



Kentico software

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Kentico software

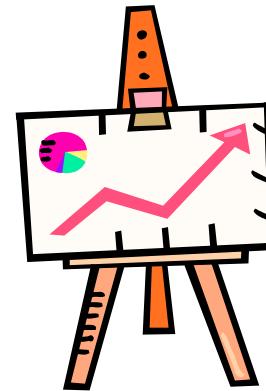
- **2004**

- 1 employee (Petr Palas, former FI MU student)
- 1 dog
- 1 product – Kentico CMS (Bachelor thesis)

- **2011**

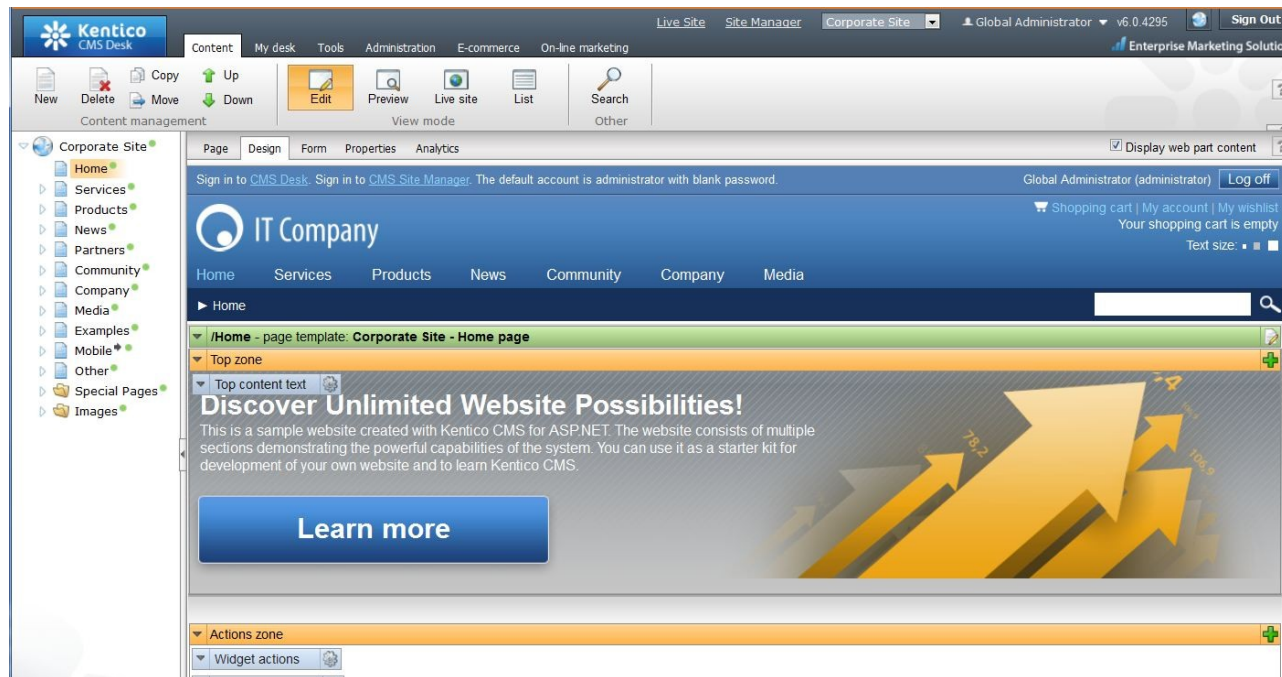
- 65 employees CR
- 7 employees USA
- 1 employee UK
- 5 dogs
- 1 product – Kentico CMS
- 7000+ web sites
- 1200+ partners in 80+ countries

- Fastest growing Czech technological company – Deloitte FAST 50, 2010
- Microsoft Gold Certified Partner and Microsoft Visual Studio Industry Partner



Kentico CMS

- **CMS = Content Management System**
- CMS = system for building and maintaining websites
- Drupal, Joomla, DotNetNuke
- ASP.NET application written in C#

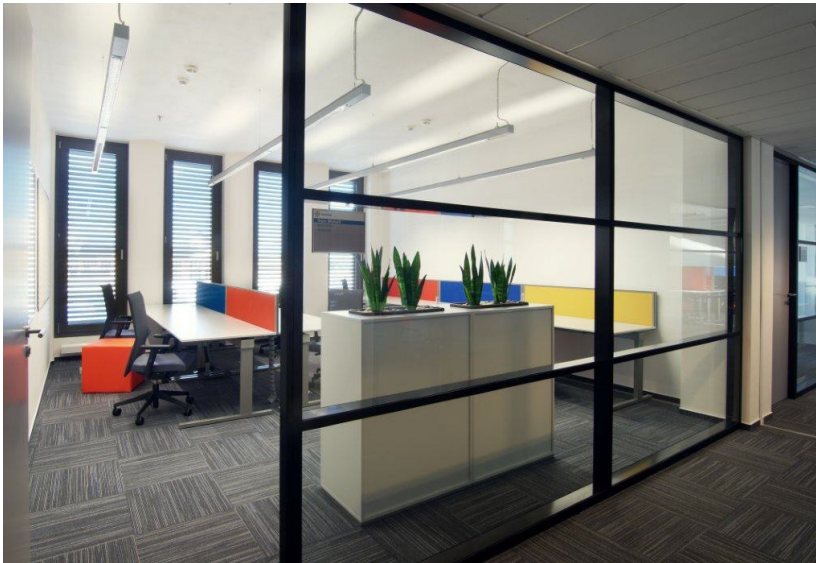


Our customers



Why Kentico?

