SPB .NET Meetup #4

Visual Studio 2015 Diagnostic and Debugging Tools

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About me

- Product Manager at Cezurity
- One of the core developers of the source code analyzer PT Application Inspector
- Former Team Lead at Acronis, Luxoft, Boeing

Performance and Diagnostics Hub

- PerfTips
- Memory Usage
- CPU Usage
- Application Timeline

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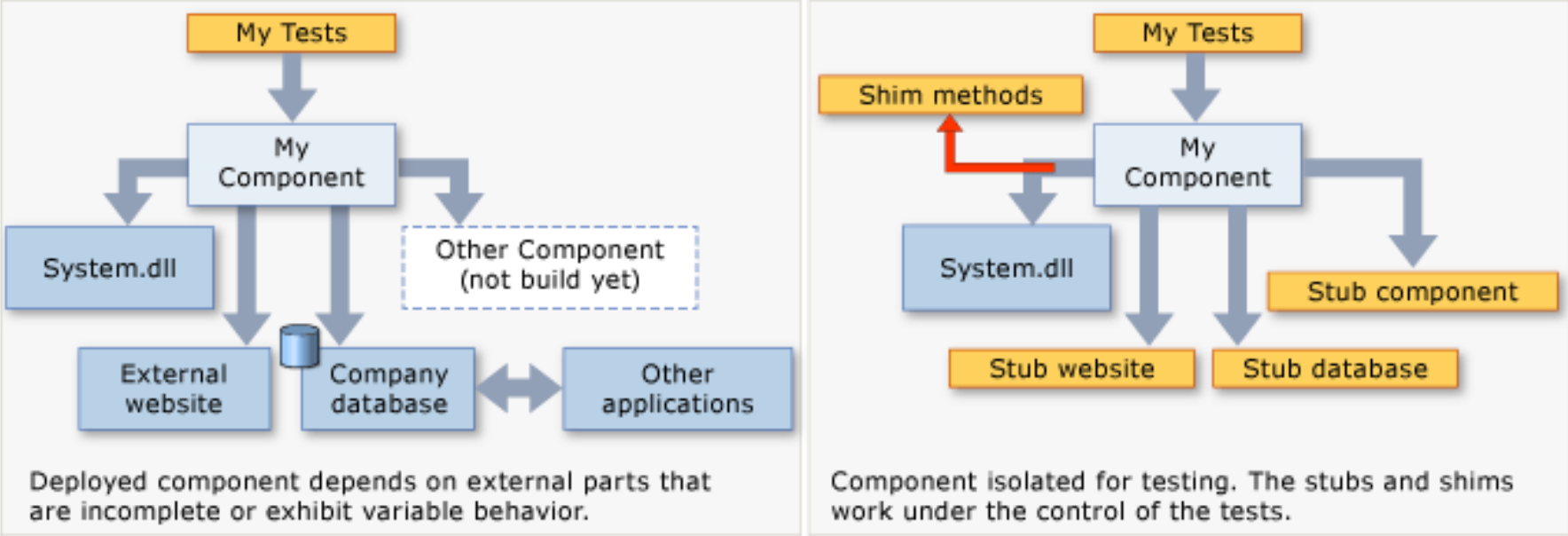
Unit Testing Tools

- Extensible Unit Test framework
- Unit Test Isolation *(Enterprise Edition only)*
- IntelliTest *(Enterprise Edition only)*

Unit Test Isolation

Microsoft Fakes, formerly Microsoft Research Moles project

Replace parts of the application with *stubs* or *shims*, based on Microsoft Research ExtendedReflection



IntelliTest

```
        }
        0 references
        public static TriangleKind ClassifyBySideLengths(int[] lengths)
        {
            //validate(lengths);

            int s1 = lengths
            int s2 = lengths
            int s3 = lengths

            if (((s1 + s2 <=
            {
                return Triang
            }
            else if ((s1 ==
            {
                return Triang
            }
            else if ((s1 ==
            {
```


