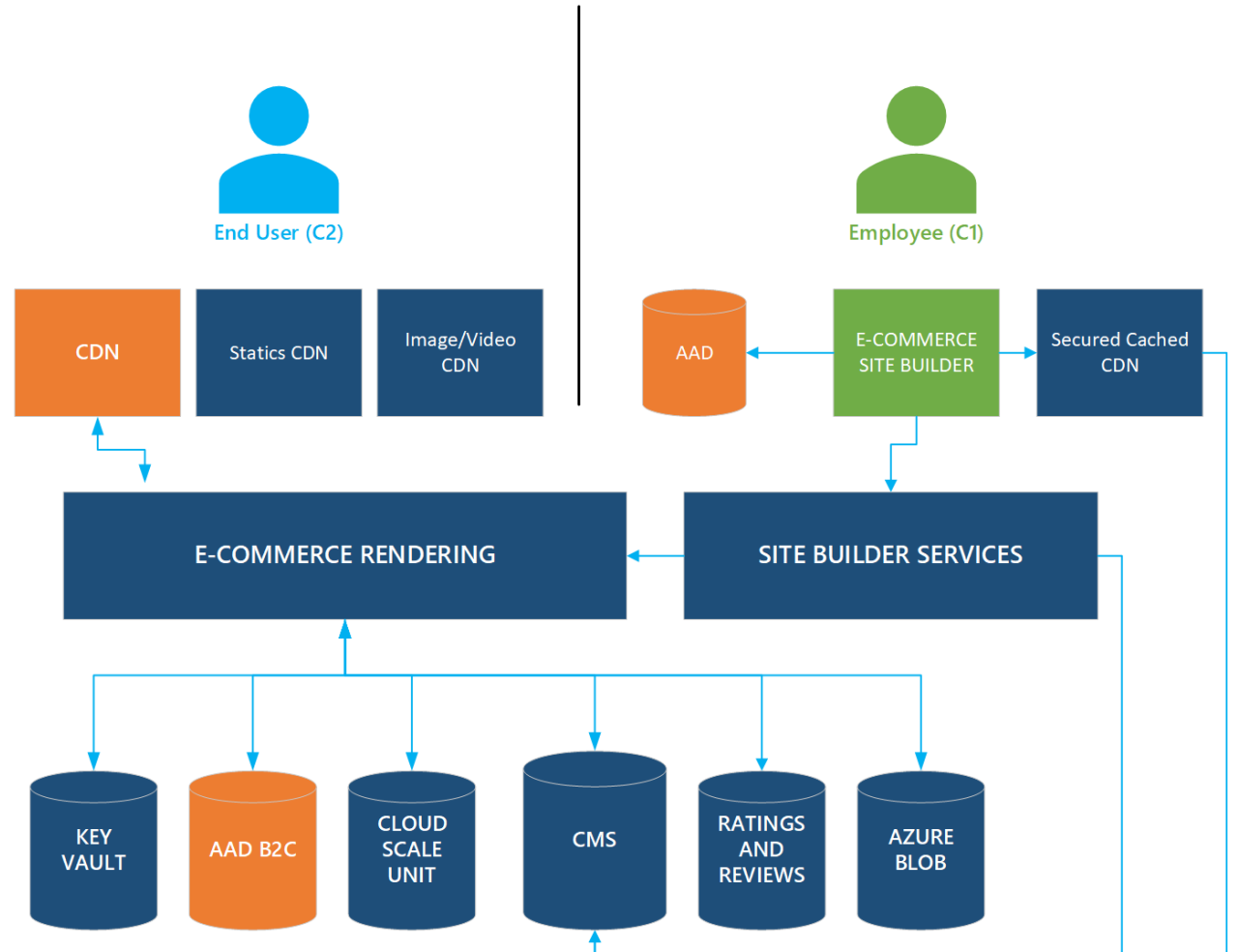
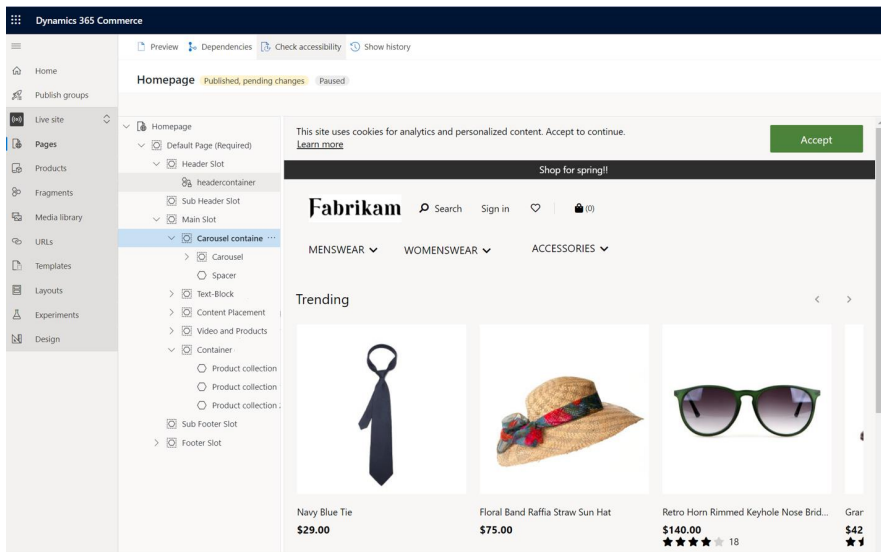
Media Library

