

# Visual Studio 2010



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# Visual Studio 2010





Silverlight Tools

Multi-core Development

SharePoint Development

Cloud Development

Web Development

Windows Development

Generate from Usage

Office Development

New WPF Editor

Customizable IDE



Microsoft®  
**Visual Studio® 2010**  
Premium

UI Test Automation

Test Impact Analysis

Performance Profiling

Static Code Analysis

Code Coverage

Code Metrics

Database Change Mgmt

Database Deployment

Database Unit Testing

Test Data Generation

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Microsoft®  
**Visual Studio® 2010**  
Professional



Microsoft®

**Visual Studio®** 2010  
Ultimate

IntelliTrace™

UML Modeling

Architecture Explorer

Logical Class Designer

Load Testing

*Test Manager 2010*

Test Case Management

Manual Testing

**Fast Forward for Manual Testing**

Layer Diagram

Web Testing

UI Test Automation

Performance Profiling

Code Coverage

Database Change Mgmt

Database Unit Testing

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Microsoft®

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Premium



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**Visual Studio®** 2010  
Professional



Microsoft®

# Visual Studio® Test Professional 2010

*Test Manager 2010*

Test Case Management

Manual Testing

Team Explorer

Fast Forward for Manual Testing

Lab Mgmt Config.

Team Agents



Microsoft®

# Visual Studio® Lab Management 2010

Virtual Env. Setup/Tear Down

Environment from Template

Checkpoint Environment



Microsoft®

# Visual Studio® Team Foundation Server 2010

Version Control

Gated Check-in

Reporting

Build Automation

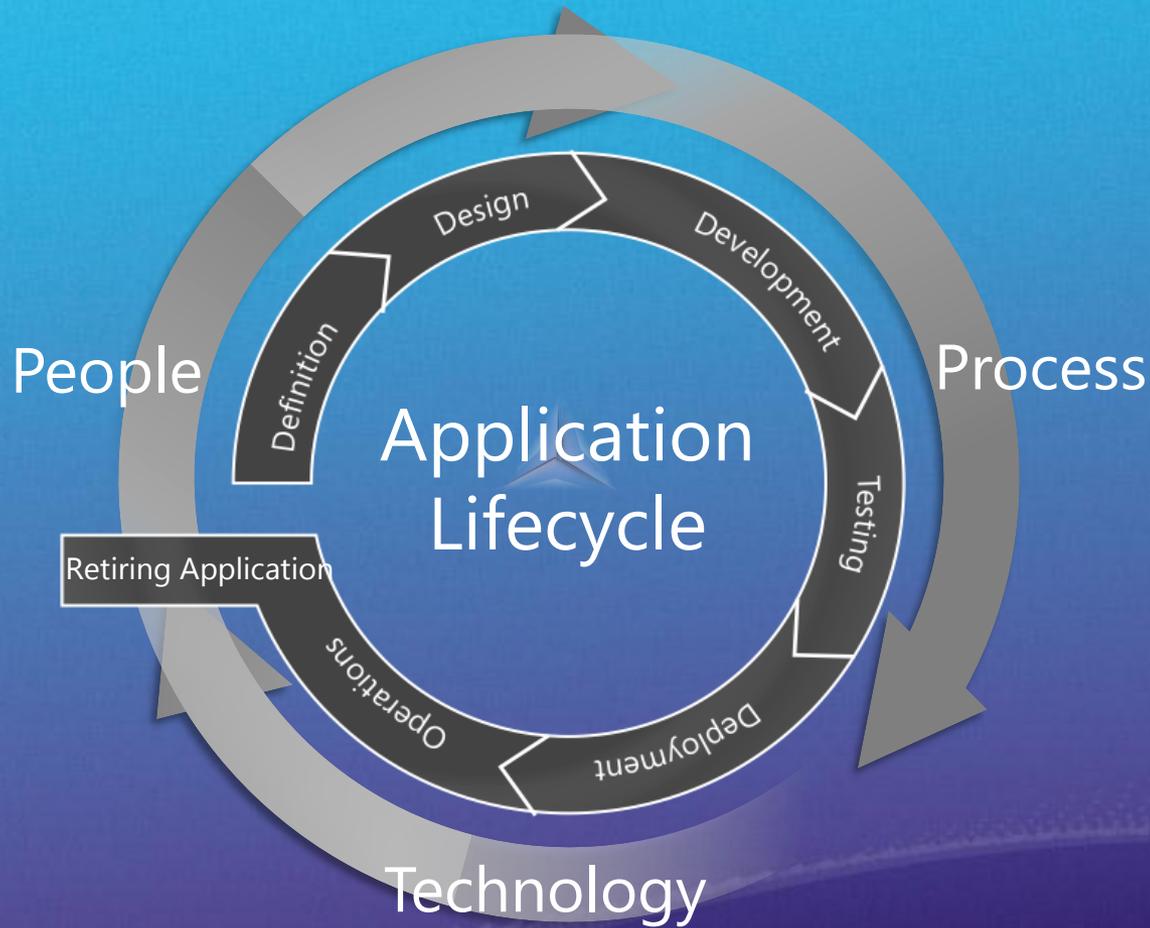
Branch Visualization

Test Case Management

Agile Planning Tools

Team Portal

# Holistic Approach to ALM



# Holistic Approach to ALM



People

- Productivity
- Accountability
- Project Management
- Process Management

Process



- Governance
- Operations
- Maintenance

Retiring Application

Application Lifecycle

Technology

- Flexible
- Scalable
- Interoperable
- Secure
- Manageable

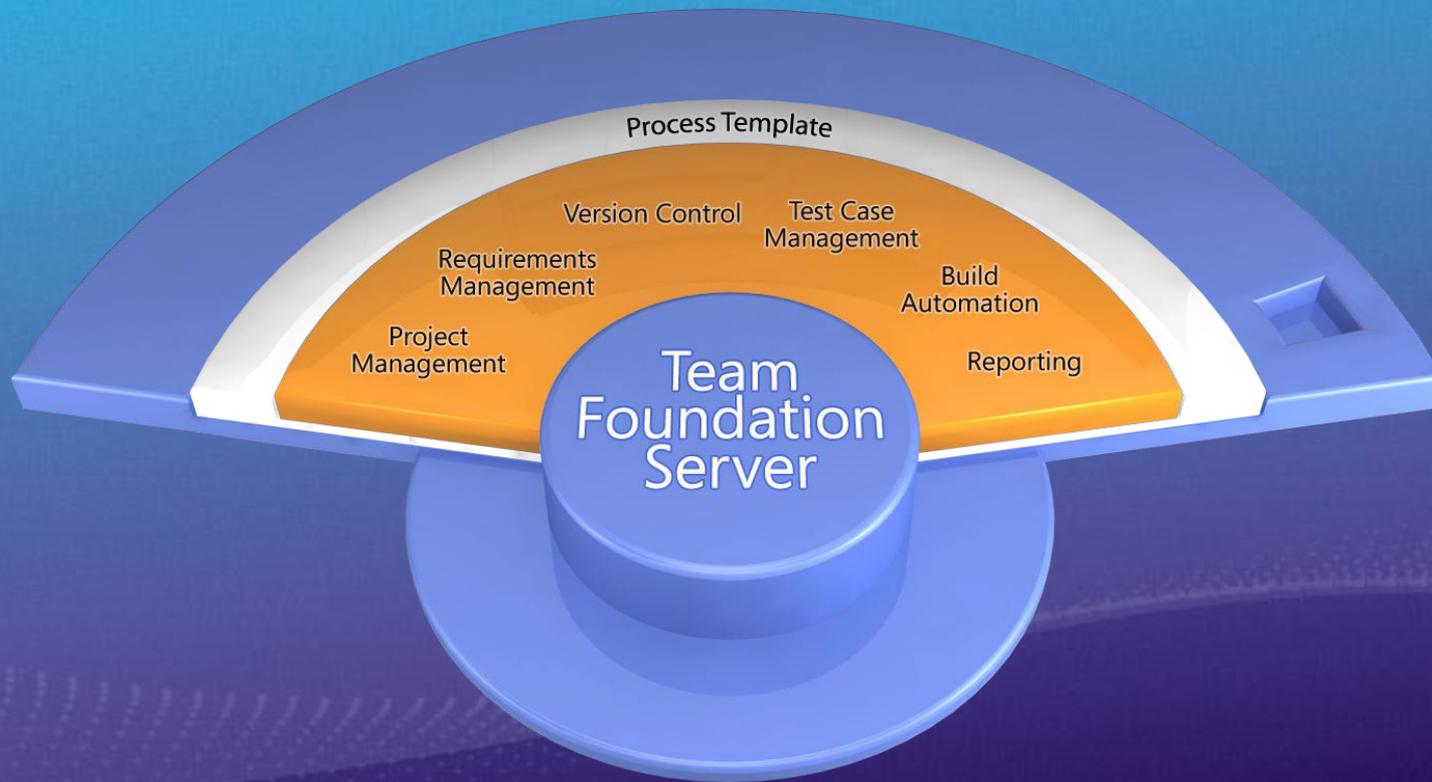


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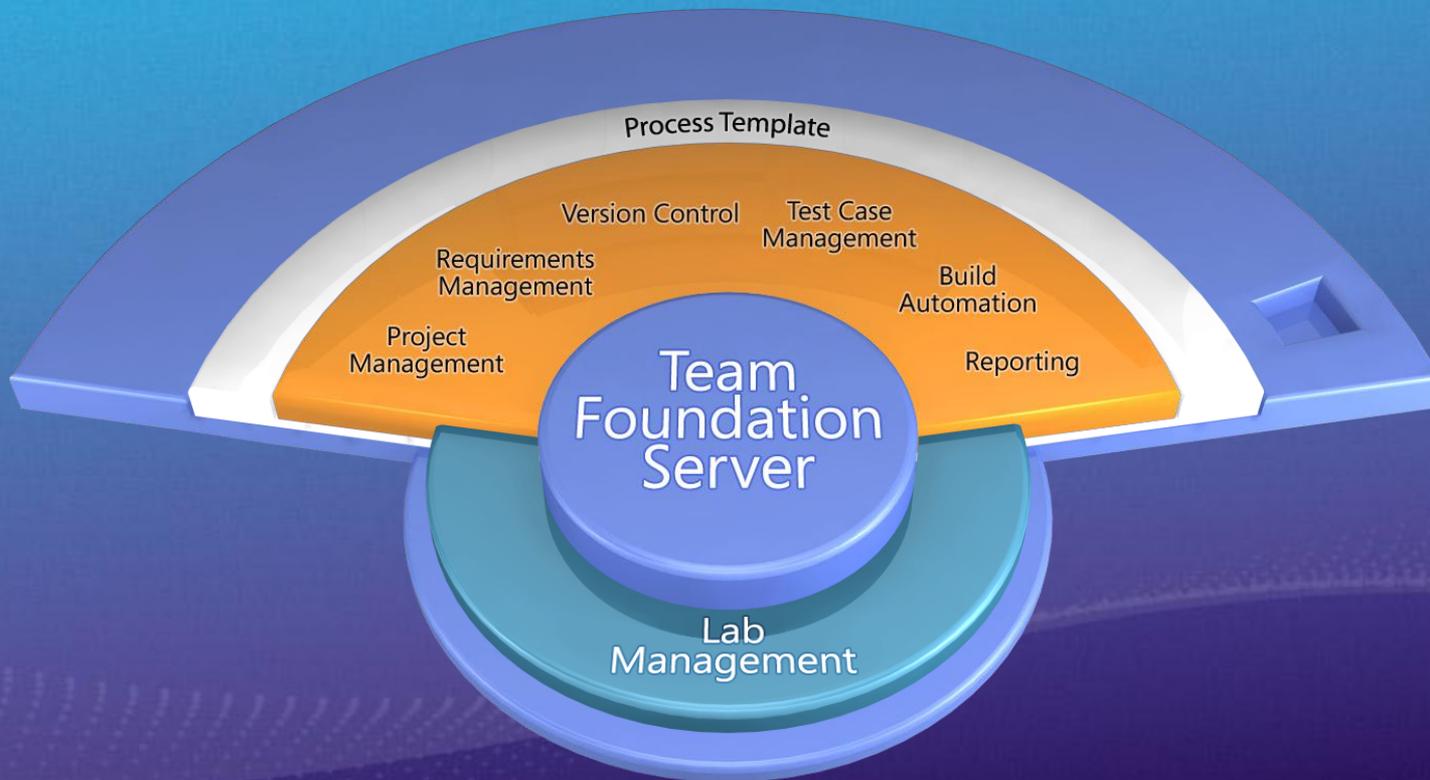
# Visual Studio 2010



