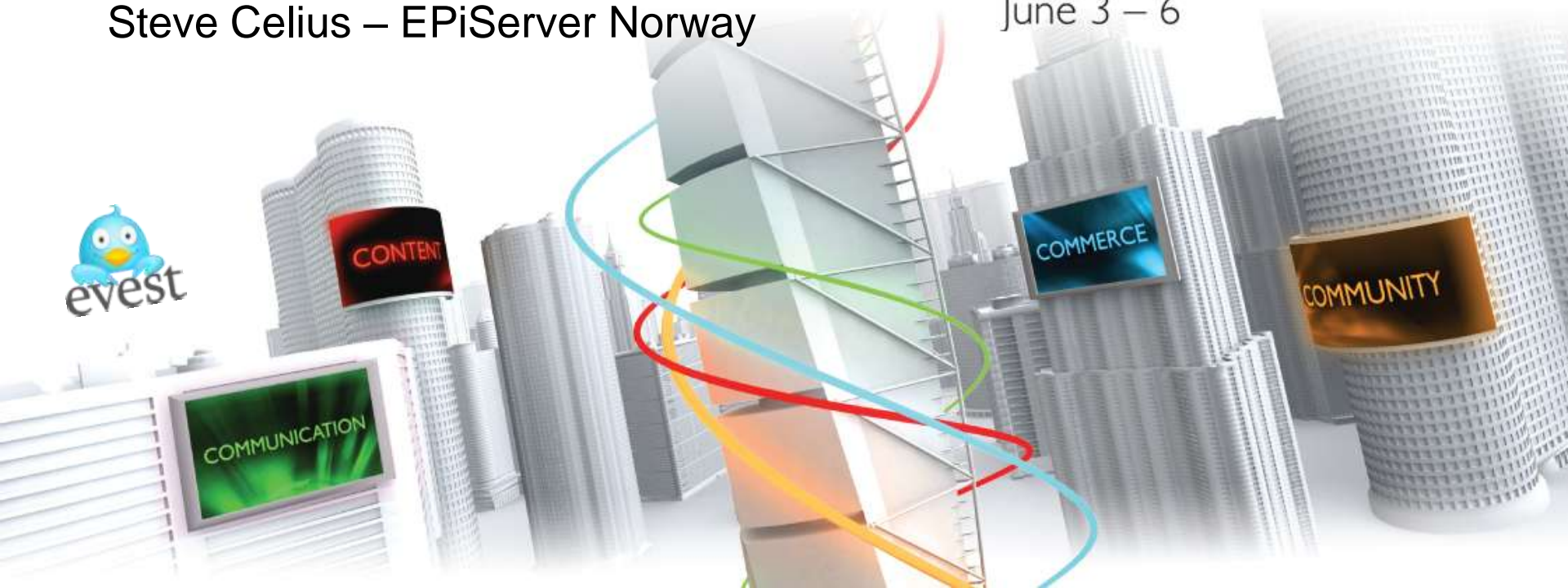


# Deployment in EPiServer CMS

Steve Celius – EPiServer Norway

## EPiSERVER PARTNER SUMMIT

June 3 – 6



# PLAN



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# Planning – External Dependencies

## » "Line Out"

- RSS Feeds, HR / Vacancies
- DNS

## » SMTP

- XForms, alerts etc.
- Most projects needs access to a SMTP server

## » Databases (other than EPiServer)

- Access rights, execute permissions etc.

## » Reporting Services or other analysis tools

## » Visitor Tracking

- Google Analytics, SEO Tools, etc.

# Planning – Licenses

- » EPiServer Licenses for production environment
  - We do not process license requests in weekends
  - You do not want to go live on a demo license (but you could)
- » 3rd Party
  - Identify any 3rd party components that you might need a license for



# Planning – Operating System

- » Test (and develop) on same IIS (major version)
  - Windows 7 for Windows Server 2008 (R1 / R2)
- » Develop on 64-bit if you can
  - Windows Server 2008 R2 is 64-bit only
  - Legacy systems / components might make this impossible
  - Large projects have been postponed due to 32/64 bit problems



# Installation Basics

## » Install EPiServer Deployment Center on the servers

- Use it to set up sites (install empty site)
- Copy run-time files to the empty site
- You will typically move the database using backup/restore

## » Configure your services

- Disable the ones you do not need / use (Log Service?)
- Multiple Servers? Where does the scheduler run?