IntelliTest Exploration Results - stopped

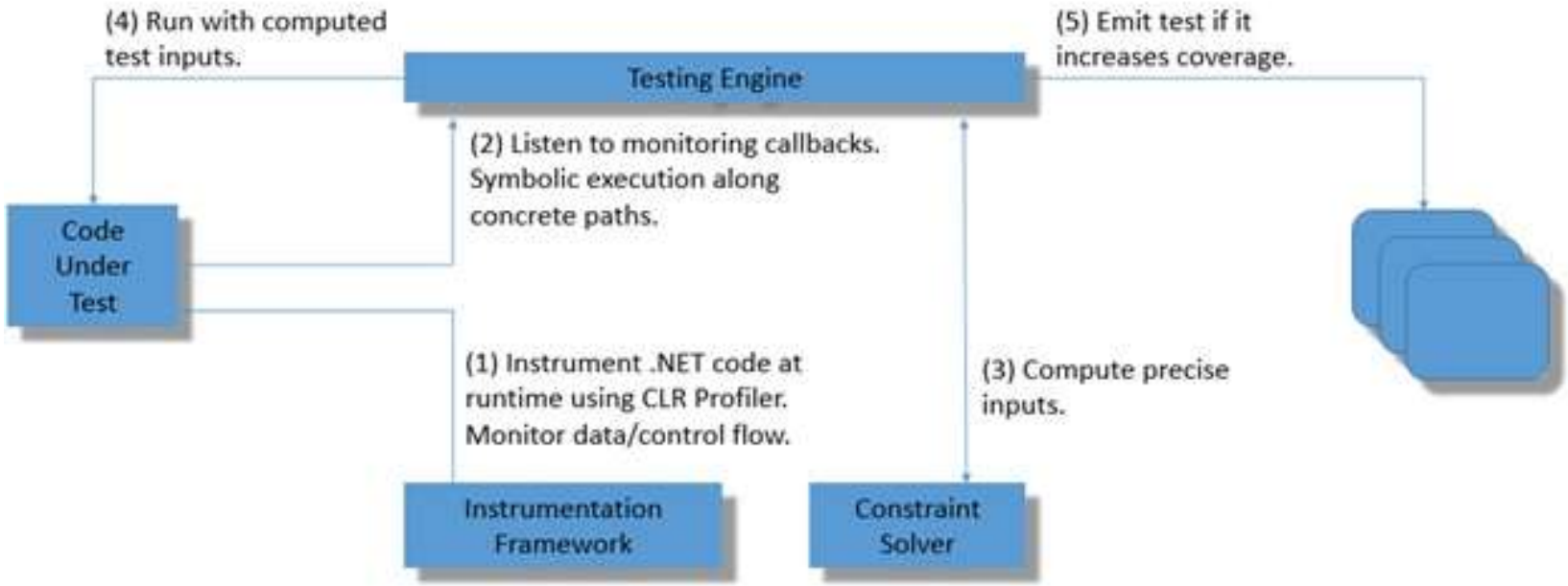
Triangle.ClassifyBySideLengths(int ▾ | Run

8 4 16/16 blocks, 0/0 asserts, 12 run

	lengths	result	Summary/Exception	Error M
1	null		NullReferenceException	Object
2	{}		IndexOutOfRangeException	Index v
3	{0}		IndexOutOfRangeException	Index v
4	{0, 0}		IndexOutOfRangeException	Index v
5	{0, 0, 0}	Invalid		
6	{5, 538, 0}	Invalid		
7	{67, 0, 0}	Invalid		
8	{422, 536, 6...	Scalene		
9	{528, 413, 5...	Isosceles		
10	{2, 2, 3}	Isosceles		
11	{1, 512, 512}	Isosceles		

IntelliTest

Formerly Microsoft Code Digger and Microsoft Research Pex project, based on Microsoft Research ExtendedReflection and Z3 solver

