

### Sean P. McDonough

SharePoint Gearhead, Developer and Evangelist.

My Company:



Twitter: @spmcdonough

About: http://about.me/spmcdonough

Blog: http://SharePointInterface.com

### SHAREPOINT SATURDAY

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# The Agenda

- 1. Evolution of Development
- 2. Examine the New App Model
- 3. How Apps are Exposed
- 4. Devs and Admins: Together Again!
- 5. Side Notes & Demo

+ Q&A throughout!

CHECKLIST



# So why am I talking about the New App Model?

- believe it or not, my background is development
- I've been working with the new App Model since last summer
- I speak jive ...
   I mean, I speak "admin" too







Developer vs. Administrator

### Ask a dev ...

 Building solutions for SharePoint is hard!

 Setting up SharePoint just to develop is hard

 I'm just trying to solve business problems using the tools available to me



### Ask a dev about admins ...

- They come up with policies just to block our solutions and what they do
- They just seem to want more and more documentation. I spend all day writing!



They're a bunch of trolls!



### Ask an admin ...

- Keeping a SharePoint farm running is hard!
- Farm administration gets harder with each release
- When something goes wrong, I'm the one who gets called and yelled at

### Ask an admin about devs ...

- I tune it up, and their custom code tanks my farm's performance
- RunWithElevatedPrivileges isn't the norm;
   devs need to learn how security works
  - Someone dies the next time I hear, "well, it worked on \*my\* machine"



# Cold War?





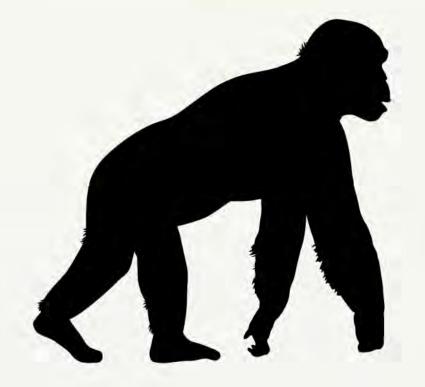


## Developer vs. Administrator

How did it get this way?

# The Evolution of Support for Custom SharePoint Applications





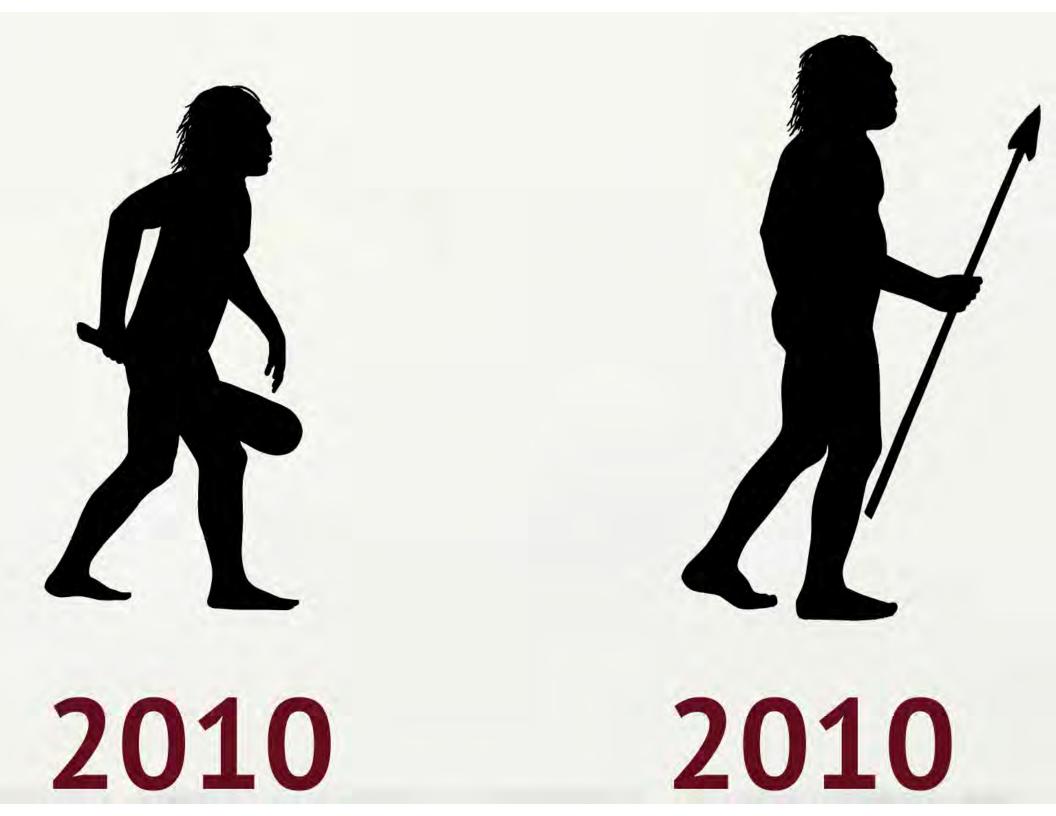
### Windows SharePoint Services 2.0 SharePoint Portal Server 2003

- Server object model available to developers
- No SharePoint-specific development support
- Customizations deployed directly to servers (by hand or through MSI)
- SharePoint unaware of changes being made



### Windows SharePoint Services 3.0 Microsoft Office SharePoint Server 2007

- Features and solution packages (WSPs) added to management custom code deployments
- SharePoint gains awareness of solutions that are available and deployed to the farm
- Primary mode of development still focuses on server object model

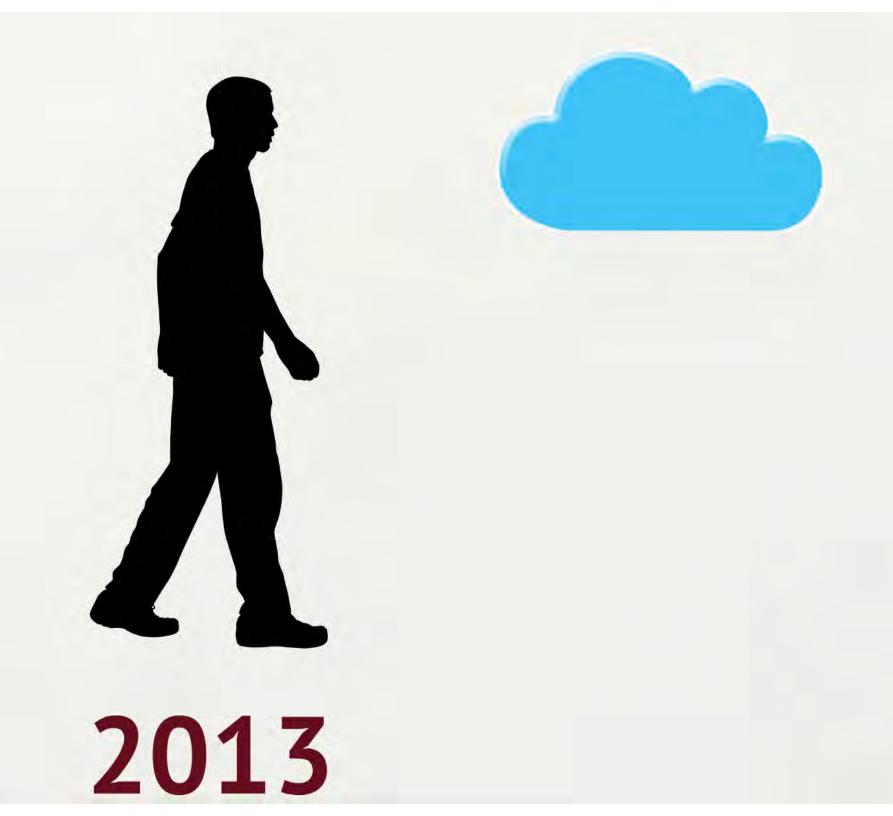


## 2010

### Microsoft SharePoint Foundation 2010 Microsoft SharePoint Server 2010

- Biggest initial change comes for developers: Visual Studio support for building SharePoint solutions.
- Primary focus still on building full-trust, server-side solutions

- Client-side object model (CSOM) is introduced
- Sandboxed solutions are introduced
- Both CSOM and sandboxed solutions represent a change in how solutions are conceptualized and architected



### Microsoft SharePoint Foundation 2013 Microsoft SharePoint Server 2013

- Introduction of the new Cloud App Model (or simply "App Model")
- Focus shifts away from full-trust, server-side code to building client-side applications
- New App Model is pushed heavily by Microsoft and is the only one that will work both on-premises and in Office 365

## The future is cloudy

#### What's so special

Key App Model

#### Isolation

Hygiene

. Ago gata is pensisted within the Ago Web - not the Host We On uninstall, entire Any Web is basically wiped out



Aspects about Apps?



