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Digital Transformation Made **SMARTer**

Best Practices for Using Images, Dynamic URLs and External Content Links

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***Logos**

***Graphics and Charts**

***Photos**

***Marketing Blurbs**

***Line Drawings**

***Signatures**

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Images in Smart Communications

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Which Format is Best?

- **For Print**

- **What is Important? - High Resolution, Highly Detailed**
- **TIFF, PDF**

- **For Email / Web**

- **What is Important? - Screen Resolutions, Small File Size**
- **JPEG, PNG**

Why is Size Important?

- **For Performance**

- **Time to Load – Large Files take longer to Download**
- **Internet Connection Speed – Clients often have slowest connections**

- **For Cloud Usage**

- **Impacts Page Counts**
- **Calculated Pages = Total Bytes / 20,000**
(1 Page = 20,000 Bytes)

Common Formats Available

- **GIF** (Graphics Interchange Format)
- **PNG** (Portable Network Graphics)
- **JPEG** (Joint Photographic Experts Group)
- **TIFF** (Tagged Image File Format)
- **PDF** (Portable Document Format)

Pros

- Lossless Compression
- Supports **Transparency**
- Supports Indexed Color
- Supports Animation
- Web Pages can display GIF

Cons

- Does not support RGB, CMYK or LAB Color
 - Many commercial grade print vendors want CMYK for color printing
 - Indexed Color means it is limited to 256 colors which is fine for simple graphics but not photos
- If GIF is used for continuous tone photo images, the limited colors available lead to poor image quality.

You should use GIF when...

- You need to create web animations. GIF images hold all of the animation frames and timing information in one single file.
- You need transparency. GIF images have an “alpha channel” that can be transparent, so you can place your image on any colored background.
- You need a small file. The compression techniques in the GIF format allow image files to shrink tremendously. For very simple icons and web graphics, GIF is the best image file format.

Don't Use GIF when...

- You need photographic-quality image. Though GIFs can be high resolution, they have a limit of 256 colors. Photos typically have thousands of colors and will look flat and less vibrant.
- You need to print an image. Because of the color limit, most printed photos will lack depth. If you need to print photos, look at TIFF and JPEG.

PNG Format Details (Portable Network Graphics)

Pros

- Lossless Compression
- Supports **Transparency** for 24-bit RGB
- Supports Two Color spaces
 - RGB, Indexed Color
 - 1-bit to 48-bit Color
- A Little Smaller than LZW compression in TIFF
- Web Pages can display PNG

Cons

- Does not support CMYK or LAB Color
 - Many commercial grade print vendors want CMYK for color printing
- Files for photos are pretty large
- Does not support animation

You should use PNG when...

- You need high-quality **transparent web graphics**.
- You have illustrations with limited colors. Though any image will work, PNG files are best with a small color palette.
- You need a small file. PNG files can shrink to incredibly tiny sizes – especially images with simple colors, shapes or text. This makes it the ideal image file type for web graphics.

Don't Use PNG when...

- You are working with photos or artwork. Due to PNG's high color depth, the format can easily handle high resolution photos. However, because it is a lossless web format, file sizes tend to get very large.
- You're dealing with a print project. PNG graphics are optimized for the screen. You can definitely print a PNG but you'd be better off with a JPEG or TIFF file.

Pros

- Lossy Compression
 - Highest Compression (Smallest Size)
 - At the Cost of Image Quality
 - Supports a sliding scale of compression to allow optimum balance of size and quality
- The Most Used Image Format
 - Selecting Less Compression can result in very good quality but with larger file sizes
- Supports RGB, Grayscale and Indexed Color

Cons

- Every Iteration/Copy reduces Image Quality
 - Copy of a Copy of a Copy...
- Does not support 16-bit color, CMYK or LAB color
- Does not support animation
- Does not support transparency

You should use JPEG when...

- You're dealing with on-line photos and/or artwork. JPEGs offer you the most flexibility with raster editing and compression, making them ideal for web images that need to be downloaded quickly.
- You want to print photos and/or artwork. At high resolution files with low compression, JPEGs are perfect for editing and then printing.
- You need to send a quick preview image to a client. JPEG images can be reduced to very small sizes, making them great for emailing.

Don't Use JPEG when...

- You need a web graphic with transparency. JPEGs do not have a transparency channel and must have a solid background.
- GIF and PNG are your best options for transparency.
- **Remember:** Each time you edit/save a JPEG, the image quality is reduced. If possible, complete all edits to a document and then insert the original image.

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TIFF Format Details

Pros

- Lossless Compression
- Considered Highest Quality for Commercial
- Supports most Color spaces
 - RGB, CMYK, Indexed Color
 - 1-bit to 48-bit Color
- Supports several compression formats
 - G3 – Common with Line Art
 - LZW – Common with Photos
- Widely Supported across all platforms
 - Mac, Windows, Unix

Cons

- Some Web Browsers don't display TIFF Files
- Files for Photos are pretty large
- Does not support animation

You should use TIFF when...

- You need **high-quality print graphics**.
- File size is not a major concern.

Don't Use TIFF when...

