envision IT

Performance Tuning in SharePoint Online and On Premises

November 25, 2015

SharePoint

Office 365

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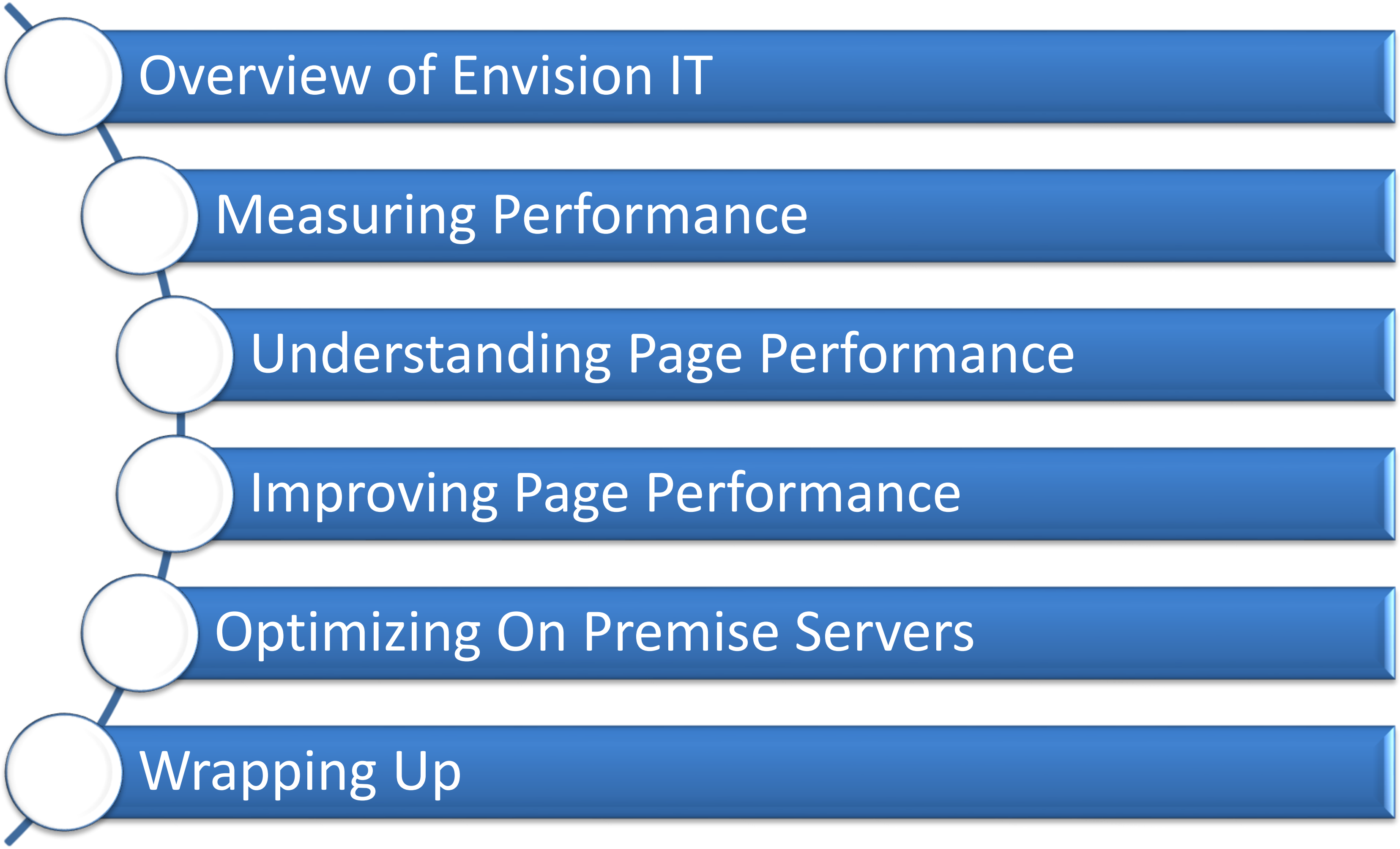
- www.envisionit.com
- Twitter @carsonpeter
- VP Toronto SharePoint User Group

Agenda



- Overview of Envision IT
- Measuring Performance
- Understanding Page Performance
- Improving Page Performance
- Optimizing On Premise Servers
- Wrapping Up

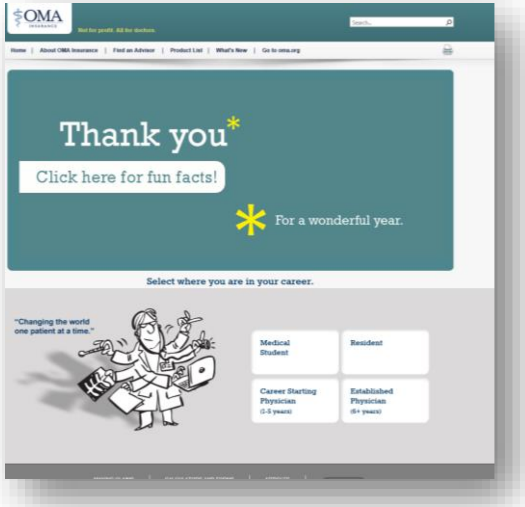
Envision IT Overview

- O365 Productivity Consultants
- Go-to partner for SharePoint Websites, Intranets, Extranets, and Collaboration portals
- Working with SharePoint since 2001
- Microsoft Gold Partner
- Multiple award winner

Microsoft Partner
Gold Collaboration and Content
Silver Application Development
Silver Cloud Platform

Envision IT

Public Websites


OMA INSURANCE
Not for profit. All for doctors.
Search...
Home | About OMA Insurance | Find an Advisor | Product List | What's New | Go to oma.org

Thank you*

Click here for fun facts!