Security











- + Scope controlled by provider implementation
- · Provider chooses their technology stack
- . All "code" is HTML + CSS + JavaScript! . Code can call back to SharePoint independently
- · Minimal security concerns (relatively speaking) . Security can be tricky (\$25 Trust and OAuth 2.0)





- · Special case of Provider-hosted App Model · Technology stack is Azure-based web & SQL · Office 365-only model (for now \_)
- Security simplified by Office 365 and Azure ACS





. Scoped to web/sub-site level

. Everything runs in the browser

Noteworthy







On-Premises / High Trust Model

#### The App Model **Experience**





#### How Apps "Surface" in SharePoint



#### Back to the Cold War ...



#### Is there hope?











Let's install an App











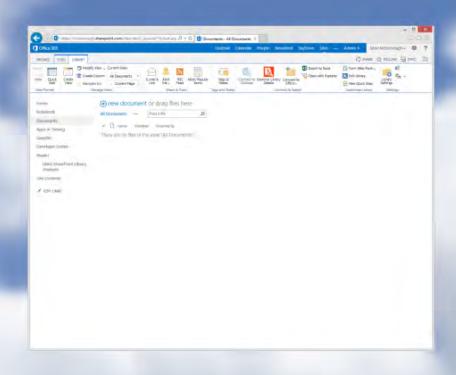


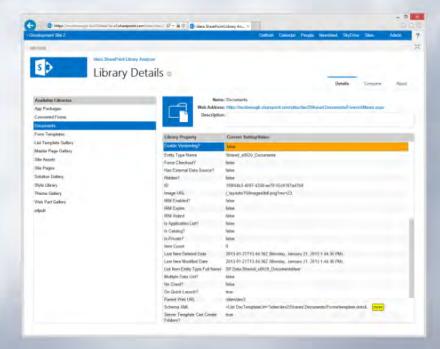


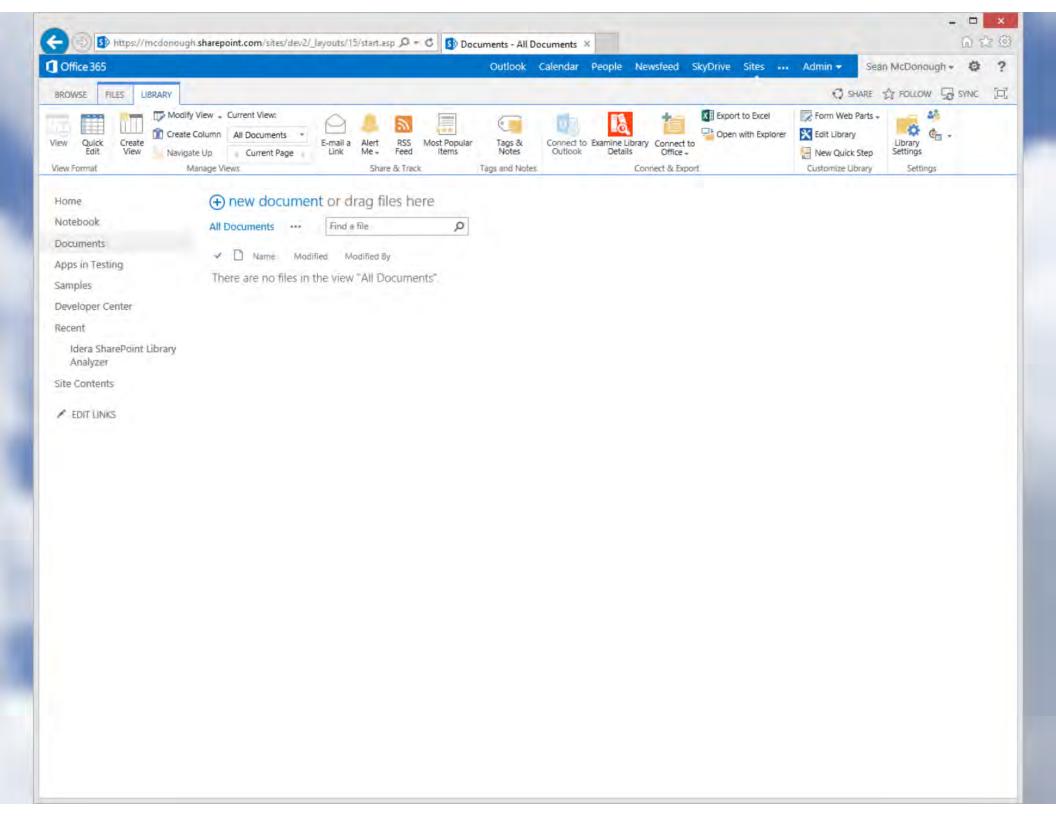


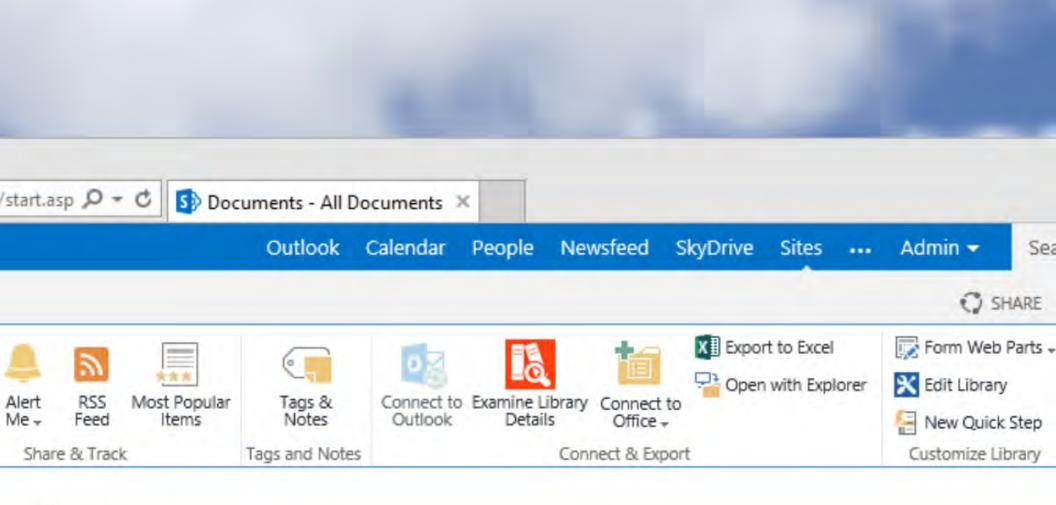


# The App Model Experience







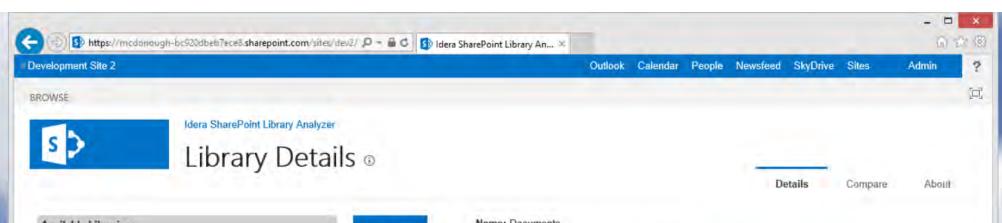


#### ag files here

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'All Documents".



#### **Available Libraries** App Packages Converted Forms Documents Form Templates List Template Gallery Master Page Gallery Site Assets Site Pages Solution Gallery Style Library Theme Gallery Web Part Gallery wfpub

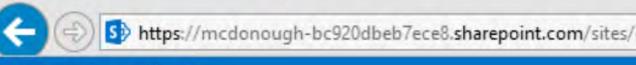


Name: Documents

Web Address: https://mcdonough.sharepoint.com/sites/dev2/Shared Documents/Forms/AllItems.aspx

Description:

Library Property	Current Setting/Value
Enable Versioning?	false
Entity Type Name	Shared_x0020_Documents
Force Checkout?	false
Has External Data Source?	false
Hidden?	false
ID	109f44b3-4097-4338-ae78-55c6167a47b9
Image URL	/_layouts/15/images/itdl.png?rev=23
IRM Enabled?	false
IRM Expire	false
IRM Reject	false
Is Application List?	false
Is Catalog?	false
Is Private?	false
Item Count	0
Last Item Deleted Date	2013-01-21T13:44:36Z (Monday, January 21, 2013 1:44:36 PM)
Last Item Modified Date	2013-01-21T13:44:36Z (Monday, January 21, 2013 1:44:36 PM)
List Item Entity Type Full Name	SP.Data.Shared_x0020_DocumentsItem
Multiple Data List?	false
No Crawl?	false
On Quick Launch?	true
Parent Web URL	/sites/dev2
Schema XML	



Development Site 2

**BROWSE** 



Idera SharePoint Library Analyzer

### Library Detai

#### **Available Libraries**

App Packages

Converted Forms



# Key App Model Aspects

# What's so special





# Key App Model Aspects





about Apps?

