

East Coast Oracle Users Conference

November 4 - 5, 2025



A Picture is Worth 1000 Words: Handling Images in APEX

Karen Cannell

kcannell@thtechnology.com

TH TECHNOLOGY

@thtechnology @thtech.bsky.social





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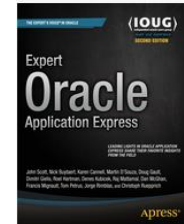
in [Linkedin.com/groups/72183](https://www.linkedin.com/groups/72183)

🦋 [@oracleace.bsky.social](https://bsky.app/profile/oracleace.bsky.social)



About Me ...

- TH TECHNOLOGY – Oracle Consulting Services, APEX Focus
- Mechanical/SW Engineer - Analyzed, designed, developed, converted, upgraded, enhanced legacy & Oracle database applications for Govt, Medical, Engineering, Fisheries **30+ Years**
- Web/APEX applications since HTMLDB
- Oracle ACE Director 
- Apress Author
- Retired ODTUG Director, Kscope KEO#1, Leadership Program, Swimmer, PART Mermaid, Volunteer, User Group Fan





#StayHealthy

#Stay Safe

About You ...

- **APEX Experience?**
- **APEX Versions?**
- **Image Struggles?**

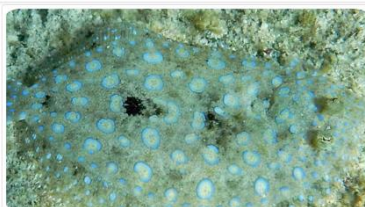




Octopus
OTHER



Orange Cup Coral
CORAL



Peacock Flounder
FISH



Pillar Coral
CORAL



Queen Triggerfish
FISH



Scorpionfish
FISH



Squid
OTHER



Staghorn
CORAL



Starfish
OTHER



Trumpet Fish
FISH



French Angelfish
FISH



Anemone
OTHER



Anemone Featherduster
OTHER



Banded Coral Shrimp
OTHER



Cinnamon Cay Reef snorkel area
GALLERY





PLAN YOUR SNORKEL Administration

🔍 fovinp

🔒

☐ Remember me

Sign In



Why?

• Size Matters!

- Not 4x6 vs 10x12 or Portrait vs Square
- Physical Size in M / KB

← → ↑ ↻ 🖨 > This PC > Local Disk (C:) > aFriendsVINP > Prod_Imag

⊕ New ▾ ✂ 📁 📄 📧 📧 🗑 ⬆ Sort ▾ ≡ View ▾ 🔄 Set as backg

Name	Date modified	Type	Size
 brown_bay_reef_snorkel_area.png	11/24/2024 1:10 AM	PNG File	12,653 KB
 salt_pond_snorkel_area.jpg	11/24/2024 1:07 AM	JPG File	12,551 KB
 salt_pond_snorkel_area.png	11/24/2024 1:07 AM	PNG File	12,551 KB
 haulover_bay_reef_north_snorkel_area.png	11/24/2024 1:09 AM	PNG File	12,418 KB
 hawksnest_reef_map.jpg	11/21/2024 8:06 PM	JPG File	12,121 KB
 haulover_bsy_reef_south_snorkel_area.png	11/24/2024 1:09 AM	PNG File	11,163 KB
 great_lameshur_snorkel_area.png	11/24/2024 1:06 AM	PNG File	9,991 KB
 cannellbayreef_map.jpg	11/21/2024 11:32 AM	JPG File	9,620 KB
 salomon_honeymoon_map.jpg	11/18/2024 6:01 PM	JPG File	9,192 KB
 honeymoon_east_map.jpg	11/18/2024 6:02 PM	JPG File	9,000 KB
 little_lameshur_snorkel_area.png	11/24/2024 1:05 AM	PNG File	8,766 KB
 hawksnest_map.jpg	11/21/2024 8:03 PM	JPG File	8,241 KB
 yawzi_point_snorkel_area.png	11/24/2024 1:05 AM	PNG File	6,976 KB
 brown_bay_reef.jpg	11/24/2024 1:10 AM	JPG File	943 KB
 hauloverR_bay_north.jpg	11/24/2024 1:09 AM	JPG File	807 KB
 french_angel.jpg	11/18/2024 5:58 PM	JPG File	790 KB
 fresnchange.jpg	11/18/2024 5:51 PM	JPG File	790 KB
 little_lameshur.jpg	11/24/2024 1:04 AM	JPG File	764 KB
 europa_bay.jpg	11/24/2024 1:04 AM	JPG File	678 Kb
 haulover_bay_reef_south.jpg	11/24/2024 1:08 AM	JPG File	669 KB
 moonjellyfish.jpg	11/18/2024 5:46 PM	JPG File	573 KB
 cannellbayreef.jpg	11/21/2024 11:32 AM	JPG File	497 KB
 bluecrab.jpg	11/18/2024 5:57 PM	JPG File	428 KB
 bluetang_surgeon.jpg	11/18/2024 5:57 PM	JPG File	425 KB
 great_lameshur.jpg	11/24/2024 1:06 AM	JPG File	403 KB
anemone_featherduster.jpg	11/18/2024 5:58 PM	JPG File	400 KB

Images – Size – Best Practices

- Smaller (KB) is Better
- .webp format ~ 25% Smaller
- Consistent Size and Quality

How Does APEX Help Us with Images?



Pictures in APEX - Today

- APEX 23.2 Image Upload Item
 - Upload - Preview
 - Display
 - Store
 - Crop - w Aspect Ratio
 - Resize - Compress ✓
 - Default Camera – Main or Selfie

Page Item

Page Search

Page 218: Edit Photo

Pre-Rendering

Components

Dialog Header

Content Body

P0_ADD_LABEL [Global Page]

Edit Photo - &P218_SITE_NAME.