## » Multiple major versions of EPiServer on same server

- Test it first – Scheduler could stop working



# Virtualization

- » EPiServer runs fine on virtual servers
- » Many customers host like this
- » Virtualization makes capacity planning a bit harder
  - Remember: One host = single point of failure
    - even if you have many virtual machines
  - Performance testing is important



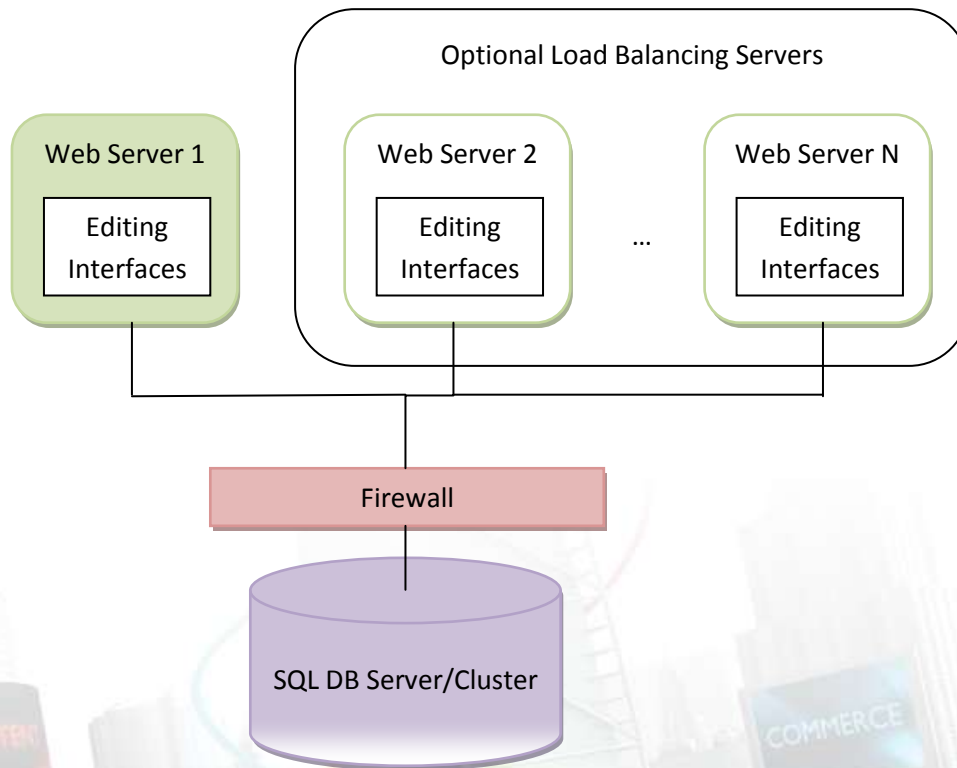
# Servers server servers...

- » Important part in planning
- » How many servers do you need?
- » Web Farms
  - For performance,
  - or availability