// company // company

# Isolation

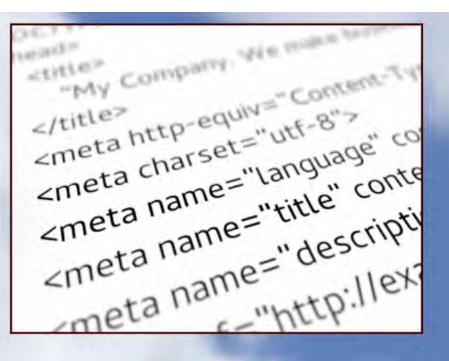
- No code runs on the SharePoint server - it runs on the client, "another server," or both
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- Apps do not have direct access to Host Web SharePoint data



# Hygiene



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## Standards

- App Model focuses on building solutions with presentation tier technologies like HTML, CSS, and JavaScript
- Back-end business logic can be built on/with any stack:
   Microsoft/.NET, LAMP, Java/J2EE, etc.
- SharePoint data is accessed/updated through CSOM and OData-compliant (mostly) REST web service endpoints

# Security

- Apps have no privileged access to SharePoint data; they go through web services
- New App Model introduces the concept of application identity (versus just "user identity")
- OAuth 2.0 is underlying framework for App and Userbased trust

# Are you a developer?

If so, you might be wondering ...

# Are you a developer?

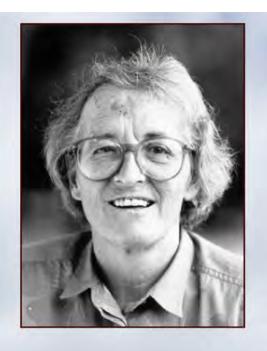
If so, you might be wondering ...



How the #\$@! am I supposed to build an application with these constraints?

# l understand.

# I'm here to help.



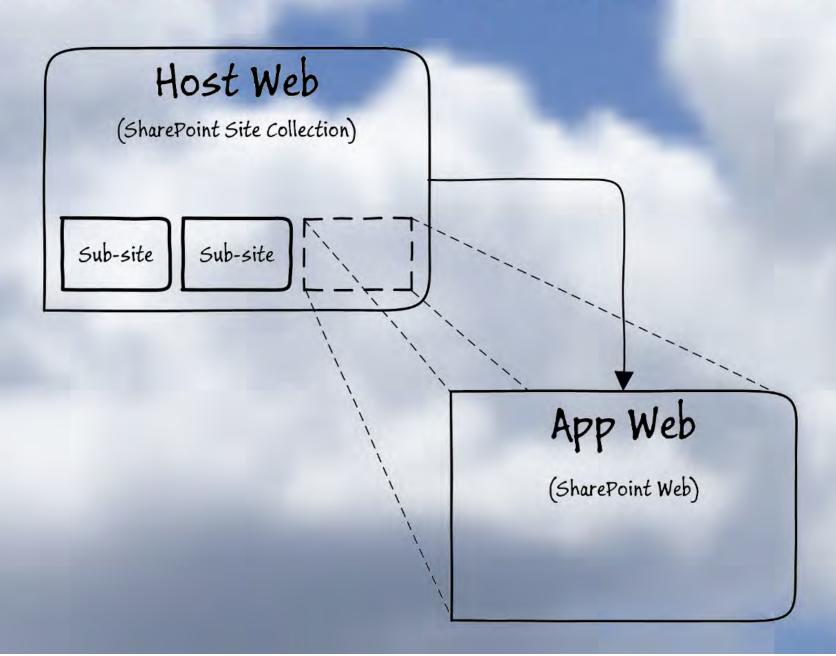
# Dr. Elisabeth Kübler-Ross The Five Stages of Grief

- 1. Denial
- 2. Anger
- 3. Bargaining
- 4. Depression
- 5. Acceptance

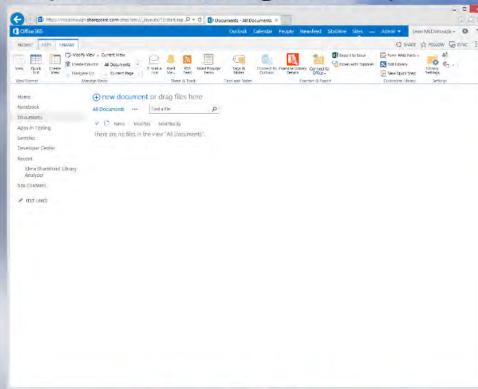
There are App Model Hosting Options



# SharePoint-hosted

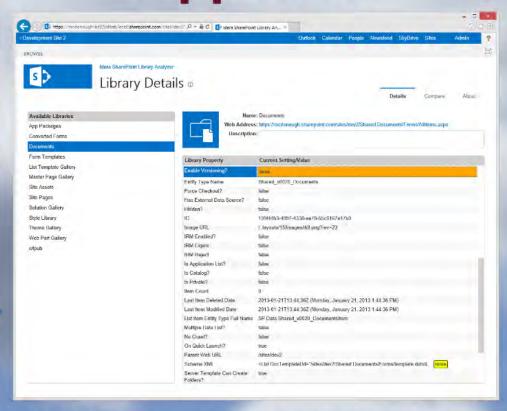


https://mcdonough.sharepoint.com/sites/dev2



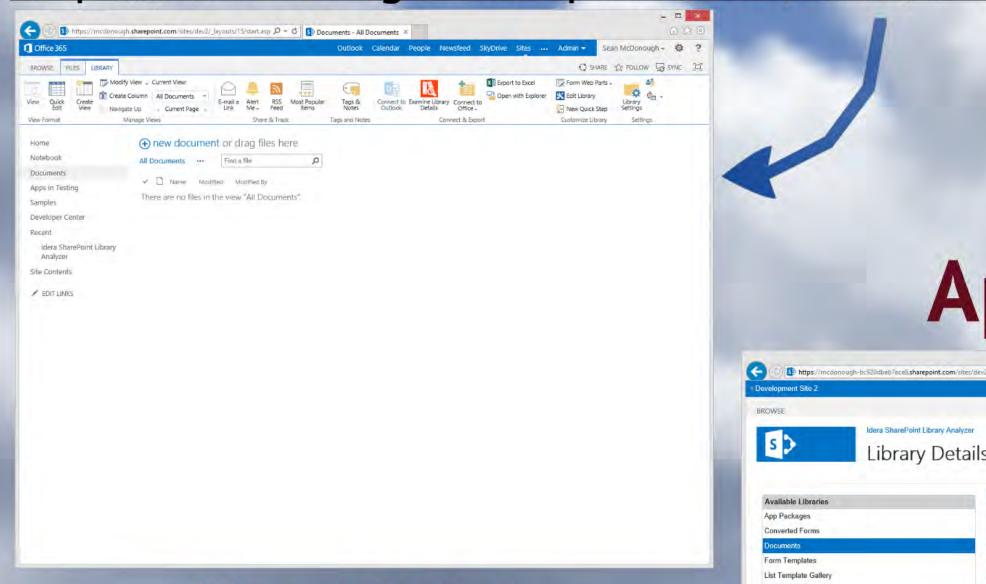
**Host Web** 





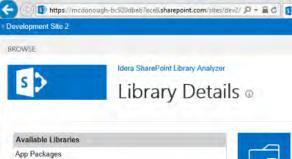
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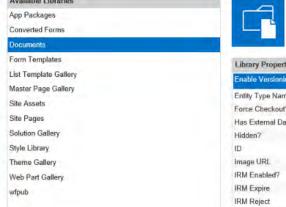
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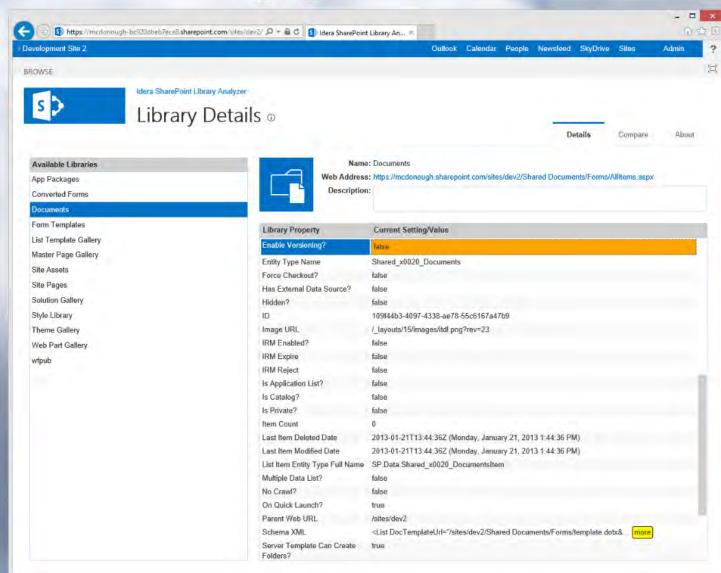
**Host Web** 

