
.Net Pros and Cons

Outline

- **What is .Net**
- **.Net Pros**
- **.Net Cons**
- **Conclusion**
- **References**

What is .Net

What is .Net

- Application development framework based solely on the windows family o/s.
- A platform that anyone can develop for using a system similar to Java/JVM.
- Unlike Java/JVM there is no language barrier.
- Managed C++, C#, Visual Basic, Perl, Java and many more languages are currently available with more on the way.

What is .Net

- The .NET Framework is a development and execution environment that allows different programming languages & libraries to work together seamlessly to create Windows-based applications that are easier to build, manage, deploy, and integrate with other networked systems.

What is .Net

- The .NET Framework consists of three main parts:
 1. The Common Language Runtime (CLR).
 2. Framework Class Libraries (FCL).
 3. A componentized version of Active Server Pages called ASP.NET.

What is .Net

The Common Language Runtime (CLR)

- A language-neutral development & execution environment that provides services to help "manage" application execution.

What is .Net

The Framework Class Libraries (FCL)

- A consistent, object-oriented library of prepackaged functionality.
- Together, the class libraries provide a common, consistent development interface across all languages supported by the .NET Framework.

What is .Net

ASP.NET

- Provides a programming model, and infrastructure, to make creating scalable, secure and stable applications faster, and easier than with previous Web technologies.

What is .Net

- .Net uses a multi stage compiler to give platform independence.
- This midstage compilation is called MSIL (Microsoft Intermediate Language).
- MSIL is a language that contains metadata that describes the code so that no type libraries or a Interface Definition Language is needed.

.Net Pros

.Net Pros

- It offers multiple language support.
- It has a rich set of libraries.
- It's open-standard friendly (e.g., HTTP and XML) -- it may even become a standard itself.
- Its code is compiled natively, regardless of language or deployment (Web or desktop).

.Net Pros

- Compilers for over 20 programming languages are available for use with the .NET Framework.
- Over 350 tools are available from third-party vendors to aid in .NET Framework development.

.Net Pros

- Tons of support/learning information available.
- Over 350 books have been published or soon will be published discussing software development with the .NET Framework.
- Over 750 .NET Framework user groups exist worldwide.

.Net Pros

- Already becoming widely implemented.
- Over one million developers are using Visual Studio .NET.
- Thousands of leading companies are developing and deploying their applications with the .NET Framework.
- Microsoft is aggressively deploying applications built using the .NET Framework such as MSN and XP Media Center.

.Net Pros

- It is optimized for XML and architected around XMLWeb Services.
- This makes web services run especially fast and efficient.

.Net Pros

- Newly developed C# (C sharp) programming language.
- Microsoft's answer to Java.
- It is a strongly-typed object-oriented language designed to give the optimum blend of simplicity, expressiveness, and performance.

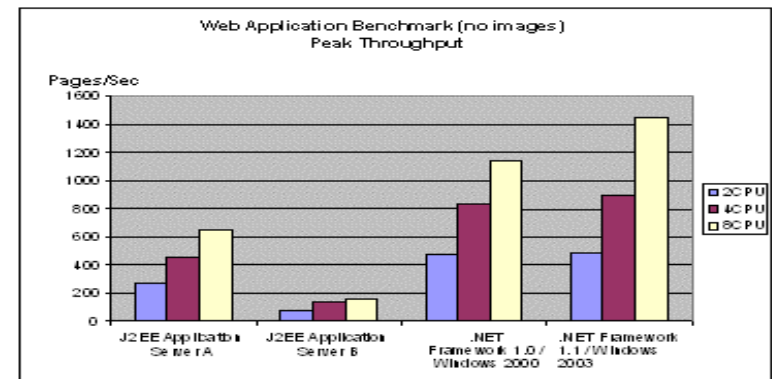
.Net Pros

- The multiple-language capability of .NET enables developers to use the programming language that is most appropriate for a given task and to combine languages within a single application.
- Components written in different languages can consume functionality from each other transparently, without any extra work required from the developer.

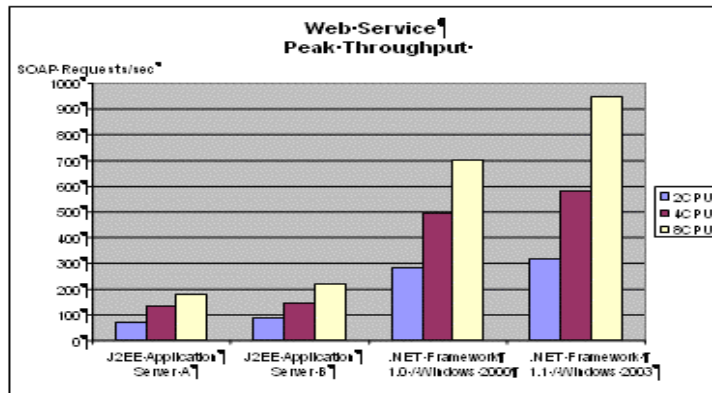
.Net Pros

- Improved performance of typical web applications.
- .NET Framework significantly outperforms J2EE for Web application hosting, Web services, and distributed transactions.
- Offers significant performance and scalability benefits over the previous ASP technology, thanks to its just-in-time (JIT) compilation and caching technologies.