Region Body

P218_SITE_NAME

P218_WA_IMAGE_ID

P218_IMAGE_CATEGORY

P218_WATER_ACTIVITY_ID

P218_FILE_TITLE

P218_IMAGE_BLOB

P218_IMAGE_DISPLAY

P218_FILENAME

P218_MIME_TYPE

P218_CHARACTER_SET

P218_CREATED_BY

P218_CREATED

P218_LAST_UPDATED_BY

P218_LAST_UPDATED

Dialog Footer

Buttons

Close

CANCEL

Delete

DELETE

Next

SAVE

CREATE

Post-Rendering

Filter

Identification

Name

P218_IMAGE_BLOB

Type

File Upload

Label

Label

Photo

Display

Display As

Block Dropzone

Dropzone Title

Drag and Drop to Add or Replace Photo

Dropzone Description

Drag and drop in a new image to Add or Replace a photo. Or exit this dialog and click Create to add a new photo.

Display Download Link

Display Download

Capture Using

Main Camera

Storage

Type

BLOB column specified in Item Source attribute

MIME Type Column

MIME_TYPE

Filename Column

FILENAME

Character Set Column

CHARACTER_SET

BLOB Last Updated Column

LAST_UPDATED

File Types

image/*

Maximum File Size

KB

Layout

Image Upload Item Type

- File Upload
- Customized for Images

▼ Identification

Name

P218_IMAGE_BLOB

Type

Image Upload

▼

☰

▼ Label

Label

Photo

▼ Display

Display As

Block Dropzone

▼

Dropzone Title

Drag and Drop to Add or Replace Photo

Dropzone Description

Drag and drop in a new image to Add or Replace a photo. Or exit this dialog and click Create to add a new photo.

↗

Display Download Link

☒

Download Link Text

Capture Using

None

▼

Image Upload - Display

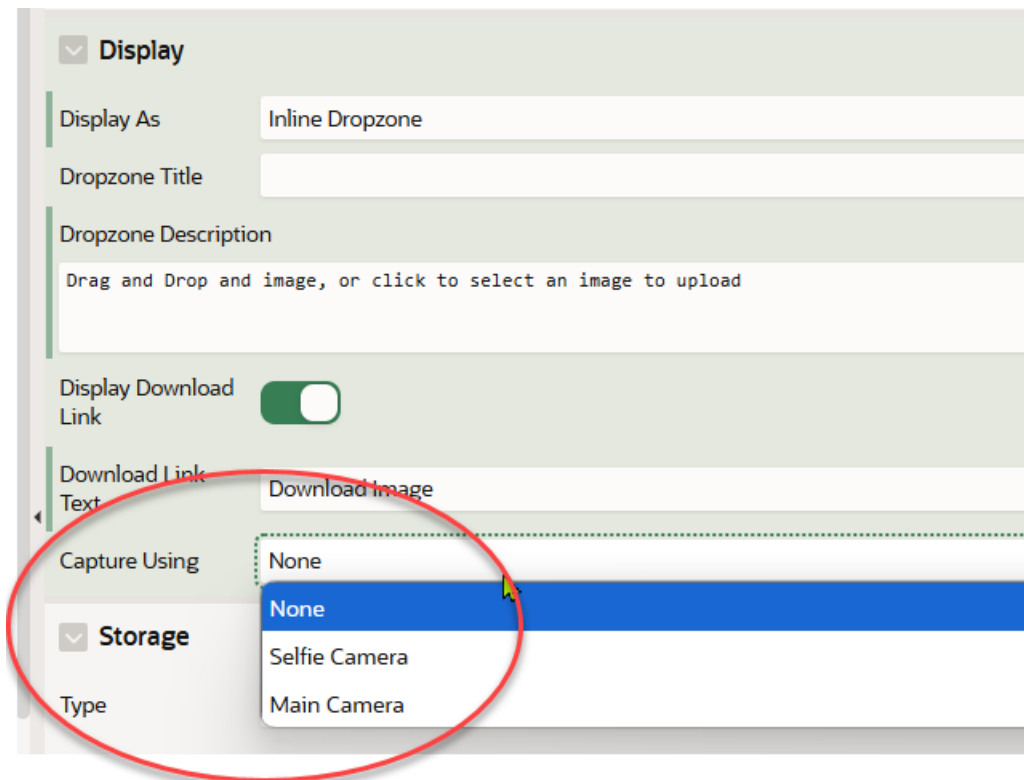
- Same

Plus ...

Identification	
Name	P420_IMAGE_BLOB
Type	Image Upload
Label	
Label	Upload Main/Header Photo
Display	
Display As	Icon Dropzone
Preview Size	Inline File Browse
Display Download Link	Icon Dropzone
Download Link Text	Inline Dropzone
	Block Dropzone
	Native File Browse
Capture Using	None

Image Upload – Capture Using

- Desktop
 - Same Function
- Mobile
 - Default Camera
 - Switch Camera
 - Select Photo
 - Disables Select File



The screenshot displays a configuration interface for image upload. It is divided into two main sections: 'Display' and 'Storage'.

Display Section:

- Display As:** Inline Dropzone
- Dropzone Title:** (Empty text field)
- Dropzone Description:** Drag and Drop and image, or click to select an image to upload
- Display Download Link:** (Toggle switch, currently turned on)
- Download Link Text:** Download Image
- Capture Using:** A dropdown menu is open, showing three options: 'None' (selected), 'Selfie Camera', and 'Main Camera'.