Is Application Lis





## App Web



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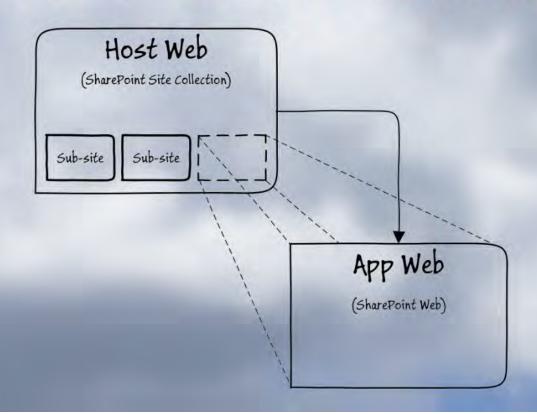
https://mcdonough-bc920dbeb7ece8.sharepoint.com/sites/dev2

- Scoped to web/sub-site level
- Everything runs in the browser
- All "code" is HTML + CSS + JavaScript!
- Minimal security concerns (relatively speaking)

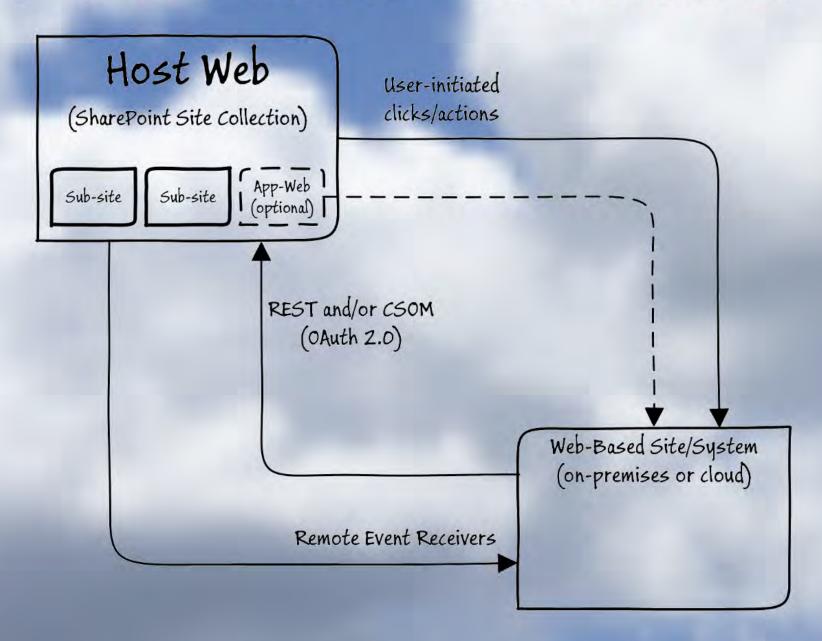


## Noteworthy Points

## **SharePoint-hosted**

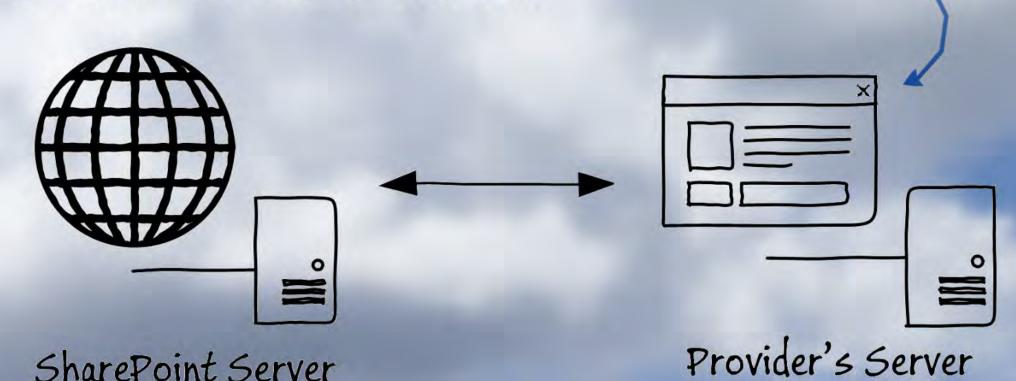


# Provider-hosted



Servers may be onpremises, in the cloud, or a combination of the two

https://localhost:44300



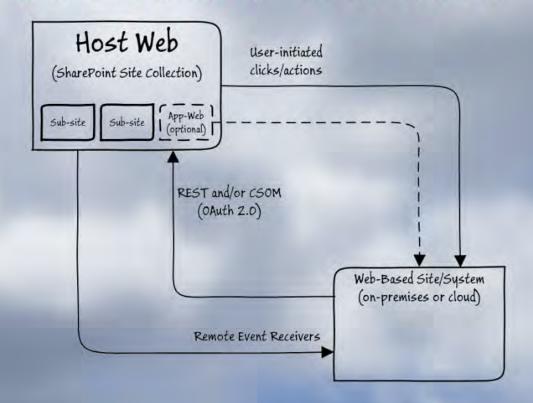
https://mcdonough.sharepoint.com/sites/dev1/

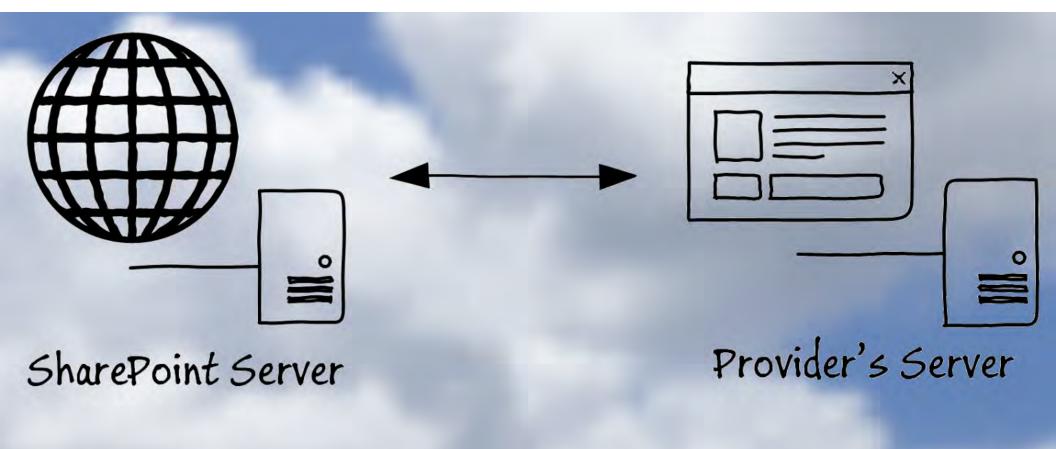
- Scope controlled by provider implementation
- Provider chooses their technology stack
- Code can call back to SharePoint independently
- Security can be tricky (S2S Trust and OAuth 2.0)