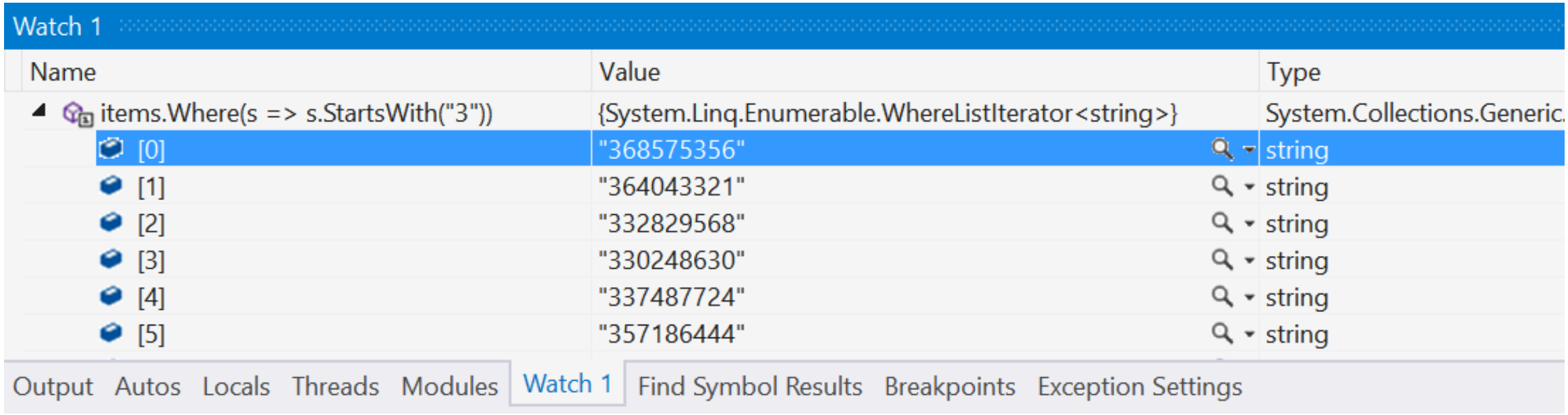


How test case generation works

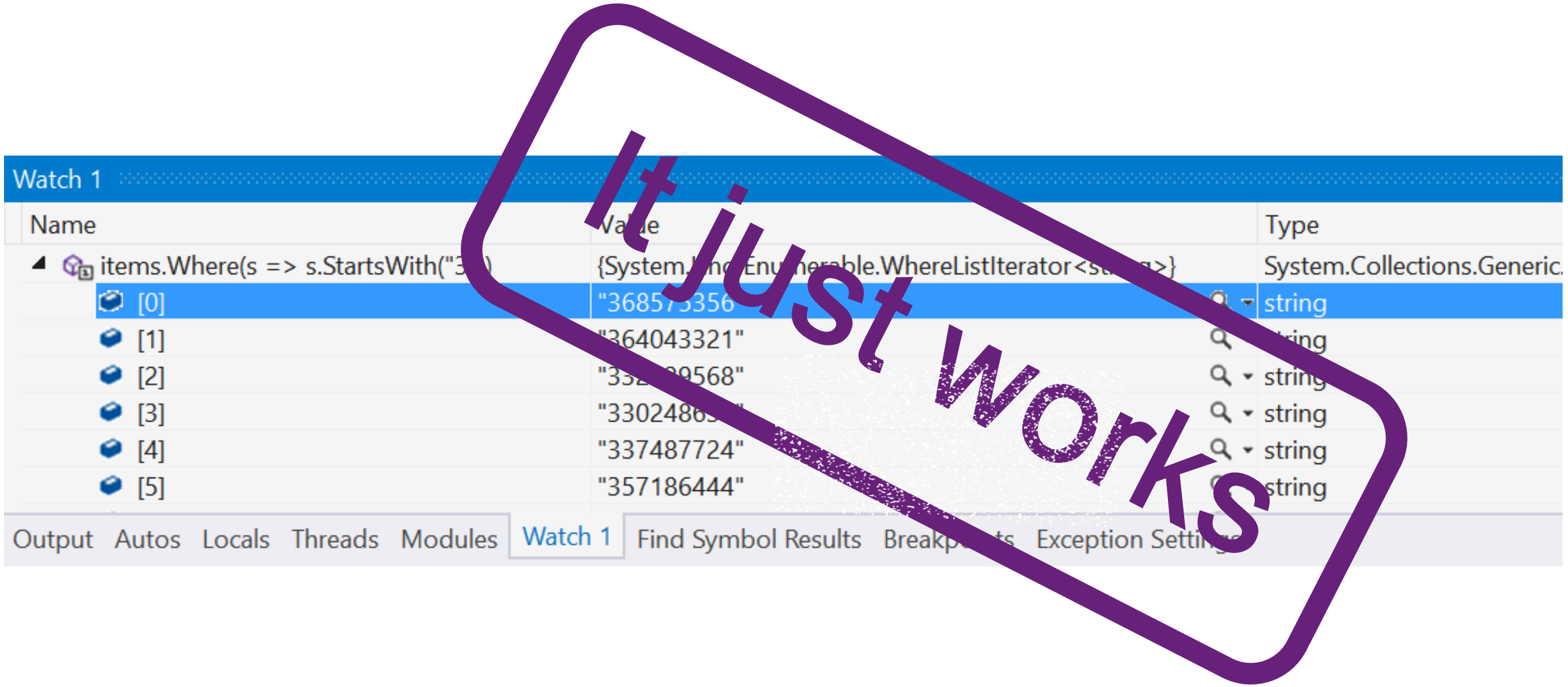
Debugging Tools

- Cross-platform Debugging Support
  - JavaScript / Cordova
  - C# / Xamarin
  - C++ / Android
  - Python
- Lambda Expressions in Watch Window
- New Breakpoint Configuration Experience
- New Exception Window