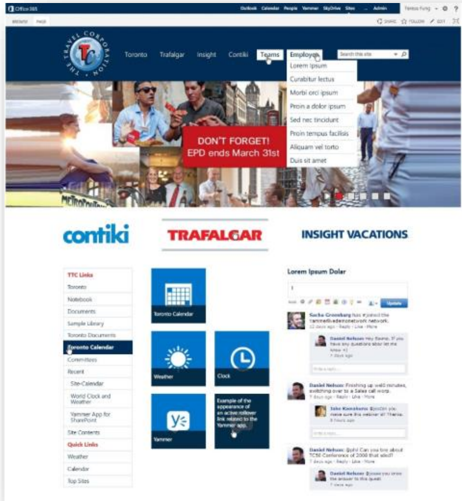
* For a wonderful year.

Select where you are in your career.

"Changing the world one patient at a time."

Medical Student
Resident
Career Starting Physician (1-5 years)
Established Physician (6+ years)

Intranets / Staff Portals



DON'T FORGET!
EPD ends March 31st

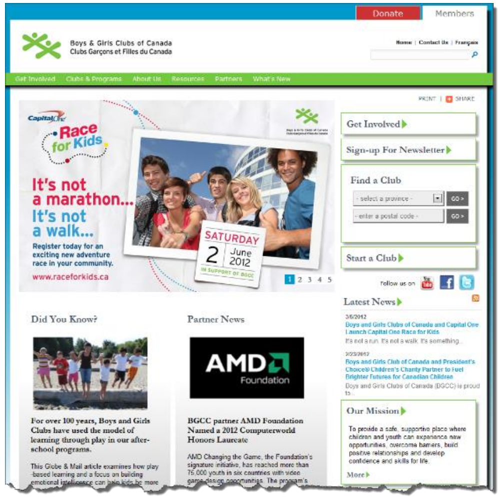
Example of the appearance of an active rollover link related to the Yammer app.

Lorem Ipsum Dolar

Daniel Nelson: Finishing up well minutes, switching over to a Sales call work.

Daniel Nelson: @phil Can you tell about TC50 Conference of 2000 that sted?

Extranets / Member Portals



It's not a marathon... It's not a walk...

Register today for an exciting new adventure race in your community.

www.raceforkids.ca

Latest News

3/5/2012
Boys and Girls Clubs of Canada and Capital One Launch Capital One Race for Kids
It's not a run. It's not a walk. It's something...

3/23/2012
Boys and Girls Club of Canada and President's Choice® Children's Charity Partner to Fuel Brighter Futures for Canadian Children
Boys and Girls Clubs of Canada (BGCC) is proud to...

Did You Know?

For over 100 years, Boys and Girls Clubs have used the model of learning through play in our after-school programs.

This Globe & Mail article examines how play-based learning and a focus on building emotional intelligence can help kids be more

Partner News

BGCC partner AMD Foundation Named a 2012 Computerworld Honors Laureate

AMD Changing the Game, the Foundation's signature initiative, has reached more than 75,000 youth in six countries with video game-design opportunities. The program's

Our Mission

To provide a safe, supportive place where children and youth can experience new opportunities, overcome barriers, build positive relationships and develop confidence and skills for life.

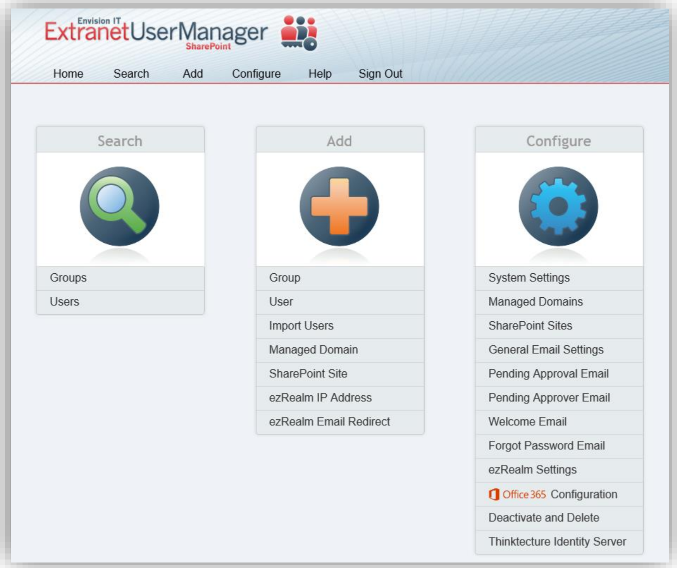
More

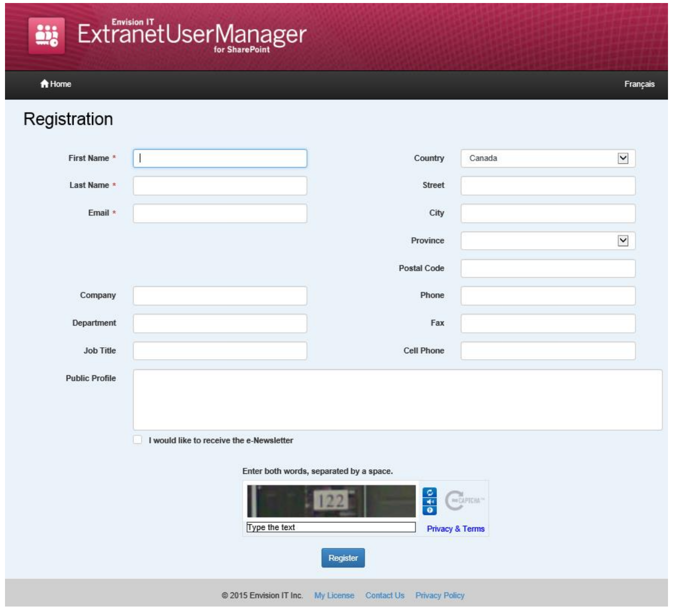
Office 365

SharePoint

Microsoft Azure

Extranet User Manager





Country: Canada

□ I would like to receive the e-Newsletter

Enter both words, separated by a space.