Noteworthy Points

## Provider-hosted

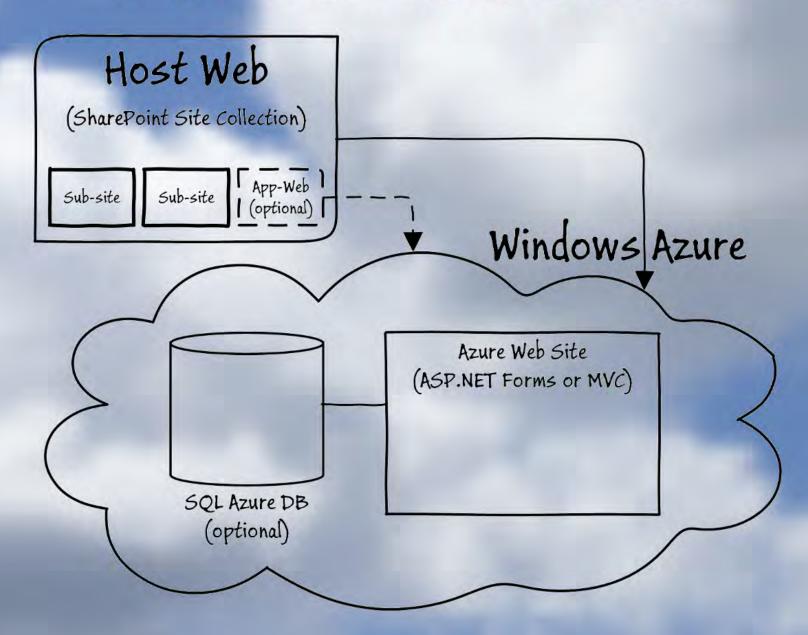






## **On-Premises / High Trust Model**

## Autohosted

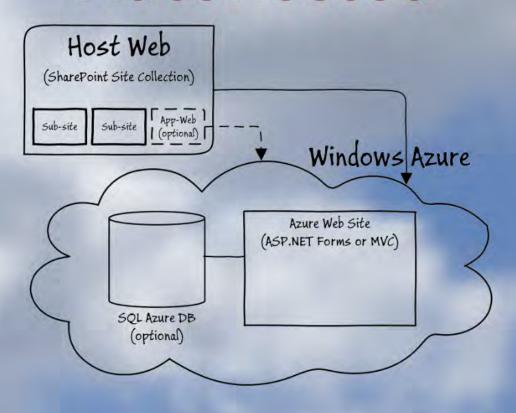


- Special case of Provider-hosted App Model
- Technology stack is Azure-based web & SQL
- Office 365-only model (for now ...)
- Security simplified by Office 365 and Azure ACS

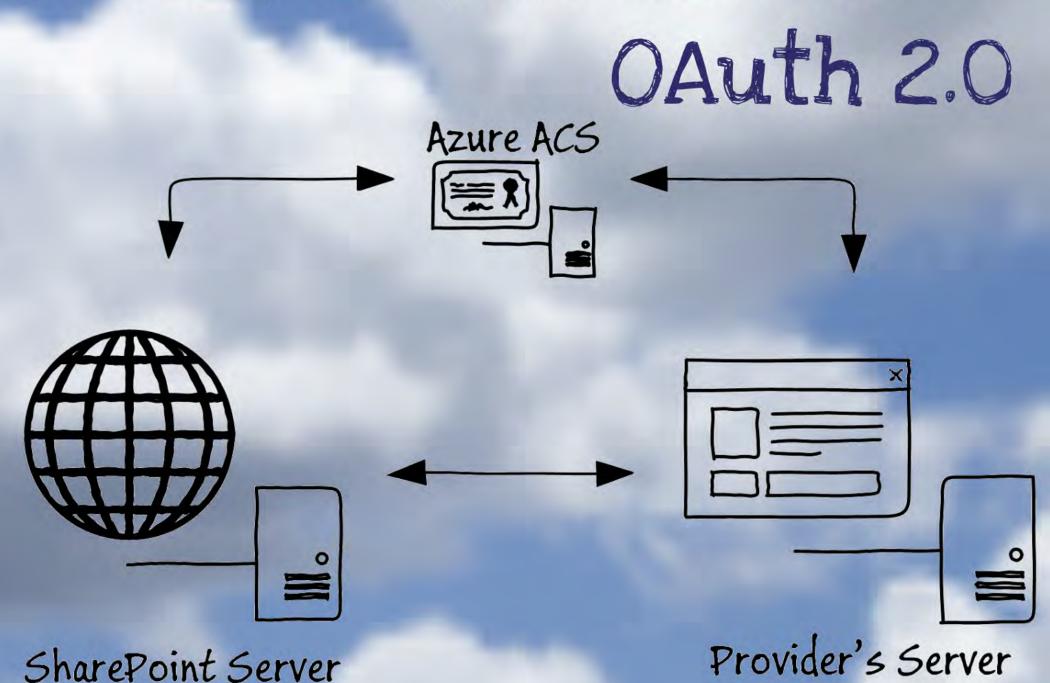


Noteworthy Points

## Autohosted



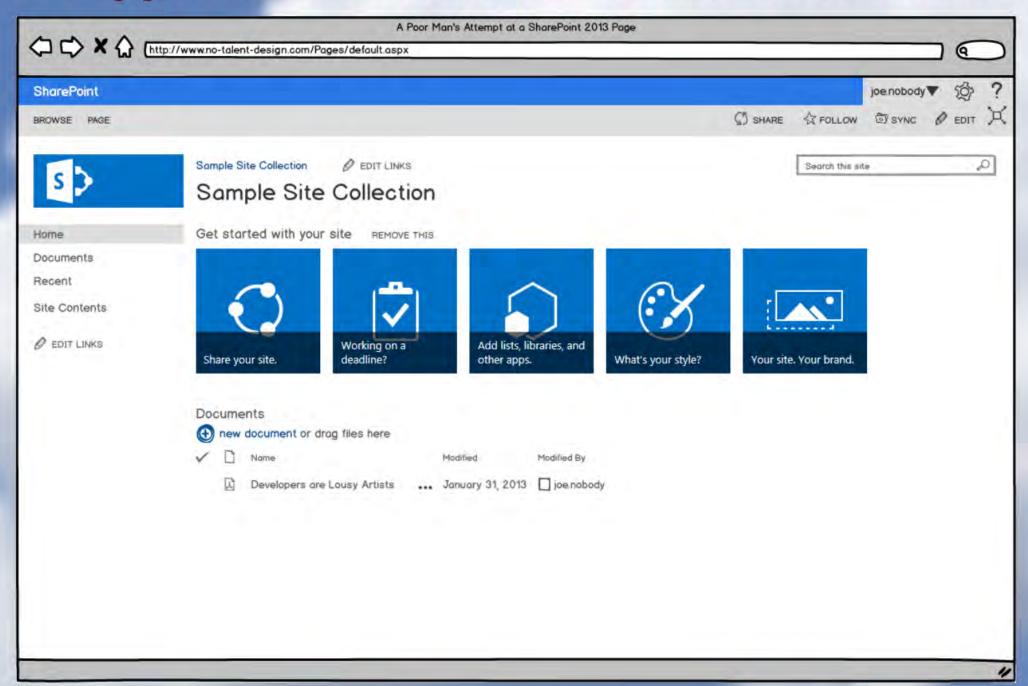
### Office 365 / Cloud / Autohosted Model



