Windows 8 Release Preview

Product Guide for Developers

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Introduction

If you're a developer, Windows 8 Release Preview gives you an amazing platform to reach the millions of people around the world who use Windows every day to be more productive, creative, and to have fun. With Windows 8 Release Preview, you have unprecedented access and opportunity to reach that worldwide customer base early. Windows 8 represents the most significant platform opportunity available to developers because you have the change to reach millions of people with your amazing Metro style apps.

Apps are at the center of the Windows 8 experience. They're alive with activity and vibrant content. Users are immersed in your full-screen, Metro style apps, where they can focus on their content, rather than on the operating system.

Developers can take advantage of the services Microsoft provides so their apps will light up when they're connected to the cloud. When developers connect apps to the cloud using the Live SDK, they can take advantage of single sign-on, which gets users even deeper into their app experience because they'll be able to more easily store data and communicate with their friends and family.

Signing up to sell your app in the Windows Store means you can tap into the worldwide user base of Windows, even at the Release Preview stage. You'll draw from a wealth of new tools and services, including updated versions of Visual Studio Express 2012 RC for Windows 8, Blend for Microsoft Visual Studio 2012 RC, an optimized Windows 8 SDK, and personalized app telemetry data, so you can develop and deploy apps faster and more profitably.

With Windows 8, you can leverage your existing skills and code assets to create Metro style apps for your customers.

- Web developers can use their HTML5, CSS3, and JavaScript skills, as well as their experience with third-party JavaScript libraries.

- Microsoft .NET Framework and Silverlight developers can use their XAML, C#, and Visual Basic skills.

- Developers looking for maximum performance for their games and other graphics-intensive apps can use the power of Microsoft DirectX 11.

With Windows 8, you're ready to imagine, build, and sell the next great app to the entire world.

Apps take center stage

Windows 8 makes it easy to build full-screen Metro style apps that are fun to use and explore. Flexible and easy-to-use controls, built-in animations, and layout options make your apps feel fast and fluid. Live tiles on the Windows Start screen display information from your website or service and help ensure your app is useful—even when it's not running. When users acquire additional apps, their experience is enriched when those apps participate in app contracts. For example, when an app implements the Search contract, users can search its content from an unrelated app. Users can also choose to share content from one app to another. And apps can be optimized to the user's context, hardware, and preferences.

Metro style app principles

More than just an app platform, Metro style is a design philosophy that puts content before chrome and helps you build attractive, easy-to-use apps that will delight your customers with their intuitive and common interaction model. Some principles common to great Metro style apps include:

- **Content before chrome.** Content is at the heart of Metro style apps, and putting content before chrome is fundamental to the design of Metro style apps.

- **Fast and fluid.** User interactions and transitions are quick and intuitive, and animations are deliberate and purposeful.

- **Support for multiple states.** Metro style apps support a full-screen, immersive state, and a minimal, snapped view that runs while a second app takes up the majority of screen space.

- **Support for the right contracts.** App contracts provide a way for apps to work together that lets users search across apps or choose to share content from one app to another. Their experience improves as users add more apps that support contracts to their PC.

- **Live tiles.** Useful information appears on the app's tile on the Start screen even when the app isn't running.

- **Settings and user context roam via the cloud.** Users get a great, continuous experience, regardless of where they sign in.

Embracing these principles makes your app more usable, increases its visual appeal, and helps you deliver an experience that's consistent and familiar to your users.