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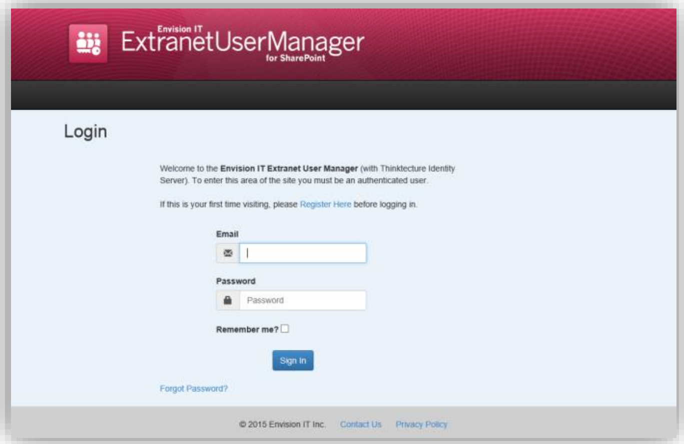

Welcome to the **Envision IT Extranet User Manager** (with Thinktecture Identity Server). To enter this area of the site you must be an authenticated user.

If this is your first time visiting, please Register Here before logging in.

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- Easy delegation of user management to business
- Self-registration, approvals, forgotten password reset
- Simplified login for both internal and external users

Poll 1

Which version of SharePoint are you currently using?

- Office 365
- SharePoint Server 2013
- SharePoint Server 2010
- SharePoint Foundation (2010 or 2013)
- MOSS 2007 or WSS 3.0

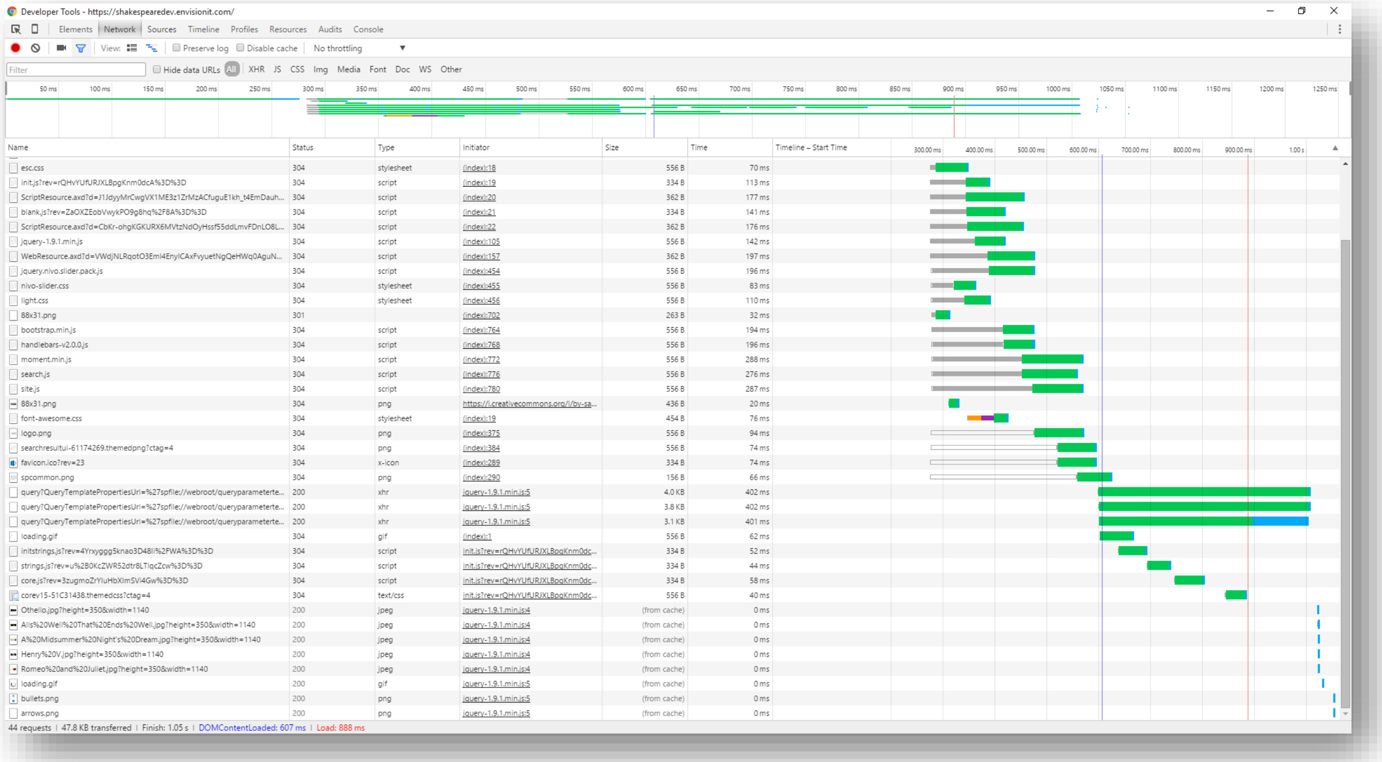
Poll 2

What use case are you looking to optimize performance on?

- Public web site
- Intranet Portal
- Collaboration Portal

Measuring Page Performance

- Developer Toolbar in IE or Chrome
- Activate by pressing F12
- Network tab shows timing to load each page element
- Cached versus full page reload (F5 vs. Control F5)
- Time to first byte, page load, page fully rendered