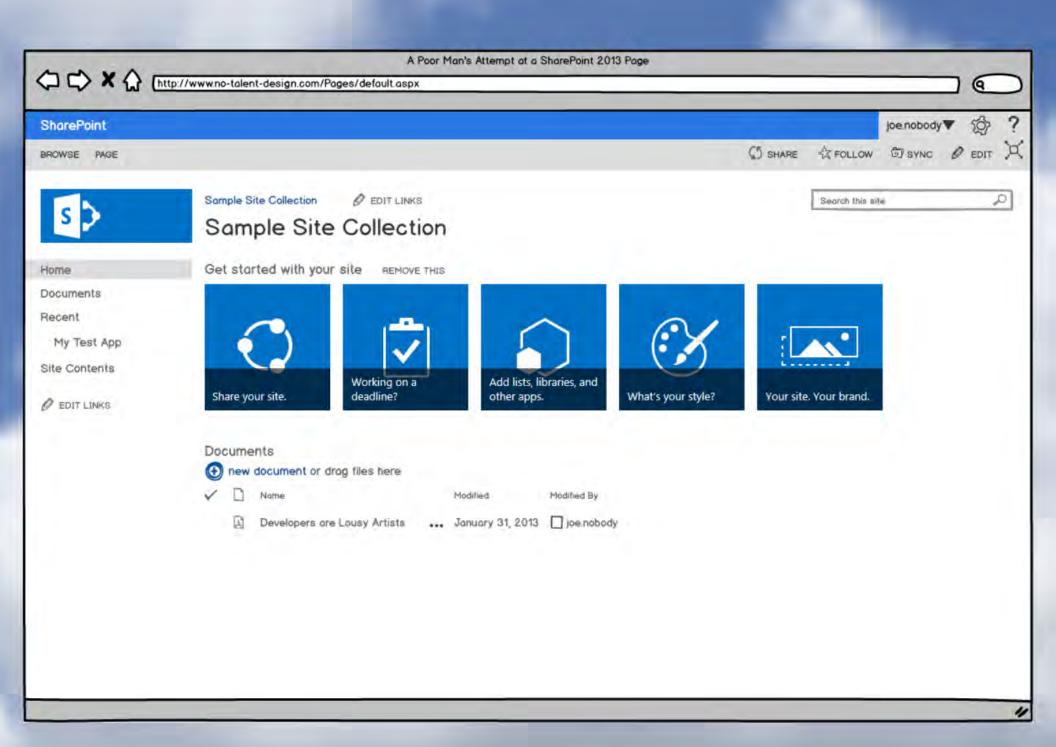
# How Apps "Surface" in SharePoint

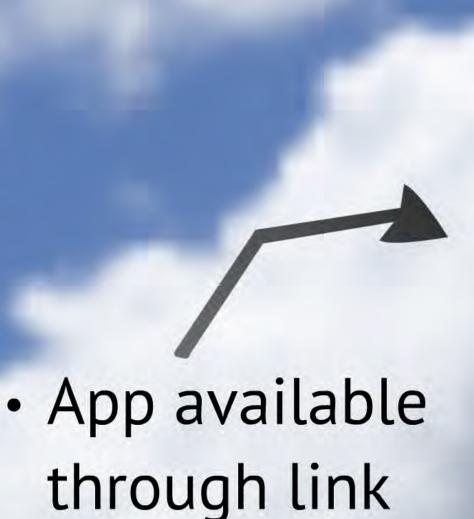


## A typical SharePoint 2013 team site



# Let's install an App





 also in Site Contents



Home

Documents

Recent

My Test App

Site Contents





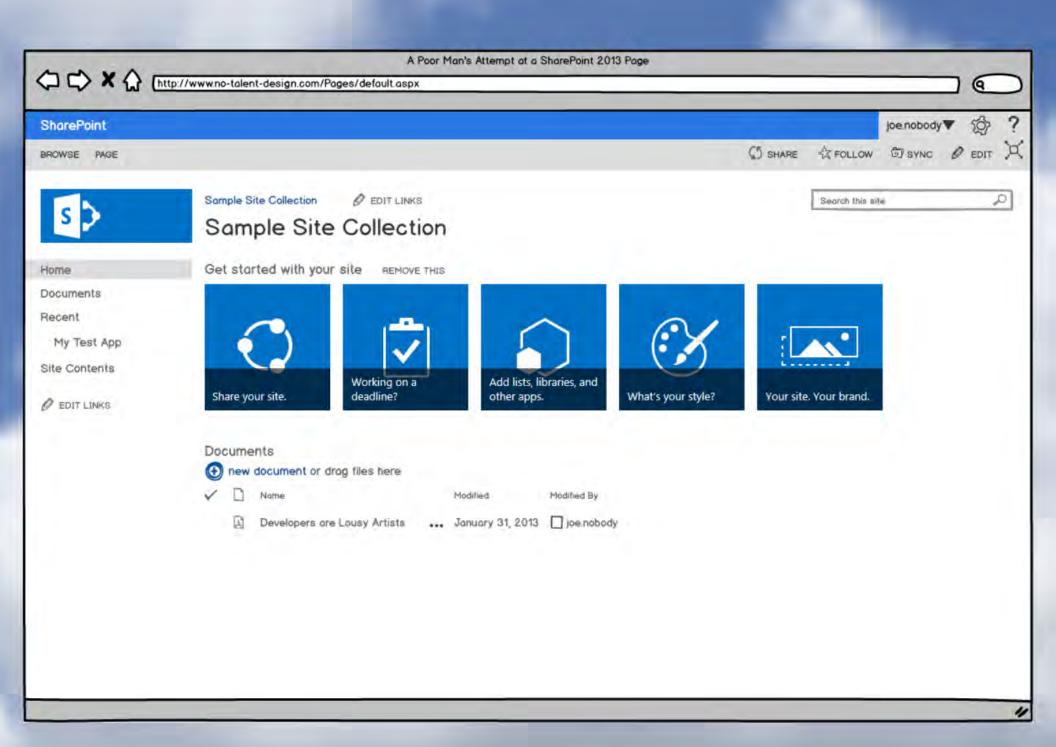






## Immersive / Full Page Experience





Share your site.

Working on a deadline?

Add lists, libraries, and other apps.