App contracts

App contracts are a way for users to seamlessly search across and share content between unrelated apps. They extend the usefulness of your app by eliminating the need to work with varying standards or app-specific APIs to access data stored or created by another app, all while keeping users in your branded experience. You don't need to know anything about the target app other than its declared support for the target contract – it just works.
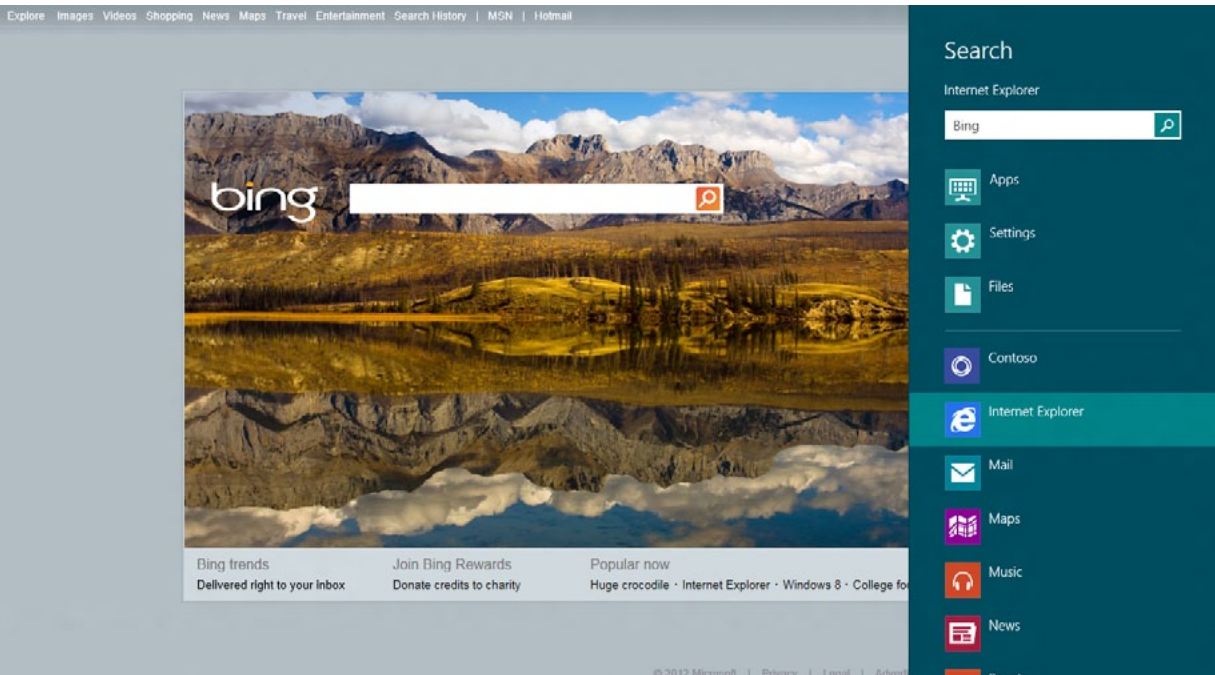
Users can search the content in your app and all other apps that support the Search contract

Windows 8 provides support for several contracts, including:

- **Search.** When you implement the Search contract, users can search not only your app's content but content from other apps that participate in Search, as well.

- **Share.** The Share contract lets you help users share content from your app with another app or service, and vice versa, if the user chooses to do so.

- **Play To.** You can help your users play digital media to Windows-certified DLNA devices from within your app by supporting the Play To contract.

- **App to app picking.** This contract lets users pick files from one app directly from within another app.

- **Settings.** This provides quick, in-context access to settings that affect the user's app experience, including whether your app can access the user's location.

- **Print.** This contract lets users print content on any printer compatible with Windows 8.

Fast and fluid

With Windows 8, we created a touch-optimized platform that people interact with in an intuitive way. As a result, interactions with the operating system and UI elements feel natural and responsive. Animations and transitions are used deliberately, and effects are subtle and designed to enhance the connection between users and their PC. App layout and presentation are simplified with easy-to-use layout APIs and presentation controls.

The built-in animations library lets you create smooth, animated experiences from a comprehensive set of predefined animations that are lively and unique. With 3-D transformations you can add smooth, fluid, visual experiences like perspective transforms and flipping elements on and off the screen.

Flexible layout options make app layout easy and consistent with Windows 8. Flexbox, a feature of CSS3, lets you create containers that expand proportionally to fill any remaining space on the screen. The VariableSizedWrapGrid control provides similar functionality for XAML developers. Grid layouts are available in both HTML5 and XAML. Grids give you the ability to position and size content in a grid structure that you define with fixed, fractional, or automatic units. You can orient content in a grid horizontally or vertically. You can use Multi-Column Layout to imitate complex layouts, such as those found in newspapers and magazines.

Semantic Zoom is a touch-optimized way to navigate through large content collections. Users can pan or scroll through their content, and then zoom in or out to view more or less information. This lets apps present content in a more tactile, visual, and informative way than traditional navigation and layout patterns like tabs.

Semantic Zoom helps you navigate large content collections

Versatile input methods

There are a number of different input modalities to think about when you design apps, including touch, mouse, and keyboard. Windows 8 makes it easy to support each, by following the principle of "design for touch and get mouse and keyboard for free".

Pointer APIs allow you to work with any input modality (mouse, keyboard, pen, touch) without knowing the origin of the input data. Higher-level gesture APIs let you use pre-defined touch gestures and detect multi-touch events in your apps. You also have the ability to build custom touch gestures or use input-specific APIs to provide a unique experience in your app.

Tailored experiences

Building experiences that take full advantage of the latest hardware is easy with Windows 8. Sensor APIs help you build apps that are tailored to the user's context, and apps scale gracefully to support both compact and large form factors.