- You are working with web graphics. Although many web browsers support it, TIFF files are optimized for print.
- Go with JPEG or PNG when you need to display high-quality images on-line.

Pros

- An Image Format used to display documents and graphics correctly no matter the device, application, operating system, or web browser.
- Vector Graphics foundation
 - Can also display raster graphics, form fields and spreadsheets
- Because it is a near Universal Standard
 - PDF files are often the file format requested by print vendors
- PDFs can be optimized to reduce file size
 - Example reduction: from 2 MB to 1 MB

Cons

- Some versions of PDF embed fonts, which can lead to larger file sizes.
- Merging PDFs can sometimes lead to duplication of embedded fonts which increases file size.
 - This can be circumvented by adding appropriate instructions to FOP renderer

You should use PDF when...

- You are ready to print. Many printers prefer PDF as their primary delivery format because it is so much of a universal standard.
- You want to display documents on the web/browser. You wouldn't use a PDF for a single icon or logo, but it's great for posters, flyers, booklets, and on-line viewing of statements and policies.

Don't Use PDF when...

- You need to edit the images or charts within the document. Use other tools to edit the images and then place them in the PDF.

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Image Implementation Options

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Embedding Image in Template

Pros

- No Dependency on External Servers
- No Additional Resource Calls
- Optimum Performance for Display

Cons

- Increases Size of Template
- Image Maintenance
 - At the Template Level
 - Requires SC access/permissions

Storing Image in CMS

Pros

- No Dependency on External Servers
- No External Resource Calls
- A Single Location for Maintenance

Cons

- Image Maintenance
 - Requires SC access/permissions
- Images Can't be Re-used by other systems

Storing Image in Image Server

Pros

- Does Not Require SC access/permissions
 - Business Units can maintain their own images without compromising template integrity
- A Single Location for Maintenance
- Images Can be Re-Used by Other Systems

Cons

- Dependency on External Server
- Previews and Cloud API calls require access to Image Server
 - Deployment of Image Server in DMZ
 - Firewall restriction to IP address of SC platform
- Performance Depends on Latency of Server (Response Time)

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Dynamic URLs

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Dynamic URL is a NOW Feature

- **Role**
 - **To retrieve documents or images from system archive such as FileNet, Image Right, etc.**
 - **Many times these docs are made available via Web Services that SC (NOW) calls passing parameters**

Dynamic URL is a NOW Feature

- **Technical Description**
 - **An HTTP Get with optional Query Parameters**
 - **Functions exactly like retrieving an image from internet/intranet**
 - **<http://mysite.com/path/to/resource.png>**
 - **<http://mysite.com/path/to/service?id=xxxx&password=abc>**
 - **Endpoint should be a resource: normally a binary object like an image or PDF**
 - **Base64 encoding is used**

Dynamic URL is a NOW Feature

- **Limitations**

- **Content returned by URL Link can be:**

- **Plain Text**
 - **Images (JPEG, PNG, GIF, TIFF)**
 - **XML**
 - **Multi-Page TIFF**
 - **PDF**

- **PDFs are split into individual pages... any embedded fonts get duplicated**

- **Resolution: enable font merging in the fop.xconf**
 - **Example:** **<renderer mime="application/pdf">**
 <merge-fonts>true<merge-fonts>
 </renderer>

Dynamic URL is a NOW Feature

- **Configuration**

- HTTP Resources use scheme: **http://**

- Local Resources use scheme: **file:///**

- Resources must be on the network and available to the server

- Path must be resolved relative to the server

- Where Client is on a different machine to the server make sure URL is formatted correctly: **file:///\\<servername>\test\logs\info.txt**

- Archive Systems: resource retrieval is usually supported by a Web Service hosted by the archive system. Follow the syntax published by the host system.

FileNet Example:

http://<host>:<port>/FileNet45WS/UriRetrieval?user=<user>&objstore=<objectstore>&path=<path>&cdUri=<contentUri>

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External Content Link

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External Content Link is Smart Comm Feature

- **Role (Relationship to Dynamic URL Links)**
 - **Smart Comm version of Dynamic URL with specified “End Points” to accommodate Cloud usage.**
 - **Use to create a dynamic link to external content provider (3rd party system or Web Server) via a URL**
 - **Use to create a link to an item in your CMS**
 - **Enables you to retrieve images or text that are not embedded in the template and insert them into documents generated at run-time.**

External Content Link is Smart Comm Feature

- **Technical Description**

- **Uses External End Points defined in the Settings module of the Tenancy**
 - **End Points define a target location (could be a folder)**
 - **Link Path – used with End Point to define a complete path to a single resource**
- **Static text can be used to specify the path to your content or to specify the resource id of the item in the CMS**

For Example: to link to an image or PDF in your CMS

 - **Enter the resource id of the item**
 - **Enter the folder/file name of the item such as /Images/Company_Logo.png**