- The Media Library allows for easy management of all your media assets
- Upload, modify, replace, and delete one or many selected items
- Support for Search, Filtering, and Previews
- Add metadata, manage viewport optimizations, and manage supported media such as video subtitles or captions and thumbnails



E-Commerce Site Builder

- The Commerce authoring tool is a web portal-based tool used to author content for your site
- Authoring allows authenticated employees to perform Admin, Design and Editing, or Read-Only actions
- The authoring tooling securely connects with underlying systems (CMS, Web Front End, Commerce Scale Unit) to draft, preview, and publish content



Roles in E-Commerce Site Builder

Role	Description
System Administrator	Users who have this role have all privileges for all tools, and for all ratings and reviews. They can also create sites.
Administrator	Users who have this role have all privileges for all tools and RnR in each site structure.
Web Producer	Users who have this role can create pages, fragments and templates, upload and manage assets, and enrich products and categories.
Reader	Users who have this role can view pages, templates, assets, fragments, layouts and settings, but may not make changes.
RnR Moderator	Users who have this role can moderate product reviews.

E-Commerce Site Builder content structuring



Authoring Tool

Dynamics 365 Commerce

Preview Dependencies Check accessibility Show history

Homepage Published, pending changes Paused

- Home
- Publish groups
- Live site
- Pages
- Products
- Fragments
- Media library
- URLs
- Templates
- Layouts
- Experiments
- Design

- Homepage
 - Default Page (Required)
 - Header Slot
 - headercontainer
 - Sub Header Slot
 - Main Slot
 - Carousel container
 - Carousel
 - Spacer
 - Text-Block
 - Content Placement
 - Video and Products
 - Container
 - Product collection
 - Product collection
 - Product collection
 - Sub Footer Slot
 - Footer Slot





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Fabrikam Search Sign in (0)