The Windows 8 sensor platform is an end-to-end solution that includes support for both desktop and Metro style app development. The Win32 API lets you integrate sensor data without writing a lot of code. Windows Runtime Components let you quickly access input from eight sensors, including accelerometer, inclinometer, gyrometer, compass, ambient-light, orientation, and simple orientation of a device, and, with a user's permission, geolocation.

Windows 8 scales apps to ensure consistent physical sizes for UI elements regardless of the pixel density of the screen. As a developer, your work is minimal—just provide scalable resources and Windows takes care of the rest.

Tiles are connected and alive

Through tiles on the Start screen, apps are alive with activity and can deliver vibrant content, even when they're not running. Using live tiles, your app can provide useful, at-a-glance data to the user, while minimizing battery usage. Windows Push Notification Services enables your app to receive messages and send them to your app's live tile or provide a notification to the user.
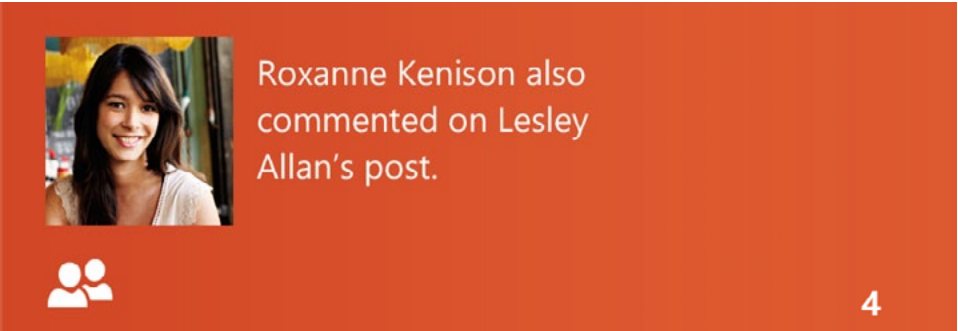
Live tiles bring your app to life, even when it's not running

Developing for Internet Explorer 10

Windows Internet Explorer 10 Release Preview is the new way to experience the web, and it is fully optimized for Windows 8 touch devices. Developers can use the same HTML5 mark-up to build rich, interactive web sites that will run in both experiences on Windows 8.

More Web standards

Internet Explorer has one underlying platform with extensive support for web standards like HTML5 and CSS3. This enables developers to write code without using plug-ins. Microsoft's commitment to web standards now extends beyond the browser to Windows 8. Developers can build Metro style apps using the same standards-based platform as Internet Explorer.

Built for touch in Windows 8

Internet Explorer provides an intuitive touch-first browsing UI that is built for your finger. You can pan, zoom, and navigate naturally. With MSPointer events, you can support multi-touch input, pen, and mouse interaction in a single development effort that saves time. Users have the ability to make your site feel more like a native app by pinning it to the Windows 8 Start screen. Or build a companion Metro style app for your website an d let your users discover it in one-click while browsing.

Better developer tools

The F12 Developer tools are a powerful set of client-side, cross-browser debugging tools. Use them to monitor real-time performance and inspect your HTML and CSS elements in one-click. You can also change between standards-based and older rendering engines, which makes it easier to test many versions of Internet Explorer.

Cloud-connected

Developers can take advantage of the services Microsoft provides so their apps will light up when they're connected to the cloud. When developers connect apps to the cloud using the Live SDK, they can take advantage of single sign-on, which gets users even deeper into your app experience because they'll be able to more easily store data and communicate with their friends and family.

Build apps using what you know

Windows 8 lets you build Metro style apps using a variety of programming languages and tools. You can program your apps using C#, C++, or Visual Basic, while using XAML to declaratively describe the user interface. Or you can build apps using web technologies like HTML5, CSS3, and JavaScript. Developers looking for the best possible performance on Windows 8 can use Microsoft DirectX 11.1 with C++.

Extensible and compatible with existing frameworks

The new Windows 8 app models feature native extensibility, which you can use to build your own reusable component libraries. You first build your own custom components with C++, C#, or Visual Basic and compile them as portable libraries. Then, you can use any supported language to call these components from your apps.

The Windows Runtime (WinRT) is a straightforward set of APIs used to build Metro style apps. WinRT APIs are available to you in all supported languages, including JavaScript, C++, C#, and Visual Basic. WinRT APIs are accessible to other Microsoft programming frameworks, like the .NET Framework or Windows C Runtime Library. Traditional Windows desktop apps can also access a subset of the new WinRT functionality, in addition to the proven Win32 and .NET APIs.

