



Dynamics 365 Commerce

Modernizing the Dynamics 365 Commerce in-store technology stack

White Paper

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Modernizing the Dynamics 365 Commerce in-store technology stack

Our in-store apps are the cornerstone of our Dynamics 365 Commerce omnichannel offering. We continuously innovate to provide [Modern and Intelligent store](#) experiences. To further modernize our solution, we are rolling out two sets of changes that will significantly improve IT operations and the end-user experience with our existing in-store applications on Windows.

The new Store Commerce application is a technology upgrade of the existing Modern point of sale (MPOS). It provides improved performance, reliability, and long-term support on the Windows platform. The new Commerce software development kit (SDK) enables sealed core installers and independent customization installers that greatly reduce the operational overhead and maintenance cost of our solution by eliminating the need to repackage the app with each update.

This white paper describes the evolution of our in-store solution, the motivation for our modernization work, and a detailed release timeline to help customers and partners plan their adoption of the new Store Commerce app and Commerce SDK as we work toward full parity with the Retail SDK and MPOS.

Solution overview

Store Commerce application

One key advantage of the TypeScript/HTML rendering technology used by the POS UI layer is portability across Windows, iOS, Android, and browsers, providing a unified mobile solution across core product capabilities and extensions. The popular and widely used TypeScript/HTML technology stack also simplifies ISV and partner onboarding to our application ecosystem. The existing Dynamics 365 Commerce MPOS is built as a Universal Windows Platform (UWP) JavaScript app, which enables native support and quick time to market on the Windows platform.

However, support for UWP JavaScript apps is on the decline. [UWP JavaScript apps are no longer supported in Visual Studio 2019](#) and onward, and [Azure DevOps is deprecating support for Visual Studio 2017 Hosted Agents](#). The existing Legacy Edge based Chakra rendering engine for Scripting Applications on Windows lags behind rendering improvements on other platforms. Lastly, the existing UWP “sandbox” poses limitations to our extensibility scenarios and inter-process communication caused application runtime challenges.

To modernize our in-store application framework and set up the foundation for ongoing innovation, we are releasing Store Commerce for Windows. This application uses a new shell built on [WebView2](#) powered by the Chromium engine. This provides several advantages:

- **Improved rendering performance** compared to the existing Legacy Edge based Chakra engine.
- **Improved support on Microsoft ecosystem** as WPF continues to be a first-class citizen in Visual Studio, Azure Dev Ops, and other parts of the Microsoft ecosystem. WebView2 is the newly released and broadly [supported across various programming environments and versions of Windows](#).
- **Improved extensibility and application runtime** through elimination of the inter-process communication between the UI shell and dllhost.exe processes (UWP “sandbox”).
- **Improved serviceability for online only devices** through Cloud POS (CPOS) rendering within the application shell.

The Store Commerce app is simply a new shell for all existing functionality and code of the MPOS. All existing functionality, including offline support, native hardware integration, and all UI experiences remain the same. Existing customer extensions will continue to work once [migrated to the new Commerce SDK](#), which provides many advantages, including support for new independent customization installers.

While we strongly encourage all customers to migrate to the Store Commerce app, given all the benefits, we will also continue to support the existing MPOS until the 10.0.32 release.