External Content Link is Smart Comm Feature

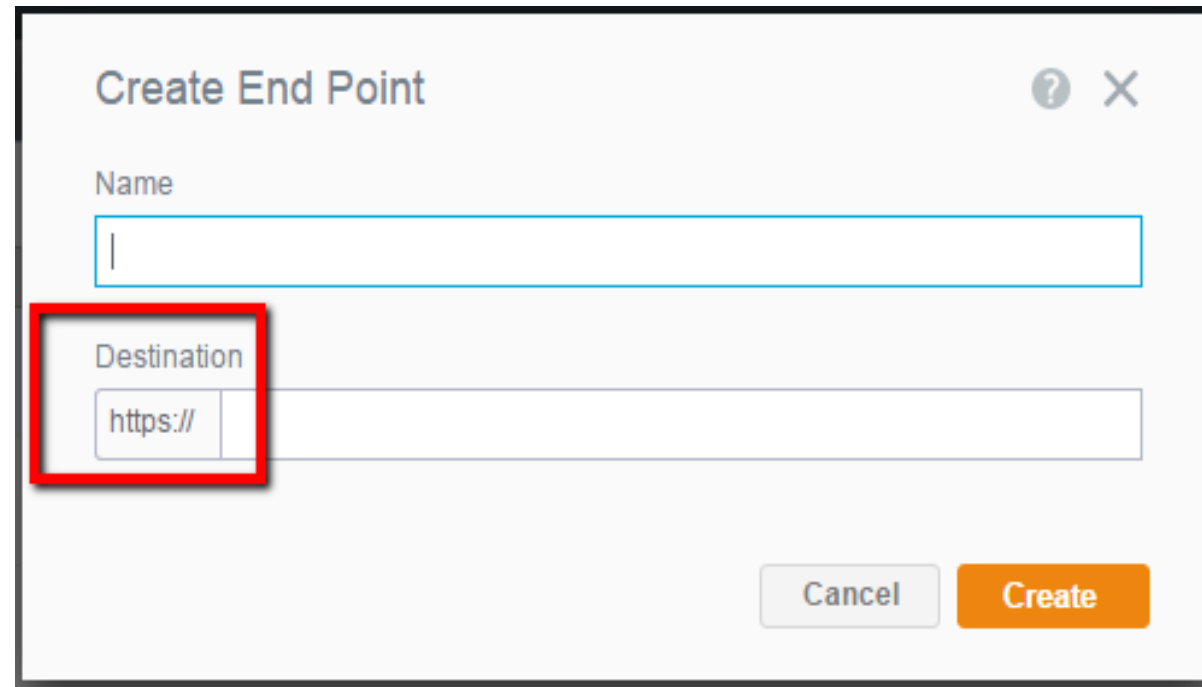
- **Limitations**

- **Content returned by External Content Link can be:**
 - **Plain Text**
 - **Images (JPEG, PNG, GIF, TIFF)**
 - **XML**
 - **Multi-Page TIFF**
 - **PDF**
- **PDF Limitations**
 - **Encrypted or Password Protected PDFs are not supported**
 - **Links to PDFs in CMS not supported for HTML output**
 - **Maximum number of pages for linked PDF is 149**

External Content Link is Smart Comm Feature

- **Configuration**

- **HTTPS Resources use scheme: `https://`**
 - **The Destination has `https://` as the prefix by default and cannot be changed in Settings module**



The screenshot shows a dialog box titled "Create End Point" with a question mark icon and a close button (X) in the top right corner. Below the title, there is a "Name" label followed by an empty text input field. Below that is a "Destination" label followed by a text input field containing "https://". A red rectangular box highlights the "Destination" label and its input field. At the bottom right of the dialog, there are two buttons: "Cancel" (light gray) and "Create" (orange).

External Content Link is Smart Comm Feature

- **Configuration**

You can link to HTTP Resources by overriding the HTTPS scheme

- In the Tenancy, navigate to

Appliances

Queue

Other

Additional Properties

- Add HTTP endpoint

`comms.endpoint.Rons`

`TestEndPoint={"destination":"http://192.168.1.88:9080/images/"}`

- New property will be used by Appliances using this Queue

- For On-Demand calls, make similar modification to the “Pools” defined for On-Demand and Interactive calls.

Queue / RonsQueue

General Reporting Resources SMTP **Other**

Custom Handler Resource IDs
157221456

Draft Exception Processing Configuration

Default Locale
English (United States)

Additional Properties
`comms.endpoint.RonsTestEndPoint={"destination":"http://192.168.1.88:9080/images/"}`

Delete Close Save

External Content Link is Smart Comm Feature

• Configuration

Setting the External Content Link in the Template

- Select the End Point from the drop-down list
- Add the Link Path. This could be a data item, static text or a combination of both
- Compare the completed link preview at the bottom to verify the full path is correct.

Edit External Content Link

Specify Query Name

Specify a name for the Query, which will be seen in the Assembly Tree.

Query Name
Please enter a name for this Query. This name is displayed in the assembly tree. It is for reference only and does not appear in the output.

RonsTestImage

Specify Query Name

Specify Options

External Content Link

Please select predefined end point and specify a link path to the external content.

End Point: RonsTestEndPoint

Link Path: abc royal_chelsea.png

External Link Preview: https://192.168.1.88:9080/images/royal_chelse...

< Back Next > Cancel