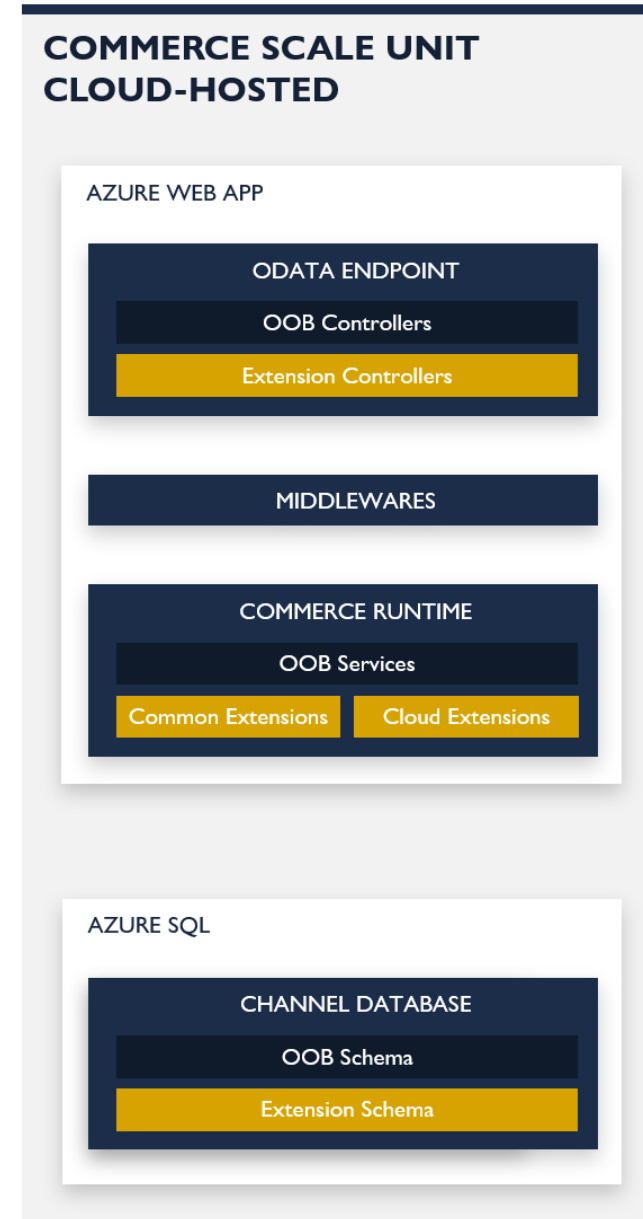
MENSWEAR WOMENSWEAR ACCESSORIES

Trending

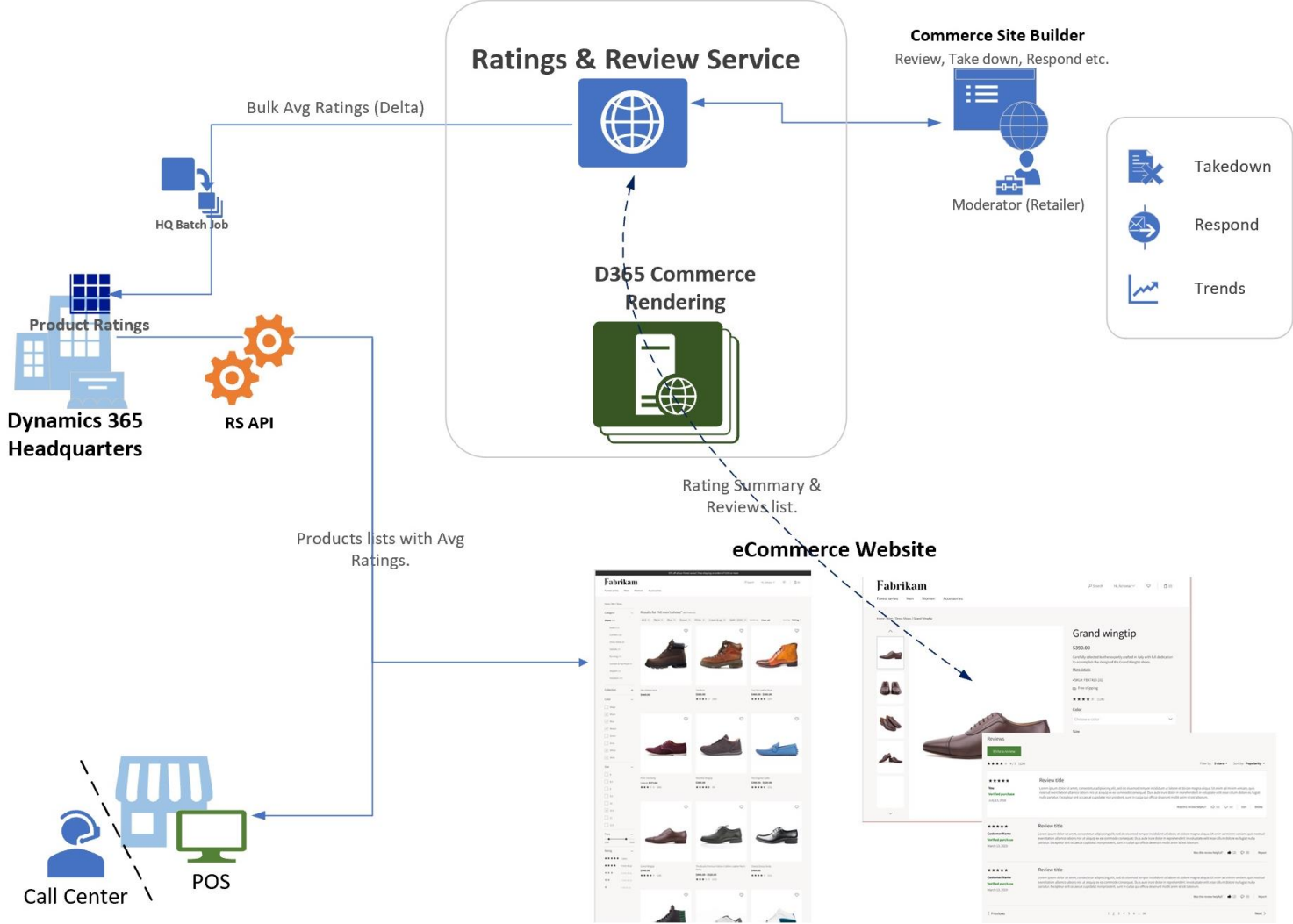
			
Navy Blue Tie \$29.00	Floral Band Raffia Straw Sun Hat \$75.00	Retro Horn Rimmed Keyhole Nose Bridgman Sunglasses \$140.00 ★★★★★ 18	Gravitas Sneakers \$42.00 ★★★☆☆