Metro style apps with HTML5 and JavaScript take advantage of powerful advancements in standards-based web technology. It's now possible to build fully native Windows apps with the simplicity and flexibility of standards-compliant HTML markup, JavaScript, and CSS3 using the new Windows Library for JavaScript. Visual Studio Express 2012 RC for Windows 8 provides access to an extensive library of application templates to streamline and accelerate app development.

XAML lets you carry all of your knowledge forward in C#, Visual Basic, and C++. If you're familiar with Silverlight or WPF, you'll be right at home with Windows 8 development. The new Windows 8 controls have been fully implemented in XAML, enabling you to build user experiences with the new Windows personality. For the first time, native C++ developers can take advantage of XAML to build highly interactive and attractive UI.

DirectX graphics are at the core of Windows 8. DirectX enables your full-screen Metro style apps to deliver smooth, flicker-free action whether you created them using HTML5 or XAML. No matter which model you choose to develop your Metro style app, if the hardware supports it, your app will always be hardware accelerated.

The new Windows 8 graphics modules are better integrated, making Direct2D, Direct3D, and DirectCompute components easier to use together and requiring fewer duplicated resources than before. New capabilities for creating immersive, interactive experiences are now available to Metro style app developers, including DirectXMath, XAudio2, and XInput. Visual Studio Express 2012 RC for Windows 8 integrates first class graphics authoring and debugging features, including fully integrated HLSL language support, Direct3D asset viewing, and PIX support. For the ultimate graphics, gaming, or video experience, take advantage of the full processing capabilities of modern graphics hardware to bring new features such as stereoscopic 3-D to your Metro style apps with DirectX 11.1.

Powerful tools and all the resources you need

The new Windows 8 SDK and Windows Dev Center provide everything you need to start building your apps. The Windows 8 SDK includes free versions of Visual Studio Express 2012 RC for Windows 8and Blend for Microsoft Visual Studio 2012 RC to jumpstart your development. The Windows 8 Dev Center provides access to hundreds of sample apps, documentation, tutorials, and guidance from the experts.

The Windows SDK for Metro style apps provides a complete development experience. It includes only the tools and resources you need to get started quickly. Samples and documentation have been moved online to minimize download time. The WinRT API surface has been optimized to simplify development. And the inclusion of Visual Studio Express 2012 RC for Windows 8 and Blend provides you with first-class development and design tools for Metro style app development.

The Assessment and Deployment Kit (ADK) helps you measure system performance to ensure that the software and hardware you develop is of the highest quality.

Visual Studio Express 2012 RC for Windows 8 is a free, lightweight version of the powerful Visual Studio integrated development environment (IDE). Visual Studio Express is packaged with Blend, which now also helps you work with HTML5 and CSS3. Blend provides access to Windows controls and an integrated tool to profile user interfaces.
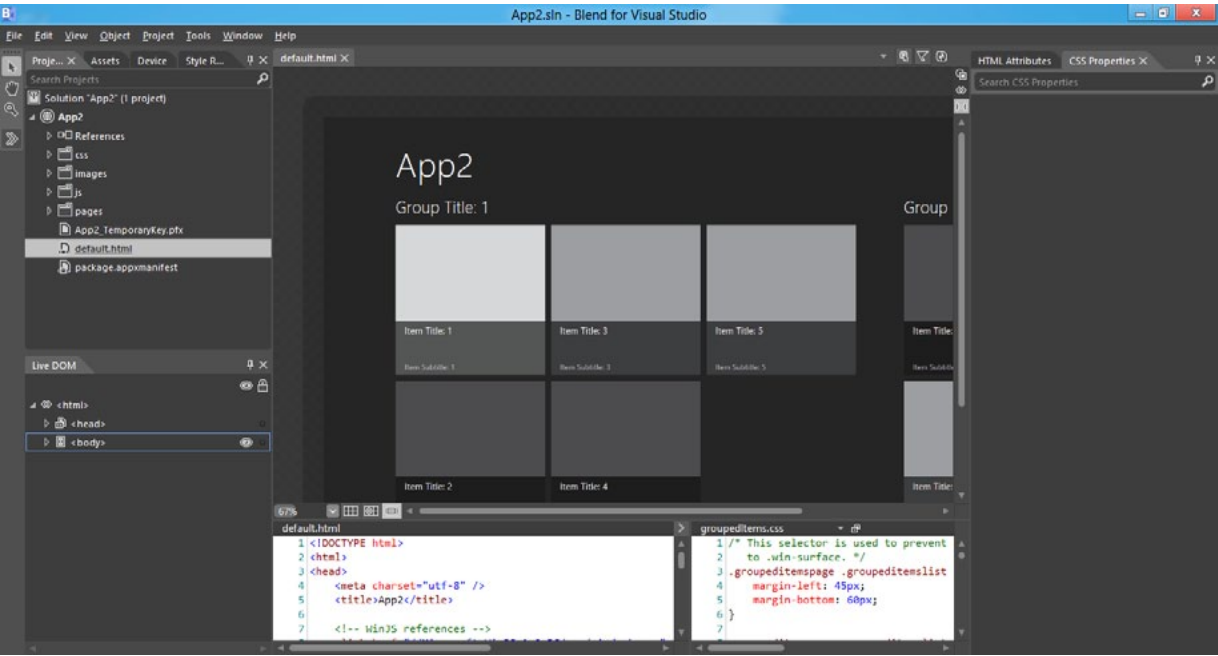