- What do we have in common?
- Amazing job
- Worldwide successful product
- Fashionable office in Brno city center
- Innovation time & Summer of code



Links

- General information <http://www.kentico.com>
- Web for developers <http://devnet.kentico.com>
- Trees for bugs <http://trees.kentico.com/Home.aspx>
- Summer of code <http://www.kentico.com/trainee.aspx>
- Job opportunities <http://www.kentico.com/jobs.aspx>
- Theses <http://www.kentico.com/theses.aspx>
- Free edition <http://www.kentico.com/Download-Demo/Free-Edition>



Kentico CMS for ASP.NET



ASP.NET Web Applications Basics

Štěpán Kozák

List of contents

- What is ASP.NET?
- What is a request?
- How does ASP.NET deal with stateless http?
- ASP.NET request life cycle
- ASP.NET page/control life cycle

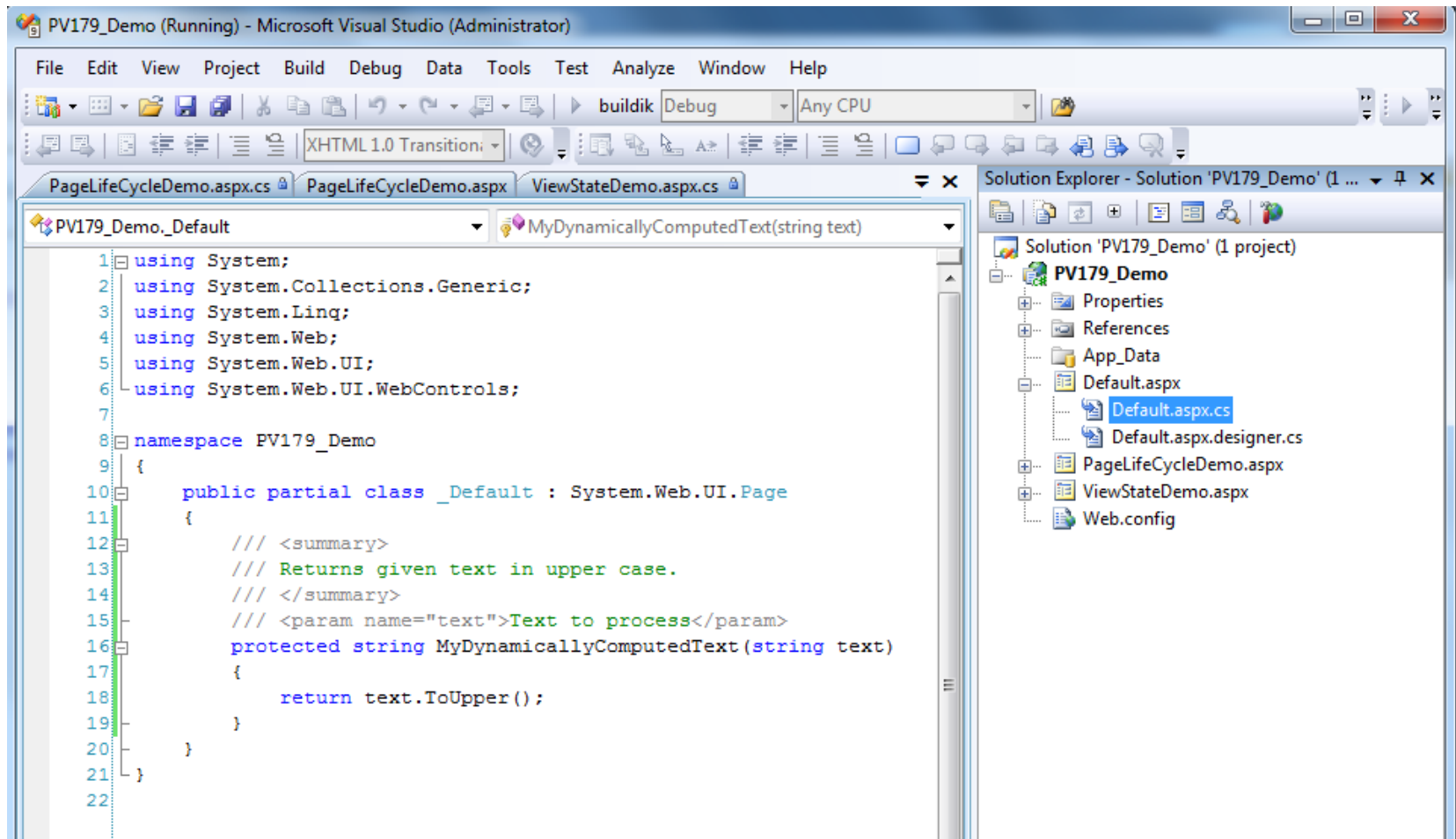
What is ASP.NET?

- **Active Server Pages .NET**
- Platform for creating dynamic web applications
- You can use any .NET language as a code-behind
- Development of ASP.NET WebForms applications can be similar to the development of WinForms applications. Similar, not same!