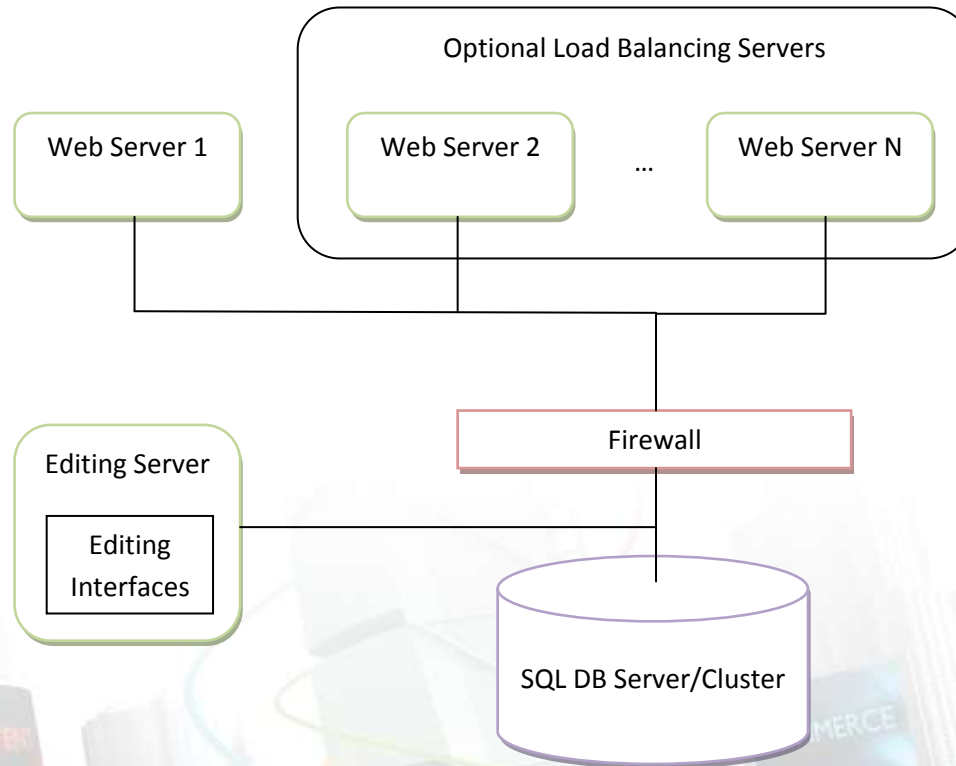




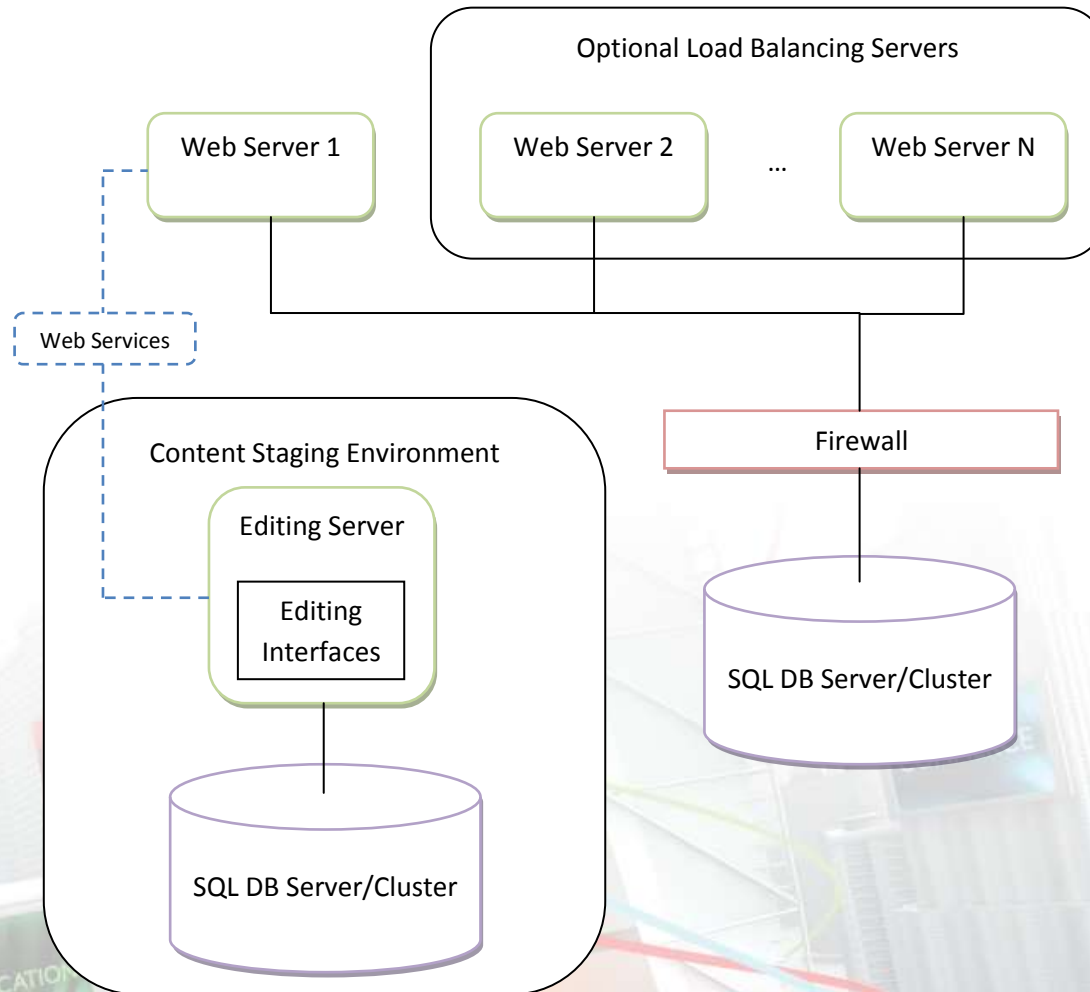
# Server Setup – Small Sites



# Server Setup – Secure



# Server Setup – Content Staging



# Single Server vs Web Farms

- » High availability / redundancy require more than one server
- » Scaling up first could be cheaper than scaling out
- » More than one = added complexity
  - Shared VPP storage
  - Cache Invalidation
  - Session Affinity



# File Management in Web Farms

- » Images and documents are stored on the hard drive
  - Images and documents that editors upload in edit mode
  - In Virtual Path Providers mapped paths
- » VPPs must be available on all servers in real-time
  - Or at least close to real-time



# File Management – Storage Area Network

- » SAN or alternative network storage (NetApp)
- » Safe storage (RAID configurations)
- » Good performance (most cases)
- » Expensive
  - Typically not an option for smaller sites, unless the customer already have a SAN