Storage Section:

- Type:** (Empty text field)

Image Upload - Storage

- Same Options

Storage

Type

BLOB column specified in Item Source attribute

BLOB column specified in Item Source attribute

Table APEX_APPLICATION_TEMP_FILES

MIME Type Column

Filename Column

BLOB Last Updated Column

Image Upload

- Crop
- Aspect Ratio

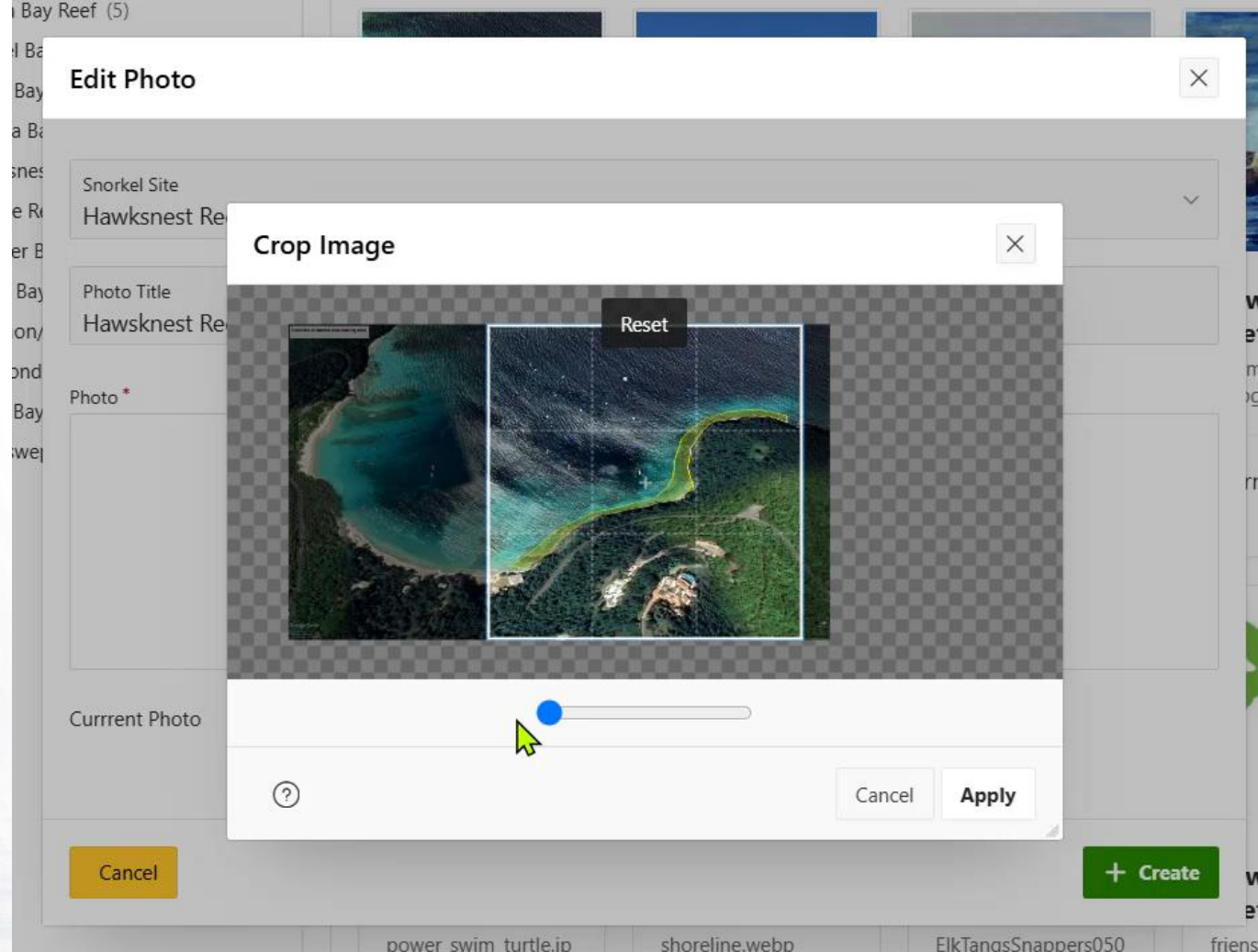


Image Upload

- Resize
- Compresses!

otos

ount 68

Identifier Photos



Edit Photo

Fish/Coral/Creature

☐ Fish ☐ Coral ☐ Creatures

Photo Title

Photo *



Drag and Drop

Drag and drop in a new image to Add or Replace a photo. Or exit this dialog and click Create to add a ne...

Choose Image

Current Photo

Cancel

+ Create

▼ Display

Display As

Block Dropzone

Dropzone Title

Drag and Drop

Dropzone Description


Drag and drop in a new image to Add or Replace a photo. Or exit this dialog and click Create to add a new photo.

Display Download Link

☐

Capture Using

Main Camera

▼ Storage

Type

BLOB column specified in Item Source attribute

MIME Type Column

MIME_TYPE

Filename Column

FILENAME

BLOB Last Updated Column

LAST_UPDATED

▼ Cropping

Allow Cropping

☒

Aspect Ratio

1:1 (square)

▼ Resize To

Maximum File Size

1000

KB

Maximum Width

PX

Maximum Height

PX

[< Home](#)[Share](#)

23

Image/photo compress in browser before upload

BE

bernhard · Sep 9 2021

Idea Summary

In regions with low bandwidth it is useful to compress a taken photo before upload

Use Case

Construction site: builders take photos of building-process... but have only mobile-data-connection with low bandwidth

Preferred Solution (Optional)

compress images in browser by Javascript before upload to table/DB



This has been **delivered** in Oracle APEX 23.2!

Feature Request

FR-1942

Product Area

[Application Builder](#)

Status

DELIVERED**23 Voters**

Pictures ...

- What Else Do We Need?



Easier Ways to Download BLOB/CLOB

- APEX 24.1
- **apex_http.download**
 - Replaces Guts of On-Demand Image Download Procedures
- Download Process
- Download Dynamic Action

Recognize This? the Old Way

Language ?

* Code ?