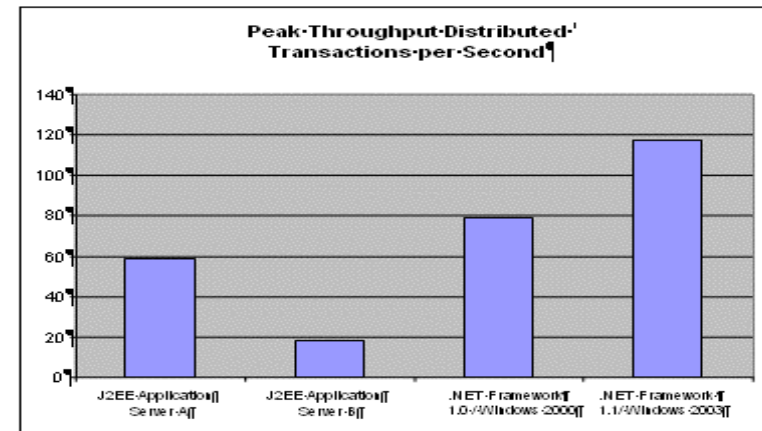
.Net Pros



.Net Pros



.Net Pros



.Net Pros

- Support for standard networking protocols & specifications.
- Uses standard Internet protocols and specifications like TCP/IP, SOAP, XML, & HTTP to allow a broad range of information, people, systems, and devices to be connected.

.Net Pros

- Support for different platforms.
- Available for a variety of Windows platforms, which allows people, systems, and devices to be connected using different computing platforms.

.Net Cons

.Net Cons

- It's yet another platform to consider, which means there is no doubt a learning curve.
- Multiple language support keeps this to a minimum but there is still going to be some relearning and tweaking of legacy code.

.Net Cons

- Made by Microsoft.
- This is bad for many reasons:
 1. All support of the workings of the framework must come from Microsoft. This is a detriment for, as all development concerns must go through one vendor, it is easy for the company to cover up problems that may exist.

.Net Cons

2. It is a well known fact that in the past Microsoft has had problems with security in the windows platform. If you are developing only in windows then windows security problems may become your security problems.

.Net Cons

3. Since this is a proprietary product the development in the framework at this point can only be accomplished in a windows environment. This is a big issue if you want to upgrade to .Net and are only running Linux machines.
4. As of this point .Net applications can only be served from the Microsoft based ASP.NET server.

.Net Cons

5. “Ok you want a new Microsoft product the first thing you need is MORE RAM”.
6. Large organizations with legacy hardware will not be able to port existing systems into .Net due to the hardware constraints. This is also a cost factor.

.Net Cons

- Many people have argued that multiple language support as Microsoft has advertised is actually a problem. It is said that by providing access to many different languages to one problem that solutions to problems become less elegant and more towards a hack.

.Net Cons

- It appears that .NET applications consume huge amounts of memory. This is due to the fact that the runtime takes massive chunks of memory and then return memory to the OS when called for.
- The problem has been reported that this can become an issue when it slows web servers.

.Net Cons

- .NET executables are compiled to MSIL (Microsoft Intermediate Language). Unlike native code binaries, MSIL contains metadata that makes it easy to decompile. Utilities exist that can convert compiled code back into C#. This is a problem for any developer who wants to keep source code confidential.

.Net Cons

- Because .NET is propriety, a license must be purchased for each developer on your team. This gets really pricey really fast considering an enterprise architect version of Visual Studio .Net has a suggested retail price of \$2500 USD.
- Bulk licensing does not kick in until you reach 250 seats. $\$2500 * 250 = \62500 OUCH! This is without hardware, operating systems or servers.

Summary

Summary

What is .Net

- A development and execution environment that allows different languages and libraries to work together to create windows applications.
- Three parts: Common Language Runtime (CLR), Framework Class Libraries (FCL), and ASP.NET.

Summary

.Net Pros

- Multiple Languages working together.
- Rich library set.
- Lots of support/learning information.
- Becoming widely used.
- Improved performance.

Summary

.Net Cons

- Made by Microsoft.
- Currently only works on windows platforms.
- High memory usage.
- Easily decompiled.
- Cost.

Conclusion

- While .NET may not be the best solution for everyone (you may prefer to run a Java and Unix solution), it's definitely not vaporware.
- In our opinion the pros outweigh the cons.
- To lean more visit msdn.microsoft.com/net/

References

- Information in this presentation culled from:
msdn.microsoft.com/net/
webmonkey.wired.com
www.itwriting.com (.net pros and cons forum)