



# ArcGIS Imagery Dedicated Usage Guide

Version 1.0  
17 February 2021

## Table of Contents

Introduction:.....	3
Starting off with the imagery servers:.....	3
1. The Dynamic imagery server .....	3
1.1. Accessing data on the cloud .....	3
1.1.1 Getting rasters using an ACS connection: .....	3
1.1.2. Raster Proxies: .....	4
1.2. Using AID tools .....	4
1.2.1 Installation .....	4
1.2.2. Create AID Image Service Definition Package .....	5
1.2.3. Manage AID Image Services .....	6
1.2.4. GetJobStatus tool .....	11
2. Tile cache / Scene layer servers: .....	13
2.1 Using AID tools .....	13
2.1.1. Manage AID Tile Services .....	13
2.1.2 GetJobStatus tool .....	16

## Introduction:

**ArcGIS Imagery Dedicated (AID)** is available for organizations mandated to store their data in their own cloud location, typically on AWS or Azure. AID provides dedicated server machines managed by Esri, but installed next to the customers storage and provide dynamic imagery, tiled imagery and processing and analysis services directly against the stored imagery.

ArcGIS Imagery Dedicated Edition further provides GPtools in ArcGIS Pro for packaging, publishing, and managing the services. There are also rest based interfaces that can be used to integrate with different applications.

## Starting off with the imagery servers:

Users of the AID workflow have the option to set up two types of servers: The Dynamic Imagery server and the Tiled/Scene-layer server.

### 1. The Dynamic imagery server

The Dynamic Imagery server allows the user to publish rasters stored on the cloud along with mosaics built from these rasters. AID further provides the user with a set of tools to publish/manage image services using this data.

#### 1.1. Accessing data on the cloud

Rasters on the cloud can be accessed for packaging via three methods i.e. a) using an ACS connection b) using Raster Proxies of data on the cloud. Mosaics can be made using these three methods.

##### 1.1.1 Getting rasters using an ACS connection:

ACS connections to cloud data can be made using the cloud store access keys and secret keys. Look into this link [Here](#) or [Here](#) for details of creating the connection. Local caches of the rasters can be created by having the 'pixel cache' option enabled in the 'Add Rasters to Mosaic Dataset' when creating the mosaic. Create this cache in a 'z:/mrftcache/' location. These caches can further be packaged and published (similar to Raster Proxies workflow; see section [1.1.2](#)).

### 1.1.2. Raster Proxies:

Raster Proxies pointing to rasters on the cloud can be published via AID. (See the use of [Optimise Rasters workflow](#) to create raster proxies of images on the cloud, also note the cache location when creating RP's should be 'z:/mrftcache'). Raster Proxies if added to mosaic then must be embedded for the publishing as an image service, check out the MDTools documentation the MDCS github Repo (<https://github.com/Esri/mdcs-py>) for details on how this is to be done.

Dynamic imagery server also allow the publishing of individual CRF's (stored in an s3 bucket and not locally) as tile service (See [AID GP tools: Managing services](#)). To do this the location of the CRF cloud store (an s3 bucket) must first be registered in the server which can be done only if the security keys are provided for the same bucket while subscribing to AID.

## 1.2. Using AID tools

The AID GP tools can be downloaded from this [link](#). The AID tools allow the user to publish/manage imagery services using data on the cloud. The data is first packaged and saved locally using the 'Package Dataset' tool. Then using the 'Manage dataset' tool the data can be published, updated, or deleted. Services can also be stopped (pause publish) or started (re-start publish).

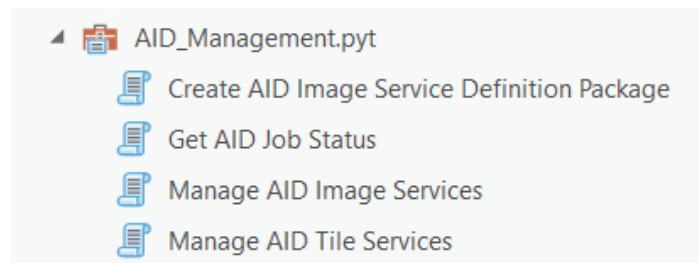
### 1.2.1 Installation

Download the zip file from [here](#) and extract it to a working folder E.g.

c:\Image\_Mgmt\_Workflows\AID\.

This folder contains One Python tools box called AID. In ArcGIS Pro the tool can be imported into your project. **Prerequisite:** You need to install MDtools from the mdcs github Repo.