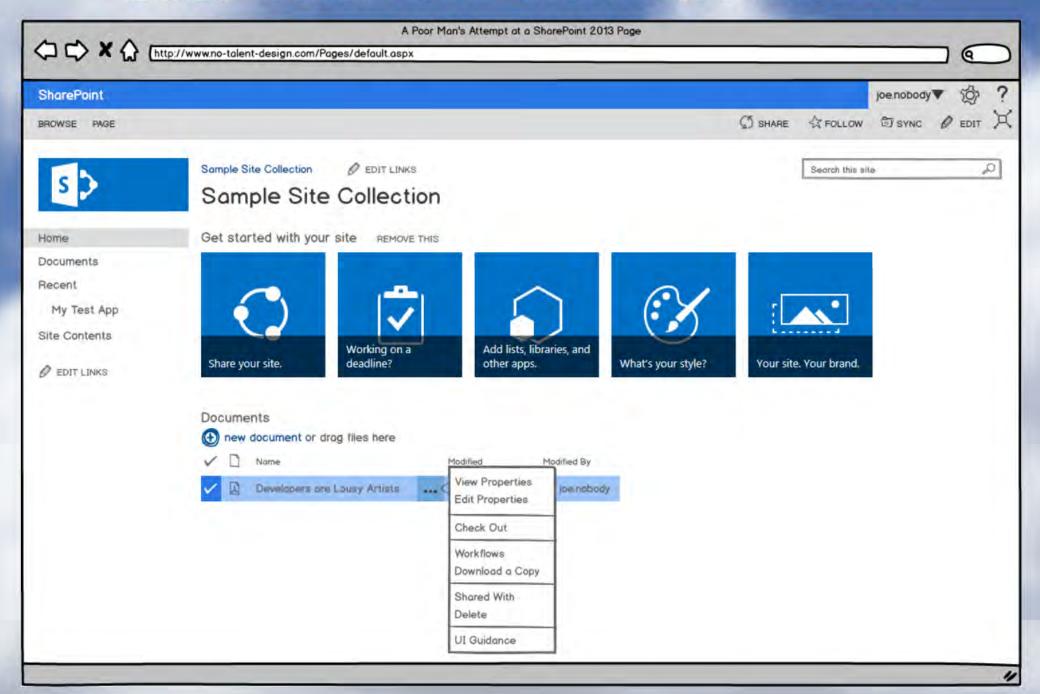
#### Documents

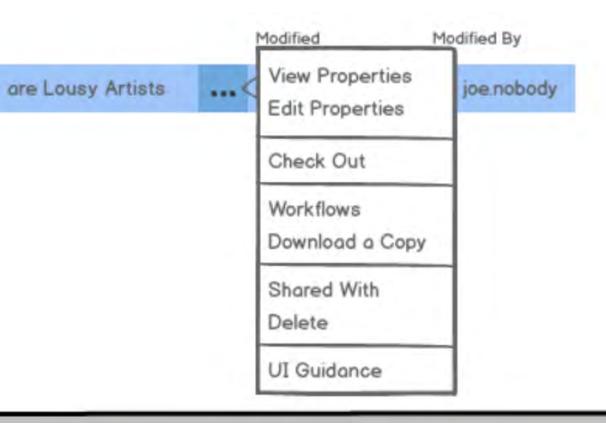


 □ Name
 Modified
 Modified By

 □ Developers are Lousy Artists
 ... January 31, 2013
 □ joe.nobody

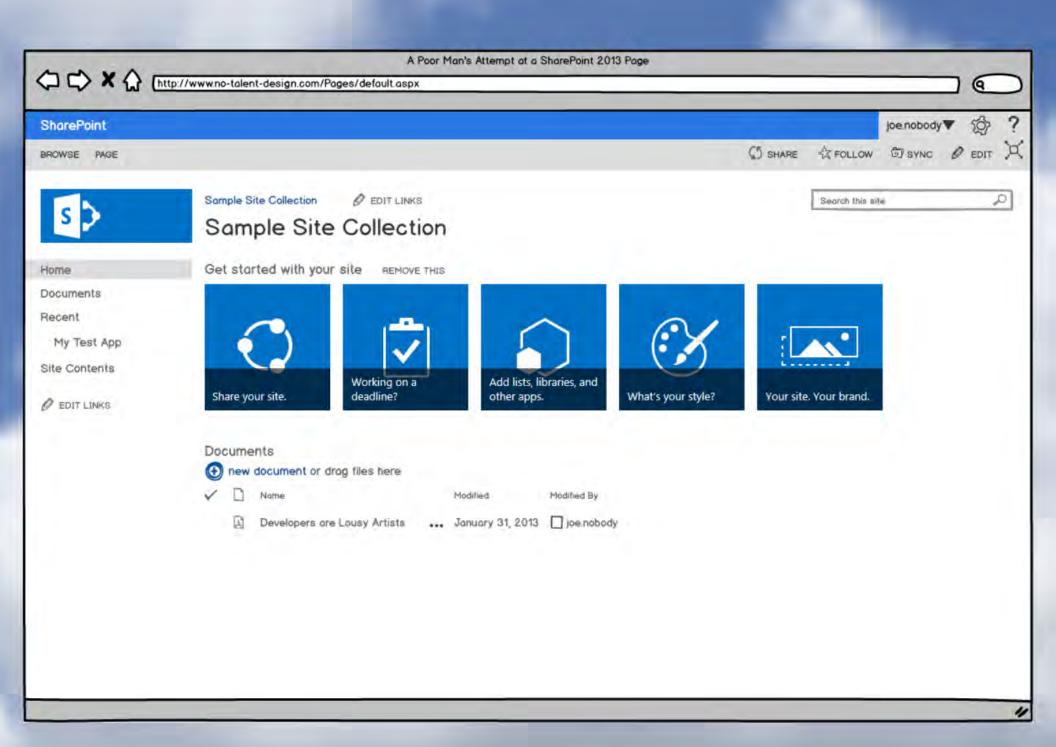
### **User Interface Custom Actions**



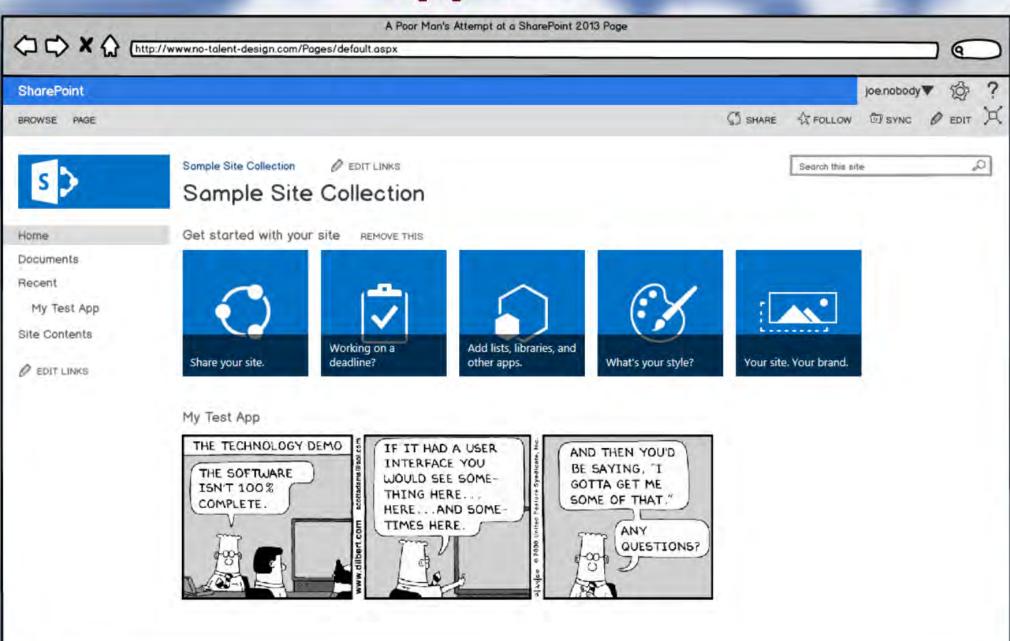




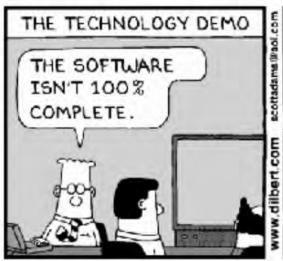
- this is an ECB custom action
- ribbon custom actions also possible

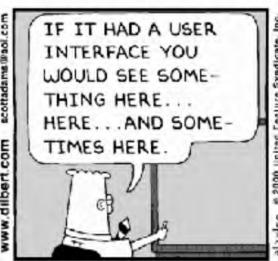


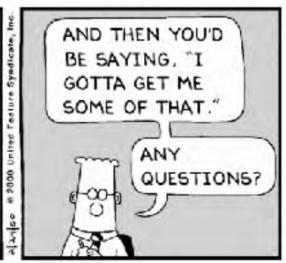
## **App Parts**



#### My Test App







- handled like a web part
- · basically an IFRAME in Host Web

# Back to the Cold War ...







Is there hope?





Much of the agitation has to do with poor boundaries and ambiguity around custom solution responsibilities

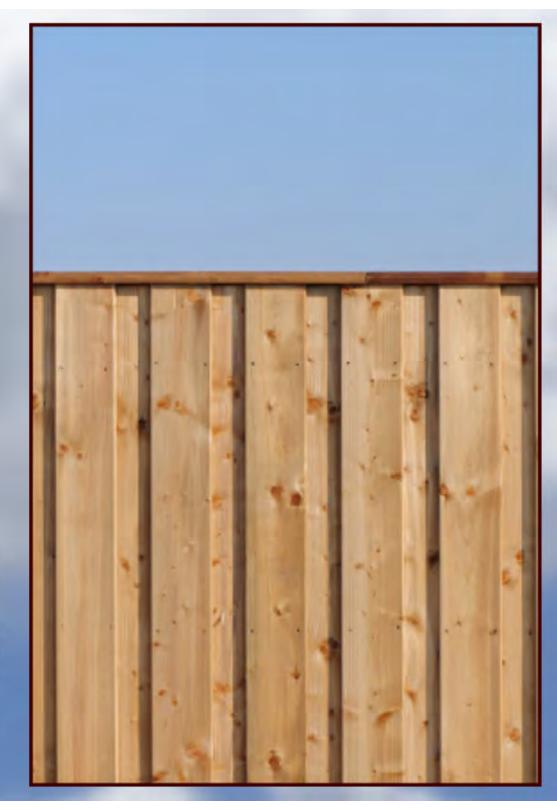
# The new App Model addresses many of these issues directly



- Isolation
- Hygiene
- Standards
- Security

- Isolation
- Hygiene
- Standards
- Security

"Good fences make good neighbors"



# The New App Model What the changes mean

Developer



Administrator





### The New App Model

#### What the changes mean

#### Developer





#### Administrator



#### **Isolation**

- · No code runs on the SharePoint server it runs on the client, 'another server,' or both
- · Apps run from a separate App Web that has a different hostname (URL base) than its hosting SharePoint site (Host Web)
- · Apps do not have direct access to Host Web SharePoint data



- · Say goodbye to the server object model
- · Object model not as robust as server OM App Model is not appropriate for all app types!
- · Can't take context for granted Just about everything is an explicit series of interactions with the SharePoint environment
- · Greater patch and hotfix freedom Solution code only loosely tied to farm



- · Say goodbye to farm performance issues related to custom code Code is now running on other Servers you may or may not manage
- · Troubleshooting boundaries are clearer Look at the URL - It tells you where to investigate
- · Service packs, hotfixes, and CUs (generally) shouldn't break custom code Farm and solution upgrades not tightly coupled

#### Hygiene

- Apps are deployed as packages that contain content and declarative markup only: HTML, ASPX pages (but no code-behind), images, XML files, list templates, etc. No DLLs.
- · App data is persisted within the App Web not the
- · On uninstall, entire App Web is basically wiped out resulting in clean uninstall. Nothing remains.



- · Buh-bye provisioning code, hello declarative markup! no FeatureReceivers, provisioning scripts, etc.
- · Think hard about persisted values/items Particularly for SharePoint-hosted Apps, since App Webs are wiped-out on uninstall
- · Can be a real asset Especially if your needs can be met with an autobosted app where provisioning is automatic



- · Different (but overall fewer) demands for administrators and their time
- No longer manual MSP deploys and Feature activations but app catalog must be managed
- · Centralized management Apps may be requested by users and managed in app catalog; includes licensing support
- · Administrators can put the mop away No more cleaning up dead artifacts. DLLs. lists. webs. and other items that were left behind.