Example of ASP.NET page

```
1 <%@ Page Language="C#" AutoEventWireup="true" CodeBehind="Default.aspx.cs" Inherits="PV179_Demo._Default" %>
2
3 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4 <html xmlns="http://www.w3.org/1999/xhtml">
5 <head runat="server">
6     <title>PV179 Demo page</title>
7
8     <script type="text/javascript">
9         //
10         function DisplayMessage() {
11             alert('Hello world!');
12         }
13         //]]&gt;
14     &lt;/script&gt;
15
16 &lt;/head&gt;
17 &lt;body&gt;
18     &lt;form id="form1" runat="server"&gt;
19     &lt;div&gt;
20         &lt;span style="color: Blue;"&gt;In ASP.NET page you can mix (X)HTML markup with server controls
21             and C# code: &lt;/span&gt; ← HTML
22     &lt;hr /&gt;
23     &lt;%= MyDynamicallyComputedText("Text") %&gt;: ← C# code (or VB.NET code)
24     &lt;asp:TextBox runat="server" ID="txtText" /&gt; ← Server control
25     &lt;/div&gt;
26     &lt;/form&gt;
27 &lt;/body&gt;
28 &lt;/html&gt;
29</pre></div><div data-bbox="364 366 900 620" data-label="Image"><img alt="Screenshot of a Mozilla Firefox browser window displaying the rendered ASP.NET page. The page content is 'In ASP.NET page you can mix (X)HTML markup with server controls and C# code:'. Below this text is a text input field labeled 'TEXT:'. The browser's address bar shows 'http://localhost:53053/Default.aspx'."/><p>The screenshot shows a Mozilla Firefox browser window titled "PV179 Demo page - Mozilla Firefox". The address bar contains "http://localhost:53053/Default.aspx". The page content displays the rendered output of the ASP.NET code: "In ASP.NET page you can mix (X)HTML markup with server controls and C# code:". Below this text is a text input field with the label "TEXT:". The browser's status bar at the bottom shows "x".</p></div><div data-bbox="853 932 954 977" data-label="Page-Footer"><p><img alt="Kentico logo" data-bbox="853 932 895 977"/> Kentico</p></div>
```

ASP.NET page – code behind



```
PV179_Demo (Running) - Microsoft Visual Studio (Administrator)
File Edit View Project Build Debug Data Tools Test Analyze Window Help
buildik Debug Any CPU
XHTML 1.0 Transitional
PageLifeCycleDemo.aspx.cs PageLifeCycleDemo.aspx ViewStateDemo.aspx.cs
PV179_Demo_Default MyDynamicallyComputedText(string text)
1 using System;
2 using System.Collections.Generic;
3 using System.Linq;
4 using System.Web;
5 using System.Web.UI;
6 using System.Web.UI.WebControls;
7
8 namespace PV179_Demo
9 {
10     public partial class _Default : System.Web.UI.Page
11     {
12         /// <summary>
13         /// Returns given text in upper case.
14         /// </summary>
15         /// <param name="text">Text to process</param>
16         protected string MyDynamicallyComputedText(string text)
17         {
18             return text.ToUpper();
19         }
20     }
21 }
22
```

Solution Explorer - Solution 'PV179_Demo' (1 ...)

- Solution 'PV179_Demo' (1 project)
- PV179_Demo
 - Properties
 - References
 - App_Data
 - Default.aspx
 - Default.aspx.cs
 - Default.aspx.designer.cs
 - PageLifeCycleDemo.aspx
 - ViewStateDemo.aspx
 - Web.config

What is a request?

The screenshot shows the Fiddler HTTP Debugging Proxy interface. The top menu includes File, Edit, Rules, Tools, View, and Help. Below the menu is a toolbar with various actions like Comment, Reissue, Remove, Resume All, Streaming, AutoDecode, Process Filter, Find, Save, Launch IE, Clear Cache, Encoder, Tearoff, and MSDN Search. The main window is divided into several panes:

- Web Sessions:** A table listing captured sessions. The 10th session is highlighted, showing a 401 HTTP response from intr.
- Inspectors:** A pane showing the details of the selected session. It displays the request headers for a GET request to `http://www.google.cz/` over HTTP/1.1. The headers include:

```
Accept: text/html, application/xhtml+xml, */*
Accept-Language: cs-CZ
User-Agent: Mozilla/4.0 (compatible; MSIE 8.0; windows NT 6.1; WOW64; Trident/4.0; SLCC2; .NET CLR 2.0.50727;
Accept-Encoding: gzip, deflate
Connection: Keep-Alive
Host: www.google.cz
```
- Response View:** A pane showing the response headers for the selected session. The response is an HTTP/1.1 200 OK from www.google.cz. The headers include:

```
Date: wed, 28 Sep 2011 13:08:55 GMT
Expires: -1
Cache-Control: private, max-age=0
Content-Type: text/html; charset=UTF-8
Set-Cookie: PREF=ID=7358ef38213c0bad:FF=0:TM=1317215335:LM=1317215335:S=pkW_I5Sr6NTaZ33d; expires=Fri, 27-S
Set-Cookie: NID=51=nH38jmmDyV8EwV1wzgcjidRqBcAV5XAodiFF48KireHPwPC18F6mMhBfwfdqw3sph-9tatk0rjkw2Fo38IRpar
Server: gws
Content-Length: 54183
X-XSS-Protection: 1; mode=block
```
- Response Body:** A pane showing the raw response body, which is HTML code. The visible part starts with:

```
<!doctype html><html><head><meta http-equiv="X-UA-Compatible" content="IE=8"><meta http-equiv="content-type
true";e:function(){google.fl=true};b:location.hash&&location.hash!="&#";bv:21,cf:"";pm:"p",pl:[],mc:0,sc:0.5
(function(){var a=google.j>window.onpopstate=function(){a.psc=1};for(var b=0,c=["ad","bc","inpr","is","p
arguments]]}(c))();if(!window.chrome)window.chrome={};window.chrome.sv=1.00;
window.google.sn="webhp";var i=window.google.timers={};window.google.startTick=function(a,b){i[a]={t:start
</script><style id=gstyle>body{margin:0;overflow-y:scroll}#gog{padding:3px 8px 0}.gac_m td{line-height:17px
if(!window.google)window.google={};window.google.crm={};window.google.cri=0;window.cik=function(e,f,g,l,m,b
if(b&&b.substr(0,6)!="&sig2=")b="&sig2="+b;c.src=["/url?sa=t", "", "&cd=",a(m),h?"&authuser="+a(h):", goog
"&sqi=2": "", "&ved=",a(n),e?"&url="+a(e.replace(/#.*\/, "")).replace(/\+/g,"%2B"):"";n="&ei=", "zxyDTuykI8rV0QwWw
(function(){try{var e=true,j=false;var m=window.gbar=window.gbar||{};function_tvh(a,b){var c=parseInt(a,10
var p={},ca={},q=[],fa=function(a,b){q.push([a,b])};ia=function(a,b){p[a]=b};ja=function(a){return a in p};
b:b};if(c)for(var d in c)a[d]=c[d];try{z(a)}catch(f)};n("mdc",p);n("mdi",ca);n("bnc",q);n("qgc",y);n("qr
```

The status bar at the bottom shows "Capturing" is active, "All Processes" are being monitored, and the current session is 1/31 for `http://www.google.cz/`.

What is a request?

- Main thing you need to remember about HTTP protocol:

HTTP is stateless protocol!

- But we need state in dynamic web applications!

How does ASP.NET deal with stateless http?

- The answer is ... **ViewState!**
- It is a technique used by an ASP.NET Web page to persist changes to the state of a Web Form across postbacks (HTTP POST to the same page that the form is on).
- **Use ViewState carefully** and only when it's really needed! It's helpful technique, but it might become too greedy and can cause the application to be less effective.

ViewState – How is it send within requests?

Label #1 (disabled ViewState):
Label #2 (enabled ViewState): Yay! It works! #2

TextBox #1: Default value
TextBox #2: Default value

```
Source of: http://localhost:53053/ViewStateDemo.aspx - Mozilla Firefox
File Edit View Help

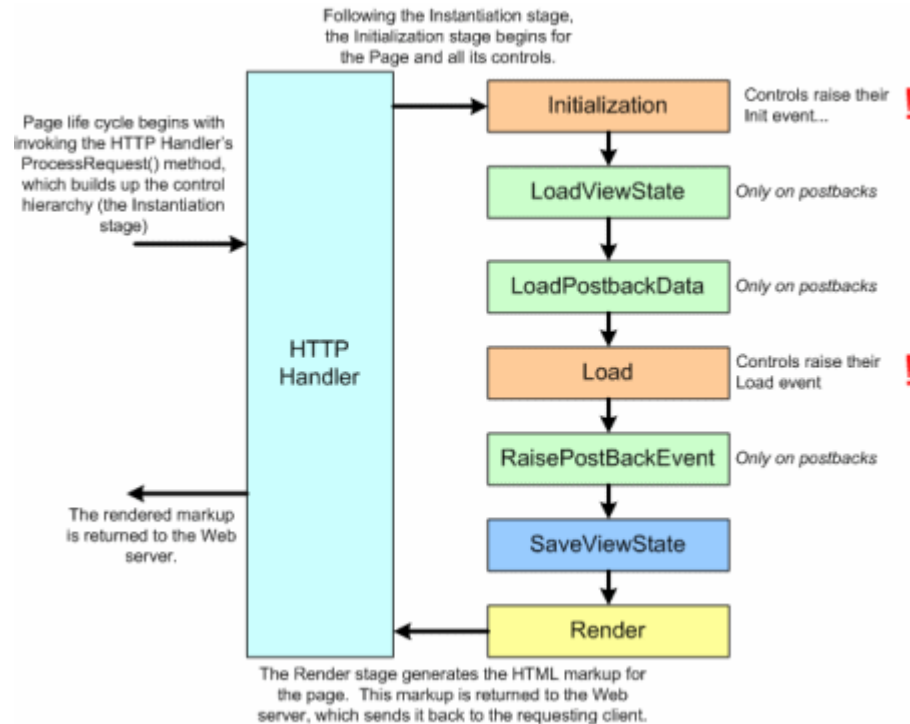
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org
/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head><title>
  FV179 Demo page - ViewState
</title></head>
<body>
  <form name="form1" method="post" action="ViewStateDemo.aspx" id="form1">
<div>
<input type="hidden" name="__VIEWSTATE" id="__VIEWSTATE"
value="/wEPDwULLTE2NzgyMTcyNTEPZBYCagMPZBYCagMPDxYCHgRUZXh0BRFZYXkhIE10IHdvcmtzISAjMmRkZIt
Ehb7Ze3GsCiwGdZkEOL2bTPf" />
</div>

  <div>
    <div style="border: solid 1px grey; width: 300px;">
      Label #1 (disabled ViewState): <span id="lblText1"></span><br />
      Label #2 (enabled ViewState): <span id="lblText2">Yay! It works! #2</span>
    </div>
    <br />
    <input type="submit" name="btnSetText1" value="Set text to a label #1"
id="btnSetText1" />
    <input type="submit" name="btnSetText2" value="Set text to a label #2"
id="btnSetText2" />
    <hr />
    <div style="border: solid 1px grey; width: 300px;">
      TextBox #1: <input name="txtText1" type="text" value="Default value"
id="txtText1" /><br />
      TextBox #2: <input name="txtText2" type="text" value="Default value"
id="txtText2" />
    </div>
    <br />
    <input type="submit" name="btnPrintText" value="Copy text from TextBox #1 to
TextBox #2" id="btnPrintText" />
  </div>
</form>
</body>
</html>
```