# File Management - Network Share

- » The most common option
- » No redundancy
- » Pick one web server or use database server for files
- » A little bit tricky to configure
  - Requires firewall opening for 455 (ms\_ds)
  - Run Application Pool as "other" user
  - Use the same username / passwords on all servers
  - Security on share and disk - requires Modify rights (better on 6)

# File Management - File Replication

- » Fully redundant – all servers have all files
- » File replication is inherently dangerous
- » Software for file replication or synchronisation
  - RepliWeb RDS
  - Vice Versa
  - MS DFS (requires AD)

- » Synchronising EPiServer VPP folders using the Microsoft Sync Framework

<http://world.episerver.com/Blogs/David-Knipe/Dates/2009/11/Synchronising-EPiServer-VPP-folders-using-the-Microsoft-Sync-Framework/>

# File Management – Database Filesystem

- » All files are stored in the database
- » No hassle, easy to set up
- » Require more space for the database
- » Caches files on the servers for optimal performance
- » Require external search engine
- » Free Module on EPiCode:  
[www.coderesort.com/p/epicode/wiki/DatabaseFileSystem](http://www.coderesort.com/p/epicode/wiki/DatabaseFileSystem)



# Cache Invalidation

- » Cache needs to be cleared on all servers when content is changed
- » Use UDP if possible
- » Requirements
  - Enable Events
  - Enable Remote Events
  - Add Http Module listener
  - Configure the <system.serviceModel>
- » Based on WCF, highly configurable

<http://world.episerver.com/Documentation/Items/Tech-Notes/EPiServer-CMS-5/EPiServer-CMS-5-R2-SP2/Event-Management-System-Specification/>

# Cache Invalidation – Resources

## » Test with the RemoteEventListener tool

<http://world.episerver.com/Documentation/Items/Tech-Notes/EPiServer-CMS-5/EPiServer-CMS-5-R2-SP2/Event-Management-System-Specification/>

## » Read More:

- Fredrik Haglund's blog

[blog.fredrikhaglund.se/blog/2009/09/22/episerver-cms-how-to-configure-remote-events-with-many-servers-and-firewalls-between-them/](http://blog.fredrikhaglund.se/blog/2009/09/22/episerver-cms-how-to-configure-remote-events-with-many-servers-and-firewalls-between-them/)

- LoadBalancing in 6 steps

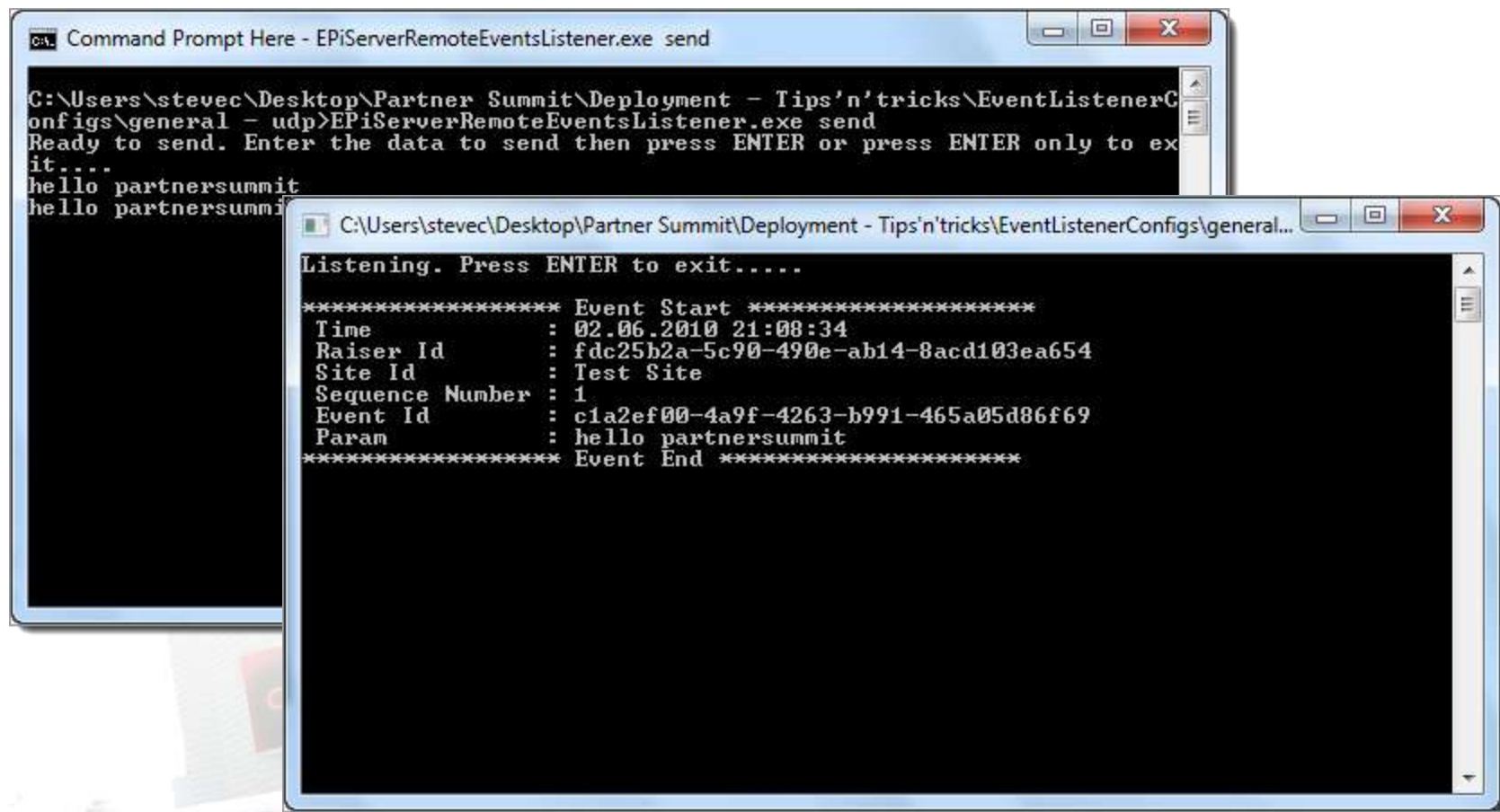
<http://labs.episerver.com/en/Blogs/Allan/Dates/112230/11/LoadBalancing-in-6-steps/>

