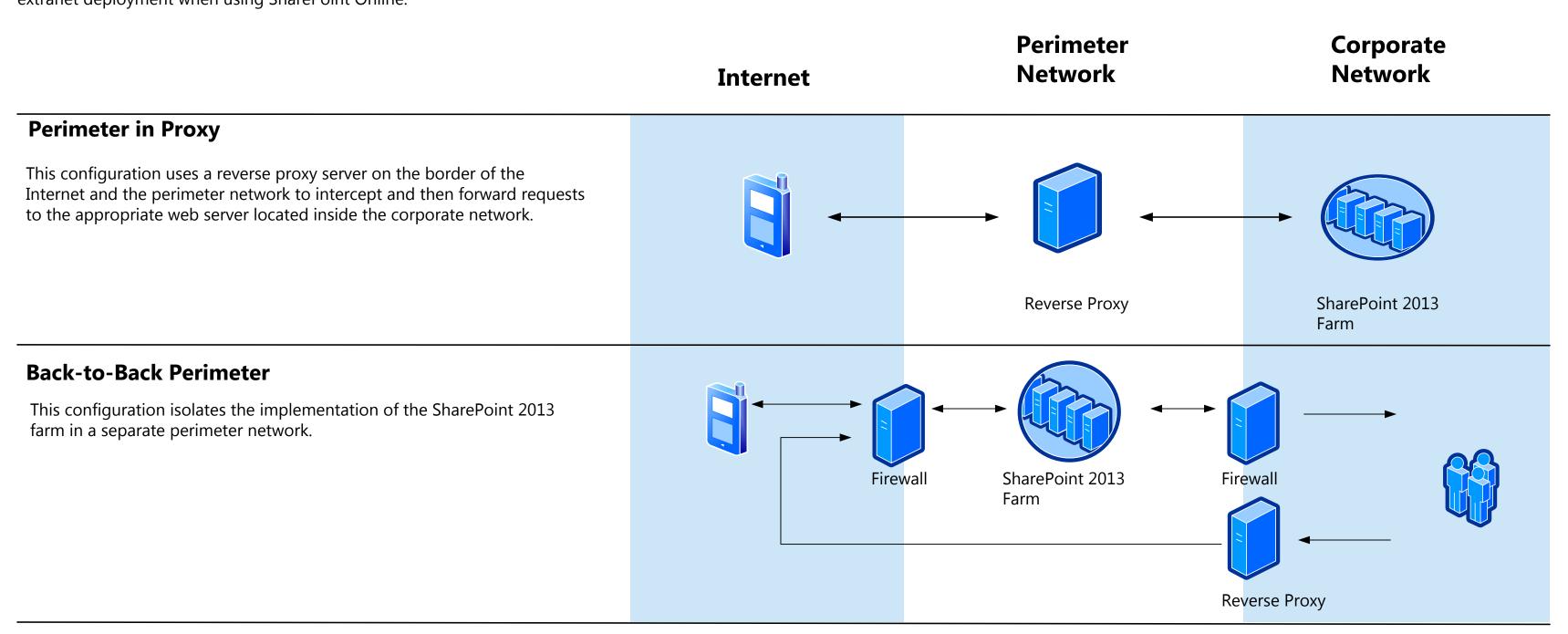# MOBILE ARCHITECTURE IN SHAREPOINT 2013

Infrastructure Design Considerations

SharePoint Server 2013 Preview provides the mobile architecture necessary to connect users to business-critical data and other types of information across multiple device platforms. IT professionals can create and manage compelling mobile SharePoint experiences throughout their organization by using an on-premises server-based deployment, or by using SharePoint Online services. This diagram provides an end to end understanding of the SharePoint 2013 mobile ecosystem.
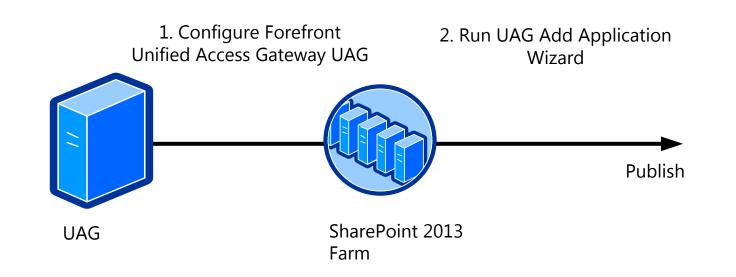
EXTRANET DESIGN

When users on mobile devices require external access to a SharePoint site, you must implement an extranet topology in your network. The following diagrams illustrate possible extranet topologies to choose from when planning external mobile devices access to your SharePoint farm. You do not need an extranet deployment when using SharePoint Online.