Name	Status	Type	Initiator	Size	Time
esc.css	304	stylesheet	(index):18	556 B	70 ms
init.js?rev=rQHvYUfURJXLBpgKnm0dcA%3D%3D	304	script	(index):19	334 B	113 ms
ScriptResource.axd?d=J1JdyyMrCwgVX1ME3z1ZrMzACfuguE1kh_t4EmDauh...	304	script	(index):20	362 B	177 ms
blank.js?rev=ZaOXZEobVwykPO9g8hq%2F8A%3D%3D	304	script	(index):21	334 B	141 ms
ScriptResource.axd?d=CbKr-ohgKGKURX6MVtzNdOyHssf55ddLmvFDnLO8L...	304	script	(index):22	362 B	176 ms
jquery-1.9.1.min.js	304	script	(index):105	556 B	142 ms
WebResource.axd?d=VWdjNLRqotO3EmI4EnyICAxFvyuetNgQeHWq0AguN...	304	script	(index):157	362 B	197 ms
jquery.nivo.slider.pack.js	304	script	(index):454	556 B	196 ms
nivo-slider.css	304	stylesheet	(index):455	556 B	83 ms
light.css	304	stylesheet	(index):456	556 B	110 ms
88x31.png	301		(index):702	263 B	32 ms
bootstrap.min.js	304	script	(index):764	556 B	194 ms
handlebars-v2.0.0.js	304	script	(index):768	556 B	196 ms
moment.min.js	304	script	(index):772	556 B	288 ms
search.js	304	script	(index):776	556 B	276 ms
site.js	304	script	(index):780	556 B	287 ms
88x31.png	304	png	https://i.creativecommons.org/l/by-sa...	436 B	20 ms
font-awesome.css	304	stylesheet	(index):19	454 B	76 ms
logo.png	304	png	(index):375	556 B	94 ms
searchresultui-61174269.themedpng?ctag=4	304	png	(index):384	556 B	74 ms
favicon.ico?rev=23	304	x-icon	(index):289	334 B	74 ms
spcommon.png	304	png	(index):290	156 B	66 ms
query?QueryTemplatePropertiesUrl=%27spfile://webroot/queryparameterte...	200	xhr	jquery-1.9.1.min.js:5	4.0 KB	402 ms
query?QueryTemplatePropertiesUrl=%27spfile://webroot/queryparameterte...	200	xhr	jquery-1.9.1.min.js:5	3.8 KB	402 ms
query?QueryTemplatePropertiesUrl=%27spfile://webroot/queryparameterte...	200	xhr	jquery-1.9.1.min.js:5	3.1 KB	401 ms
loading.gif	304	gif	(index):1	556 B	62 ms
initstrings.js?rev=4Yrxyggg5knao3D48li%2FWA%3D%3D	304	script	init.js?rev=rQHvYUfURJXLBpgKnm0dc...	334 B	52 ms
strings.js?rev=u%2B0KcZWR52dtr8LTlqcZcw%3D%3D	304	script	init.js?rev=rQHvYUfURJXLBpgKnm0dc...	334 B	44 ms
core.js?rev=3zugmoZrYluHbXlmSVi4Gw%3D%3D	304	script	init.js?rev=rQHvYUfURJXLBpgKnm0dc...	334 B	58 ms
corev15-51C31438.themedcss?ctag=4	304	text/css	init.js?rev=rQHvYUfURJXLBpgKnm0dc...	556 B	40 ms
Othello.jpg?height=350&width=1140	200	jpeg	jquery-1.9.1.min.js:4	(from cache)	0 ms
Alls%20Well%20That%20Ends%20Well.jpg?height=350&width=1140	200	jpeg	jquery-1.9.1.min.js:4	(from cache)	0 ms
A%20Midsummer%20Night's%20Dream.jpg?height=350&width=1140	200	jpeg	jquery-1.9.1.min.js:4	(from cache)	0 ms
Henry%20V.jpg?height=350&width=1140	200	jpeg	jquery-1.9.1.min.js:4	(from cache)	0 ms
Romeo%20and%20Juliet.jpg?height=350&width=1140	200	jpeg	jquery-1.9.1.min.js:4	(from cache)	0 ms
loading.gif	200	gif	jquery-1.9.1.min.js:5	(from cache)	0 ms
bullets.png	200	png	jquery-1.9.1.min.js:5	(from cache)	0 ms
arrows.png	200	png	jquery-1.9.1.min.js:5	(from cache)	0 ms

Timeline – Start Time

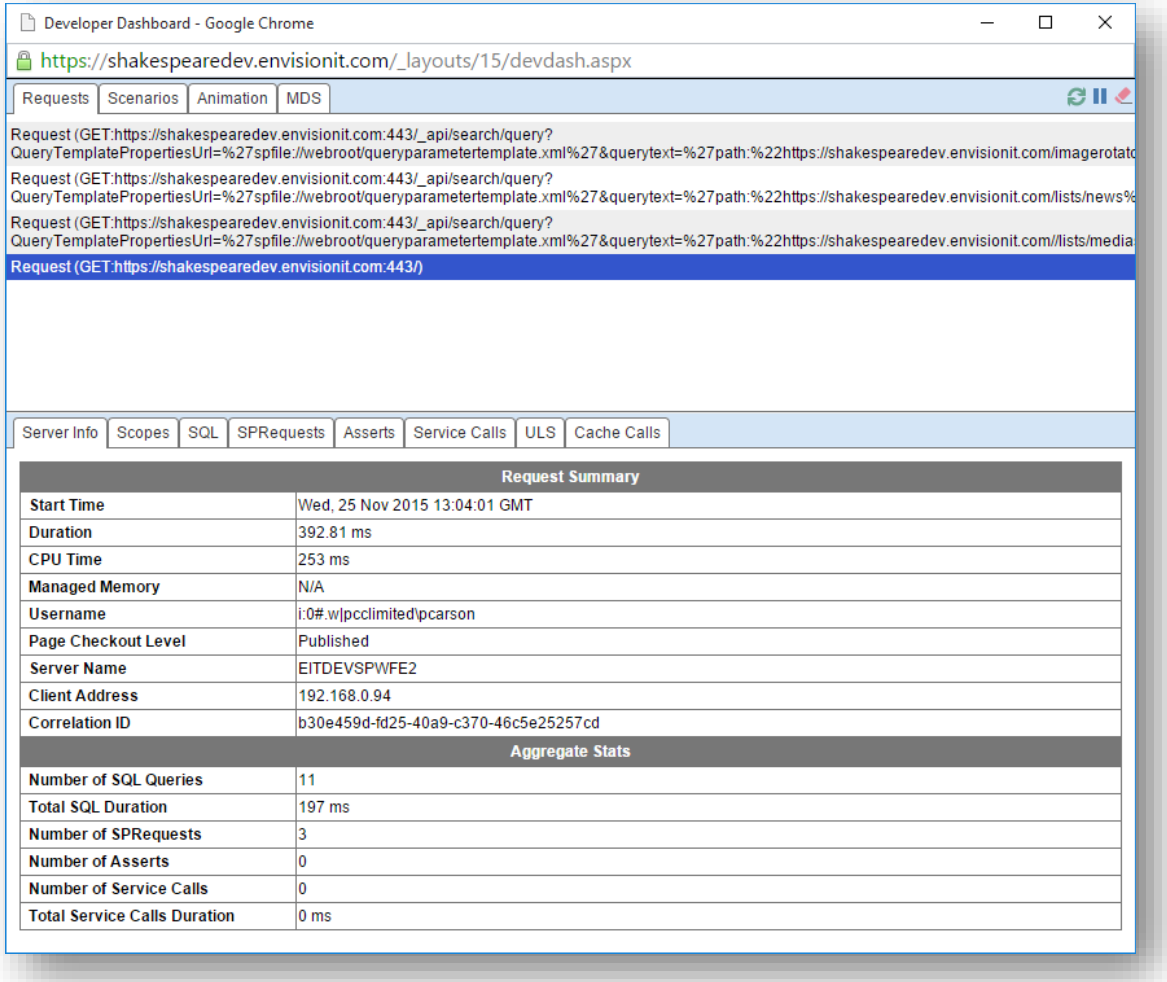
44 requests | 47.8 KB transferred | Finish: 1.05 s | DOMContentLoaded: 607 ms | Load: 888 ms