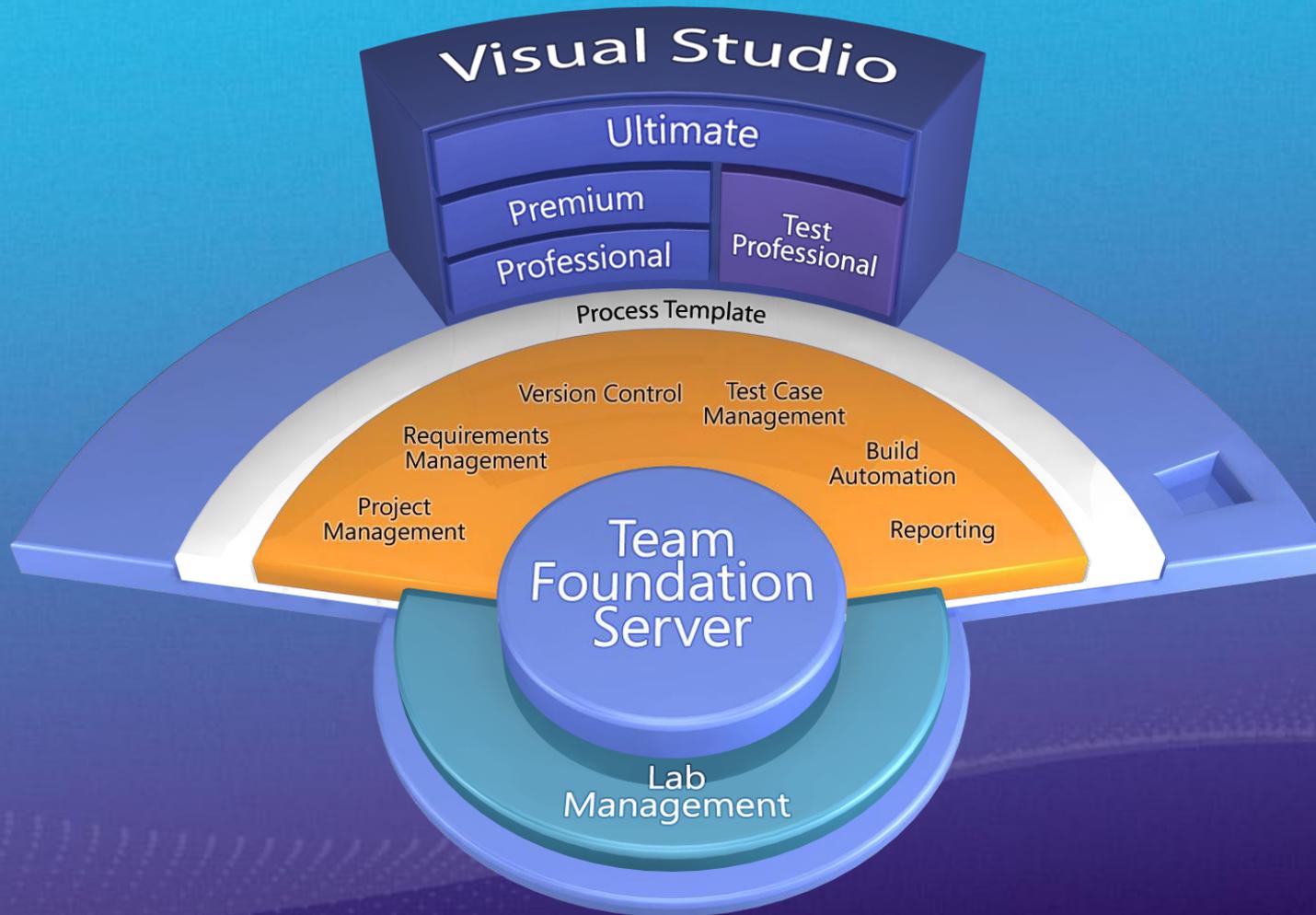
# Visual Studio 2010



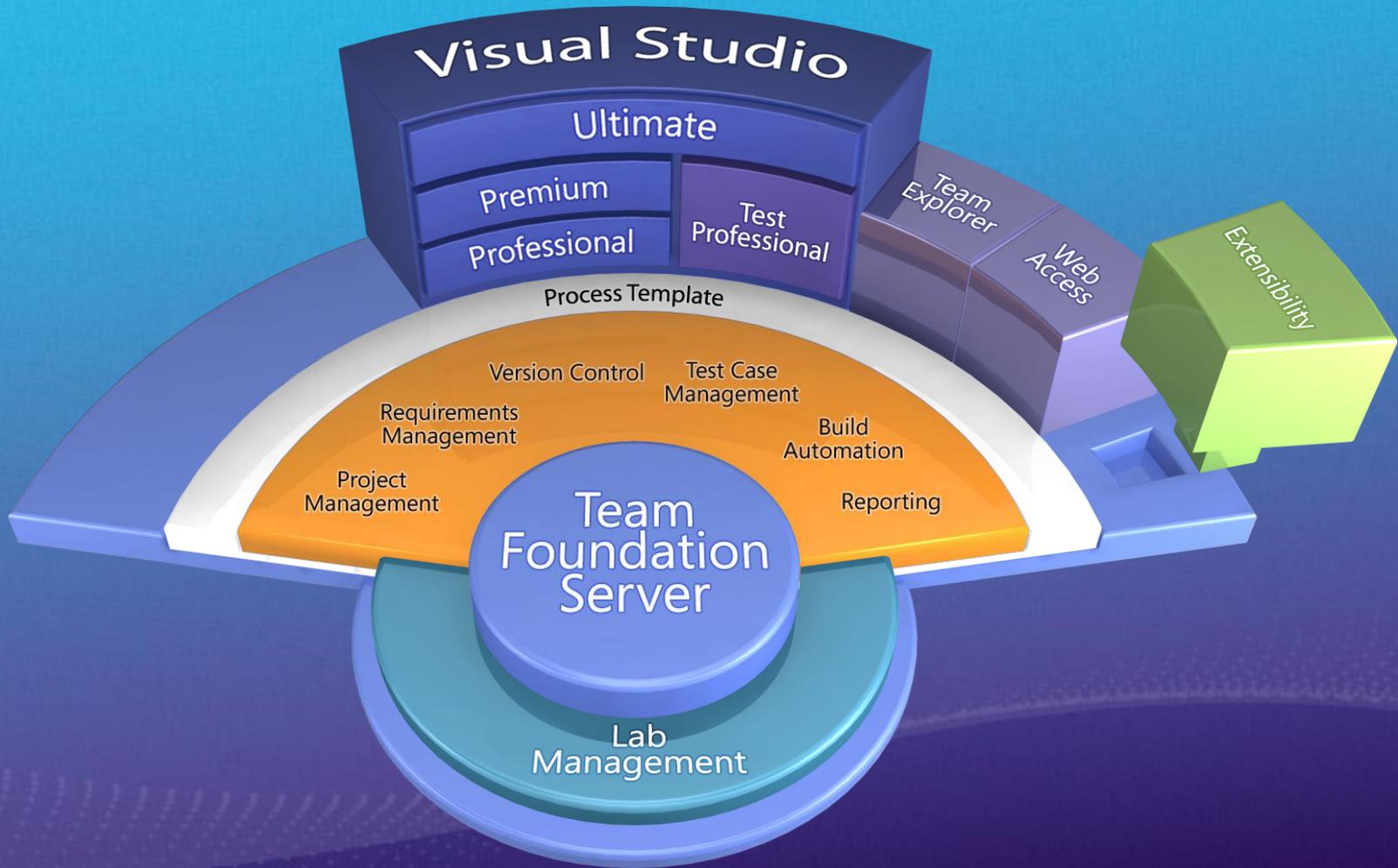
# Visual Studio 2010



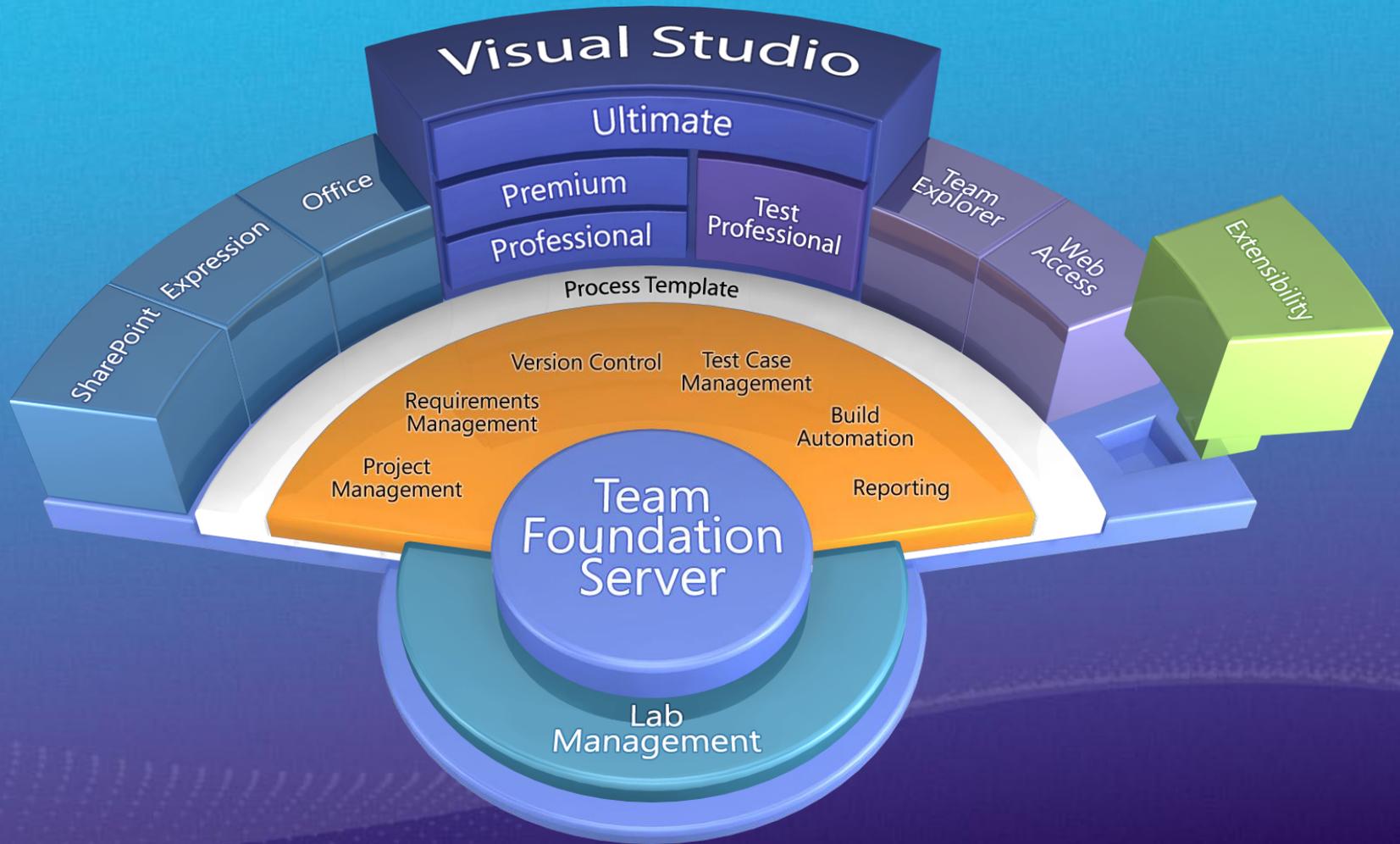
# Visual Studio 2010



# Visual Studio 2010



# Visual Studio 2010

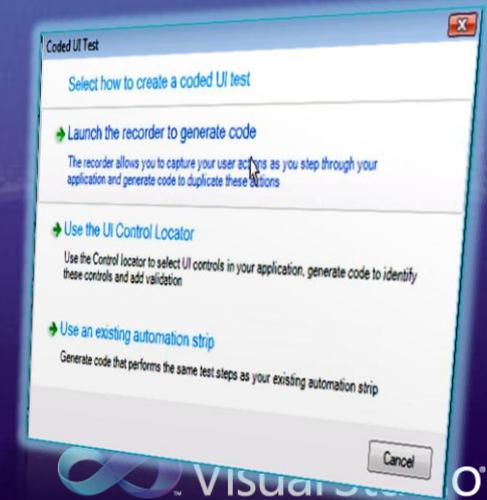