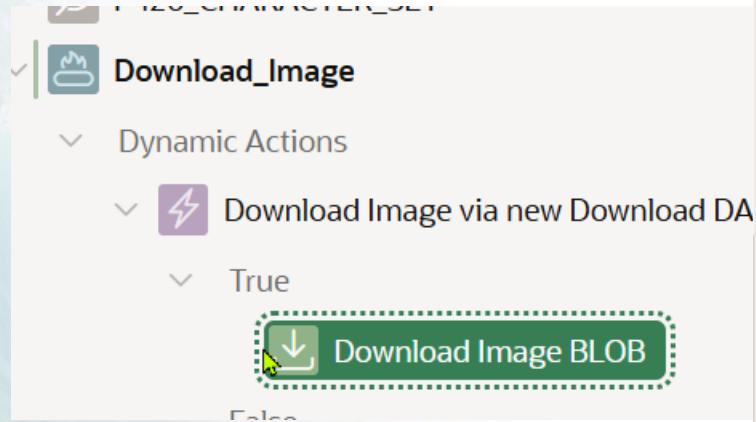
⌂ 🔍 🛠️ A:: ☑️ 👤 APEX Assistant ⚙️

```
1  begin
2      for c1 in (select *
3                  from water_activity_images
4                  where wa_image_id = :WA_IMAGE_ID) loop
5          --
6          sys.http.init;
7          sys.owa_util.mime_header( c1.mime_type, FALSE );
8          sys.http.p('Content-length: ' || sys.dbms_lob.getlength( c1.image_blob));
9          sys.http.p('Content-Disposition: attachment; filename="' || c1.filename || '"');
10         sys.http.p('Cache-Control: max-age=3600'); -- tell the browser to cache for one hour
11         sys.owa_util.http_header_close;
12         sys.wpg_docload.download_file( c1.image_blob );
13
14         apex_application.stop_apex_engine;
15     end loop;
16 end;
```

apex_http.download API

```
apex_http.download(  
    p_blob          => c1.image_blob,  
    p_content_type => c1.mime_type,  
    p_filename      => c1.filename  
);  
-- end new way --  
/** -- old way --  
sys.http.init;  
sys.owa_util.mime_header( c1.mime_type, FALSE );  
sys.http.p('Content-length: ' || sys.dbms_lob.getlength( c1.image_blob));  
sys.http.p('Content-Disposition: attachment; filename="' || c1.filename || '" );  
sys.http.p('Cache-Control: max-age=3600'); -- tell the browser to cache for one hour,  
sys.owa_util.http_header_close;  
sys.wpg_docload.download_file( c1.image_blob );  
  
apex_application.stop_apex_engine;  
-- end old way -- **/
```

DA: Download Single BLOB/CLOB



Identification

Name Download Image BLOB

Action Download

Settings

Multiple Files ☐

View File As Attachment

Source

SQL Query

```
select image_blob, filename, mime_type
  from water_activity
 where water_activity_id = :P420_WATER_ACTIVITY_ID
```

Items to Submit P420_WATER_ACTIVITY_ID

DA: Download All

▼ DOWNLOAD_ALL

▼ Dynamic Actions

▼ Download all Water Activity Images in

▼ True

 Download all Water Activity Images in

False

▼ Identification

Name Download all Water Activity Images into a Zip

Action Download

▼ Settings

Multiple Files



Filename water_activity_main_images.zip

▼ Source

SQL Query

```
select image_blob, filename, mime_type  
from water_activity_images
```

Items to Submit

Pictures ...

- What Else Do We Need?



Pictures ... Images ...

- Where to Keep
- How to Display
- How to Download

'Cuz It's Not the Same Everywhere ...

Images – Where to Keep Them

- Local Table
 - DB BLOB, Tried and True, DB Storage Size
- Static Application Files
 - Handy, No Setup, Go w the App, #s Matter
- CDN or ORDS Server
- URL or REST Web Service
- OCI Object Storage
 - More Popular w Cloud
 - Access via URL or REST Call
 - Copy to Static Files?

Display/Download Image

- Item
 - Image Display, Display Image
 - New! Download BLOB/CLOB
- Interactive Report
 - #COLUMN#
 - Display Image, Download BLOB Column Types
- Cards
 - Media Element and Media Action
- Interactive Grid
 - &COLUMN.
 - REST Service to Display
 - ~~On-Demand Process~~ apex_http.download API to Download

Display Image Item Type: Item/Grid

Label: Current Photo

Settings

Based On: BLOB Column specified in Item Source

Alternative Text Column: Image URL stored in Page Item Value

Filename Column: BLOB Column specified in Item Source

MIME Type Column: MIME_TYPE

BLOB Last Updated Column: LAST_UPDATED

Layout

Display Image Item Type: Item/Grid

▼ Settings

Based On

BLOB Column specified in Item Source ▼

Alternative Text Column

Filename Column

FILENAME

MIME Type Column

MIME_TYPE

BLOB Last Updated Column

LAST_UPDATED

Display Image Item Type: Item/Grid

▼ Settings

Based On

BLOB Column returned by SQL statement▼

⚠ SQL Statement

↗

```
select image_blob from emp
where mime_type = 'image/jpg'
and empno = 222
```

✎

Display Image Item Type: IR

Identification

Column Name IMAGE_BLOB

Type Display Image

BLOB Attributes

Table Owner Parsing Schema

Table Name WATER_ACTIVITY_IMAGES

BLOB Column IMAGE_BLOB

Primary Key
Column 1 WA_IMAGE_ID

Primary Key
Column 2 - Select -

Mime Type
Column MIME_TYPE

Filename Column FILENAME

Last Updated
Column LAST_UPDATED

Character Set
Column - Select -

Download Image Item Type: IR

Identification

Column Name IMAGE_LENGTH

Type Download BLOB

Heading

BLOB Attributes

Table Owner Parsing Schema

Table Name WATER_ACTIVITY_IMAGES

BLOB Column IMAGE_BLOB

Primary Key
Column 1 WA_IMAGE_ID

Primary Key
Column 2 - Select -

Mime Type
Column MIME_TYPE

Filename Column FILENAME

Last Updated
Column LAST_UPDATED

Character Set
Column - Select -

Download Image – A Bit Harder

When Cannot Use the Download
Dynamic Action or Process:

