

PRESS RELEASE



## OpenSilver 2.1 Introduces F# Support: Combining Functional Programming with XAML for a New Web App Development Paradigm

*The introduction of F# support in OpenSilver 2.1 marks a significant advancement in web application development. The combination of F#'s robust, expressive power with XAML's rich, interactive UI capabilities, opens new avenues for functional programming enthusiasts in web application realms.*

**PARIS, France, February 6, 2024** — Userware has announced the release of OpenSilver 2.1, now featuring F# support, a significant update that merges the robustness of functional programming with the declarative nature of XAML for web application development.

Developers are provided with an enhanced toolkit that mirrors the familiar development experience of XAML-based technologies like Silverlight and WPF, but with F# instead of C#. By allowing F# and XAML files to work in tandem, OpenSilver 2.1 allows functional programming enthusiasts to build rich and complex web applications more efficiently.

OpenSilver, positioned as the contemporary successor to Microsoft's Silverlight, is a modern, plugin-free, open-source framework designed to allow the creation of rich web applications using C# and XAML. The release of version 2.0 in October marked a significant milestone with the introduction of VB.NET support. The current update, version 2.1, now includes F# support, further expanding its range of supported languages.

Unlike Silverlight and WPF, applications developed with OpenSilver are fully compatible with all current browsers, including Chrome, Edge, Firefox, and Safari, and do not require any plugin to run. This compatibility represents a significant advancement, ensuring a wider reach and accessibility for XAML-based applications.

## F# Integration in OpenSilver 2.1

With this new update, developers can now include files such as “App.xaml” and “MainPage.xaml” along with their F# code-behind counterparts (“App.xaml.fs”, “MainPage.xaml.fs”) in a single project.

This integration allows them to harness the strengths of both XAML and F#: XAML is well-suited for defining user interfaces, its declarative nature and templating system aiding in the design of complex UIs. Additionally, the forthcoming GUI designer for OpenSilver is expected to further streamline this process.

Meanwhile, F# offers its own set of advantages, including immutable data structures, expressive and concise coding, and rich pattern matching. These features of F# help in creating cleaner, more maintainable code, and contribute to developing programs that are less prone to errors, enhancing the overall efficiency and robustness of web applications.

The integration of F# into OpenSilver is a paradigm shift beyond mere language addition. The functional coding approach, coupled with XAML's rich UI capabilities, can lead to faster development times, fewer bugs, and more readable code. For the .NET community, this represents an opportunity to explore new architectural patterns and potentially innovate in web application design.

## Getting Started with F# in OpenSilver

For developers keen to explore OpenSilver with F# support, the first step is to download the Visual Studio extension (VSIX) from [OpenSilver.net](https://opensilver.net). This extension adds new F# project templates to the "New Project" dialog of Visual Studio, mirroring the structure of blank apps found in Silverlight, WPF, WinUI, MAUI, and other XAML-based technologies. The key difference is that each XAML file is paired with an F# code-behind, like "MainPage.xaml.fs". Furthermore, compiling the application generates static web standards-based files. These files run on all modern browsers, on both desktop and mobile, and can be easily deployed to any web server, or packaged as standalone applications for distribution on app stores.

To assist developers in adapting to and utilizing the new F# support, Userware has expanded its "OpenSilver Showcase" to include F# versions of about 100 small samples. Originally demonstrating the use of C# and VB.NET with XAML, the Showcase now also showcases the practical application of F# in OpenSilver projects. Each sample – accessible at <https://opensilver.net/gallery/> – features an online demo along with a 'view source' option, providing direct access to the XAML and F# source code.

## Other New Features in OpenSilver 2.1

Besides F# support, OpenSilver 2.1 introduces several other enhancements. These include comprehensive coverage of the Silverlight Toolkit, which brings many additional UI controls to

OpenSilver, such as Rating, DomainUpDown, GlobalCalendar, and dozens more. The toolkit also enables advanced Drag & Drop capabilities and provides various ready-to-use themes, allowing for greater customization and visual appeal in applications.

To demonstrate these new features, Userware has migrated to OpenSilver the original comprehensive “Silverlight Toolkit Samples” application by Microsoft, now accessible at: <https://opensilver.net/gallery/>

Other standout features include the complete reimplementations of animations, now mirroring Silverlight's capabilities, and improvements in low-level components such as text display.

## Looking Ahead: What's Next for OpenSilver?

As OpenSilver evolves, the Userware team is actively developing a range of new features aimed at enhancing both the developer experience and application capabilities: near-term expected developments include introducing a WYSIWYG XAML designer with drag-and-drop functionality to simplify UI creation, enhanced WPF features support, and XAML Hot Reload for faster coding iterations. Additionally, integration with .NET MAUI is anticipated, promising the ability to deploy applications across iOS, Android, Mac, and more.

The team is also committed to enhancing the developer support ecosystem through new documentation and extended development support for macOS, VSCode, and Rider. Additionally, the nostalgic Silverlight PivotViewer control is making a comeback, and excitingly, support for the creation of 3D and Mixed Reality apps is being developed, promising a new realm of possibilities for web and app developers.

All these upcoming features are expected to be compatible with F# as well, ensuring a continued seamless experience for developers using this language.

## More information

More detailed information about OpenSilver 2.1 and its features can be found on the official blog announcement at: <https://opensilver.net/announcements/2-1/>

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