(<https://github.com/Esri/mdcs-py>)

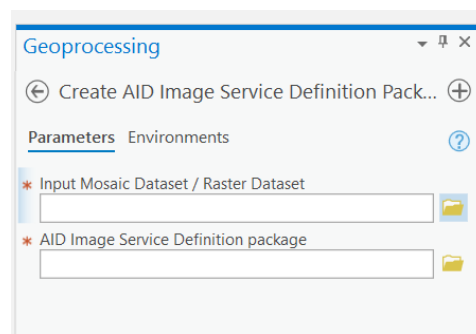


### 1.2.2. Create AID Image Service Definition Package

For publishing data in the dynamic imagery server, the data must first be packaged. The packaging tool provide by AID must be used for this. On running the tool, the input mosaic/raster is first validated and packaged if found valid. The different validation steps include:

1. First the source paths to the rasters or the rasters in the mosaic dataset are extracted and checked for if they are local paths or not. If local then error is given that: *'Source path is invalid'*.
2. For mosaics made from raster proxies (MRF files), a check is made on whether the raster paths are embedded or not, if not then error is shown: *'Raster path should either be embedded or should be a cloud path'*. The datafile path is also separately checked and if the path is local then it is corrected by the tool to a z:/mrftcache location. If the correction fails then error is shown: *'DataFile path should start with z:/mrftcache.'* In case an individual .mrf file needs to be published, then the DataFile path must be manually set to z:/mrftcache for the packaging to work, else the above-mentioned error is shown.
3. Checks are also included for rasters on the cloud (currently only for vsicurl), if invalid then error is shown *'URL is not accessible'*

After validation, the package is then placed in the output location as given by the user. If not valid the user has to correct the data as per the requirements (see [section 1.1](#) for valid ways to create the data). The following inputs are required to package a dataset:



#### Inputs

- Input Data – Select/Enter the path to the mosaic or raster proxies to be packaged.  
e.g: For mosaics: C:/datasets/Mosaic.GDB/MyExmpleMosaic  
For raster proxy (or pixel cache): C:/datasets/MyExmpleRP.mrf

- Service Package Location – Select the path where the package should be created.

### 1.2.3. Manage AID Image Services

This tool helps the user to perform multiple actions including create, update, delete, start or stop a dynamic image service.

#### a. Creating a service:

To Create a Dynamic Image Service, the following inputs are required:

The screenshot shows the 'Manage AID Image Services' tool window. The 'Parameters' tab is selected. The fields are as follows:

- AID Image Server:** A dropdown menu with 'di4-geocloud' selected.
- Action:** A dropdown menu with 'Create Service' selected.
- Server Folder Name:** A dropdown menu with 'TRUE' selected.
- \* Image Service Name:** An empty text input field.
- \* AID Image Service Definition Package:** An empty text input field with a folder icon to its right.
- Instance Type:** A dropdown menu with 'Dedicated Instance' selected.
- Description:** An empty text input field.
- Copyright:** An empty text input field.
- Checkboxes:**
  - ☐ Create Portal Item
  - ☐ Enable WMS
  - ☐ Enable WCS
  - ☐ Enable Tiled Imagery
  - ☐ Set service permissions

#### Inputs

- AID Image Server - select the server on which you need a service to be created
- Action – Select 'Create Service' from the pulldown menu
- Server Folder Name – Select or enter the folder where the service should be created
- Image service name – Enter the name of the image service to be created
- AID Image Service Definition Package – Browse to the dataset package created by the package dataset tool

- Instance Type – Select the instance type (Dedicated/Shared) to be used for the image service.
- Description - Enter the description of the image service to be created.
- Copyright - Enter the copyright of the image service to be created.
- Create Portal Item - Select this option to create an item with the created image service URL to the logged in portal.
- Enable WMS- Select this option to enable WMS services for the published image.
- Enable WCS- Select this option to enable WCS services for the published image.
- Enable Tiled imagery- Select this option in case you want to publish as a Tiled image service. Note: This is only possible when using a .crf format image as input for publishing.
- Set service permissions- Give or revoke permissions for the different users of the published imagery.

On running the tool, an Image service is created with the given details. Also, the job id and the job status is printed out at the end of execution of the tool in the messages tab. Please note the Job ID to check the status of the job later.

#### b. Updating a service

Enter the below inputs to the Manage AID Image Services GPTool to update a service.