Blend for Microsoft Visual Studio 2012 RC helps you quickly create beautiful user experiences

The Windows Driver Kit (WDK) now integrates with Visual Studio Professional or Ultimate editions to provide a full set of tools and interfaces to help you write, build, compile, sign, test, debug, and verify drivers, along with tools to port your existing driver files to new Visual Studio projects.

A library of templates is included in Visual Studio Express 2012 RC for Windows 8 to jumpstart development of your Windows 8 app. The templates include common layout and interaction models, including fixed layout, grid app, navigation app, and split app. With Windows 8 and Visual Studio Express 2012 RC for Windows 8, you can build apps with Metro style UI using Windows 8 controls. The controls are designed to work equally well with touch devices or mouse and keyboard. Using Windows 8 controls and templates, your apps will convey the Windows personality with an intuitive and consistent user experience.

Windows 8 simplifies development of accessible apps, making the world of touch-based computing available to more users. The controls and templates included with Visual Studio Express 2012 RC for Windows 8 support accessibility features by default.
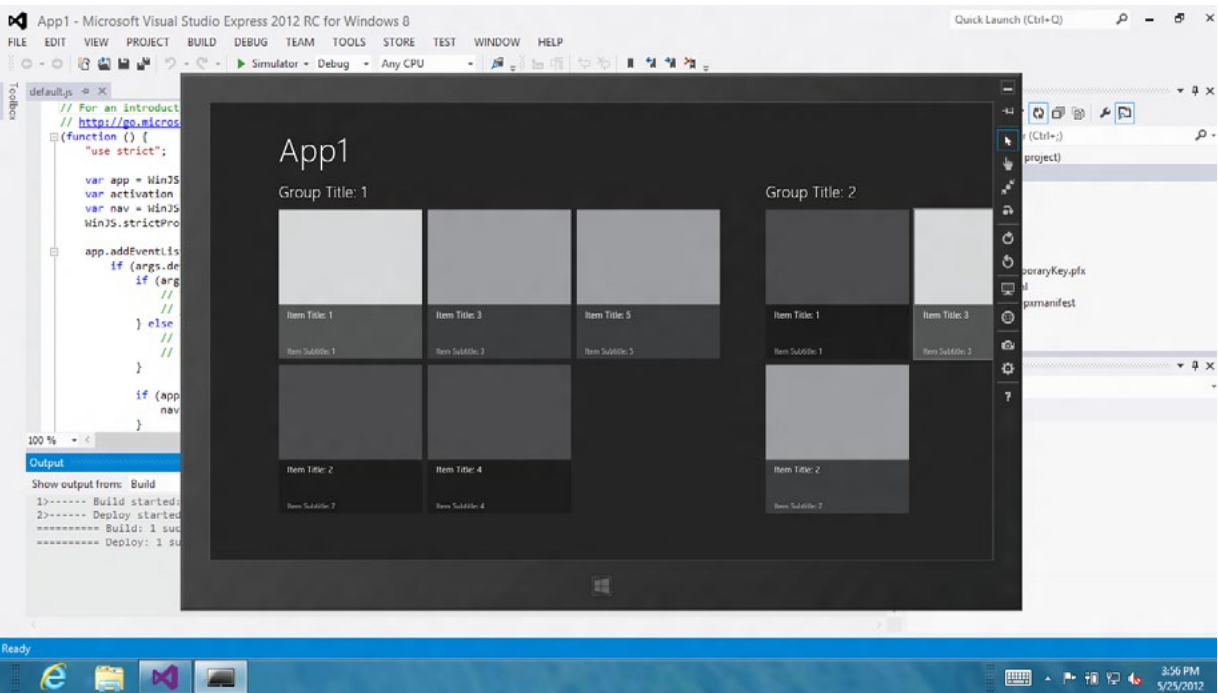
Visual Studio Express 2012 RC for Windows 8 helps you develop Metro style apps