Developer Dashboard

- Enabled through PowerShell on the server

```
Add-PSSnapIn Microsoft.SharePoint.Powershell
$content =
([Microsoft.SharePoint.Administration.SPWebService]::ContentService)
$appsetting =$content.DeveloperDashboardSettings
$appsetting.DisplayLevel =
[Microsoft.SharePoint.Administration.SPDeveloperDashboardLevel]::On
$appsetting.Update()
```

- Provides SharePoint and SQL timings and server details
- For Office 365, support request is needed to get server details


Developer Dashboard - Google Chrome
https://shakespearedev.envisionit.com/_layouts/15/devdash.aspx
Requests
Scenarios
Animation
MDS
Server Info
Scopes
SQL
SPRequests
Asserts
Service Calls
ULS
Cache Calls

```
Request (GET:https://shakespearedev.envisionit.com:443/_api/search/query?
QueryTemplatePropertiesUrl=%27spfile://webroot/queryparametertemplate.xml%27&querytext=%27path:%22https://shakespearedev.envisionit.com/imagerotatc
Request (GET:https://shakespearedev.envisionit.com:443/_api/search/query?
QueryTemplatePropertiesUrl=%27spfile://webroot/queryparametertemplate.xml%27&querytext=%27path:%22https://shakespearedev.envisionit.com/lists/news%
Request (GET:https://shakespearedev.envisionit.com:443/_api/search/query?
QueryTemplatePropertiesUrl=%27spfile://webroot/queryparametertemplate.xml%27&querytext=%27path:%22https://shakespearedev.envisionit.com//lists/media
Request (GET:https://shakespearedev.envisionit.com:443/)
```

Request Summary	
Start Time	Wed, 25 Nov 2015 13:04:01 GMT
Duration	392.81 ms
CPU Time	253 ms
Managed Memory	N/A
Username	i:0#.w|pcclimited\pcarson
Page Checkout Level	Published
Server Name	EITDEVSPWFE2
Client Address	192.168.0.94
Correlation ID	b30e459d-fd25-40a9-c370-46c5e25257cd
Aggregate Stats	
Number of SQL Queries	11
Total SQL Duration	197 ms
Number of SPRequests	3
Number of Asserts	0
Number of Service Calls	0
Total Service Calls Duration	0 ms

Visual Studio Load Testing

- Record Web Tests in Visual Studio
- Assemble them into Load Tests
- Play them back through Azure
- Simulate large numbers of users across different browsers and geographies

- http://blogs.msdn.com/b/charles_sterling/archive/2015/06/01/load-test-series-part-i-creating-web-performance-tests-for-a-load-test.aspx

Understanding Page Performance

- SharePoint server page processing
- Network latency
- Number and size of page elements

Improving Page Performance

- Navigation style - structured / term store / search / custom
- Server web parts vs. client side development
- Leveraging search extensively
- Using a Content Delivery Network to improve download speed of page elements
- Combine and compress files
- Image renditions to reduce image sizes

Optimize page performance in SharePoint 2013

https://msdn.microsoft.com/en-us/library/office/dn449110.aspx

Navigation options for SharePoint Online

Structural navigation	Managed navigation	Search-driven navigation
Pros: •Easy to configure •Security-trimmed •Automatically updates as sites are added	Pros: •Easy to maintain •Performs well even with complex navigation	Pros: •Security-trimmed •Automatically updates as sites are added •Fast loading time and locally cached navigation structure
Cons: •Can perform poorly with complex site structure	Cons: •Not security-trimmed •Not automatically updated to reflect site structure	Cons: •No ability to easily order sites •Requires customization of the master page (technical skills required)

https://msdn.microsoft.com/en-us/library/dn850367.aspx

EIT_ManagedNavigation Control

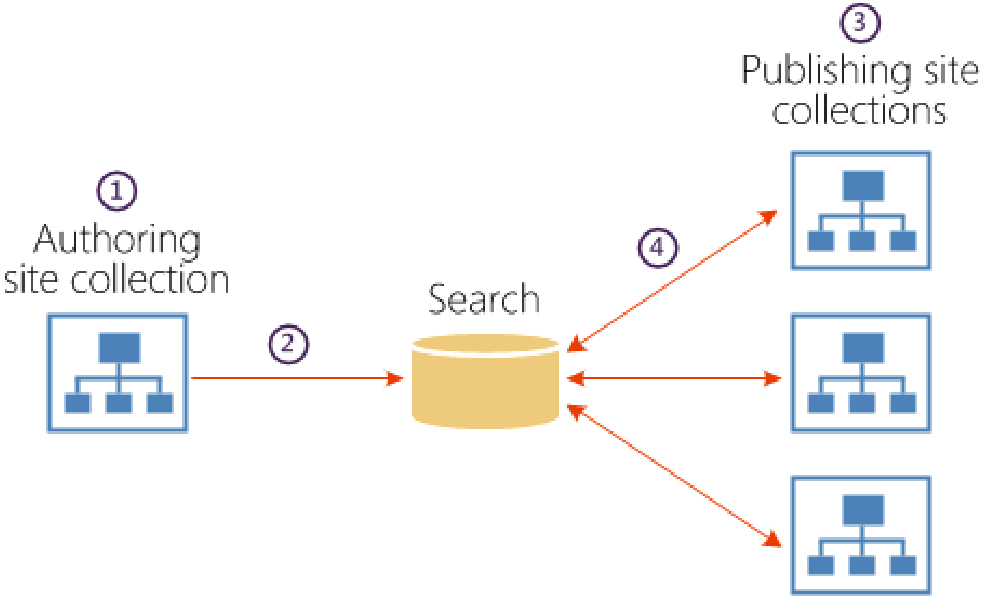
- Server side control for on premises
- Based off of Managed Navigation
- Renders Bootstrap friendly nav HTML
- Can be security trimmed
- Optimized through caching
- Global nav, left nav, and breadcrumb control styles
- www.envisionit.com/shakespeare