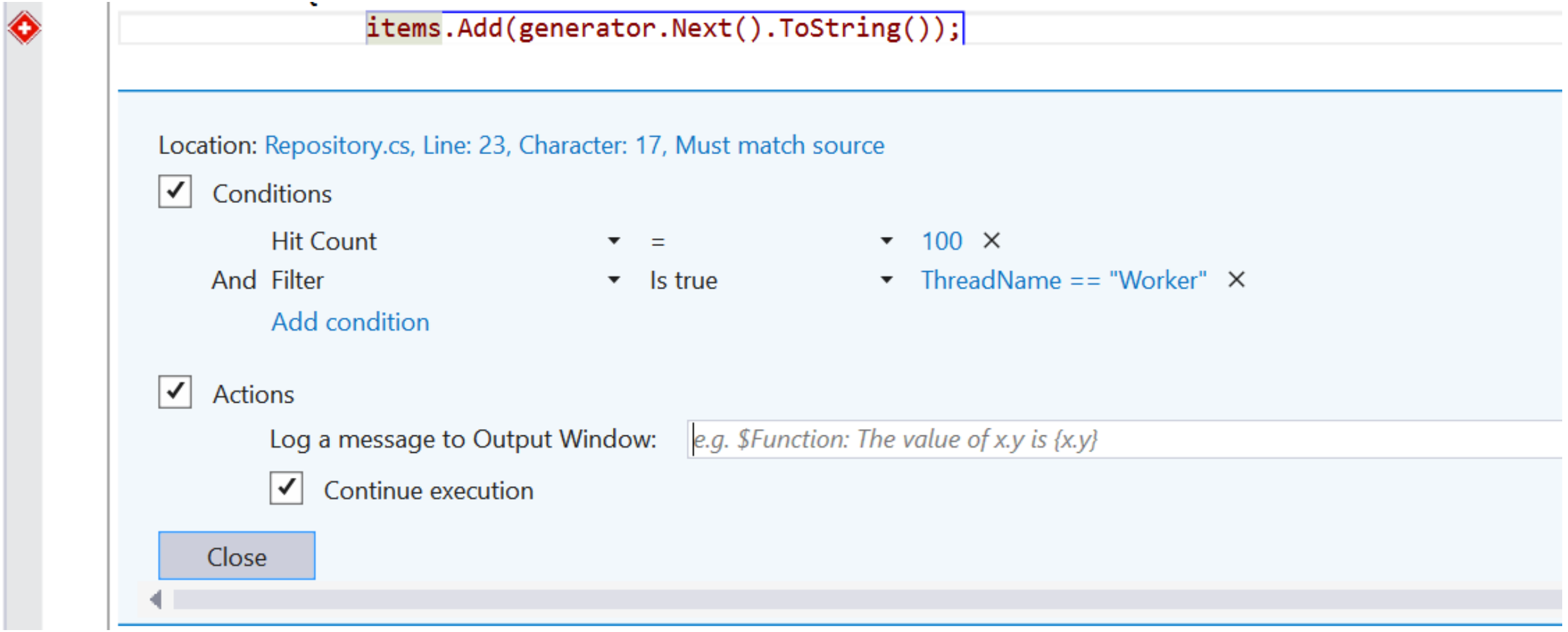
Lambda Expressions in Watch Window



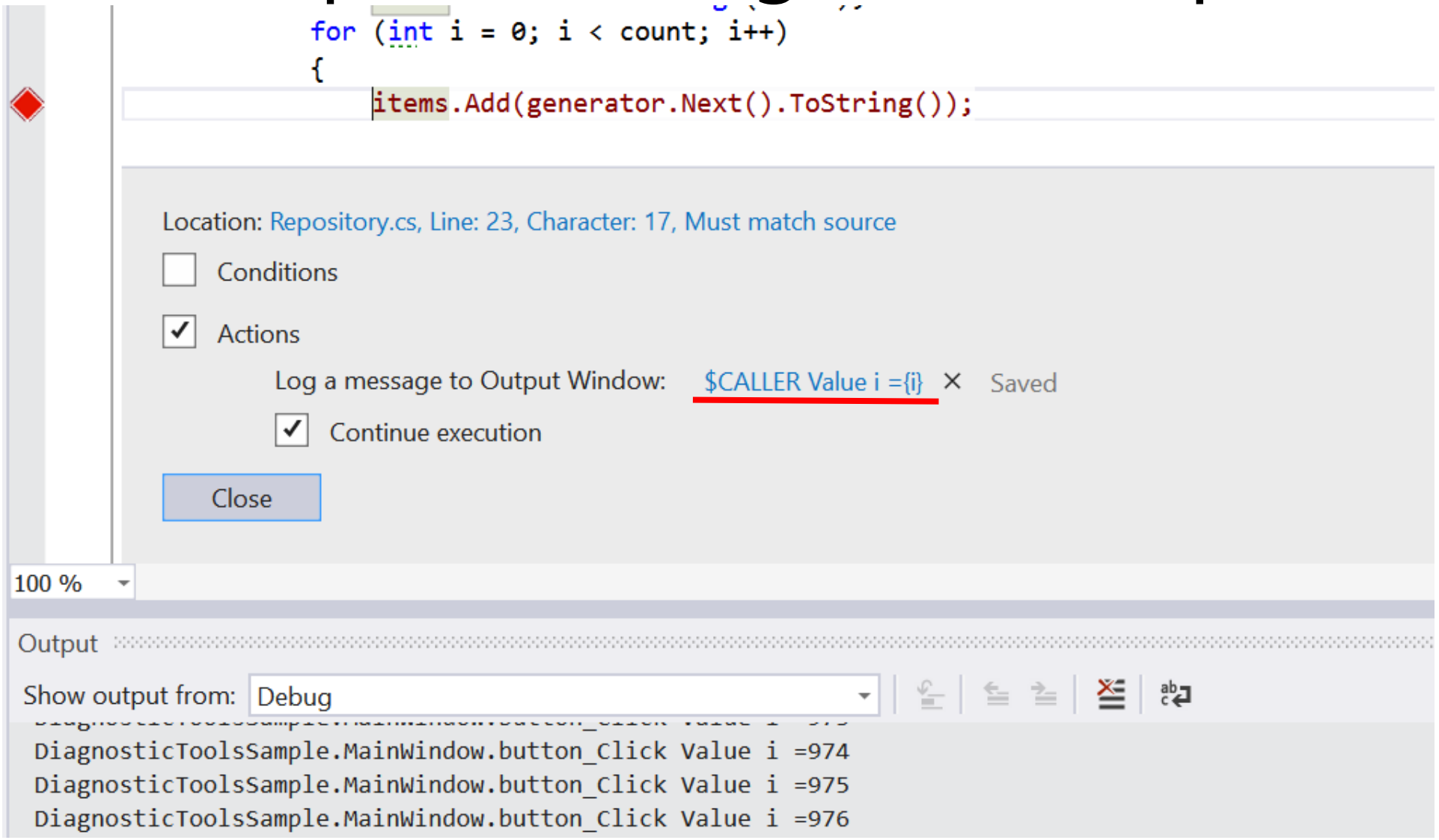
Lambda Expressions in Watch Window