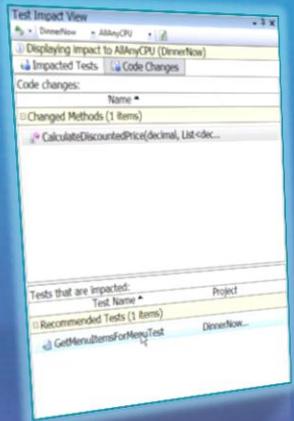
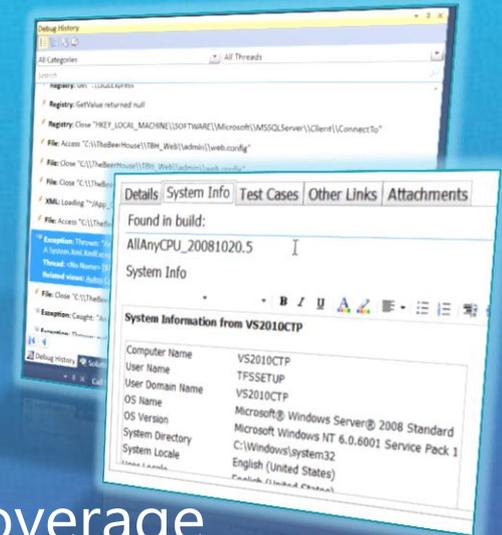


# Spend Less time Debugging

- IntelliTrace™
  - *Make "No-Repro" History with Actionable Bugs*

- Test Impact Analysis and Code Coverage
  - *Run the Right Tests and only the Right Tests*
  - *And know you have really tested you code*