A new, unified Windows Dev Center (http://dev.windows.com) brings together all the necessary tools, reference content, code samples, how-to information, and community forums that you need to quickly get up and running with Metro style apps, desktop apps,

or driver development. The Windows 8 sample gallery includes hundreds of samples demonstrating the breadth of the development platform, including nearly every developer feature included in Windows 8. Community members are encouraged to add their own code samples to the Samples Gallery. In addition, the new Windows Design Center includes case studies, reusable design assets, and prescriptive guidance for creating beautiful, easy-to-use Metro style apps for Windows.
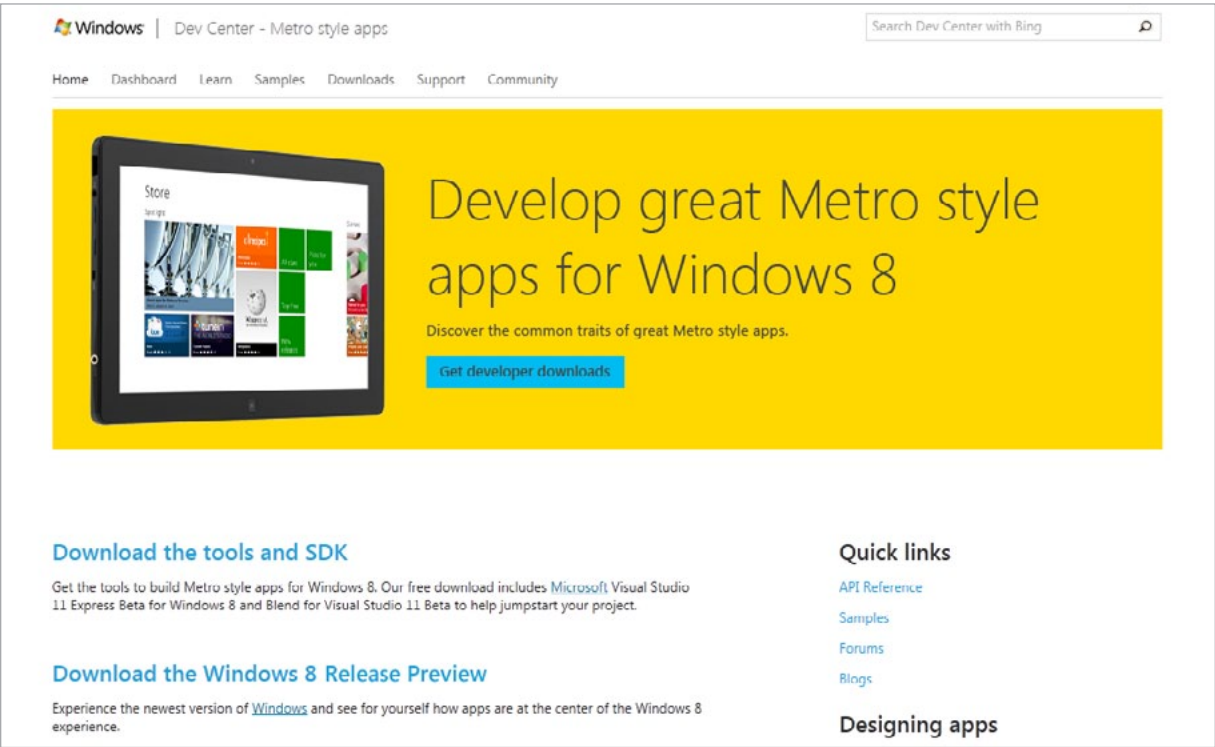
The new Windows Dev Center

Line-of-business app development

Windows 8 provides new opportunities for line-of-business apps, especially for the tablet and slate form factors. Windows 8 line-of-business apps can enhance worker productivity, with full screen experiences that allow workers to more easily interact with the app's content. Switching between apps is easy, and apps that support "snapped" view enable workers to multitask. In addition, enterprise developers can build line-of-business apps for Windows 8 by using the programing languages they already know.

Metro style apps cannot access user resources or system capabilities unless the app specifically declares a need to use those resources. This helps ensure a strong delineation between apps and the types of resources the app can access. Businesses can use Windows 8 contracts to make sharing data across apps easier and more efficient. Contracts eliminate the need to work with different standards or app-specific APIs to access data stored or created by another app.