- On-Demand Process
 - apex_http.download (vs. the old way)
- Button or Link

Return an Image ... a Bit Harder

- ~~PL/SQL Process~~
- REST Service
 - **Generally** load faster than `apex_util.get_blob`
- On-Demand Process
 - Benefit of Authentication/Authorization
 - `apex_http.download`

Joel Kallman, 2014

- “The easiest way to return an image from a URL in an APEX application is either via a RESTful Service or via an On-Demand process. ...”

<https://joelkallman.blogspot.com/2014/03/yet-another-post-how-to-link-to.html>

Create Application Process



Source

Language PL/SQL



* Code ?



APEX Assistant



```
1  begin
2      for c1 in (select *
3                  from water_activity_images
4                  where wa_image_id = :WA_IMAGE_ID) loop
5
6          sys.http.init;
7          sys.owa_util.mime_header( c1.mime_type, FALSE );
8          sys.http.p('Content-length: ' || sys.dbms_lob.getlength( c1.image_blob));
9          sys.http.p('Content-Disposition: attachment; filename="' || c1.filename || '"');
10         sys.http.p('Cache-Control: max-age=3600'); -- tell the browser to cache for one hour
11         sys.owa_util.http_header_close;
12         sys.wpg_docload.download_file( c1.image_blob );
13
14         apex_application.stop_apex_engine;
15     end loop;
16 end;
```

apex_http.download Makes it Cleaner

```
begin
  for c1 in (select *
             from water_activity_images
             where wa_image_id = :G_FILE_ID) loop
    -- new way as of APEX 24.1 --
    apex_http.download(
      p_blob      => c1.image_blob,
      p_content_type => c1.mime_type,
      p_filename   => c1.filename
    );
    -- end new way --
    /*** -- old way --
    sys.http.init;
    sys.owa_util.mime_header( c1.mime_type, FALSE );
    sys.http.p('Content-length: ' || sys.dbms_lob.getlength( c1.image_blob));
    sys.http.p('Content-Disposition: attachment; filename="' || c1.filename || '"');
    sys.http.p('Cache-Control: max-age=3600'); -- tell the browser to cache for one hour,
    sys.owa_util.http_header_close;
    sys.wpg_docload.download_file( c1.image_blob );
```

Download Image – A Bit Harder

- On-Demand Process
- Button or Link

Application Process - AJAX

Application Item



```
f?p=&APP_ID.:1:&APP_SESSION.:APPLICATION_PROCESS=GET_FILE:::FILE_ID:my_image.png
```

Interactive Reports

- Display Image Type
- Download BLOB Type

Interactive Grids

- Display via REST Service (or Image URL, Static URL)
- Download via On-Demand Process

NOTE: Cannot Add a Dynamic Action on a Grid Column Unless the Grid is Editable

From/To Image URL

- Display via HTML Expression w `<img ...>` tag
- Download via Link to the Download Image URL
- Slow? No/Less Control

From/To REST Web Service

- Same as URL
- Make Sure Authorization is Correct
- Check REST Calls Limit

Web Service Request Limit – 1000?

- Default 1000
- Up It !– ex: 100000
- Manage Instance → Security → Workspace Isolation

↑ Manage Instance \ Security

Security Settings Authorized URLs

Security

Show All Security HTTP Protocol Real Application Security Session Timeout **Workspace Isolation** Region

Workspace Isolation

Configure isolation and resource limitation default values for all workspaces. Override these default values at workspace level.

Allow Hostnames ?

Resource Consumer Group ?

Maximum Concurrent Workspace Requests ?

Maximum Concurrent Session Requests ?

Concurrent Session Requests Kill Timeout ?

Maximum Size of Files in Workspace ?

Maximum Web Service Requests 1000 ?

Web Service Request Limit – 1000?

- Default 1000
- Up It !– ex: 100000
- Manage Instance → Security → Workspace Isolation

↑ Manage Instance \ Security

Security Settings Authorized URLs

Security

Show All Security HTTP Protocol Real Application Security Session Timeout **Workspace Isolation** Region

Workspace Isolation

Configure isolation and resource limitation default values for all workspaces. Override these default values at workspace level.

Allow Hostnames ?

Resource Consumer Group ?

Maximum Concurrent Workspace Requests ?

Maximum Concurrent Session Requests ?

Concurrent Session Requests Kill Timeout ?

Maximum Size of Files in Workspace ?

Maximum Web Service Requests 1000 ?

From/To Static Application Files

- Similar to Image URL

(Think: How Many Do You Have ?)