- Coded UI Tests
  - *Automated regression tests let you find bugs earlier*



# Testing Done Right

- Test Manager 2010
  - *Manual Testing for the 21st century*
  - *Plan, Manage and Execute tests from one place*



- Virtual Test Environments
  - *Reduce the overhead of maintaining physical test environments*
  - *Share Virtual environments between team members*

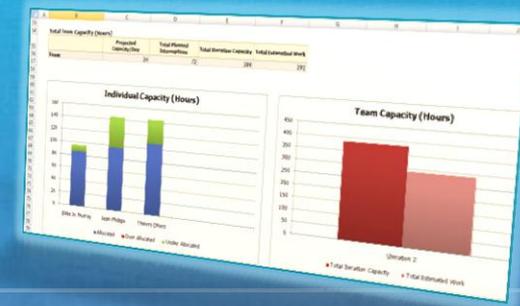


- Web and Load Testing
  - *Know your code is ready for the big time*
  - *Measure performance under real time load conditions and ensure that your applications are ready for release*



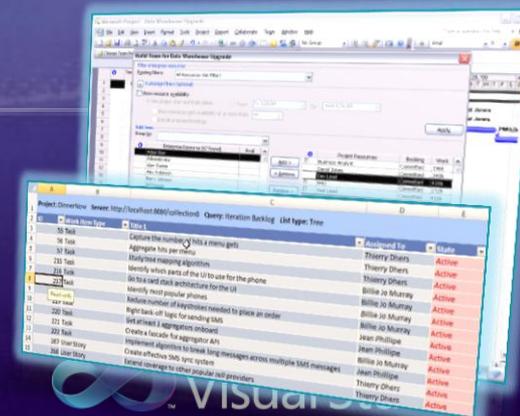
# Proactive Project Management

- Optimized for Iterative Development
  - *Ensure productivity and react to potential risks before they happen*



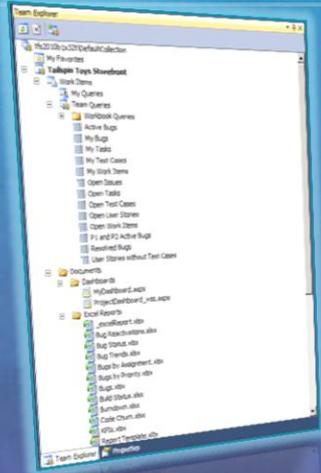
- Understand Project Health
  - *Detailed reports let you understand what is "Really" going on with the project*

- Manage Projects Your Way
  - *Use Microsoft Project or Excel based agile planning documents to keep control of your projects*

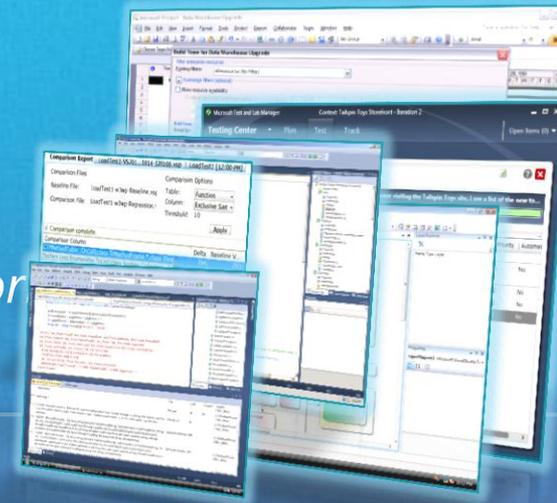


# Enhance Team Collaboration

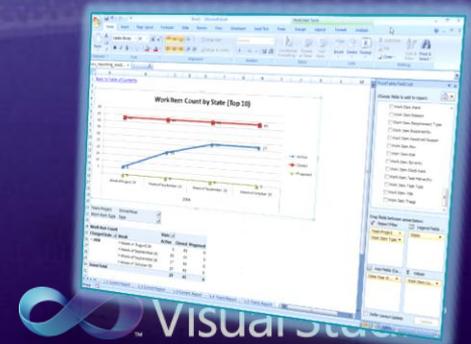
- Integrated Tools Ensure Team Consistency
  - *Drive consistent results as all team members work with an integrated set of tools*



- The Collaboration Hub
  - *Team Foundation Server provides the single collaboration source for all assets associated with a project*



- Complete Transparency
  - *All members of the team have visibility into how the project is progressing*





# Integrated Development

- Quickly resolve issues across the lifecycle *Integrated development tools and a shared repository let data flow seamlessly from action to action, helping you address business needs or resolve technical issues*



- Develop for today's modern platforms
  - Support for Windows 7, SharePoint, Cloud development and more out of the box



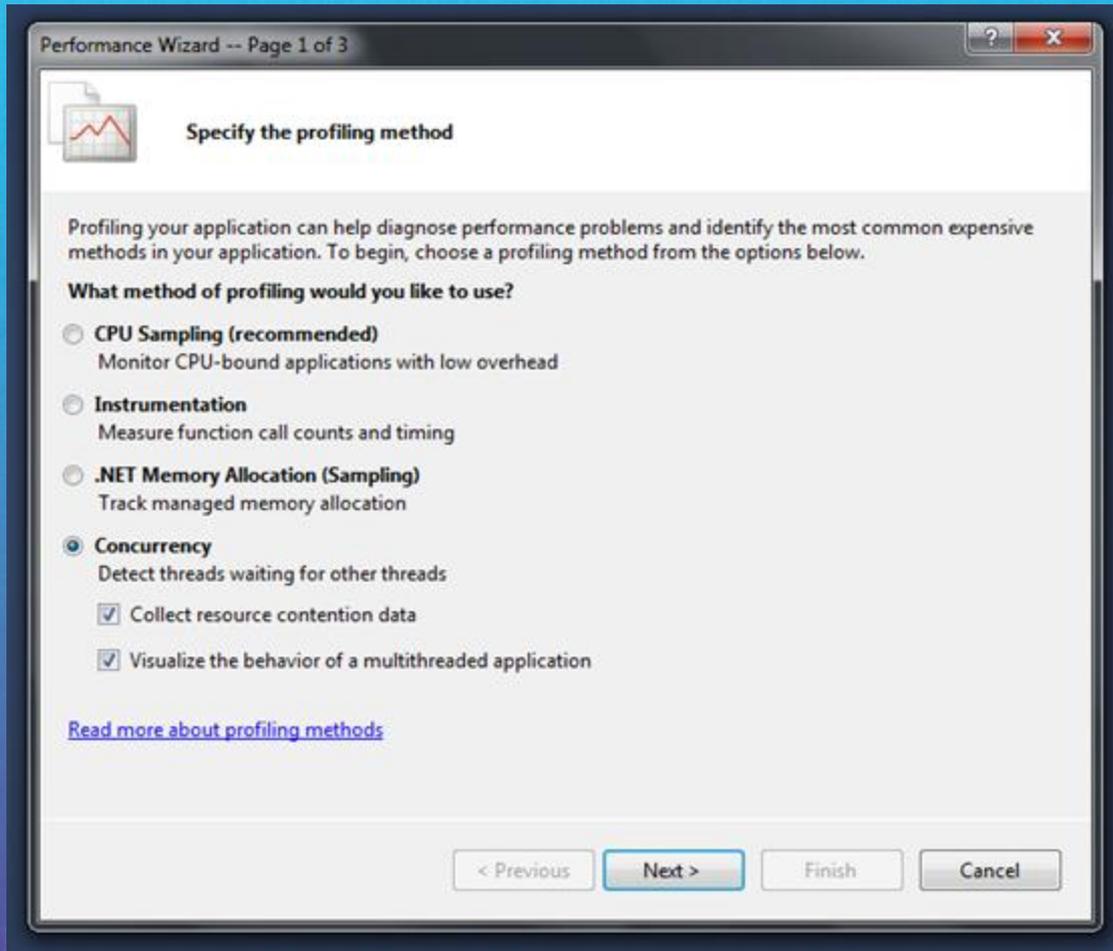
- Deployment Excellence
  - Use detailed information from across your team to know you are ready to ship
  - MS Build, Click Once and Cloud deployment options get solutions to customers efficiently