Static SharePoint Online Navigation

- Based off of Managed Navigation
- Renders Bootstrap friendly nav HTML
- Static HTML loads the global nav with the page
- JavaScript renders the left nav and breadcrumb
- Admin page updates the master page from nav in term store

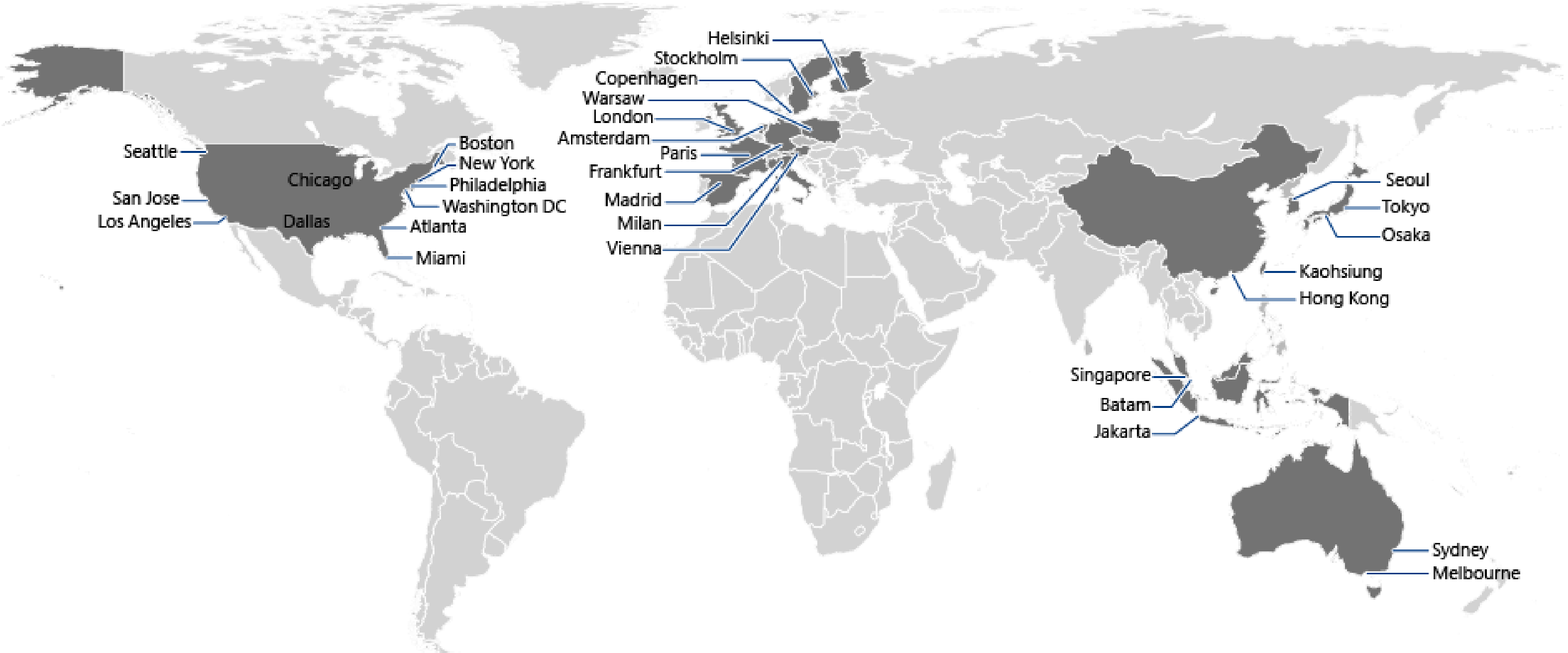
Cross-Site Publishing

- Search crawls the content
- Content Search Web Part displays it
- Can also directly access content through search REST APIs
- We’ve built a framework using jQuery and Handlebars



Content Delivery Network

- CDN is a network of servers around the world to get your data close to your users
- https://azure.microsoft.com/en-us/services/cdn/
- https://azure.microsoft.com/en-gb/documentation/articles/cdn-pop-locations/
- http://www.asp.net/ajax/cdn