- EPiServer FAQ 228

<http://world.episerver.com/FAQ/Items/Multicast-UDP-not-working/>



# Using RemoteEventListener



The image shows two overlapping Windows Command Prompt windows. The background window is titled "Command Prompt Here - EpiServerRemoteEventsListener.exe send" and shows the command `EpiServerRemoteEventsListener.exe send` being executed. The foreground window is titled "C:\Users\stevec\Desktop\Partner Summit\Deployment - Tips'n'tricks\EventListenerConfigs\general..." and shows the application's output, including event details like Time, Raiser Id, Site Id, Sequence Number, Event Id, and Param.

```
Command Prompt Here - EpiServerRemoteEventsListener.exe send
C:\Users\stevec\Desktop\Partner Summit\Deployment - Tips'n'tricks\EventListenerConfigs\general - udp>EpiServerRemoteEventsListener.exe send
Ready to send. Enter the data to send then press ENTER or press ENTER only to exit....
hello partnersummit
hello partnersummit

C:\Users\stevec\Desktop\Partner Summit\Deployment - Tips'n'tricks\EventListenerConfigs\general...
Listening. Press ENTER to exit.....

***** Event Start *****
Time       : 02.06.2010 21:08:34
Raiser Id  : fdc25b2a-5c90-490e-ab14-8acd103ea654
Site Id    : Test Site
Sequence Number : 1
Event Id   : c1a2ef00-4a9f-4263-b991-465a05d86f69
Param      : hello partnersummit
***** Event End *****
```



# Continuous Integration

*“Continuous integration describes a set of software engineering practices that speed up the delivery of software by decreasing integration times.”*

[en.wikipedia.org/wiki/Continuous\\_integration](http://en.wikipedia.org/wiki/Continuous_integration)

## » Some of the recommended practices:

- Use a source control management system
- Automate builds
- Make it easy to see the build results
- Commit often
- Automate deployment