ASP.NET page/control life cycle

- To be able to work with ASP.NET pages and controls properly you need to understand the life cycle of these elements.
- Most important phases of page/control life cycle are:
 - PreInit
 - Init
 - Load
 - PreRender
 - Render

ASP.NET page/control life cycle



Source: <http://i.msdn.microsoft.com/dynimg/IC152667.gif>

Where to get more information?

- Where to start:

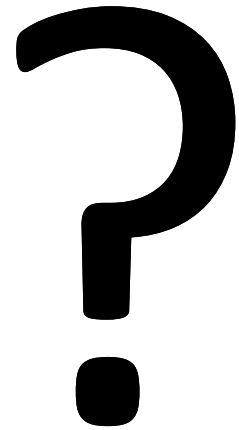
<http://msdn.microsoft.com/en-us/library/ywdtth2f%28v=vs.71%29.aspx>

- More about page life cycle:

<http://msdn.microsoft.com/en-us/library/ms178472.aspx>

- More details about how the ViewState works:

<http://msdn.microsoft.com/en-us/library/ms972976.aspx>

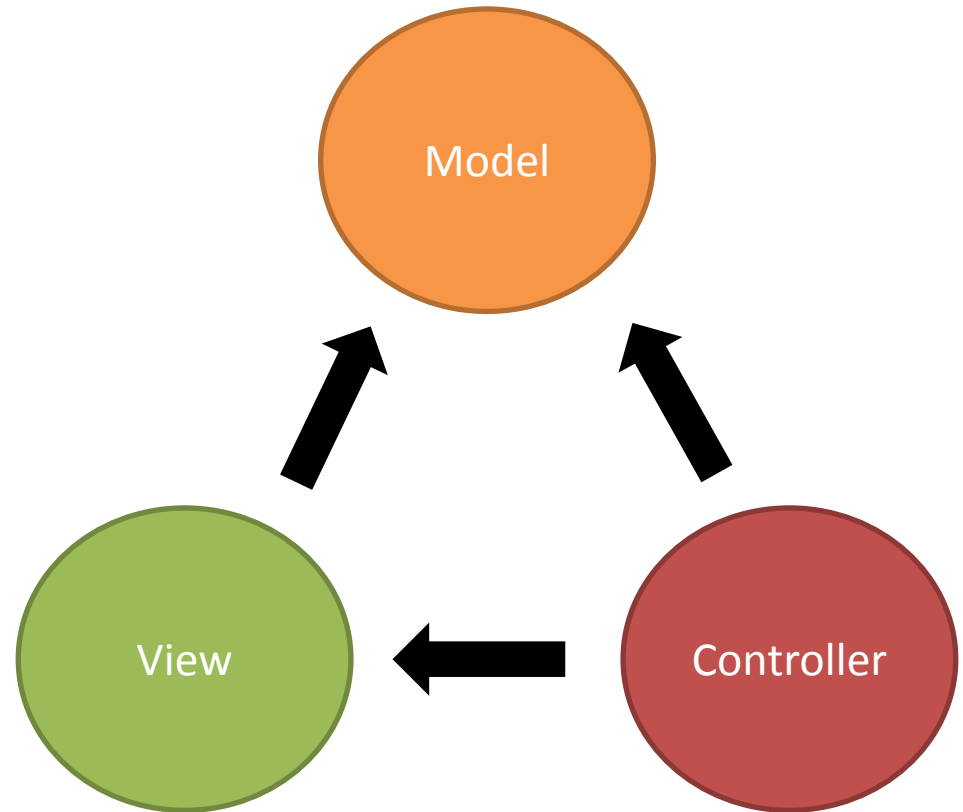
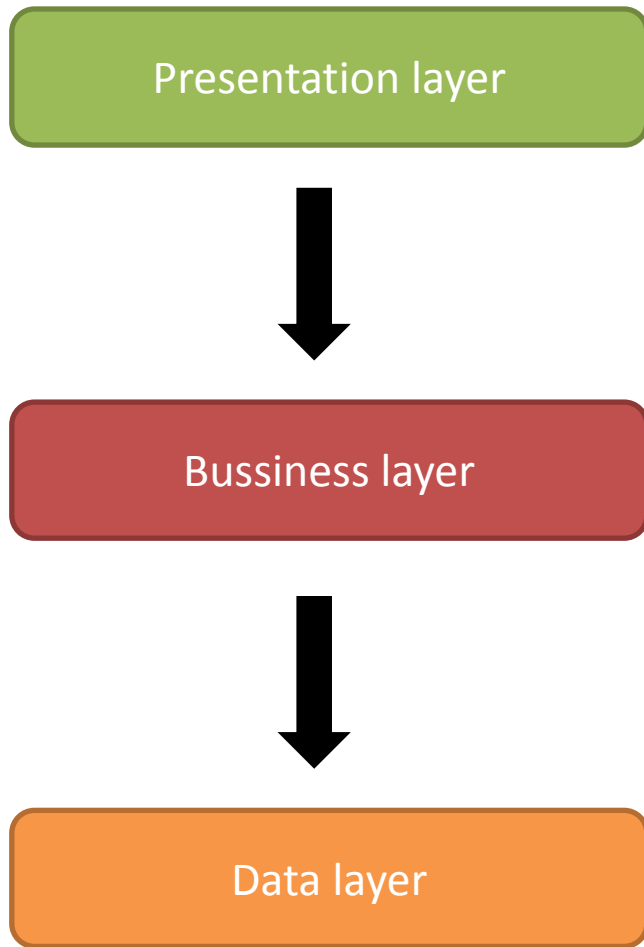