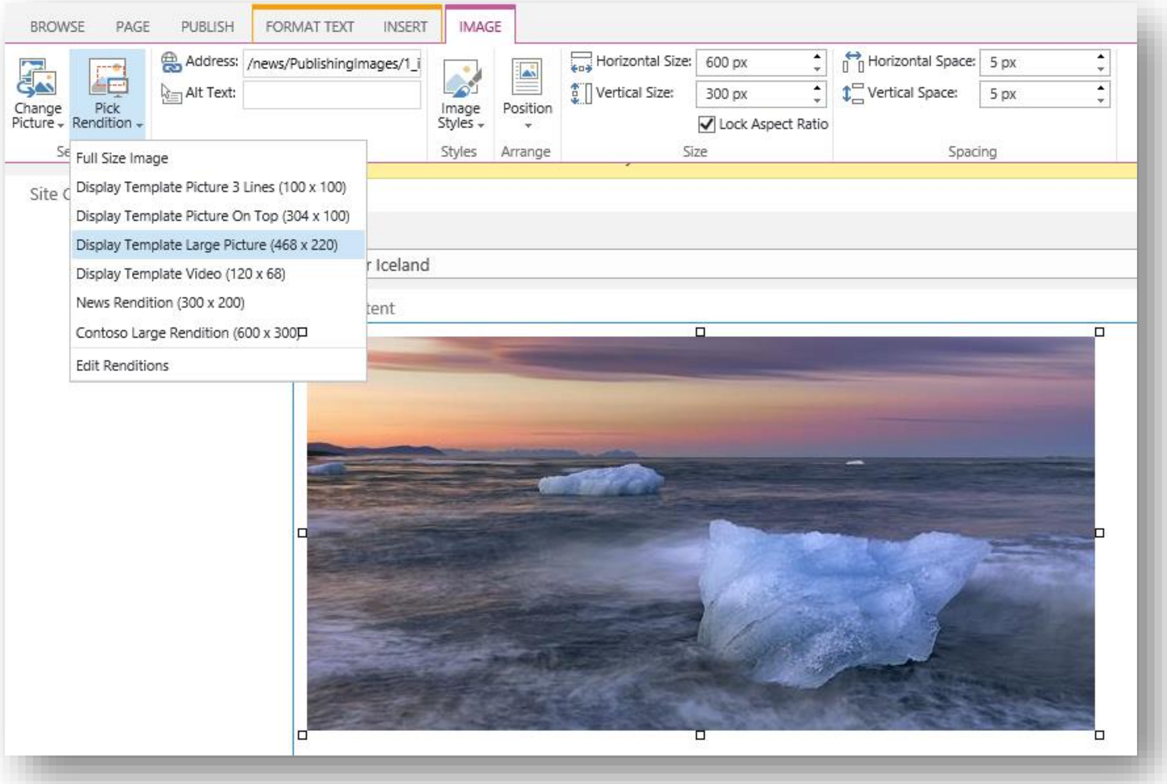


Combine and Compress Files

- Minimize JavaScript and CSS files
- Use Typescript to author JavaScript
  - www.typescriptlang.org
- Less for CSS authoring
  - http://lesscss.org/
- Combine multiple images together
  - Use CSS to render individual images from the combined file

Image Renditions

- Define rendition sizes for the site
- Content author can choose a rendition when placing image
- Can be baked into elements such as content rollups
- Content author can manipulate rendition cropping
- Uses blob cache



Address: /news/PublishingImages/1_i

Alt Text:

Horizontal Size: 600 px

Vertical Size: 300 px

☑ Lock Aspect Ratio

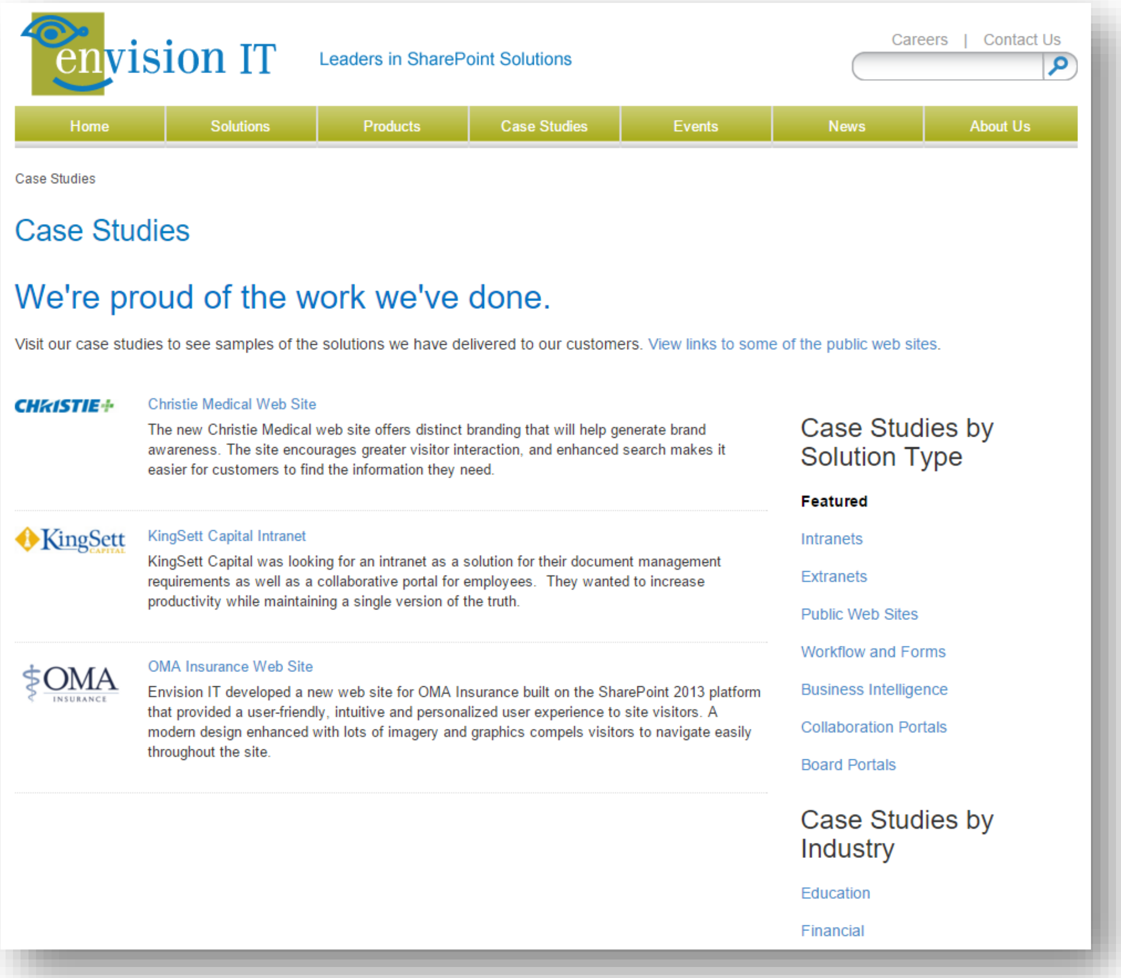
Horizontal Space: 5 px

Vertical Space: 5 px

BROWSE
PAGE
PUBLISH
FORMAT TEXT
INSERT
IMAGE
Change Picture
Pick Rendition
Image Styles
Position
Styles
Arrange
Size
Spacing
Full Size Image
Display Template Picture 3 Lines (100 x 100)
Display Template Picture On Top (304 x 100)
Display Template Large Picture (468 x 220)
Display Template Video (120 x 68)
News Rendition (300 x 200)
Contoso Large Rendition (600 x 300)
Edit Renditions
Site C
r Iceland
tent