# Continuous Integration - Tools

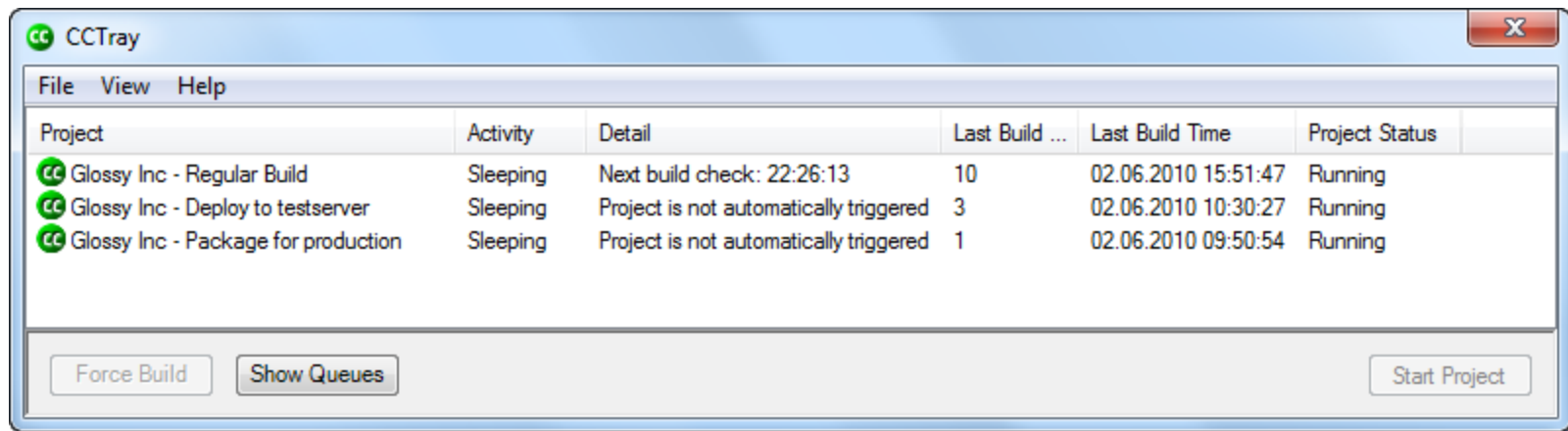
- » CruiseControl.NET
  - <http://ccnet.thoughtworks.com>
- » TeamCity
  - <http://www.jetbrains.com/teamcity>
- » Microsoft Team Foundation System



# You'll never look back

- » Catch build & integration errors early
- » Do not compile and package manually
- » Add css/js compression etc to your builds
- » Everyone on the team should be able to build
  - If not fully automated, pick a deployment responsible
- » Invaluable for maintenance
  - Keep the build server around (virtual?)
- » Prepare files or do the actual deployment directly from the tool (scripted)
  - Dev/Test could/should be deployed automatically

# CruiseControl.NET Tray Application



## Glossy Inc - Regular Build Build Successful: Build 4

Inbox | X

☆ build to steve

10:05 AM (50 minutes ago)

Reply to all

CruiseControl.NET Build Results for project Glossy Inc - Regular Build ([web page](#))

### BUILD SUCCESSFUL

Project: Glossy Inc - Regular Build

Date of build: 2010-06-02 10:05:44

Running time: 00:00:02

Integration Request: Build (IfModificationExists) triggered from IntervalTrigger

Last changed: 2010-06-02 10:04:58

Last log entry: Changed length of preview text on front page

Modifications since last build (1)

Modified	<a href="#">steve</a>	<a href="#">/trunk/website/Default.aspx</a>	Changed length of preview text on front page	2010-06-02 10:04:58
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# Configuration – IIS

## » IIS 6 vs. 7

- Oh my
- Features and stuff
- Develop on same (or near) production IIS version
- See tech note: [Changes Between IIS6 and IIS7](#)

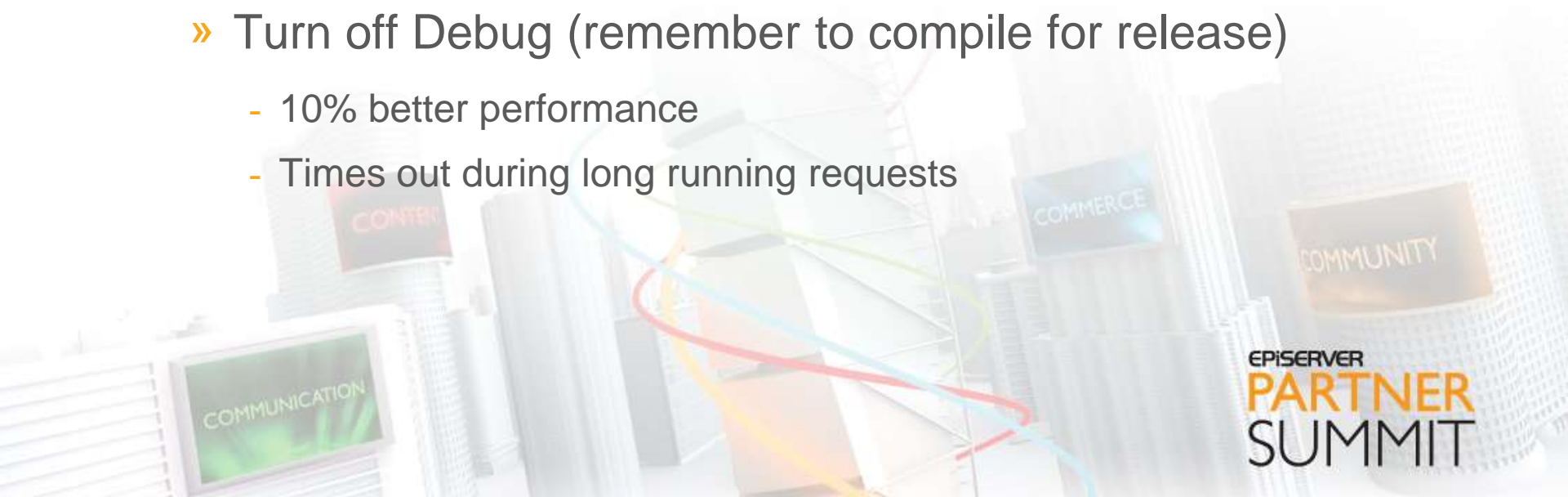
## » Config on IIS 7 is way better than IIS 6