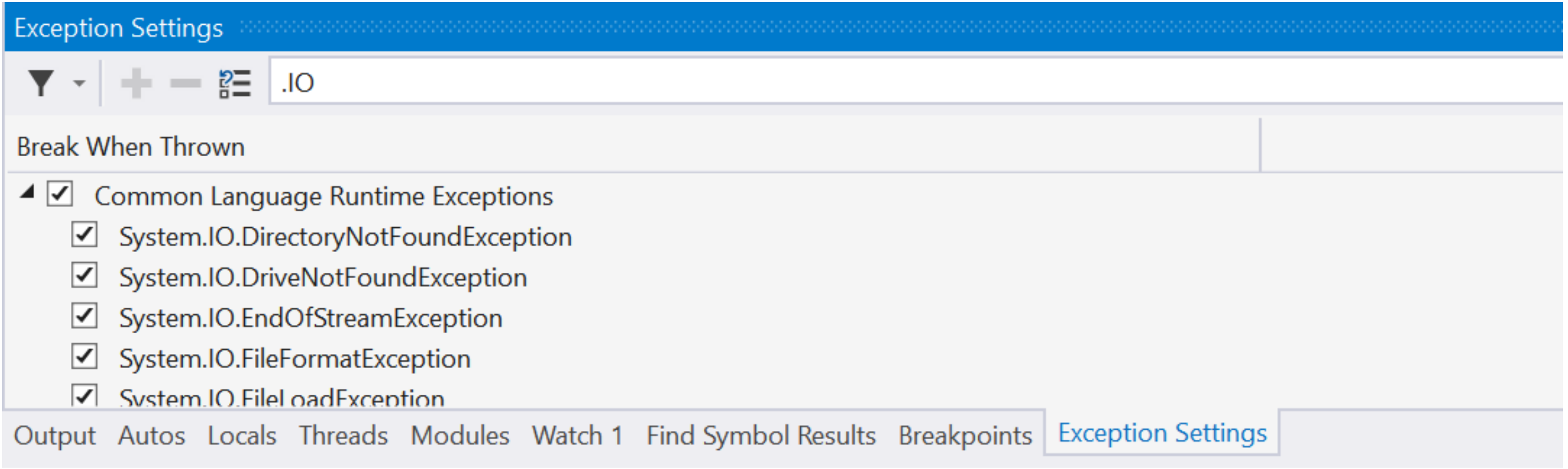
New Breakpoint Configuration Experience



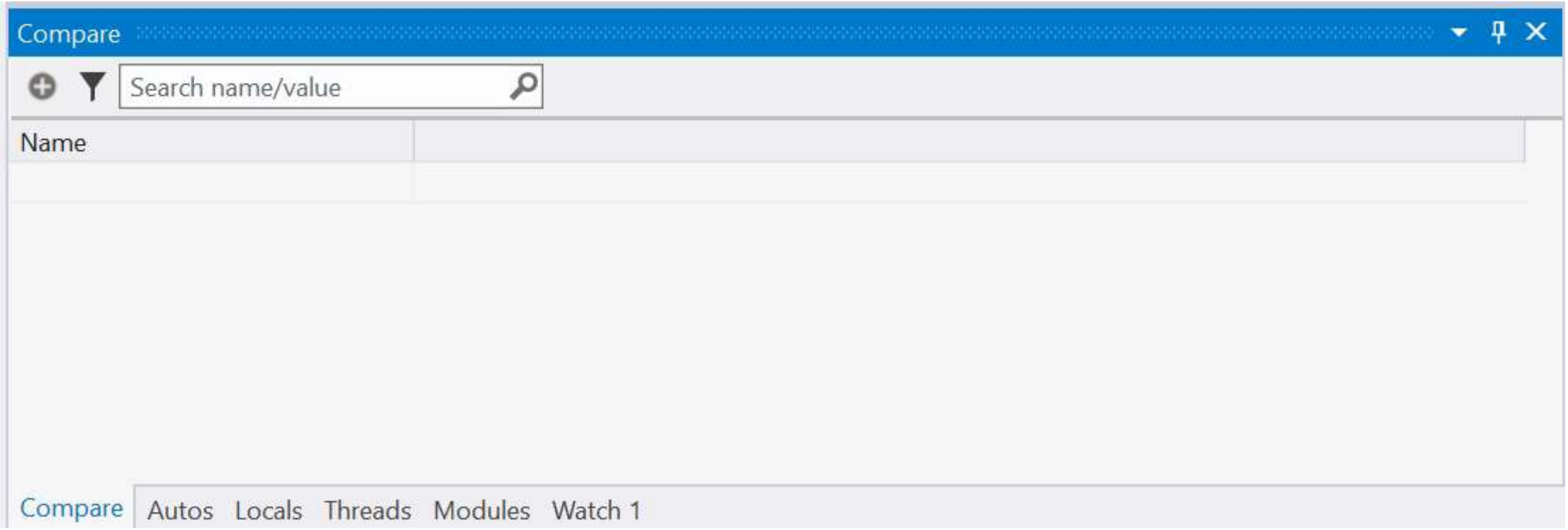
New Breakpoint Configuration Experience



New Exception Window



IntelliDebugger extension



Thank you for your attention!

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