Client Side Rendering

- Use client-side code to avoid page turns
- More responsive for end users
- www.envisionit.com/Case-Studies



Case Studies

We're proud of the work we've done.

Visit our case studies to see samples of the solutions we have delivered to our customers. View links to some of the public web sites.

Christie Medical Web Site

The new Christie Medical web site offers distinct branding that will help generate brand awareness. The site encourages greater visitor interaction, and enhanced search makes it easier for customers to find the information they need.

KingSett Capital Intranet

KingSett Capital was looking for an intranet as a solution for their document management requirements as well as a collaborative portal for employees. They wanted to increase productivity while maintaining a single version of the truth.

OMA Insurance Web Site

Envision IT developed a new web site for OMA Insurance built on the SharePoint 2013 platform that provided a user-friendly, intuitive and personalized user experience to site visitors. A modern design enhanced with lots of imagery and graphics compels visitors to navigate easily throughout the site.

Case Studies by Solution Type

Featured

Intranets

Extranets

Public Web Sites

Workflow and Forms

Business Intelligence

Collaboration Portals

Board Portals

Case Studies by Industry

Education

Financial

Optimizing On Premise Servers

- Caching - blob cache, site collection object cache
- https://blog.petercarson.ca/Pages/Performance-Tuning-Quick-Tips-for-MOSS-and-SharePoint-2010.aspx
- Warm-up scripts
- SQL and SharePoint server sizing and architecture

Blob Cache

- Caches files on the web front end server
- Reduces traffic back to SQL
- Turned off by default
- Can be flushed with PowerShell

```
$spWeb = Get-SPWebApplication $WebAppURL
[Microsoft.SharePoint.Publishing.PublishingCache]::FlushBlobCache($spWeb)
Write-Host "Flushed the BLOB cache for:" $spWeb
```

Site Collection Object Cache

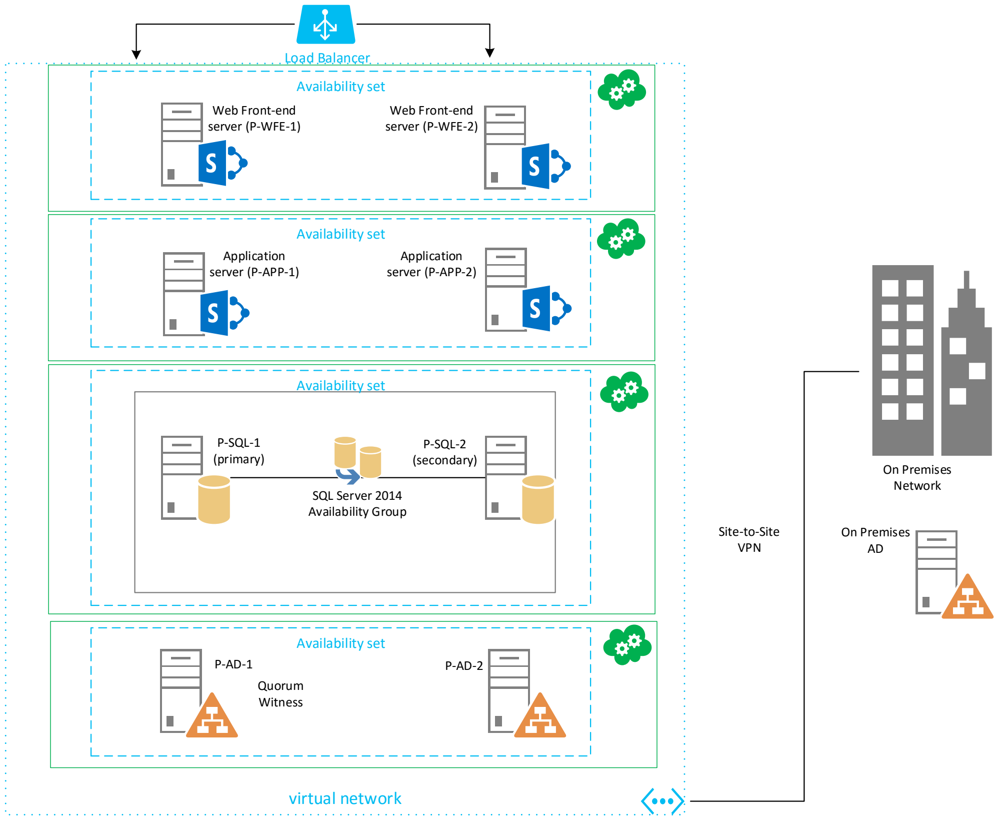
- Leveraged by the Content Query Web Part
- Caches the results of the query
- Multiplier can broaden the query scope to cache results for future queries
- Not as important in 2013 if using Search instead

Warm-Up Scripts

- IIS recycles app pools nightly
- Timing is arbitrary, but can be set
- Warm-up scripts can be run after the site recycles
  - Dramatically improves first user experience
  - Need to hit APIs as well as pages

SQL and SharePoint Sizing

- Farm design is critical to performance
- High availability requirements can also benefit performance
- Testing is important
- SQL setup is very important
- https://blog.petercarson.ca/Pages/Public-Website-Azure-Architecture.aspx
- http://social.technet.microsoft.com/wiki/contents/articles/17201.sharepoint-2013-maximizing-sql-server-2012-performance.aspx



Questions and Next steps

THANK YOU!