- Easier deployment
- IIS Management Console saves to config files
- Make sure you know about “Feature Delegation”



## More Configuration – IIS

- » Add server name to http headers in load balanced environments
- » Machine Keys can be generated in IIS 7
- » Application Pool Settings
  - Recycling on specific times (02:00)
- » Turn off Debug (remember to compile for release)
  - 10% better performance
  - Times out during long running requests



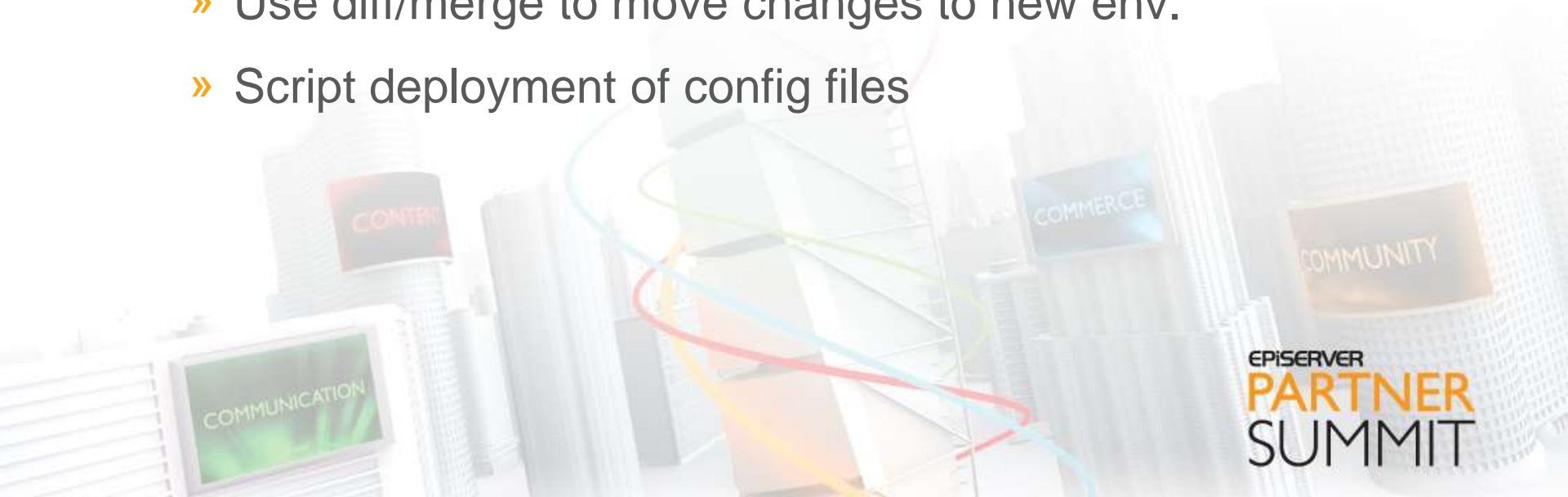
# Even More Configuration – IIS

- » Client caching
  - Set cache timeout for VPPs
  - Use YSlow or similar to test
- » Output caching



# Configuration Change Management

- » Keep configuration under source control
  - Except connectionStrings.config and other security sensitive data
- » Split into section files (configSource)
  - Only split sections that differ
- » Use diff/merge to move changes to new env.
- » Script deployment of config files



# Log4net

## » Set up Rolling File Appender

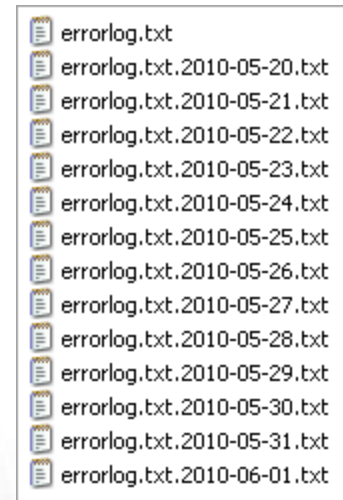
- Beware of buffering
- File Appender does not buffer

## » Use Warn (not Debug)

## » Do not log to C:

## » Plan to roll logs

- Do not fill the drive with log files
- Don't forget the IIS logs



# Security

## » Remove IIS features you do not use

- "Server Manager" or "Turn Windows features on or off"
- <http://learn.iis.net/page.aspx/29/installing-iis-7-on-windows-server-2008-or-windows-server-2008-r2/>