Code Editor - SQL Query

```
1 select FILENAME,  
2      MIME_TYPE,  
3      FILE_TITLE,  
4      '#APP_IMAGES#images/' || lower(filename) IMAGE_URL,  
5      WA_IMAGE_ID,  
6      IMAGE_CATEGORY,  
7      WATER_ACTIVITY_ID  
8 from water_activity_images
```

9

10

From/To Object Store Bucket

- Similar to REST URL
- Can Be Slow
- Use Global Variables for Bucket Access – Substitution Strings

Call to Image in Object Store

```
1  select FILENAME,  
2         MIME_TYPE,  
3         FILE_TITLE,  
4         apex_web_service.make_rest_request_b (  
5         p_url => :OBJSTR_API_ENDPOINT  
6         || '/n/' || :TENANCY_OBJSTR_NAMESPACE  
7         || '/b/' || :BUCKET_NAME  
8         || '/o/images/' || utl_url.escape(FILENAME),  
9         p_http_method => 'GET',  
10        p_credential_static_id => :G_OBJSTR_OCI_WEB_CREDENTIAL) OBJSTR_IMAGE_BLOB,  
11        WA_IMAGE_ID,  
12        IMAGE_CATEGORY,  
13        WATER_ACTIVITY_ID  
14  from water_activity_images  
15
```

Use Substitutions for “Globals”

Definition

Security

Globalization

User Interface

Progressive Web App

AI

Application 20109

Cancel

Delete

Apply Changes

Show All

Name

Properties

Availability

Error Handling

Global Notification

Substitutions

Build Options

Workflow Settings

Report Printing

Application File Storage

Copyright Banner

Substitutions

Use static substitution strings for phrases or labels that occur in many places within an application. To create a substitution string, enter the string name in the Substitution String column and the string value in the Substitution Value column.

Substitution String ?

APP_NAME

REST_GALLERY_IMAGES_DEV

REST_GALLERY_IMAGES

OBJSTR_API_ENDPOINT

TENANCY_OBJSTR_NAMESPACE

BUCKET_NAME

G_OBJSTR_OCI_WEB_CREDENTIAL

FOVINP_IMAGES_BUCKeT

Substitution Value ?

Demo Images -- Remote Storage Static Files

<https://kqwbovkvyjf6ihu-dbthtechfree.adb.us-ashburn-1.oraclecloudapps.com/ords/fovinp/gallery/images/><https://nsodqqqlu7eu8o5-frvinp.adb.us-ashburn-1.oraclecloudapps.com/ords/fovinp/gallery/images/><https://objectstorage.us-ashburn-1.oraclecloud.com>

idcvvkid4dtl

images-documents-store

OBJSTORE_BUCKET_USER_CRED

fovinp-images

REST Call to Object Storage Bucket

Code Editor - SQL Query

```
1  select FILENAME,  
2         MIME_TYPE,  
3         FILE_TITLE,  
4         apex_web_service.make_rest_request_b (  
5         p_url => :OBJSTR_API_ENDPOINT  
6         || '/n/' || :TENANCY_OBJSTR_NAMESPACE  
7         || '/b/' || :BUCKET_NAME  
8         || '/o/' || utl_url.escape(lower(FILENAME)),  
9         p_http_method => 'GET',  
10        p_credential_static_id => :G_OBJSTR_OCI_WEB_CREDENTIAL) OBJSTR_IMAGE_BLOB,  
11        WA_IMAGE_ID,  
12        IMAGE_CATEGORY,  
13        WATER_ACTIVITY_ID  
14  from water_activity_images  
15
```

Home

Snorkel Areas

Gallery Photos

Fish/Coral Id Photos

Card - Local DB Table

Card - Image URL

Card - REST Image URL

Card - Static Applic Files

Card - Object Store

IReport - Local DB Table

IReport - Image URL

IReport - REST Image URL

IReport - Static Applic Files

IGrid - Local DB Table

IGrid - Image URL

IGrid - REST Image URL

Administration

Notes

For Cards, when the image is in Object Store it's a bit trickier than a simple REST Image URL.

The image in object store is accessed by an apex_web_service.make_rest_request call using the URL to the images in object storage. This is constructed in the query here. It could also be stored in a local table for convenience. **Display Image** and **Download Image** are much like for Image URL and REST URL.

To Display Image:

Use the **Media** element of the Card and the appropriate Source, BLOB Column (in this case is the full Object Store access URL, defined in the query), Position, Appearance and other settings.

Note the "missing" images - when moving files to Object Storage, the file names need to stay the same, to match any local references - if joining as I do in the query - or the images do not show up.

To Download an Image:

Use the **Media** Card Action and define the Media URL target as a call to the GET_OBJSTR_IMAGE On-Demand (Ajax) process. We are getting a BLOB from Object Storage. Then a Click on the image calls the On-Demand process and downloads the BLOB/image.

Anemone featherduster.jpg

Anemone Featherduster

OTHER

Banded Coral Shrimp.jpg

Banded Coral Shrimp

OTHER

Cinnamon Cay Reef.png

Cinnamon Cay Reef snorkel area

GALLERY

Haulover Bay NORTH.png

Haulover Bay Reef North snorkel area

GALLERY

Honeymoon East.png

Honeymoon Reef East snorkel area

GALLERY

Blue Tang _ Surgeonfish.jpg

Blue Tang & Surgeon Fish

FISH

Blue Tang.jpg

Blue Tang

FISH

Box crab.jpg

Box Crab

OTHER

Elkhorn coral.jpg

Elkhorn

CORAL

Lobster.jpg

Lobster

OTHER

Nurse shark.png

Nurse Shark

FISH

barracuda.jpg

Barracuda

FISH

boulder star coral.jpg

Boulder Star Coral

CORAL

Caribbean reef shark.jpg

Caribbean Reef Shark

CORAL

Fire coral.jpg

Fire Coral

CORAL

Object Store – Spaces in File Names NG

- Rename Files for _ vs <space>
- Reload Files into Bucket
- Update FILENAME REPLACE ' ' → '_'
- Try Again!