Internet **Perimeter Network** **Corporate Network**

Perimeter in Proxy

This configuration uses a reverse proxy server on the border of the Internet and the perimeter network to intercept and then forward requests to the appropriate web server located inside the corporate network.

Reverse Proxy — SharePoint 2013 Farm

Back-to-Back Perimeter

This configuration isolates the implementation of the SharePoint 2013 farm in a separate perimeter network.

Firewall — SharePoint 2013 Farm — Firewall — Reverse Proxy

PUBLISHING TO EXTERNAL DEVICES

After deploying your SharePoint Server farm using an extranet topology of your choice, the final step of the deployment process is publishing the SharePoint site through a reverse proxy. Although you can use any reverse proxy for publishing to your mobile devices, Microsoft Forefront Unified Access Gateway (UAG) is used as an example. UAG requires you to publish applications through a trunk such as a portal trunk that creates a portal and can allow you access applications through that portal. Alternatively you can create an Active Directory Federation Services (AD FS) trunk to provide federated authentication.

1 Forefront Unified Access Gateway (UAG) provides remote client endpoints with access to corporate applications, networks, and internal resources via a Web portal or site. After installing UAG you will need to publish the SharePoint Server web application for external device access. You can do this by running the UAG Add Application Wizard on a specified trunk.

2 The UAG Add Application Wizard will require the following information for publishing the site:
- **Selecting the application:** Define what type of application is to be published. For SharePoint it will be a web-based application.
- **Name and configure the application:** Naming the application to be published
- **Specifying Endpoint policies**: (UAG) access policies enable you to create tiers of access, by determining whether or not endpoint devices are allowed to access internal sites and applications or perform certain operations on the application servers.
- **Deploying the application:** Decide on whether to publish site using UAG as the application server, or specify that UAG load balances requests to mirrored servers in a Web farm.
- **Configure the web server:** Specify DNS name of the SharePoint server, ports (SSL 443), and the public host name that clients will use to access the server through UAG.
- **Configure authentication:** Specify how user credentials provided during session login are forwarded to published servers requiring authentication.
- **Authorization:** Provide the users and groups that can view and access the application through the portal.

1. Configure Forefront Unified Access Gateway UAG 2. Run UAG Add Application Wizard

UAG — SharePoint 2013 Farm — Publish

DEVICE SECURITY USING EXCHANGE ACTIVESYNC
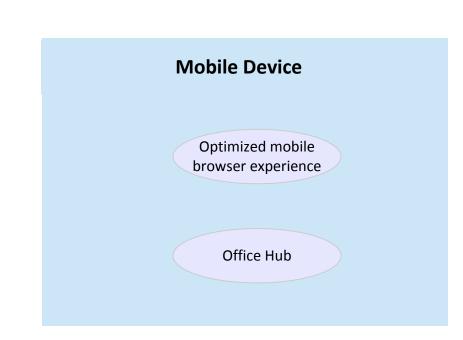
Mobile device management using Exchange ActiveSync

If SharePoint Server is deployed in an extranet topology, mobile devices access the SharePoint Server via a public facing URL. Use of credentials provide secured access to sites. If your company uses Exchange Server 2010 for email, implementing policies in Exchange ActiveSync introduces another layer of protection by ensuring the mobile device is manageable. Managing the mobile device is important during normal daily usage, however management becomes critical if the mobile device is lost or stolen.