Geoprocessing

Manage AID Image Services

Parameters Environments

AID Image Server  
di4-geocloud

Action  
Update Service

Server Folder Name  
TRUE

Image Service Name  
test\_ved

AID Image Service Definition Package

Description  
sample

Copyright  
sample

☐ Enable WMS

☐ Enable WCS

### Inputs

- AIS Image Server- From the pulldown menu select the server name on which you need to update the service.
- Action – Select 'Update Service' from the pulldown menu.
- Server Folder Name – Select the folder in which the service to be updated is present.
- Image Service name- Select the service name form within the folder that you want to update.
- Description (optional) - Enter the description of the image service to be updated
- Copyright (optional) - Enter the copyright of the image service to be updated.
- Additional options to enable WMS or WCS are also provided and can be checked by user if required.



On running the tool, the selected image service is updated. Also, the job id and the job status is printed out at the end of execution of the tool. Please note the Job ID to check the status of the job later.

#### c. Deleting a service

Enter the below inputs to the Manage AID Image Services GPTool to delete a service.

#### Inputs

- AID Image Server – Select the server name on which a service should be deleted.
- Action – Select Delete Service option
- Server Folder Name – Select the folder from which the service should be deleted.
- Image service name – Select the image service to be deleted.

On running the tool, the selected image service is deleted. Also, the job id and the job status is printed out at the end of execution of the tool. Please note the Job ID to check the status of the job later.

#### d. Starting/Stopping a service

Enter the below inputs to the Manage Services GPTool to start/stop a service. This service is only available for dynamic imagery servers.

The screenshot shows a software interface window titled "Geoprocessing" with a subtitle "Manage AID Image Services". It has a "Parameters" tab selected, with a "Help" icon (question mark) to its right. Below the tabs are five dropdown menus: "AID Image Server" (selected: di4-geocloud), "Action" (selected: Start/Stop Service), "Server Folder Name" (selected: TRUE), "Image Service Name" (selected: test\_ved), and "Change service status" (selected: STOPPED).

### Inputs

- AID Image Server - Select the server name on which a service should be started or stop.
- Action – Select Start/Stop Service
- Server Folder Name – Select the folder in which the service has be started/stopped.
- Image service name – Select the name of image service.
- Change service status – This shows the status of the selected service. Change it to change the status.

On running the tool, the selected image service is started/stopped. Also, the job id and the job status is printed out at the end of execution of the tool. Please note the Job ID to check the status of the job later.

#### e. [Update Service Permission](#)

Initially when the service is created via AID it is a public service (accessible by whoever has a link within the organization). The Update Service Permission tool allows the creator of the data to secure the published services by enabling access for up to (currently) 5 users. Further the update access can also be used to temporarily disable access for users if required.

Geoprocessing

Manage AID Image Services

Parameters Environments

AID Image Server  
di4-geocloud

Action  
Set Service Permission

Server Folder Name  
Nivedita\_Test1

Image Service Name  
vsi3capscheck

Users to give or revoke permission

User	Permission detail
public	Enabled

## Inputs

- AID Image Server - Select the server name on which a service should be started or stop.
- Action – Update Service Permission
- Server Folder Name – Select the folder in which the service has be started/stopped.
- Image service name – Select the name of image service.
- Change service status – This shows the status of the selected service. Change it to change the status.
- Users service permissions- Give or revoke permissions for the different users of the published imagery.

### 1.2.4. GetJobStatus tool

This tool is used to get the status of the job that are submitted by the various tools.

Geoprocessing

Get AID Job Status

Parameters Environments

AID Server  
di4-geocloud

\* Job Id

☐ List all Job Ids for Server

### Inputs:

- AID Server: Select the server name on which the Job was submitted.
- Job ID: Select the Create/Update/Delete/Start/Stop Job ID from the dropdown list. The list by default only shows job id's of tool runs sent in by the current user.
- List all Job Ids for Server: Select this option to see all the Job ids available in the server (not just the ones created by the current user).
- On clicking the run button, the status of the job is displayed. It can be one of the below.
  - QUEUED indicates that the job has not been picked up for processing yet.
  - SUCCESS indicates that the job has completed successfully.
  - FAILED indicates that the job failed.
- In case of CreateService the tool returns the URL of the created service