#### **Standards**

- · App Model focuses on building solutions with presentation tier technologies like HTML, CSS, and
- · Back-end business logic can be built on/with any stack: Microsoft/.NET, LAMP, Java/J2EE, etc.
- · SharePoint data is accessed/updated through CSOM and OData-compliant (mostly) REST web service



- · If you're not a "front end developer," it's time to learn some new skills MIPH, USS, JavaScript, jūvery, async patterns, etc.
- If you weren't a SharePoint (or even .NET) developer, you now have an "in" Provider-hosted apps in particular
- · This helps SharePoint's image with the rest

Small point to us, but important when considering the viability of the platform in the long-term



- Impact to administrators isn't tremendous (versus developers). More non-Microsoft, non-NET developers may be accessing SharePoint with SharePoint 2013
- · Focus becomes assisting at the web service interfaces ...
- and security, which is up next!

#### Security

- + Apps have no privileged access to SharePoint data; they go through web services
- · New App Model introduces the concept of application identity (versus just "user identity")
- · OAuth 2:0 is underlying framework for App and User-based trust



- · You need to understand both user and application security.
- The full-trust, "free pass" days of RunwithElevatedPrivileges() are long gone. · Your apps need to declare what they need

how easy or hard security will be.

It all goes in the AppManifest xonl file · Security may be no issue at all ... or require substantial investment in time/effort App Model used determines (to a large degree)



- Apps require claims-based authentication Still using NTLM7 with SharePoint 2013, it's time
- OAuth 2.0 and S2S Trusts will require admins to learn some new tricks Getting a farm set up for these items is a nontrivial effort
- Learn a bit about Azure and Office 365 with SharePoint 2013, there's a good chance you'll be involved in a conversation about it

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- Say goodbye to the server object model all access through \_api via CSOM, JSOM, REST, etc.
- Object model not as robust as server OM
   App Model is not appropriate for all app types!
- Can't take context for granted
   Just about everything is an explicit series of interactions with the SharePoint environment
- Greater patch and hotfix freedom
   Solution code only loosely tied to farm



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You need to understand both user and application security.

The full-trust, "free pass" days of RunwithElevatedPrivileges() are long gone.

- Your apps need to declare what they need
   It all goes in the AppManifest.xml file
- Security may be no issue at all ... or require substantial investment in time/effort

App Model used determines (to a large degree) how easy or hard security will be.



- Apps require claims-based authentication
   Still using NTLM? With SharePoint 2013, it's time to switch over.
- OAuth 2.0 and S2S Trusts will require admins to learn some new tricks Getting a farm set up for these items is a nontrivial effort
- Learn a bit about Azure and Office 365
  With SharePoint 2013, there's a good chance
  you'll be involved in a conversation about it



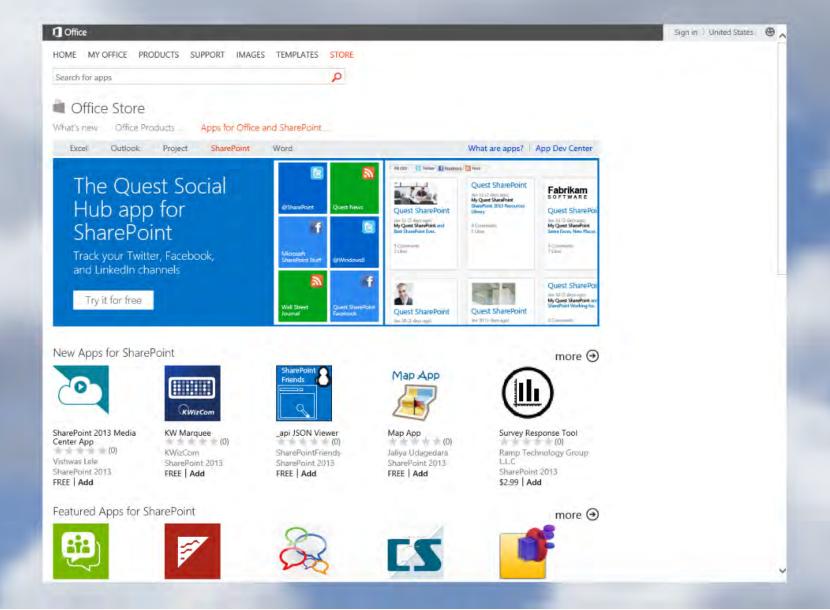
Oh yeah, one more area that deserves a mention ...



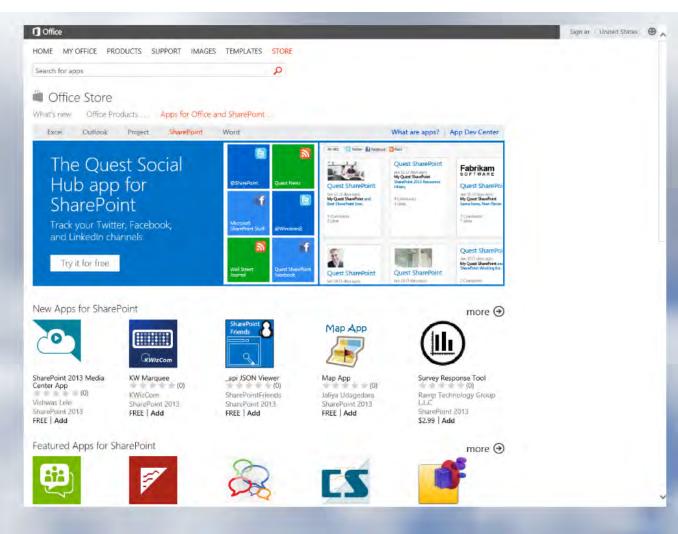
Oh yeah, one more area that deserves a mention ...

# The App Store

# The App Store







- Only apps built under the new App Model can appear in the App Store
- Apps built under the new App Model are the only option for custom code in Office 365

### The One Slide Sum-Up

- Many pain points and areas of friction between developers and administrators arose from the mechanisms provided for SharePoint customization
- The new App Model addresses many of these problems by fundamentally changing the way SharePoint is customized and extended
- Not every development challenge can be tackled with the new App Model, but many can with some rethinking in how solutions are architected and built
- The new App Model is the only way forward for Office 365, the App Store, and SharePoint's cloud-centric future

#### References

#### Apps for SharePoint overview

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#### Why Administrators Will Giggle Like Schoolgirls About SharePoint 2013's New App Model

 http://blog.idera.com/sharepoint/why-administrators-will-giggle-like-schoolgirlsabout-sharepoint-2013s-new-app-model/

#### Build apps for Office and SharePoint

http://msdn.microsoft.com/en-us/office/apps/fp160950.aspx

#### UX design for apps in SharePoint 2013

http://msdn.microsoft.com/en-us/library/office/apps/fp179934

## Important aspects of the app for SharePoint architecture and development landscape

http://msdn.microsoft.com/en-us/library/office/apps/fp179922

## How to: create custom actions to deploy with apps for SharePoint

http://msdn.microsoft.com/en-us/library/jj163954.aspx

#### Custom Ribbon Button Image Limitations with SharePoint 2013 Apps

 http://sharepointinterface.com/2013/01/22/custom-ribbon-button-imagelimitations-with-sharepoint-2013-apps/

#### What's new in authentication for SharePoint 2013

http://technet.microsoft.com/en-us/library/jj219758.aspx

## Configure an environment for apps for SharePoint (SharePoint 2013)

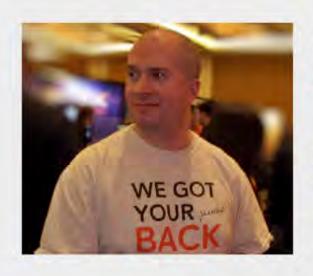
http://technet.microsoft.com/en-us/library/fp161236.aspx

## Introducing the SharePoint 2013 Application Model

http://www.binarywave.com/blogs/eshupps/Lists/Posts/Post.aspx?ID=266

#### Apps for SharePoint (Office Store)

http://office.microsoft.com/en-us/store/apps-for-sharepoint-FX102804987.aspx



### Sean P. McDonough

SharePoint Gearhead, Developer and Evangelist.

My Company:



Twitter: @spmcdonough

About: http://about.me/spmcdonough

Blog: http://SharePointInterface.com