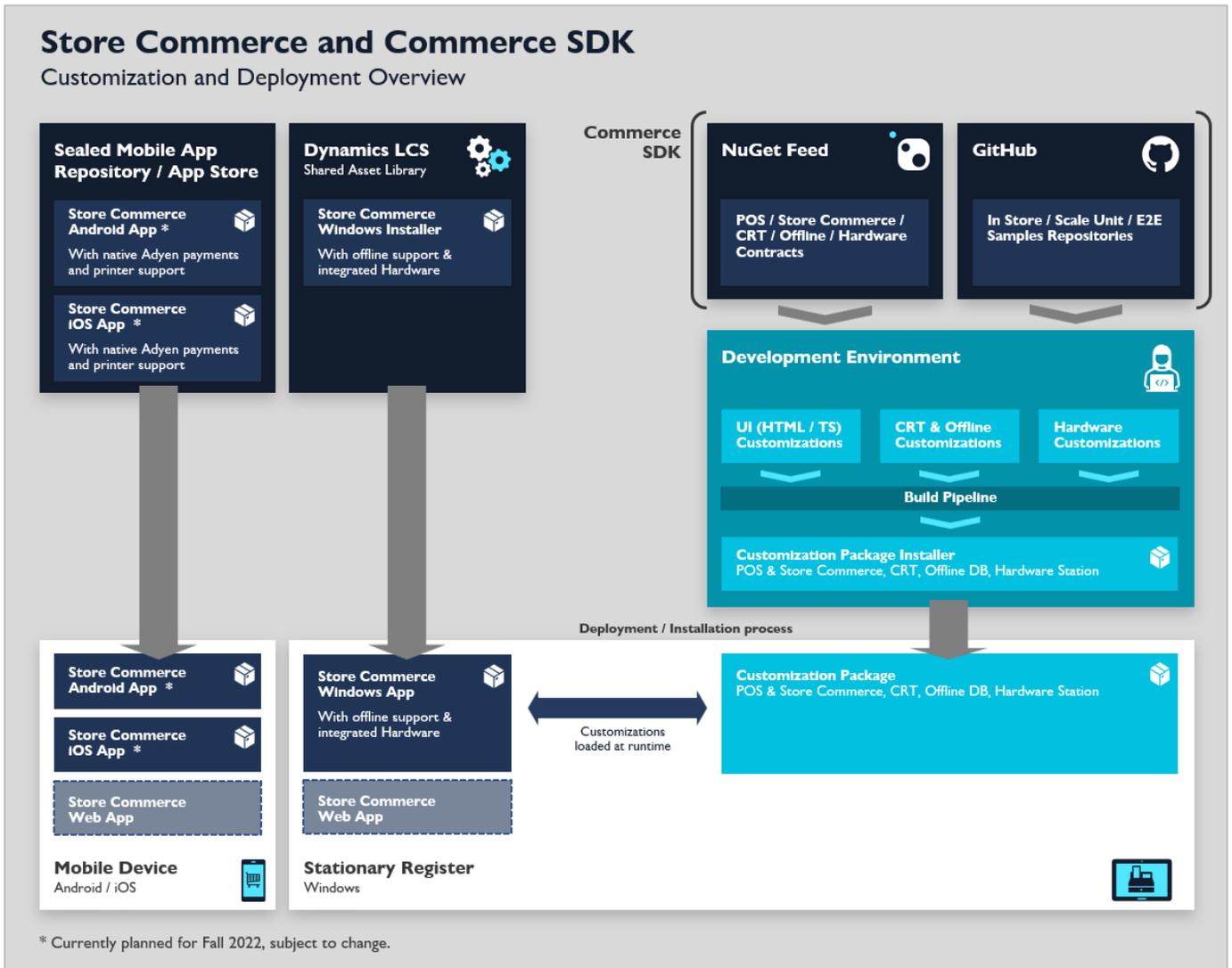
Sealed in-store installers and independent packaging

The core MPOS application and partner customizations are tightly coupled in our existing solution. For any service update, quality update, or customization change, customers and partners must go through a set of time-consuming steps to repackage and redeploy the application. ISV solutions are distributed via code artifacts and require the same repackaging and redeployment of the application, making the distribution and adoption of these solutions costly and time consuming.

Through the new [Commerce SDK](#), we now support sealed core product installers and independent packaging for customizations for existing MPOS and Store Commerce app. Installers for the core application and extension packages are separated; customers and partners can install and update them independently. Independent customization installers are supported for all in-store application artifacts, including:

- **UI layer:** all TypeScript/HTML artifacts
- **Offline:** Commerce runtime and offline database
- **Hardware and peripheral integration:** Integrated and IIS-based Hardware Station

As part of the Commerce SDK migration, we are also providing fully sealed Android and iOS Store Commerce applications with native printer and Adyen payment support, which will no longer require self-packaging.



The full list of improvements for the [Commerce SDK](#) includes:

- **Reduced deployment cost for core product installers**, which no longer requires packaging with existing unmodified customizations.
- **Reduced deployment cost for localization features**, which no longer requires them to be self-packaged through customizations and will instead be enabled via natively integrated features.
- **Reduced deployment time and operational overhead for non-customized Android and iOS POS apps**, which no longer require self-packaging and will now be supported as native, out-of-box applications.

- **Improved testability and rollout of customizations** as they can be deployed more quickly side-by-side with the core product installer.
- **Simplified developer environment setup** as the Commerce SDK can be directly downloaded from the NuGet feed and the samples can be cloned from GitHub. This eliminates the requirement for the Dynamics 365 developer VHD.
- **Quicker release cycle for core Microsoft-issued quality updates**, which now take only a few hours as opposed to several days, previously.
- **Simplified distribution and deployment of ISV solutions**, which can now be distributed through compiled extension packages rather than code distribution.

Migration from the legacy Retail SDK to the new Commerce SDK will require a number of code changes to existing customizations, as called out in the [Commerce SDK migration guide](#). Customers and partners should review the list of required changes carefully to effectively plan their migration.

Release timelines

The table below provides a high-level release timeline across platforms. Given the interdependencies between the Store Commerce app, Commerce SDK, and all our legacy applications, we recommend that you use this table to plan the adoption of the new Commerce SDK and rollout of the Store Commerce app across various platforms.

Note: These are preliminary release dates that are potentially subject to change. Please check our [official release plans](#) for the latest release details and reach out to our team for additional details on individual product capabilities and scenarios.