Enterprise deployment

For enterprises looking to take advantage of the rich capabilities of Metro style apps, the Windows Store offers acquisition options that provide direct control over the app deployment experience. Enterprises can choose to limit access to the Windows Store catalog by employees, or allow access but restrict certain apps. In addition, enterprises can choose to deploy Metro style apps directly to PCs, without going through the Store infrastructure, by using a process called "sideloading". This ensures that an app that is created in an enterprise can stay within the corporate network and be centrally distributed, managed, and updated as necessary. IT administrators remain in control of how apps get onto user's PCs, and can control access to the Windows Store by using Group Policy. Specific apps within the Windows Store can be allowed or blocked by using AppLocker.

Hyper-V

Microsoft Hyper-V on Windows 8 Pro is a flexible and robust client virtualization technology. It enables enterprise developers to test multiple configurations of apps and operating systems on a single PC, instead of testing each configuration on its own PC. Using Windows 8 Pro, developers can test and manage multiple environments from a single PC, perform app compatibility tests, and perform deployment tests without risking changes to a PC that is actively in use.

Broad reach, flexibility, and transparency of the Windows Store

Windows 8 and the Windows Store make it simple for millions of customers to find, try, and buy high-quality, certified apps from practically anywhere in the world. The Windows Store makes it easy to distribute, update, and get paid for the apps that you develop.
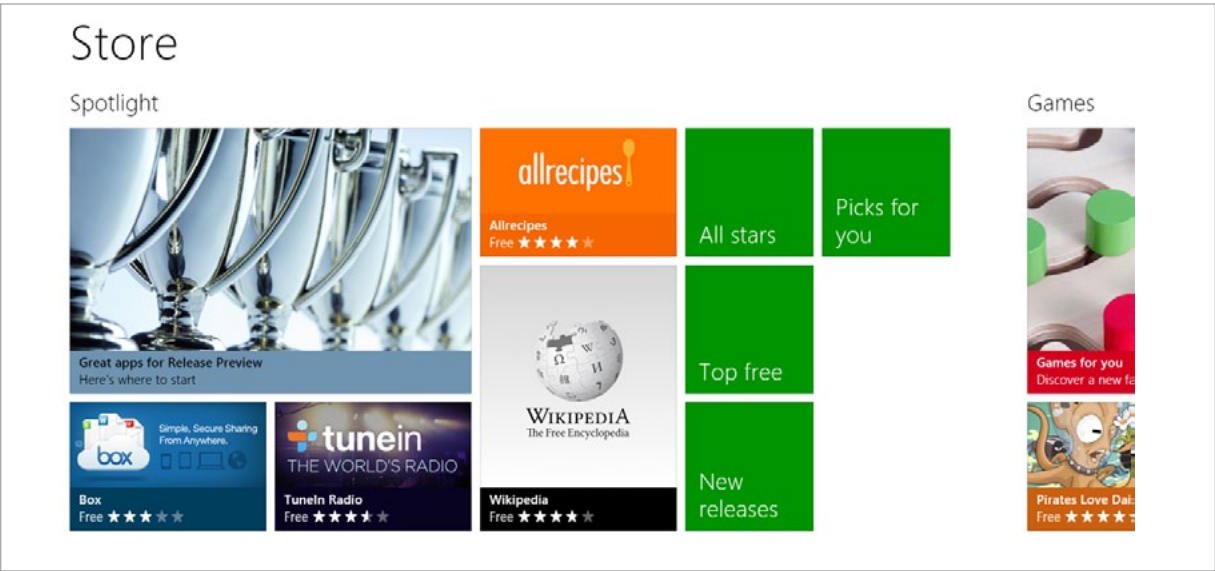
The Windows Store helps get your apps in front of global audience

Designed for discovery

The Windows Store is designed to ensure the visibility and discoverability of apps. The Windows Store features minimal chrome, so apps are center stage. Discoverability mechanisms, like search, category browse, rankings, and editorial curating help users find your apps. Landing pages are designed to surface compelling apps, and categories like New releases, Top paid, Top free, and Rising stars help organize the catalog.

The Windows Store catalog is indexed by search engines, so apps are easy to find. Web search results point to a web version of the app listing page, which is based on the same content as the Store listing. Promoting apps from your website is easy. In fact, with just a line of markup, you can promote your app via the app button within the browser, visible to anyone running Internet Explorer 10 on Windows 8.

Selling in a global marketplace

The Windows Store supports the distribution of free and paid apps in hundreds of markets worldwide, so most customers can find and install the apps they want in the language of their choice. The Windows Store supports market-specific catalogs, tailored for customers in specific locales, as well as market-specific payment providers. You can choose the catalogs in which your app is listed.

Flexible business models

The Windows Store provides you with the freedom to choose the business model that's right for your apps. The Store provides full platform support for free apps, trials (both time-based and feature-based), and paid apps, as well as in-app purchases. You're free to manage customer transactions directly using your own or third-party services for in-app purchases and subscriptions, or use the services provided by the Windows Store. For apps that are supported by ads, you're free to choose the ad platform that best meets your goals.