## » Encrypt the connectionStrings.config file

- "C:\Windows\Microsoft.NET\Framework\v2.0.50727\aspnet\_regiis.exe"  
-pef "connectionStrings" "c:\episerver\sites\mysite"  
-prov "DataProtectionConfigurationProvider"

## » Remove UI folder on front end server

## » IIS Lock Down and other tools

## » Stop EPiServer Services not in use

## Security - Continued

- » Remove test users from the database
- » Remove test content from the site
- » Verify that your folder structure is secured
  - Modules with .aspx files that does not check sec.
  - Editor/admin pages that skips authentication
- » Remove “X-Powered-By” header
- » Do you need SSL?
  - Forms auth sends username and password in clear text



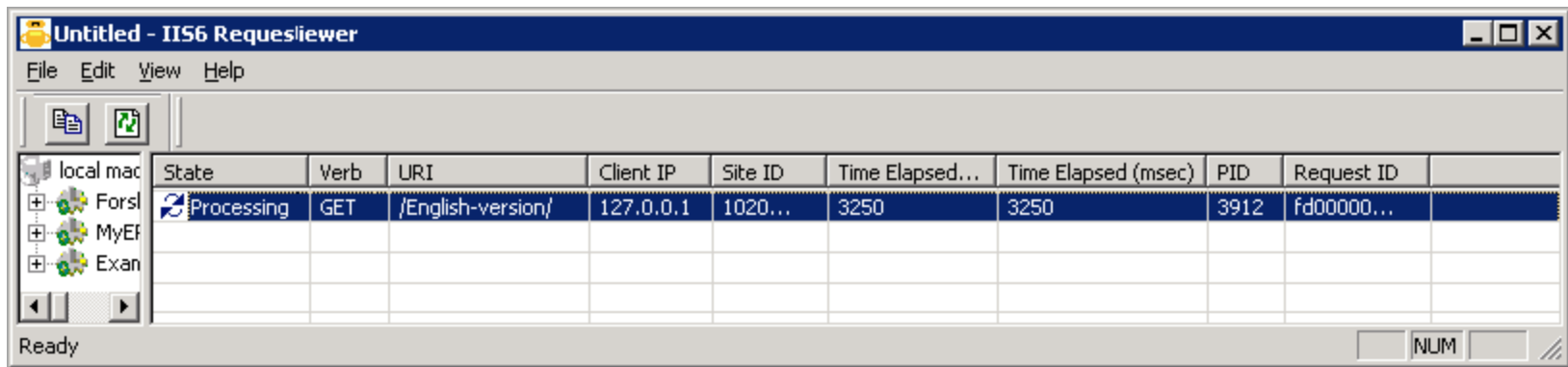
## After Launch

- » Having performance problems?
  - Can you use output caching?
- » Log to see what happens
- » Use Performance Monitor to get a better view
  - Requests / Sec
  - Requests Total
  - Memory Usage (process)
  - CPU Usage (w3 process)
  - Cache utilization
  - Errors Total



# Identify bottle necks

- » See running IIS Request
  - Win 2003: IIS Trace Diagnostics



The screenshot shows the 'Untitled - IIS6 Requestviewer' window. The menu bar includes File, Edit, View, and Help. On the left is a tree view with 'local mac' expanded, showing 'Forsl', 'MyEP', and 'Exan'. The main area is a table with the following columns: State, Verb, URI, Client IP, Site ID, Time Elapsed..., Time Elapsed (msec), PID, and Request ID. A single row is visible with the following data: State: Processing, Verb: GET, URI: /English-version/, Client IP: 127.0.0.1, Site ID: 1020..., Time Elapsed: 3250, Time Elapsed (msec): 3250, PID: 3912, Request ID: fd00000... The status bar at the bottom shows 'Ready' and a 'NUM' button.

State	Verb	URI	Client IP	Site ID	Time Elapsed...	Time Elapsed (msec)	PID	Request ID
Processing	GET	/English-version/	127.0.0.1	1020...	3250	3250	3912	fd00000...

- "C:\Program Files\IIS Resources\TraceDiag\iisreqmon.exe"
- » Win 2008: Use IIS Manager
  - Server / Worker Processes / App Pool / Requests

## Other Resources

- » Checklist for deploying EPiServer sites
  - <http://labs.dropit.se/blogs/post/2010/01/10/Checklist-for-deploying-EPiServer-sites.aspx>
- » Complex EPiServer CMS Projects
  - <http://world.episerver.com/Get-Started/Complex-EPiServer-CMS-Projects/>





# evest



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