- Home
- Snorkel Areas
- Gallery Photos
- Fish/Coral Id Photos
- Card - Local DB Table
- Card - Image URL
- Card - REST Image URL
- Card - Static Applic Files
- Card - Object Store**
- IReport - Local DB Table
- IReport - Image URL
- IReport - REST Image URL
- IReport - Static Applic Files
- IGrid - Local DB Table
- IGrid - Image URL
- IGrid - REST Image URL
- Administration

Notes

Anemone featherduster.jpg

Anemone Featherduster
OTHER

Banded Coral Shrimp.jpg

Banded Coral Shrimp
OTHER

Cinnamon Cay Reef.png

Cinnamon Cay Reef snorkel area
GALLERY

Haulover Bay NORTH.png

Haulover Bay Reef North snorkel area
GALLERY

Honeymoon East.png

Honeymoon Reef East snorkel area
GALLERY

Blue Tang _ Surgeonfish.jpg

Blue Tang & Surgeon Fish
FISH

Blue Tang.jpg

Blue Tang
FISH

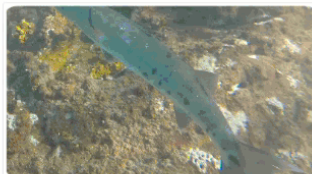
Box crab.jpg

Box Crab
OTHER

Elkhorn coral.jpg

Elkhorn
CORAL**Lobster**
OTHER

Nurse shark.png

Nurse Shark
FISH**Barracuda**
FISH

boulder star coral.jpg

Boulder Star Coral
CORAL

Caribbean reef shark.jpg

Caribbean Reef Shark
FISH

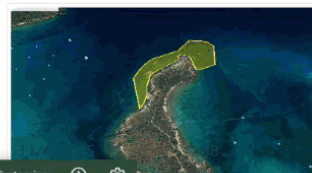
Fire coral.jpg

Fire Coral
CORAL

grey angelfish.jpg

Large grooved brain coral.JPG

Little lameshur Bay.png



sea-turtle.svg

Buckets w Pre-Authenticated Request

- Just like URL
- No Need for the REST Call and Credential

```
:G_IMAGES_DOCS_BUCKET_PAR_URL || 'images/' || utl_url.escape(filename) OBJSTR_IM
```

Static App Files and Object Store

About

Static application files are only available to the current application. Use `#APP_FILES#` in your application to reference a file.

Use this page to create, edit, and delete static files.

Static application files can be stored locally in the database (default), or can be stored in Oracle Cloud Object Storage.

[Learn More ...](#)



This application
uses **Oracle Cloud
Object Storage**.

Tasks

[Synchronize Files](#) >

[View Object Storage Files](#) >

Migrate Files to Object Storage

- Migrate Static Files to Obj Store Bucket
- Ease of #APP_FILES# Access
- Faster than REST Calls (? YMMV)
- Synchronize Files Either Way

App Definition → Application File Storage

  Application 20109 \ Edit Application Definition

Definition

Security

Globalization

User Interface

Progressive Web App

AI

Application 20109

CancelDeleteApply Changes

ty

Error Handling

Global Notification

Substitutions

Build Options

Workflow Settings

Report Printing

Application File Storage

Copyright E

Application File Storage

Add Object Storage

File Storage Type

Oracle Cloud Object Storage

?

Remote File Server

20109_OBJSTR_BUCKET

?

Updated: 6 days ago - FOVINP

- **Create New Bucket or Use Existing**
- **Upload Files to Bucket, Use from the Bucket**
- **Keeps APEX Application File Size Down**

The screenshot shows a dialog box titled "Add Remote File Storage" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Name:** A text input field containing "20109_BUCKET (2)". A red asterisk is to the left of the label. A help icon (?) is to the right of the field. Below the field is the text "Name to identify file server".
- Bucket URL:** An empty text input field. A red asterisk is to the left of the label. A help icon (?) is below the field.
- Create bucket:** A toggle switch that is currently turned on (green).
- OCI Credential:** A dropdown menu showing "OCI Credentials - orclapexdev". A red asterisk is to the left of the label. A help icon (?) is to the right of the dropdown.
- Compartment OCID:** An empty text input field. A red asterisk is to the left of the label. A help icon (?) is to the right of the field.

At the bottom of the dialog, there are three buttons: "Cancel" (light gray), "Create Credential" (green), and "Next >" (green).

Summary: Pictures in APEX

- Size Matters
- Know Where Your Images Are ...
Local DB – Static App Files – REST Service - Obj Storage
- Know Where You Are ...
Item – Card –IR – IGrid - etc

Know Your Tool – Use Your Tool

Summary: Pictures in APEX

- Upload Image
- Download BLOB/CLOB
- apex_http.download
- Object Storage

Know Your Tool - Use the New Stuff!

#StaySane
#HaveFun



East Coast Oracle Users Conference

November 4 - 5, 2025



Questions? Thank You

Karen Cannell

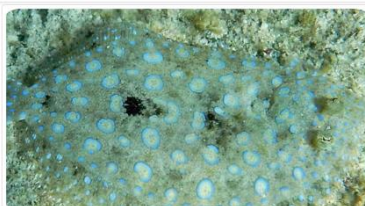
kcannell@thtechnology.com



Octopus
OTHER



Orange Cup Coral
CORAL



Peacock Flounder
FISH



Pillar Coral
CORAL



Queen Triggerfish
FISH



Scorpionfish
FISH



Squid
OTHER



Staghorn
CORAL



Starfish
OTHER



Trumpet Fish
FISH



French Angelfish
FISH



Anemone
OTHER



Anemone Featherduster
OTHER



Banded Coral Shrimp
OTHER



Cinnamon Cay Reef snorkel area
GALLERY



Resources, Object Store

[Storing and Accessing Files in OCI Bucket Using PL/SQL for Oracle APEX - Ontoor blogs](#)

- May Need to Upload/Download To/Form Object Store Bucket
- Example for OCI Object Store

