

Extending SharePoint, Lync and Exchange with a custom WOPI Client

DEV205

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Takeway from this session

- ▶ *I want you to learn and understand the WOPI protocol and how it can enhance and extend your SharePoint solutions*

Agenda

- ▶ WOPI this and WOPI that
- ▶ [MS-WOPI]
- ▶ OpenWOPI
- ▶ Build a WOPI client
 - Discovery
 - Client
- ▶ SharePoint 2013 Extensions

Office Web Apps...

Office Web Apps 2010

- ▶ SharePoint 2010 Service Application
- ▶ SharePoint 2010 only
- ▶ Not customizable, extendable and almost never updated

- ▶ docs.com
- ▶ skydrive.live.com

Office Web Apps Server 2013

- ▶ WAC Server 2013
- ▶ Standalone
- ▶ Shared with SharePoint, Exchange and Lync
- ▶ Based on the open [MS-WOPI] protocol

[MS-WOPI]

- ▶ **W**eb Application **O**pen **P**latform **I**nterface
- ▶ *<http://askwictor.com/WOPI>*
- ▶ Almost fully documented
- ▶ No licensing
- ▶ REST like protocol

Principles

Discovery

Client

Server

▶ **Security**

WOPI Client

- ▶ Provide a Discovery endpoint
- ▶ Reads information about files and folders
- ▶ Reads content of files and folders
- ▶ Writes content of files and folders

- ▶ *Office Web Apps 2013 is a WOPI Client*

WOPI Server/Apps

- ▶ Reads the WOPI Client Discovery endpoint
- ▶ Responds to requests from the WOPI Client
- ▶ Never initiates communication with the WOPI Client
- ▶ *SharePoint, Lync and Exchange 2013 are WOPI Servers*

Discovery

- ▶ `http[s]://<server>/hosting/discovery`
- ▶ HTTP/1.1 GET Request

- ▶ `<net-zone>`
 - `<app name="Word">`
 - `<action ext="docx" name="edit" urlsrc="...">`

- ▶ `<proof-key>`

Introducing OpenWOPI

- ▶ A free and open WOPI Client
 - Including extensions for SharePoint 2013
- ▶ Available on Codeplex this week
 - openwopi.codeplex.com
- ▶ ASP.NET MVC4 based
- ▶ Let's build it...

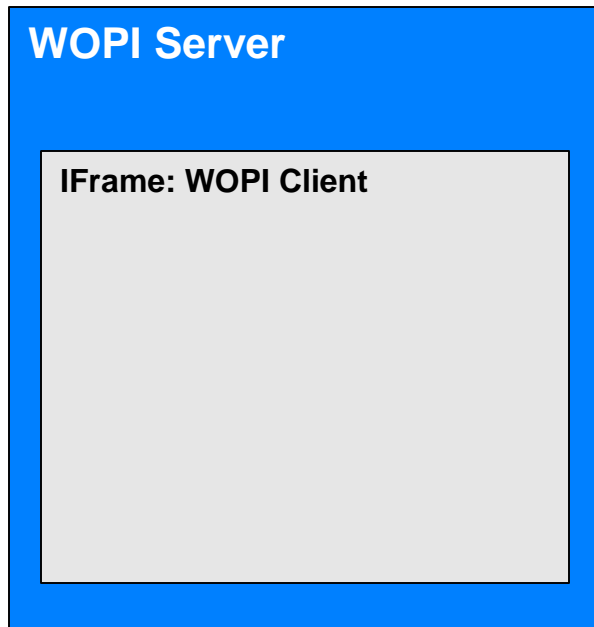


Demo

Implementing the WOPI Discovery process in the OpenWOPI Client

WOPI DISCOVERY

Client and Server Communication



- **WOPI Server** generates an *Access Token* and an *id* for the user and file
- **WOPI Server** renders an IFrame using the action *url/src* and standard parameters (GET) [friendly url]
- **WOPI Client** requests *file info (GET)*
 - *Passing unmodified Access Token and id*
- **WOPI Client** requests *file content (GET)*
 - *Passing unmodified Access Token and id*
- **WOPI Client** renders document
- Other WOPI Operations (GET, POST...)

WOPI Client Requests

- ▶ Four request types
- ▶ Must be implemented by the WOPI Server
- ▶ `http[s]://<server>/<...>/wopi*/files/<id>`
 - File-level operations
- ▶ `http[s]://<server>/<...>/wopi*/files/<id>/contents`
 - Content operations
- ▶ `http[s]://<server>/<...>/wopi*/folders/<id>`
 - Folder-level operations
- ▶ `http[s]://<server>/<...>/wopi*/folders/<id>/children`
 - Files and Folders within a folder

Request and Response details

▶ HTTP Headers

- MUST

- Authorization

- MAY

- X-WOPI-ClientVersion

- X-WOPI-ServerVersion

- X-WOPI-Proof / X-WOPI-ProofOld

- X-WOPI-CorrelationID

- X-WOPI-*

- ...

Access Tokens and security

- ▶ Access Token <token>
 - Must be present on all Requests as the Authorization header
 - Generated by the WOPI Server
 - WOPI Client doesn't have to "understand" it
 - Should expire
 - Should be scoped to a user and a set of resources
- ▶ File or folder id <id>
 - Must be unique
- ▶ Provided through the initial action request (urlsrc)

WOPI Client Security

- ▶ The Proof Key
- ▶ Defined in the Discovery message
- ▶ Not required
- ▶ Used by Server to decrypt HTTP Headers
 - X-WOPI-Proof
 - X-WOPI-ProofOld
- ▶ **SharePoint always requires this!**

Demo

SENDING WOPI REQUESTS

Actions

- ▶ Scoped to an app
- ▶ Specifies `urlsrc` so Server can initiate request
- ▶ Specifies name (type) and extension

File operations

- ▶ `http[s]://<server>/<...>/wopi*/files/<id>`
 - CheckFileInfo (GET)
 - PutRelativeFile (POST + X-WOPI-*)
 - Lock, Unlock, RefreshLock, UnlockAndRelock (POST + X-WOPI-*)
 - DeleteFile (POST + X-WOPI-*)
 - ExecuteCellStorage* (POST + X-WOPI-*)
 - ReadSecureStore (POST + X-WOPI-*)
 - Get/RevokeRestrictedLink (POST + X-WOPI-*)
- ▶ `http[s]://<server>/<...>/wopi*/files/<id>/contents`
 - GetFile (GET)
 - PutFile (POST)

Demo

RETRIEVING A FILE

Action values

- ▶ view
- ▶ edit
- ▶ mobileview
- ▶ interactivePreview
- ▶ *embedview*
- ▶ *present*
- ▶ *formssubmit*
- ▶ *formedit*
- ▶ ...

Demo

UPDATING A FILE

Integration with SharePoint

- ▶ Add-SPWOPIBinding
- ▶ Previews
 - Document Libraries
 - JavaScript (undocumented territory)
 - Search Center
 - Display Template

Exchange and Lync integration

- ▶ Only allows one WOPI Client ☹
- ▶ Exchange 2013
 - PowerShell
- ▶ Lync 2013
 - The Topology Builder

Demo

PREVIEWS FOR REAL IN SHAREPOINT 2013

Summary

- ▶ [MS-WOPI] is an open specification
- ▶ Built on the HTTP protocol
- ▶ You can create custom viewers and editors
- ▶ OpenWOPI!
 - openwopi.codeplex.com

Thank you for attending!

You've been an awesome crowd!

Slides and Open WOPI links at
<http://askwictor.com/spevo13-dev205>