### Samples Job Status response:

```

> Environments
▼ Messages
  Start Time: Friday, September 25, 2020 1:21:33 PM
  Status of job 1599657469_DI23afaf8f9_createservice is Success
  URL: https://aide-
  is1.geocloud.com/arcgis/rest/services/testcases/md_landsat_
  Succeeded at Friday, September 25, 2020 1:21:37 PM (Elapsed Time: 4.65
  seconds)

▼ Messages
  Start Time: Friday, September 25, 2020 1:26:18 PM
  Status of job 2020092415193833_DI23afaf8f9_stopservice is Success
  URL: https://aide-
  is1.geocloud.com/arcgis/rest/services/test/md_naip_no_cache_vsis3_acs/ImageServer
  Succeeded at Friday, September 25, 2020 1:26:23 PM (Elapsed Time: 5.05
  seconds)

```

## 2. Tile cache / Scene layer servers:

The Tile/Scene layer server allows the user to publish TPKX or SLPK files as 'by reference', i.e. without copying it to any local store. Tpkx files can be created for different types of imagery, please see this link: [Serving Cached Imagery—Imagery Workflows | Documentation \(arcgis.com\)](https://pro.arcgis.com/en/pro-app/latest/tool-reference/data-management/create-3d-object-scene-layer-package.htm) for details of creating a tile cache.

For 3D data like point clouds or 3D object data, the following links can be used to convert to an .slpk file.

- <https://pro.arcgis.com/en/pro-app/latest/tool-reference/data-management/create-3d-object-scene-layer-package.htm>
- <https://pro.arcgis.com/en/pro-app/latest/tool-reference/data-management/create-point-scene-layer-package.htm>
- <https://pro.arcgis.com/en/pro-app/latest/tool-reference/data-management/create-point-cloud-scene-layer-package.htm>

The data paths can be of the following types:

- s3://bucketname/filepath/Myexample.slpk OR s3://bucketname/filepath/Myexample.tpkx
- <https://bucketname.s3-us-west-1.amazonaws.com/filepath/Myexample.slpk> OR <https://bucketname.s3-us-west-1.amazonaws.com/filepath/Myexample.tpkx>
- /vsis3/[bucketname.s3-us-west-1.amazonaws.com/](https://bucketname.s3-us-west-1.amazonaws.com/) [Myexample.slpk](#) OR [/vsis3/bucketname.s3-us-west-1.amazonaws.com/ Myexample.tpkx](#)

Vsicurl paths are not currently included but will be added.

### 2.1 Using AID tools

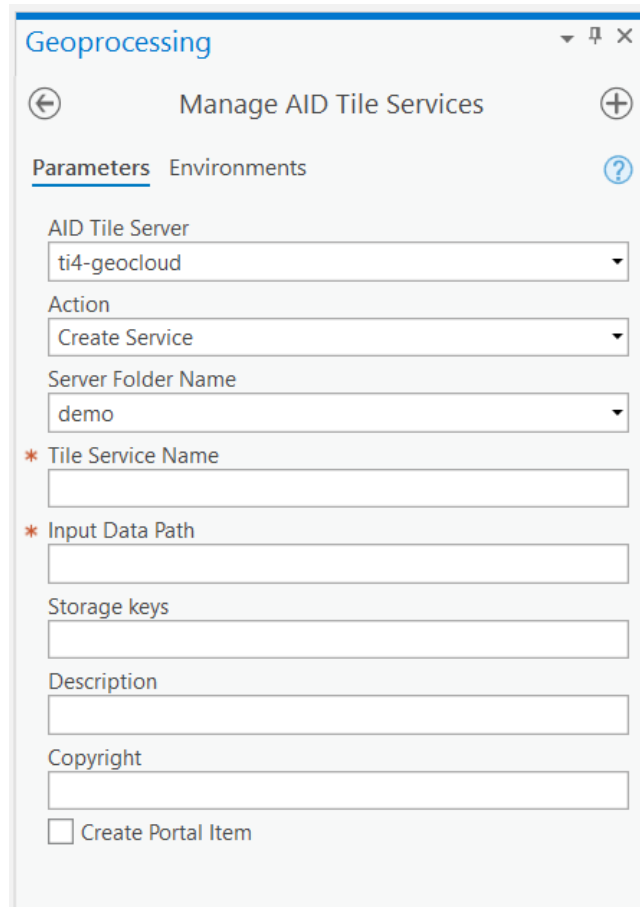
For details regarding download and installation of AID tools please see [Using AID tools: Installation section](#) above.