# Performance Profiling

- Understand how an application uses memory and where it spends its time.
- Optimize intelligently.

# Performance Profiling



ation uses  
ds its time.

# Performance Profiling

Performance Wizard -- Page 1 of 3

mandelbrot-wincounter2.vsp

Current View: Summary

### Sample Profiling Report

3,307 total samples collected

— CPU % (Usage)

- Filter by selection
- Zoom by selection
- Zoom reset
- Zoom out

#### Hot Path

The most expensive call path based on sample counts

Function Name	Inclusive Samples %	Exclusive Samples %
mandelbrot.exe	100.00	0.00
mandelbrot.MainForm.UpdateMandelbrotWorker(object)	99.40	0.00
mandelbrot.MainForm.GetMandelbrotImage(native int)	99.33	0.00
mandelbrot.MandelbrotV1.Draw(class System.Drawing.Bitmap, valueType S...	99.30	76.75

Related Views: Call Tree Functions

#### Functions Doing Most Individual Work

Notifications

- Show All Code

Report

- Show Trimmed Call Tree
- Show Hot Lines
- Compare Reports...
- Export Report Data...
- Save Analyzed Report...
- Filter Report Data
- Toggle Full Screen

Read more about...

# Performance Profiling

Performance Wizard -- Page 1 of 3

mandelbrot-wincounter2.vsp

Current View: Summary

### Sample Profiling Report

3,307 total samples

Profiling your methods in y

What method

- CPU Sam
- Instrume
- .NET Mem
- Concurr

Hot Path

The most expensive

Function Name

- mandelbrot.exe
- Mandelbrot
- Mandelbrot
- Mandelbrot

Related Views: Ca

Functions Doi

Mandel091022(2).vsp

Current View: Function Details

### Mandel.Form1.DrawMandel()

Inclusive Samples %: 98.1%

Cost Distribution

The cost distribution for the function and functions it calls is shown below.

Performance metric:

Calling Functions	Form1.DrawMandel()	Total	
Top of Stack	Function Body		98.1%
	System.Drawing.Bitmap.SetPixel(int32,int32...		50.4%

Function Code View

C:\Users\chrisss\Documents\Visual Studio 2010\Projects\MandelForm1.cs

```
0.6 %          x1 = temp;
0.6 %          double percentFactor = depth / (100.0);
5.0 %          color = ((int)(percentFactor * 255));
1.1 %          }
29.6 %         while (depth < 100 && Math.Sqrt((x1 * x1) + (y1 * y1)) < 2);
50.8 %         bitmap.SetPixel(column, row, colors[color]);
100 %
```

# Performance Profiling

The screenshot displays the Performance Wizard interface in Visual Studio, showing several overlapping windows:

- Performance Wizard -- Page 1 of 3**: The main wizard window with a sidebar on the left containing options like "CPU Sample Monitor", "Instrument Measure", ".NET Memory Track", and "Concurrent Detect".
- mandelbrot-wincounter2.vsp**: A window titled "Sample Profiling Report" showing "3,307 total samples" and a line graph of CPU usage over time.
- Mandel091022(2).vsp**: A window titled "Function Details" for "Mandel.Form1.DrawMandel()", showing "Inclusive Samples" and "Cost Distribution".
- contention-managed.vsp**: A window titled "Thread Contention Details" for "Thread 2 [6016]", showing a Gantt chart of "Wall Clock Time (Seconds)" with a red vertical line at approximately 1.948 seconds. The chart shows contention for "Total" and "Handle 1" resources.
- Contention Call Stack**: A table below the Gantt chart showing the call stack for the contention event:

Function Name
[clr.dll]
ConsoleApplication3.Program.Acquire()

# Performance Profiling

The image displays the Visual Studio Performance Wizard interface, showing several overlapping windows and reports. The main window is titled "Performance Wizard -- Page 1 of 3".

**Sample Profiling Report**  
3,307 total samples

**Hot Path**  
The most expensive function in the profile.

Function Name	Percentage
mandelbrot.exe	0.6 %
Mandelbrot	0.6 %
Mandelbrot	5.0 %
Mandelbrot	1.1 %
Mandelbrot	29.6 %
Mandelbrot	50.8 %