Exchange ActiveSync provides the following policies and features to manage mobile devices:
- **Remote wipe** If a mobile phone is lost, stolen, or otherwise compromised, you can issue a remote wipe command from the Exchange Server computer or from any Web browser by using Outlook Web App. This command erases all data from the mobile phone.
- **Device policies** Exchange ActiveSync lets you configure several options for device policies. These options include the following:
  - **Minimum password length (characters)** This option specifies the length of the password for the mobile phone. The default length is 4 characters, but as many as 18 can be included.
  - **Inactivity time (seconds)** This option determines how long the mobile phone must be inactive before the user is prompted for a password to unlock the mobile phone.
  - **Enforce password history** Select this check box to force the mobile phone to prevent the user from reusing their previous passwords. The number that you set determines the number of past passwords that the user won't be allowed to reuse.
  - **Wipe device after failed (attempts)** This option lets you specify whether you want the phone's memory to be wiped after multiple failed password attempts.
  - **Allow simple password.** This setting enables or disables the ability to use a simple password such as 1234.
  - **Allow storage card.** This setting specifies whether the mobile phone can access information that's stored on a storage card.
  - **Password enabled.** This setting enables the mobile phone password.
  - **Password expiration.** This setting enables the administrator to configure a length of time after which a mobile phone password must be changed.
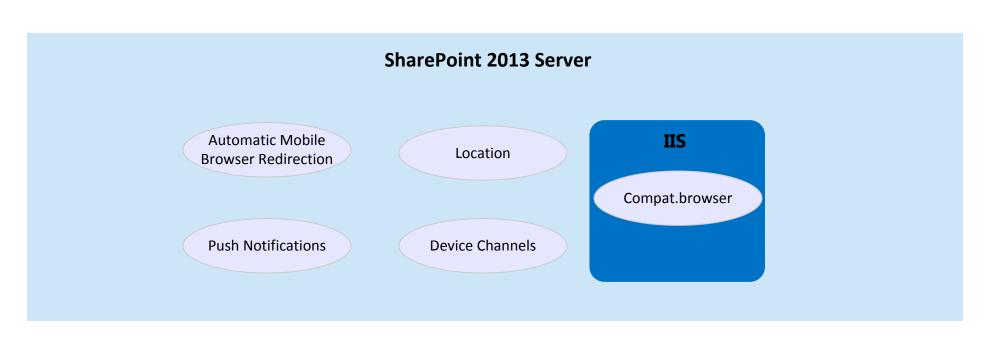
Application Architecture

The mobile application architecture contains a lot of services and components. Sometimes, these services and components exist in different software which, when integrated, offers the mobile device users enhanced user experiences. This section of the poster is intended to help you understand which services exist on which software / hardware layer.

Mobile Device — Optimized mobile browser experience, Office Hub

SharePoint 2013 Server — Automatic Mobile Browser Redirection, Location, Push Notifications, Device Channels, IIS (Compat.browser)

Office Web Apps — Word Mobile Viewer, Excel Mobile Viewer, PowerPoint Mobile Viewer

Mobile Device
- The optimized mobile browser experience renders a mobile view of the SharePoint site that is optimized for the mobile browser accessing the site. This experience is controlled by the Automatic Mobile Browser Redirection feature.
- The Office Hub for Windows Phone provides several key features for mobile device users. These include:
  - Notes – View, open, search, and edit your notes.
  - Documents – Open or find existing documents, or create a new one. Any documents you recently saved to your phone (from an email, for example) appear here as well.
  - Locations – Access your Office documents stored in places like OneDrive, a Microsoft SharePoint 2013 site, or a SharePoint Online site, which is available with Microsoft Office 365 from your phone.

SharePoint Server 2013
- Automatic Mobile Browser Redirection is discussed below.
- Location. In SharePoint Server 2013 there is a new geolocation field type that can be used in a list. You can make lists "location-aware" and display latitude and longitude coordinates through Bing Maps. An entry is typically seen as a pushpin on the map view.
- Push Notifications allow notifications to be sent from a SharePoint site to a registered mobile device application running on the mobile device.
- Device Channels allow you to render a single publishing site in multiple ways by using different designs that target different devices. Only one site is created and content is authored once. The site and content is then mapped to different master pages, page layouts, and style sheets for the specific device or group of devices.
- Compat.browser. When a mobile browser accesses a site, a http request is made to IIS. In the http request, the USERAGENT field contains information about the mobile browser making the request. This information is looked up in the compat.browser file and the appropriate mobile view is rendered for the mobile browser (classic or contemporary). For development environments, administrators may opt to change the redirection behavior. With a text editor, the **IsMobileDevice** attribute for a particular mobile browser can be edited. When **IsMobileDevice** is set to FALSE this causes SharePoint to bypass the mobile view for that browser.