Transparent terms and onboarding process

To help ensure predictability and eliminate uncertainty, app certification requirements are provided in plain language. The Windows App Certification Kit lets you test your apps for many issues prior to submission. If your app is rejected, you'll get useful feedback so you can address the issues quickly and resubmit your app for publication. And you'll know where your app is at every step of the certification process, from upload to final certification and acceptance, using the dashboard.

You can test your apps using The Windows App Certification Kit

Your personal app Dashboard

The Windows Dev Center provides a Dashboard that includes many ways to improve your apps by monitoring their success. View reports on downloads, revenue, aggregate usage, in-app transactions, customer ratings, market trends, and crash and hang data.

You can access reports and telemetry data that show failure-based and cause-centric data and that indicate how reliable your products are in the field, including how often they crash or hang. You can also compare how well your app is doing in terms of sales, downloads, and usage compared to other similar apps (no personal or company information is revealed). These new reports are consistent and actionable so you can find issues quickly and efficiently.
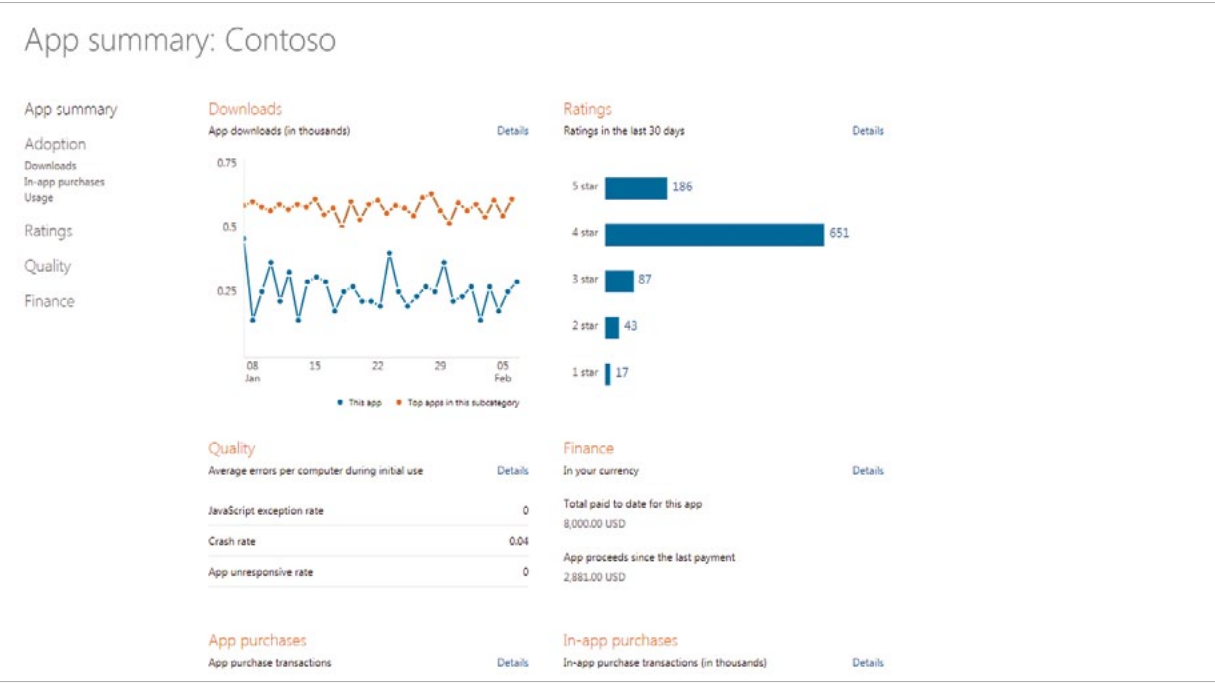
The Windows Store Dashboard includes all the tools you need to monitor your app's success

Best Economics

Windows 8 represents the single biggest platform opportunity available, and business terms of the Windows Store represent a developer-first point of view. The registration fee for individuals is $49 USD, with a $99 USD fee for companies. The revenue share is 70%, but when an app achieves $25,000 USD in revenue—aggregated across all sales in every market—that changes to 80% revenue share for the rest of the lifetime of the app.

With access to millions of potential customers around the world, development choices that let you use the skills you already have, rich platform capabilities for building Metro style apps, business terms that maximize your revenue opportunity, and flexible business models for the apps you create, Windows 8 and the Windows Store provide an unprecedented opportunity for you to imagine, build, and sell your apps.