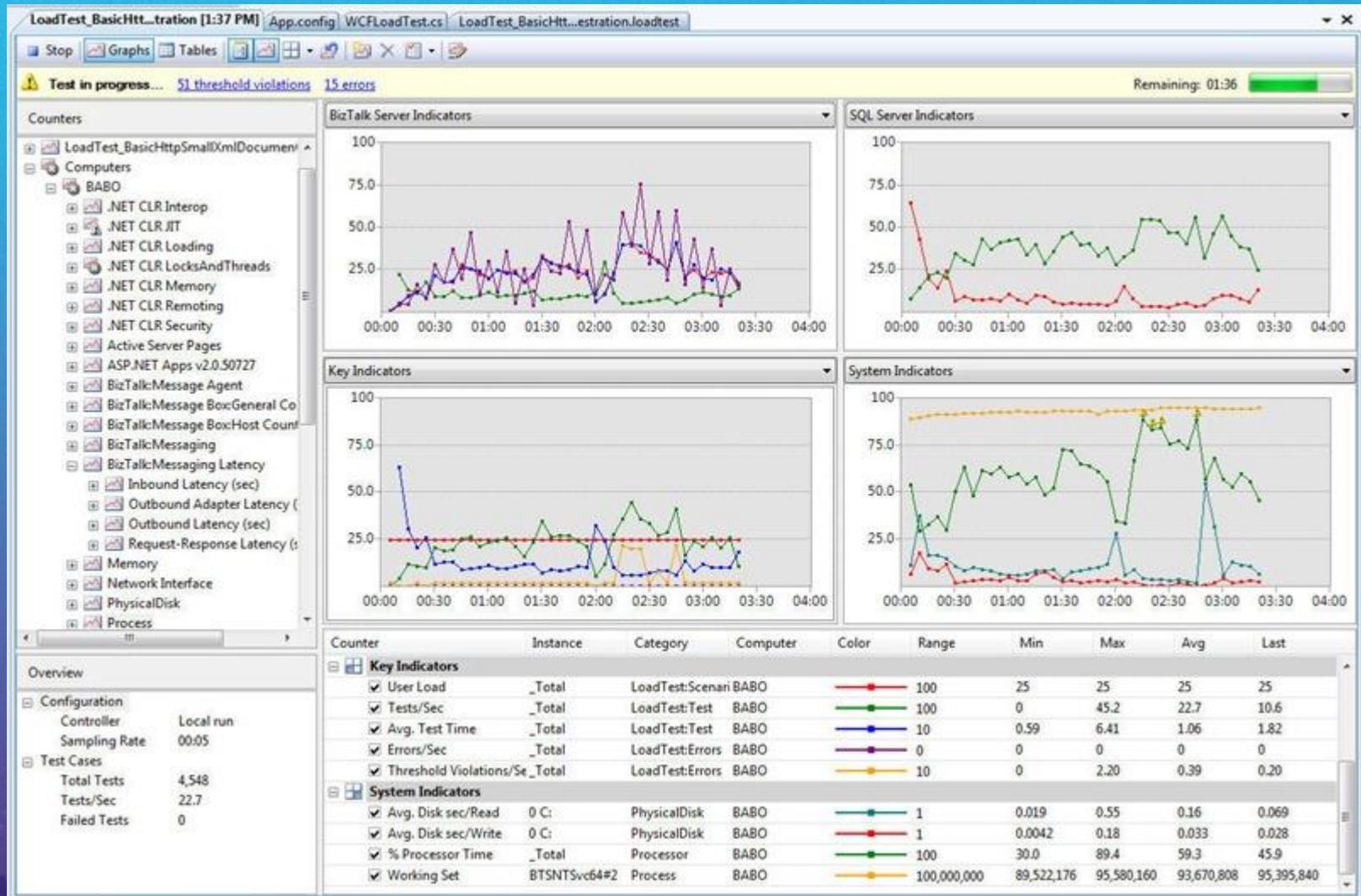
**Contentions of thread "Thread 2 [6016]"**

Name	Database	Count	Total Elapsed Time	Min Elapsed Time	Max Elapsed Time	Avg Elapsed Time
/		3,166 Requests	3,577,168.78	57.42	33,946.33	1,129.87
/Cart/Show		3,630 Requests	1,909,115.06	29.04	30,113.77	525.93
/home/show		2,007 Requests	1,435,889.77	33.35	27,013.11	715.44
/Cart/AddItem		1,973 Requests	1,131,755.52	27.11	26,466.16	573.62
Database Connections						
arobins27/test	TailspinToys	23,671 Queries	306,469.65			
/Cart/RemoveItem		1,110 Requests	429,356.30	21.32	15,688.01	386.81
/scripts/jquery.contextMenu.css		2,691 Requests	97,959.20	0.92	2,667.42	36.40
/Views/Themes/Blue/site.css		2,393 Requests	96,836.51	1.87	2,416.90	40.47
/scripts/jquery-1.3.1.js		3,241 Requests	88,296.66	0.92	2,371.53	27.24
/scripts/jquery-ui-1.6.js		3,713 Requests	83,983.38	0.86	2,369.80	22.62
/Content/ProductImages/Fabrik		210 Requests	3,963.00	0.79	2,365.42	18.87
/Content/ProductImages/North		189 Requests	3,873.90	0.81	2,365.09	20.50
/Content/Images/LiftingBodies.j		93 Requests	3,362.63	1.12	436.59	36.16
/Views/Themes/Blue/images/loj		190 Requests	3,160.30	0.95	455.89	16.63
/Views/Themes/Blue/images/lcc		202 Requests	2,932.28	0.70	453.79	14.52

**Database connection details:**

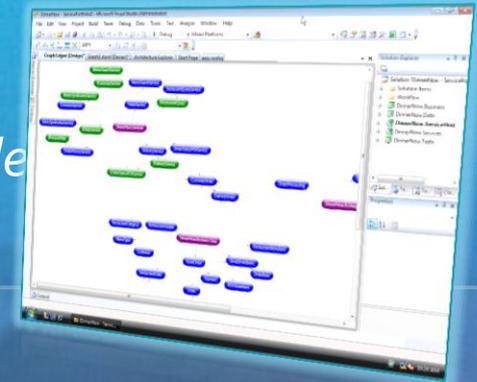
Command Text	Query Calls	Total Elapsed Time	Min Elapsed Time	Max Elapsed Time	Avg Elapsed Time
DELETE FROM ObjectStore WHERE ObjectKey= @key AND searchString= @search	1,917	118,293.41	1.41	4,625.66	61.71
IF NOT EXISTS(SELECT ID FROM ObjectStore WHERE ObjectKey= @Key AND Sex	1,915	74,950.14	2.35	4,718.28	39.14
SELECT [dbo].[Orders].[OrderID]FROM [dbo].[Orders] WHERE UserName = @p	3,827	65,761.67	1.41	13,573.86	17.18
INSERT INTO [dbo].[OrderItems](SKU,OrderID,Quantity,DateAdded,Discount,Dis	6,466	34,705.18	1.04	4,315.60	5.37
SELECT [dbo].[Customers].[UserName]FROM [dbo].[Customers] WHERE UserNe	1,915	28,882.95	1.05	3,513.95	15.08
SELECT [dbo].[Products],[SKU],[dbo].[Products].[DeliveryMethodID],[dbo].[Proc	1,914	27,160.68	2.74	2,399.48	14.19
SELECT [dbo].[Customers].[UserName],[dbo].[Customers].[LanguageCode],[db	1,915	23,987.15	2.27	879.91	12.53
UPDATE [dbo].[Orders] SET ShippingService= @p0,ShippingAmount= @p1,TaxA	1,901	13,874.46	1.14	1,043.52	7.30
DELETE FROM [dbo].[OrderItems]WHERE OrderID = @p0	1,901	8,854.01	0.88	455.75	4.66