Model view controller

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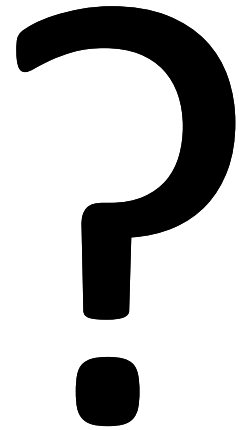
MVC



ASP.NET MVC

- Additional programming model
- Full control over HTML
- <http://www.asp.net/mvc>
- Controller + View = Result page
- Routing
- Razor engine

DEMO





Windows Azure introduction

Dominik Pintér, dominikp@kentico.com

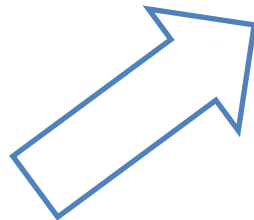
Agenda

- Cloud computing
- Windows Azure platform
- Kentico CMS & Windows Azure

Cloud Computing

Models:

- IaaS
- PaaS
- SaaS



Buy vs. rent

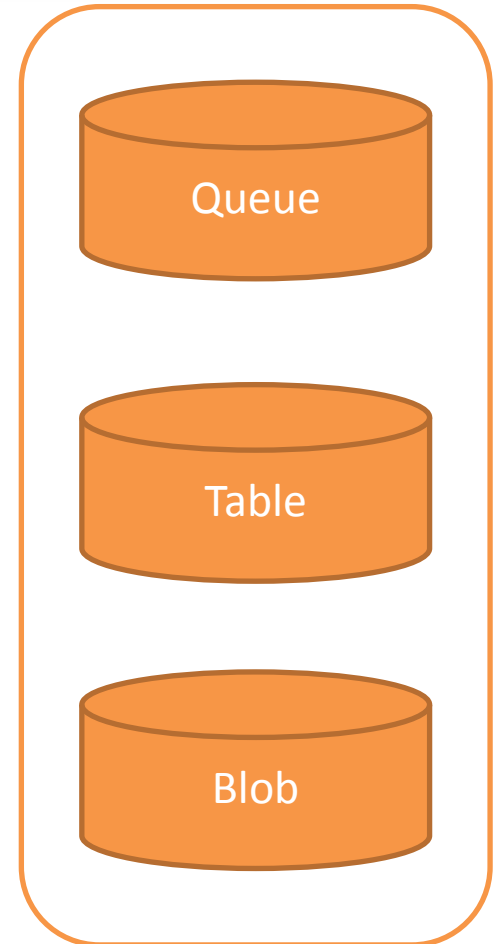
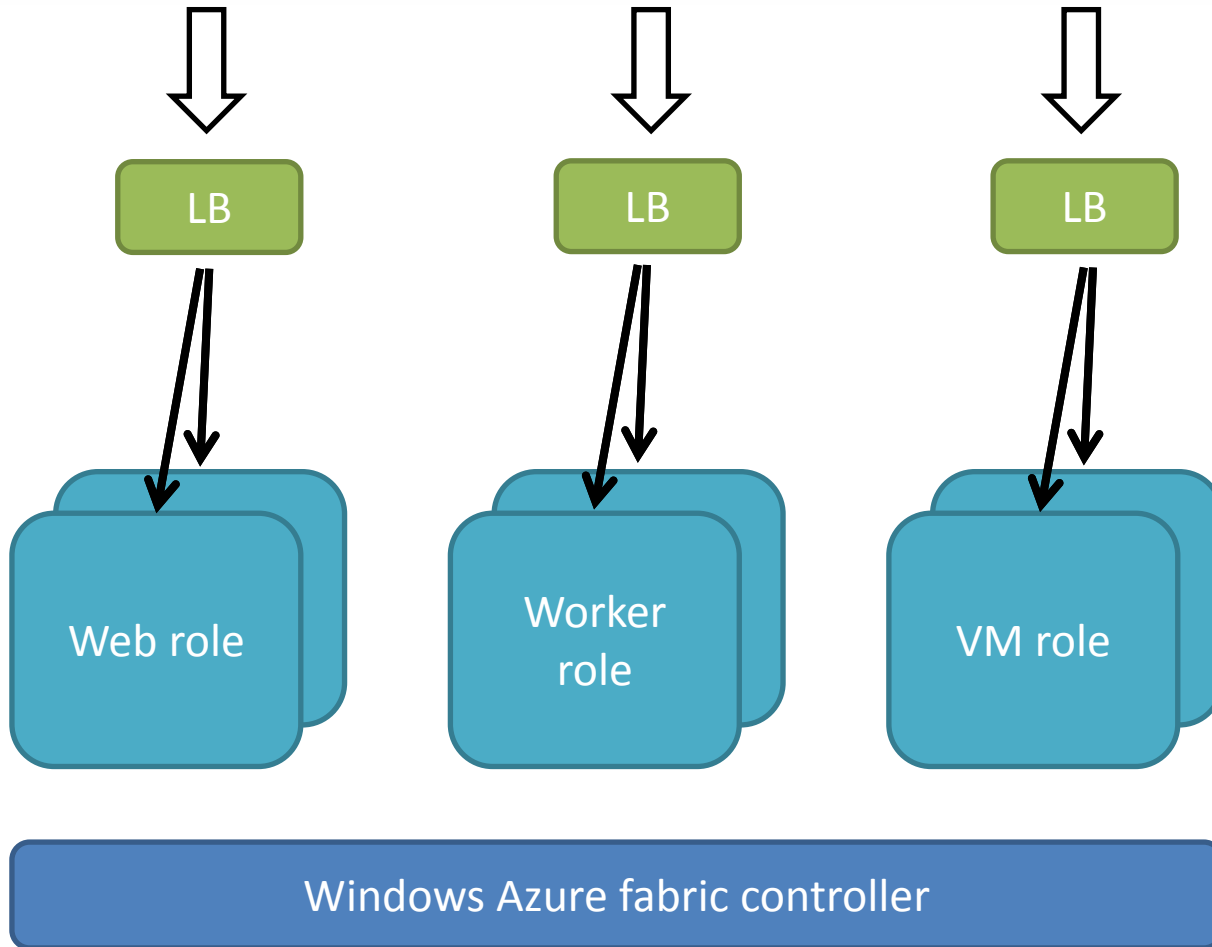
Windows Azure Platform