Upload

Upload a file to OCI Object Storage via REST calls

```

DECLARE
  l_blob      BLOB;
  l_clob      CLOB;
  l_file_name VARCHAR2(255) := 'test_upload.txt';
  l_bucket_name VARCHAR2(100) := 'your_bucket';
  l_namespace VARCHAR2(100) := 'your_namespace';
  l_url       VARCHAR2(500);
  l_response  CLOB;
BEGIN
  -- Get the file from APEX collection or page item (example BLOB)
  SELECT blob_content
  INTO l_blob
  FROM apex_application_temp_files
  WHERE name = l_file_name;

  l_url := 'https://objectstorage.ap-mumbai-1.oraclecloud.com/n/'
    || l_namespace || '/b/'
    || l_bucket_name || '/o/'
    || apex_util.url_encode(l_file_name);

  apex_web_service.g_request_headers(1).name := 'Content-Type';
  apex_web_service.g_request_headers(1).value := 'application/octet-stream';

  -- Upload using PUT method
  l_response := apex_web_service.make_rest_request(
    p_url      => l_url,
    p_http_method => 'PUT',
    p_body_blob  => l_blob,
    p_credential_static_id => 'OCI_OBJECT_STORAGE' -- Your Web Credential
  );

  dbms_output.put_line('Upload Response: ' || l_response);
END;

```

Download

Download a file in OCI Object Storage via REST calls

```
DECLARE
  l_bucket_name  VARCHAR2(100) := 'your_bucket';
  l_namespace    VARCHAR2(100) := 'your_namespace';
  l_file_name    VARCHAR2(255) := 'test_upload.txt';
  l_url          VARCHAR2(500);
  l_response     BLOB;
BEGIN
  l_url := 'https://objectstorage.ap-mumbai-1.oraclecloud.com/n/'
           || l_namespace || '/b/'
           || l_bucket_name || '/o/'
           || apex_util.url_encode(l_file_name);

  -- Set Accept header if needed
  apex_web_service.g_request_headers(1).name := 'Accept';
  apex_web_service.g_request_headers(1).value := 'application/octet-stream';

  -- Download
  l_response := apex_web_service.make_rest_request_b(
    p_url      => l_url,
    p_http_method => 'GET',
    p_credential_static_id => 'OCI_OBJECT_STORAGE'
  );

  -- You can now display or download this BLOB in APEX
  -- For example: store in a table or use as download link
  INSERT INTO downloaded_files (file_name, file_blob)
  VALUES (l_file_name, l_response);

  COMMIT;
END;
```

Delete

Delete a file
from
OCI Object
Storage via
REST calls

```
DECLARE
  l_bucket_name  VARCHAR2(100) := 'your_bucket';
  l_namespace    VARCHAR2(100) := 'your_namespace';
  l_file_name     VARCHAR2(255) := 'test_upload.txt';
  l_url           VARCHAR2(500);
  l_response      CLOB;
BEGIN
  l_url := 'https://objectstorage.ap-mumbai-1.oraclecloud.com/n/' ||
           l_namespace || '/b/' || l_bucket_name || '/o/' || apex_util.url_encode(l_file_name);

  -- Delete the object
  l_response := apex_web_service.make_rest_request(
    p_url          => l_url,
    p_http_method   => 'DELETE',
    p_credential_static_id => 'OCI_OBJECT_STORAGE'
  );

  dbms_output.put_line('Delete Response: ' || l_response);
END;
```

BestPractices for Object Store

- Always encode the file name in the URL using `utl_url.escape`
- Use OCI's recommended regional endpoint (like `objectstorage.us-ashburn-1.oraclecloud.com`).
- Secure your Web Credentials – don't expose Auth Token in code.
- Use `DBMS_CLOUD` or `ORDS` proxy for enhanced security if required.

Resources

- APEX 23.2 Image Upload Item Features

<https://www.youtube.com/watch?v=fgmZqpxu4l0>

- Sample Cards App – Images and Media

https://apex.oracle.com/pls/apex/apex_pm/r/sample-cards/images-and-media

- Joel Kallman YAP how to Link to Download a File

<https://joelkallman.blogspot.com/2014/03/yet-another-post-how-to-link-to.html>

- REST gets images faster

[Using RESTful to deliver Images for APEX](#)

- APEX: View Images and Video from OCI Object Store

<https://synuora.hashnode.dev/>

Resources - More

- LiveLab – Use OCI Object Storage ...

https://apexapps.oracle.com/pls/apex/r/dbpm/livelabs/run-workshop?p210_wid=3558&p210_wec=&session=102906933050183

- Sample Cards App – Images and Media

https://apex.oracle.com/pls/apex/apex_pm/r/sample-cards/images-and-media

- Joel Kallman YAP how to Link to Download a File

<https://joelkallman.blogspot.com/2014/03/yet-another-post-how-to-link-to.html>

- Use REST to Deliver Images for APEX

[Using RESTful to deliver Images for APEX](#)

- APEX Image Upload Facility

[Oracle APEX 23.2 New Image Upload Facility – DataVizMark](#)

PAR for Buckets can be Very Long

https://objectstorage.us-ashburn-1.oraclecloud.com/p/8qmd-wyZ_DIC_h1Fn4q5DGrjM1OvVSfXYowhPBjlz-y5nw269aJehp2RR2zVqfxC/n/idc8rysl0c0j/b/fovinp-images/o/

[Details](#) [Objects](#) [Management](#) [Monitoring](#) [Policies](#) [Work requests](#) [Tags](#)

Pre-authenticated requests

Name	Status	Target	Object name/prefix	Access type	Expiration	
par-fovinp-bucket-20251104-1602	Active	Bucket	—	Permit object reads	Dec 31, 2030, 21:00 UTC	...
par-fovinp-images-bucket-20251102-1110	Active	Bucket	—	Permit object reads and writes	Nov 10, 2025, 04:00 UTC	...

Page 1 of 1 (1 - 2 of 2 total items) Items per page 10

ADD for Next Time:

- DBMS_CLOUD way to Insert/Upload, Update, Delete
- REST Services way to Insert/Upload, Update, Delete