		Windows		Android / iOS	
		Modern Point of Sale	Store Commerce Application	Self-Packaged Application	Store Commerce Application
		Retail SDK or Commerce SDK	Commerce SDK	Retail SDK	Commerce SDK
Spring 2022	10.0.26	<p>Supported:</p> <p>Sealed installer with independent packaging (only with Commerce SDK).</p> <p>Full offline capabilities.</p> <p>Full native hardware integration.</p>	<p>Supported:</p> <p>Sealed installer with independent packaging.</p> <p>Full offline capabilities.</p> <p>Full native hardware integration.</p> <p>Unsupported:</p> <p>Localization support across all markets.</p> <p>Dual Display.</p> <p>Pricing SDK customizations.</p>	<p>Supported:</p> <p>Self-packages Android and iOS applications.</p> <p>Full native printer and Adyen payment integration (only on Android).</p>	Unsupported
	10.0.27		<p>Added Support:</p> <p>Pricing SDK customizations.</p>		
	10.0.28		<p>Added Support:</p> <p>Dual Display</p>		
			<p>Localization support across all markets.</p>		
Fall 2022	10.0.29				<p>Supported:</p> <p>Sealed installer without customization support on Android and iOS.</p>
	10.0.30				
	10.0.31				
	10.0.32				
Spring 2023	10.0.33	End of Support		End of Support	Full native printer and Adyen payment integration.

What's next

Plan your Commerce SDK adoption and Store Commerce app rollout

Independent Customization installers are available starting with the 10.0.18 release. The Store Commerce app with offline, native hardware support, and independent packaging will be available starting with the 10.0.26 release. Given that the Store Commerce app has a dependency on the new Commerce SDK, and that both require reactivation of the MPOS, or Store Commerce app once rolled out, we strongly recommend to plan rolling out both changes in parallel.

Customers and partners who are currently using Android or iOS POS will continue to use the existing Retail SDK to self-package the application until the 10.0.29 release, when the fully sealed native applications are available. This will also bring native printer and Adyen payment support to our iOS app, which was previously not supported.

The support for the existing Retail SDK will end with the 10.0.32 release but we urge all customers to plan adoption of the Store Commerce App and Commerce SDK in calendar year 2022 to take advantage of all the improvements and avoid late surprises as part of the deprecation path.

Engage with us

Migration to the Commerce SDK might require one-time code changes to existing customizations for a limited set of scenarios. Additionally, there are a lot of moving parts with the new SDK, Store Commerce app, and cross-platform support that need to be considered as part of the existing project and release plans.

Our team is eager to work alongside your team to support and help you plan your migration. You can reach us through our regular support channels, your Fast Track Solution Architect, and our [Dynamics 365 Commerce Community](#).

Get started with the Commerce SDK and Store Commerce app

Irrespective of release plans, we strongly recommend all partners start their adoption journey of the Commerce SDK. We offer a wide range of resources to help you get started:

- [GitHub repository with code samples](#)
- [Documentation on the Commerce SDK migration](#)
- [Tech Talk on the Commerce SDK migration](#)
- [Tech Talk Series on all extensibility scenarios](#)
- [Dynamics 365 Commerce Community Forum](#)

Frequently asked questions

Do the Store Commerce app and Commerce SDK have full parity with the existing Modern POS (MPOS)?

Yes, the Store Commerce app provides all the same capabilities as the existing MPOS, including embedded hardware integration, extensibility support, and offline capabilities. However, Pricing SDK support in the Commerce SDK will be added in 10.0.27, and localization and dual display support in the Store Commerce app will only be added in 10.0.29.

Is the Cloud POS (CPOS) still supported with the introduction of the Store Commerce app?

Yes. Even though customers can leverage the Store Commerce app shell for “online only” implementations, the CPOS app continues to be fully supported for customers who prefer a browser-based solution. Architecturally, the CPOS app hosted on the Commerce Scale Unit also continues to be the primary hosting solution for the Android, iOS, and Store Commerce app (online-only implementations).

Is the user experience changing in the Store Commerce app?

No. The Store Commerce app uses the exact same UI artifacts, Commerce Runtime (for offline mode), and Hardware Station binaries (for embedded hardware integration) as the existing MPOS. The only change is the new shell with improved performance and packaging solution to support sealed installers and independent packaging.

Do I have to rewrite my extensions to onboard the Commerce SDK?

Commerce Runtime (CRT) and **Hardware Station** extensions might require minor code changes for migration to the Commerce SDK.

Offline DB extensions will not require any changes and can be directly ported to Commerce SDK.

HTML/TypeScript extensions might require code changes, as documented in the [POS API and SDK changes](#) article. These changes are limited to the framework and do not require any functional changes to the extensions.

Migration from the MPOS to the Store Commerce app within the Commerce SDK also requires minor build-related modifications. As a result, we recommend that customers adopt both at the same time starting with the 10.0.26 release.

I am using the Android/iOS POS app. When should I migrate to the Commerce SDK?

Our recommendation is to adopt the Store Commerce App and Commerce SDK starting with the 10.0.26 release (or later). You will have to do a one-time migration of your existing customizations from the legacy Retail SDK to the new Commerce SDK. All UI-related extensions for the CPOS app leveraged in the iOS/Android POS can then be maintained in the new Commerce SDK.

For the packaging of the native Android/iOS POS app shell, you can continue to use the legacy Retail SDK without maintaining your extensions and migrate to our native Android and iOS apps in 10.0.29.

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