Commerce Scale Unit

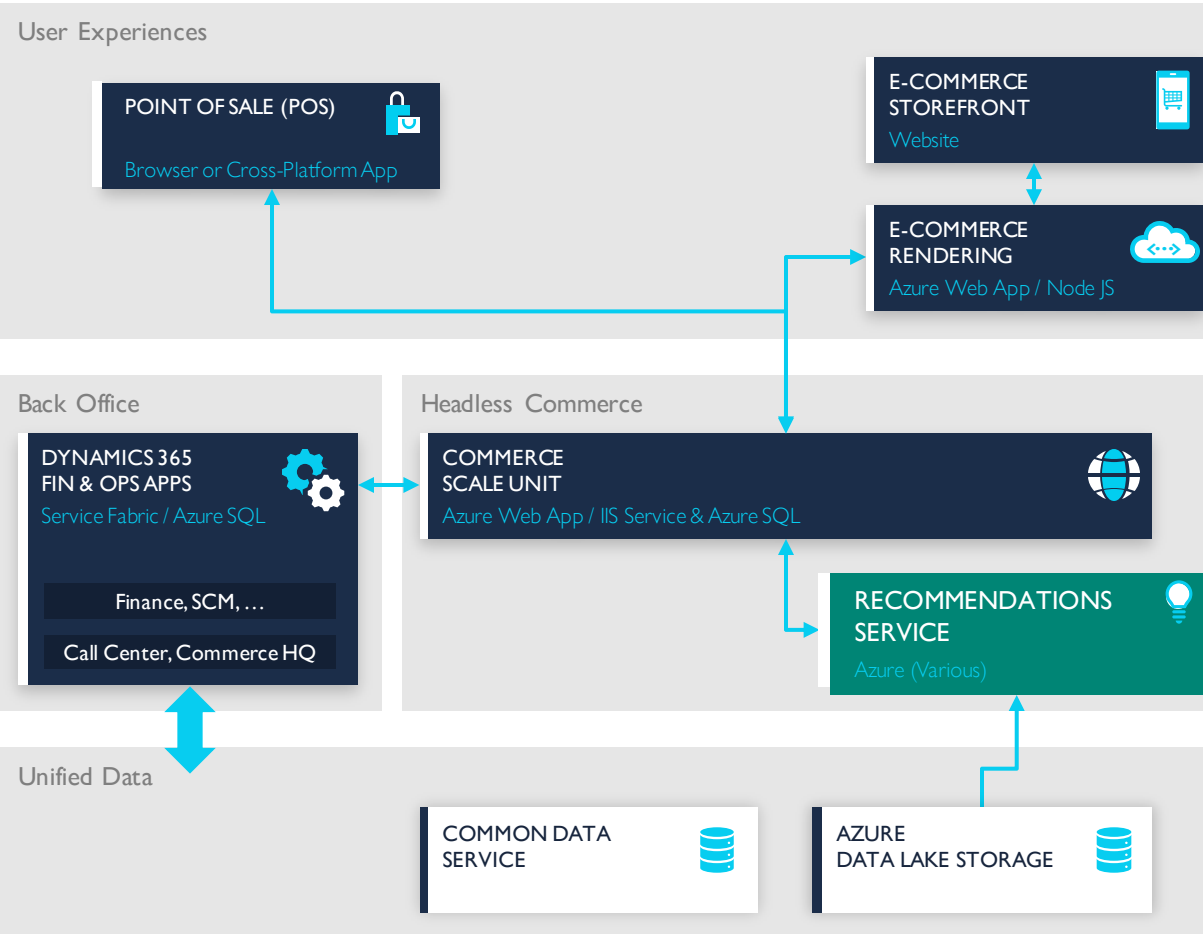
- Drives main business logic of Commerce and the e-Commerce site
- Products, Categories, Navigation Hierarchies, Pricing, Sales info, Order info, Customer authentication and information, Recommendations, Search and more all drive through the Commerce Scale Unit
- A site can link to multiple channels
- Multiple channels/sites can be managed within a single CSU