# Load Testing

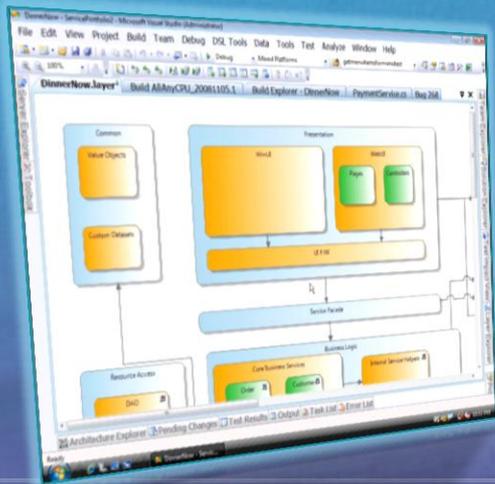


# Architecture as a Living Asset

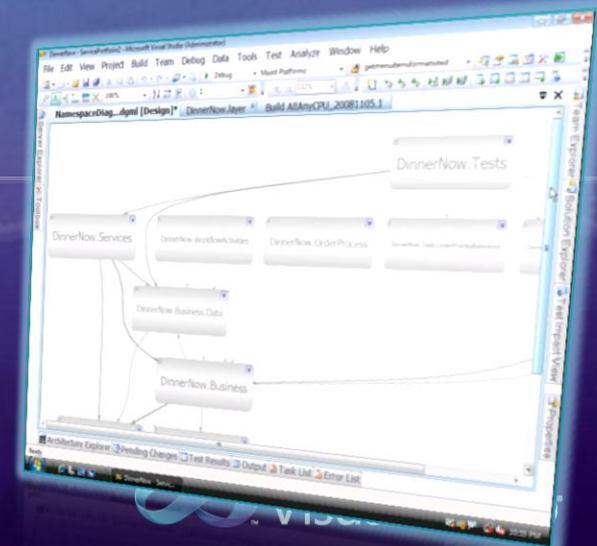
- Modeling that works with Code
  - *Seamlessly move between models and code and develop application using standard UML Diagrams*



- Architectural Validation
  - *Ensure Code Matches the Intended Design*



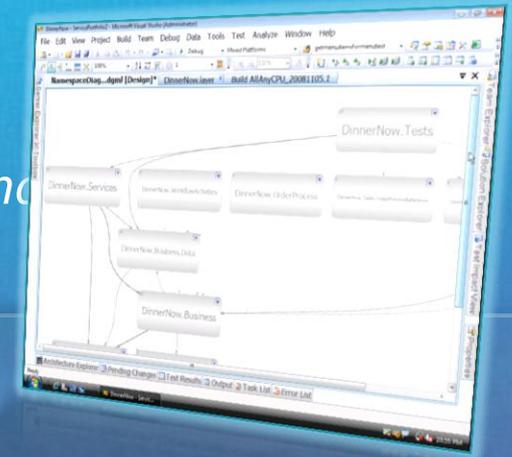
- Architecture Explorer
  - *Discover and understand how a system works and visualize existing code assets and how they connect.*



# Create code, Don't debug it

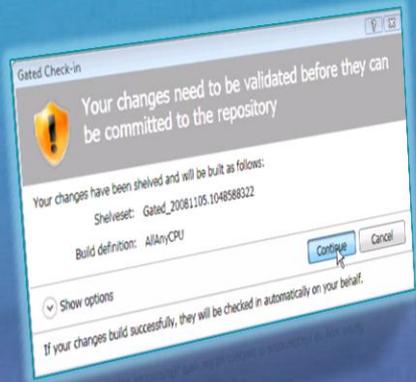
- Dependency Diagrams

- *Understand code dependencies visually and understand how to make changes*



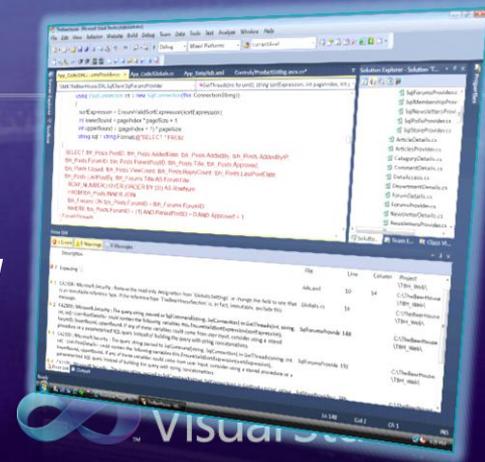
- Gated Check-In

- *Stop build breaks before they happen*



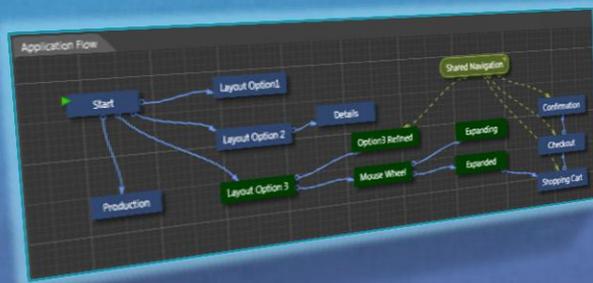
- Code Analysis and Code Metrics

- *Help you find and fix potential problems before you make them*



# Prototype Ideas to bring Projects to Life

- The Electronic Napkin
  - *SketchFlow allows you to deliver functioning proto*  
*"Back of a Napkin" feel*

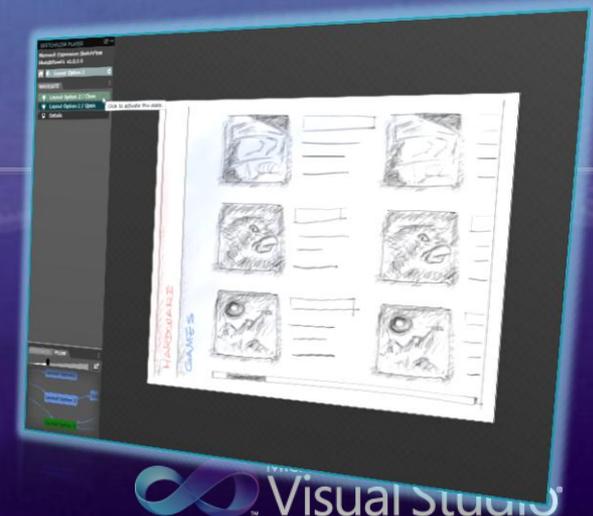


- Design UI Flow

- *Design your UI Flow using the Application Flow functionality*

- SketchFlow Player

- *Easily share and gain input to your prototypes from all interested parties*



# For more information

- Email me at [ryanchan@microsoft.com](mailto:ryanchan@microsoft.com)
- <http://www.microsoft.com/visualstudio/>
- <http://msdn.microsoft.com/en-us/>
- <http://www.codeplex.com/>

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