#### 2.1.1. Manage AID Tile Services

This tool helps the user perform create, update and delete actions for a tile/scene service.

a. Creating a service:

The following inputs are required to create a tile/scene layer service.



The screenshot shows a web-based interface titled 'Geoprocessing' with a sub-header 'Manage AID Tile Services'. It features two tabs: 'Parameters' (selected) and 'Environments'. A help icon (?) is visible. The form includes several input fields: a dropdown for 'AID Tile Server' (set to 'ti4-geocloud'), a dropdown for 'Action' (set to 'Create Service'), a dropdown for 'Server Folder Name' (set to 'demo'), a text field for '\* Tile Service Name', a text field for '\* Input Data Path', a text field for 'Storage keys', a text field for 'Description', and a text field for 'Copyright'. At the bottom, there is a checkbox labeled 'Create Portal Item'.

- AID Tile Server – select the server on which you need to publish the Tile service.
- Action – Select 'Create Service'
- Server Folder Name – Select the folder in which the service should be created.
- Tile service name – Enter the name of the tile service to be created.
- Input Data Path – URL to the data file (SLPK/TPKX). If from an S3 bucket, use the Object URL of the file.
- Storage Keys : SecretID exported by Cloudformation template as described in document AID: Setting up the Servers.
- Description - Enter the description of the image service to be created.
- Copyright - Enter the copyright of the image service to be created.

- Create Portal Item - Select this option to create an item with the created image service URL to the logged in portal.

On running the tool, an Image service is created with the given details. Also, the job id and the job status are printed out at the end of execution of the tool. Please note the Job ID to check the status of the job later.

#### b. Updating a service

Enter the below inputs to the Manage Services GPTool to update a service.

#### Inputs

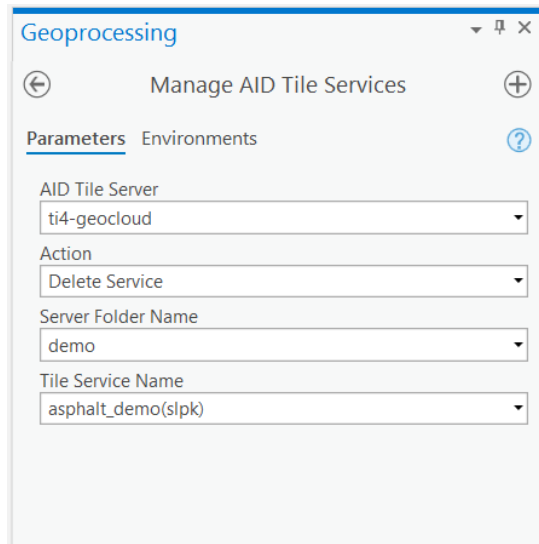
- AID Tile Server - From the pulldown menu select the server name on which you need to update the service.
- Action – Select 'Update Service' from the pulldown menu.
- Server Folder Name – Select the folder in which the service to be updated is present.
- Tile Service name- Select the service name form within the folder that you want to update.

- Input Data Path: – URL to the updated data file (SLPK/TPKX). If from an S3 bucket, use the Object URL of the file.
- Description (optional) - Enter the description of the image service to be updated.
- Copyright (optional) - Enter the copyright of the image service to be updated.

On running the tool, the selected image service is updated. Also, the job id and the job status is printed out at the end of execution of the tool. Please note the Job ID to check the status of the job later.

#### c. Deleting a service

Enter the below inputs to the Manage Services GPTool to delete a service.



The screenshot shows the 'Geoprocessing' window with the 'Manage AID Tile Services' tool. The 'Parameters' tab is selected, and the following values are entered in the dropdown menus:

- AID Tile Server: ti4-geocloud
- Action: Delete Service
- Server Folder Name: demo
- Tile Service Name: asphalt\_demo(slpk)

#### Inputs

- AID Tile Server – Select the server name on which a service should be deleted.
- Action – Select Delete Service option
- Server Folder Name – Select the folder from which the service should be deleted.
- Tile Service Name – Select the image service to be deleted.

On running the tool, the selected image service is deleted. Also, the job id and the job status is printed out at the end of execution of the tool. Please note the Job ID to check the status of the job later.

#### 2.1.2 [GetJobStatus](#) tool



Please see section [GetJobStatus](#) for details on this additional tool provided by AID for Tile/Scene layer service management.