SQL Azure

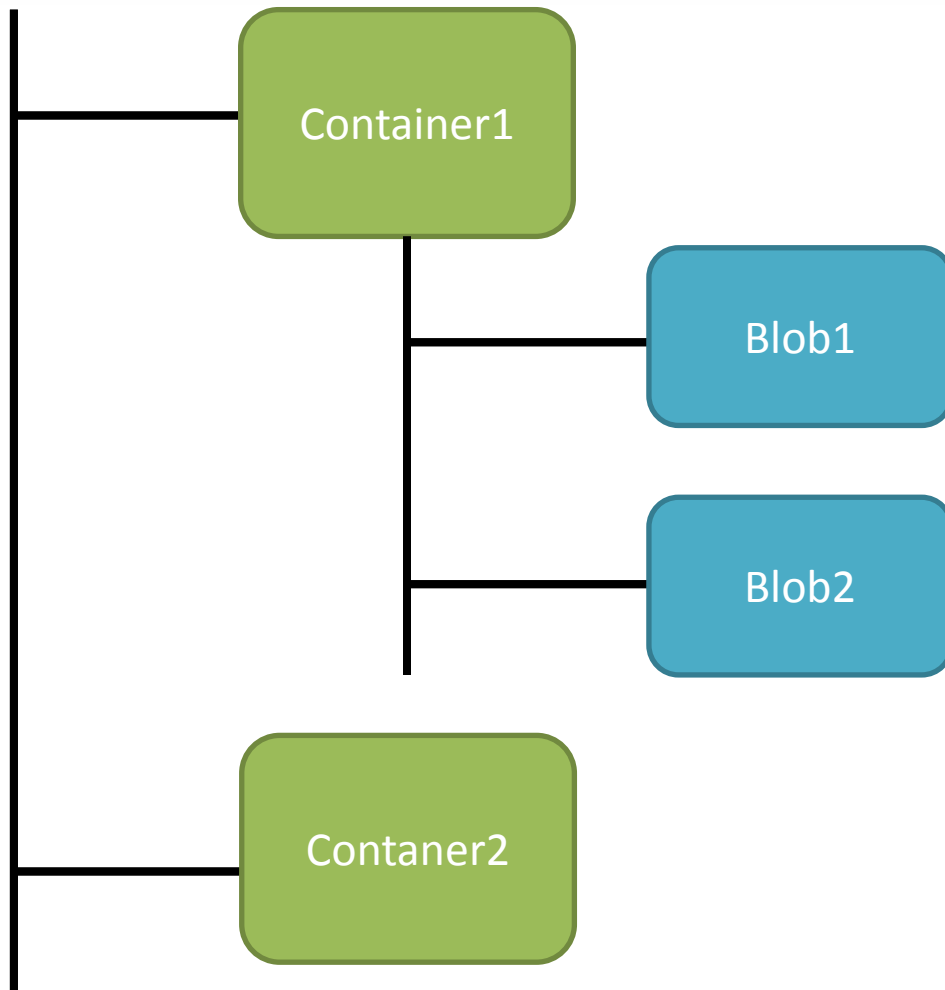
Windows Azure
AppFabric

Windows Azure

Windows Azure



Blob storage

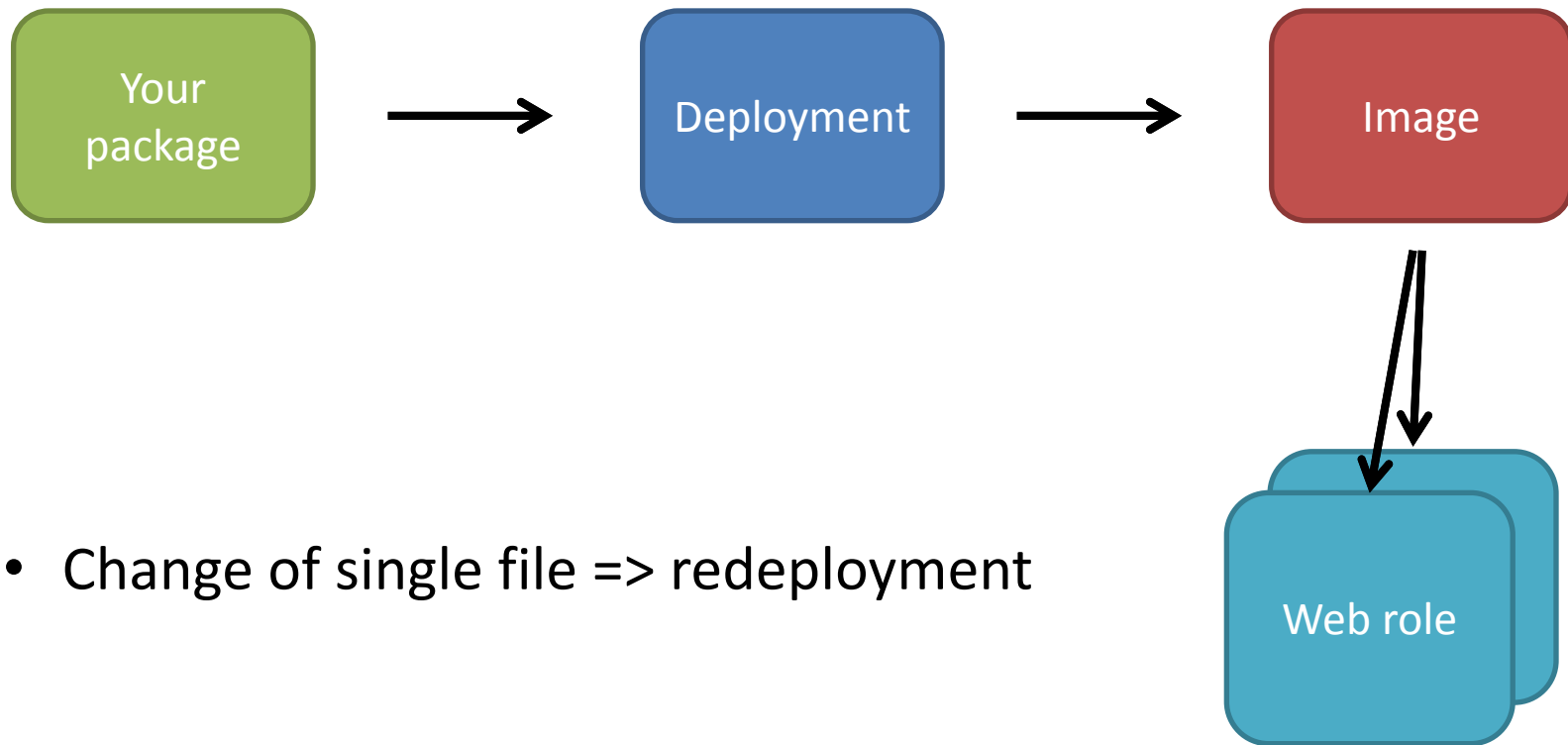


Windows Azure – Differences and Challenges

- Multiple virtual machines environment
 - Statelessness
 - Scalability
- Types of storage
 - NTFS vs. Windows Azure storage
 - Microsoft SQL server vs. SQL Azure
- Development experience
 - Software development kit and emulator
 - New patterns
- Workflow



Windows Azure internals



- Change of single file => redeployment

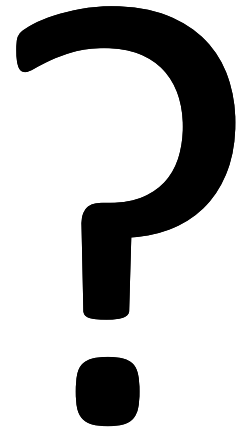
Kentico CMS & Windows Azure

History:

- Kentico CMS 5.5 R2
 - First version
 - Passed Windows Azure platform ready test
 - Limitations
- Kentico CMS 6
 - Real support
 - Lot of code changes

Development:

- One developer, almost fulltime job
- Changes: coding rules, build process, QA process



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Thank you!

Thank you!

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