Ratings and Reviews



Recommendations



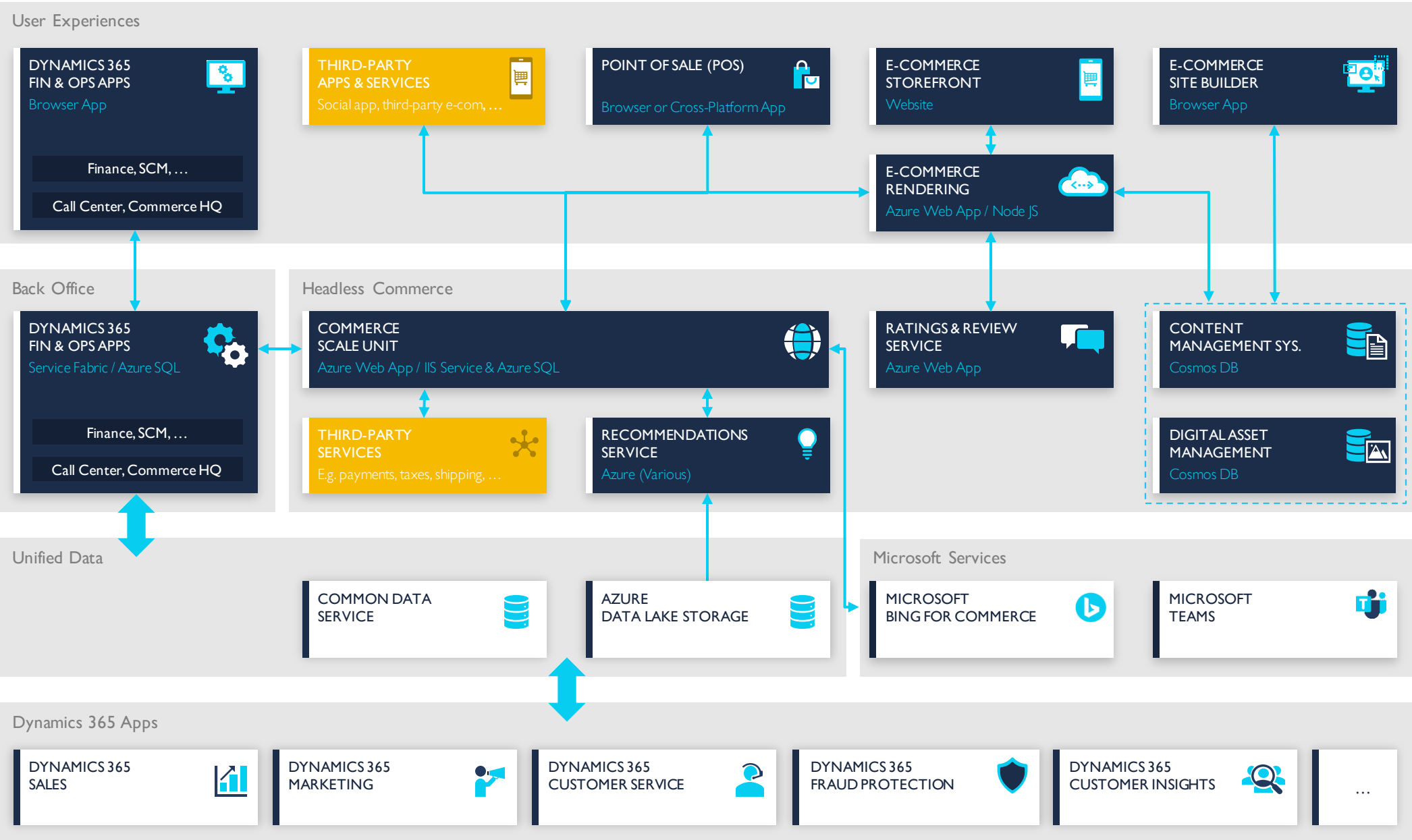
- Customer data is made available to Recommendations solution via secure connection from HQ to ADLS

- Customer data is exclusively used to train the ML models and power the Recommendations

- Customers can enable out-of-box both generic recommendations such as **New Arrivals**, **Best Selling**, or **Trending** lists, as well as ML based recommendations lists **People Also Like** and **Frequently Bought Together**, or personalized recommendations via the **Picks for You list**

- Common scenarios employed by Commerce customers include driving discovery on category pages via New Arrivals, Trending, and Best Selling; People Also Buy on Product details page, and Frequently Bought Together at checkout

ARCHITECTURE OVERVIEW



Additional Resources

// aka.ms/CommerceArchitecture

// aka.ms/CommerceInStoreTopology

//aka.ms/OnlineStoreOverview

//aka.ms/DomainsInCommerce

//aka.ms/AddCDNSupport

//aka.ms/OnlineChannelExtensibility