AUTOMATIC MOBILE BROWSER REDIRECTION

The optimized mobile browser experience renders a mobile view of the SharePoint site that is optimized for the mobile browser accessing the site. This is controlled by a new feature called the Automatic Mobile Browser Redirection feature, which must be activated on the site. When activated and a mobile browser is accessing the site, this feature checks the mobile browser to determine if it is capable of handling HTML5 or not. If the mobile browser supports HTML5, the contemporary view is rendered, else the classic view is rendered.
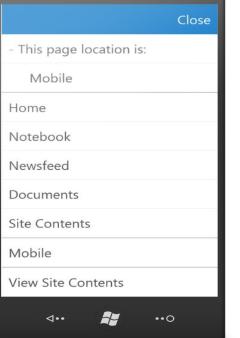
The Automatic Mobile Browser Redirection feature is activated by default when any of the following site templates are used:
- Team Site
- Blank Site
- Document Workspace
- Document Center
- Project Site

Classic View
- Provide backward compatibility for mobile browsers not capable of rendering the new contemporary view
- The classic experience is similar to the mobile browser experience of SharePoint Server 2010.
- Renders in HTML format, or similar markup languages (CHTML, WML, and so on)
- Only available for smartphone mobile browsers

Contemporary View
- The contemporary experience is rendered by modern browsers that support HTML 5.
- Offers enhanced features like Menu Button, Navigation Window, Tap-to-open links and Pagination.
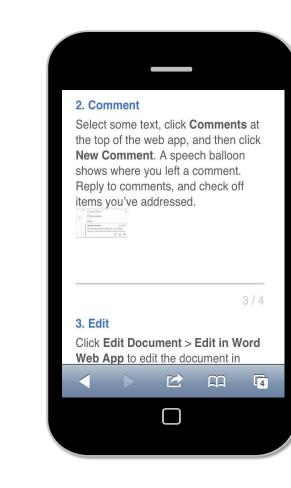- Only available for smartphone mobile browsers

Full Site View
- This view presents the full site view as would be rendered on a desktop browser.
- This is the default view rendered for desktop browsers, and slate and tablet mobile browsers.
- Switching from contemporary view to full site view is supported.

OFFICE MOBILE WEB APPS

Microsoft Office Web Apps Server is a standalone server product providing Office client application viewing in the browser. When Office Web Apps Server is installed, Office Mobile Viewers are enabled. These viewers for Microsoft Word, Microsoft Excel, and Microsoft PowerPoint are optimized to render documents for phones. When integrated with SharePoint Server 2013, a user can enjoy enhanced viewing experiences when interacting with documents on the phone. This section of the poster highlights some of the features provided through the different Office Mobile Viewers.
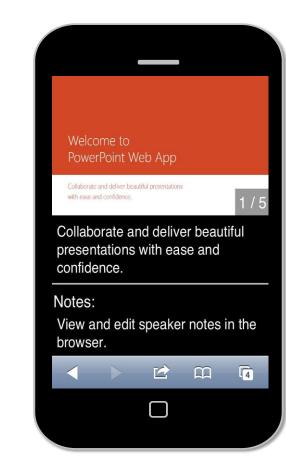
Word Mobile Viewer
- Text in the document is displayed in both portrait and landscape orientations on the device. There is no need to zoom or pan around to navigate a document.
- Basic styles are maintained and displayed. Complex style elements are replaced with standard style elements. This is for display purposes only, and the original document's formatting remains unchanged.
- Changing the display text size for readability does not change the font size in the original document

Excel Mobile Viewer
- Navigation and panning in the spreadsheet is touch experience enabled. Rows and column headers update as the user navigates throughout the document.
- Viewing large charts is possible using chart mode. In chart mode, the entire chart is presented to the phone user. Controls are provided to zoom in, zoom out, and reset to original size.
- Expandable or collapsible pivot tables
- Sorting data in a column

PowerPoint Mobile Viewer
- Optimized display for vertical or horizontal orientation. In vertical orientation, the slide's image, text on the slide (except text stored in tables), and notes in the notes field are displayed. In horizontal orientation, only the slide's image displays.
- Users can navigate between slides by swiping their fingers left or right.
- Phone users attend PowerPoint slide presentation broadcasts via Office Web Apps Server.
- Ability to zoom in or zoom out on a slide

CONFIGURING SHAREPOINT SERVER 2013 TO USE OFFICE WEB APPS SERVER

Before documents stored in SharePoint Server 2013 can be opened in Office Web Apps Server, the following configuration steps need to be performed:
- Open the SharePoint 2013 Management Shell.
- Run the following PowerShell cmdlet: New-SPWOPIBinding –ServerName <ServerName>, where <ServerName> is the FQDN name of the URL that you set for the internal and external URLs.

Office Web Apps Server
- Office Web Apps Server is a separate standalone server product which, when integrated with SharePoint Server 2013, gives mobile device users enhanced user experiences through the Word Mobile Viewer, Excel Mobile Viewer, and PowerPoint Mobile Viewer. Each of these web applications are discussed in the below section.
- These viewers are discussed in the below section.

Microsoft® SharePoint

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