

Project Supported Transformations Progress

Code: Is there code? Is it submitted or existing? If so add URL to parent wiki page!!!

Py1/Py2: Is it using PyCloudwer1, PyCloudwer 2, or neither. Expectation for Beta is most will be in Py1, moving forward with new ones we will use Py2.

JSON-LD: Is proper JSON-LD generated in the MetaData and registration document (make sure to use full URI).

DCKR: Dockerized?

Test File: Sample file available?

TC: Is the tool in the tools catalog?

DPL: Is the tool dockerized (if not Windows), managed by the elasticity service, and passing tests every other hour?

DL: Is the tool downloadable via Sandeep's modifications to move compute to the data?

Complete & Deployed
Needs work
Blocked

Scientific

Domain		Tool	Type	Description	Code	Py1/Py2	JSON-LD	DCKR	Test File	TC	DPL	DL	Assignment
Hydrology	1	Advection Diffusion		Solve a general advection-dispersion equation.	No (Don't have a general tool. Seems like this was not done as per the description.)								Sandeep Puthanveetil Satheesan Per Dr K this will be post beta
	2	Chemical Mean Age	Extractor	Determine the mean age of chemical constituents with inputs of chemical dynamics.	No (This is a simulation tool - don't have code.)								Sandeep Puthanveetil Satheesan Per Dr K this will be post beta
	3	Document Tables Extractor (nrsa.nlp.wordtables)	Extractor	Extract tables from documents.	Yes	No	No	No	No	No	No	No	
	4	ESRI Shapefile Extractor by using GDAL (nrsa.geoshp.preview)	Extractor	Create a Geoserver layer for WMS service. It can be used in previewer	Yes	Py1	Yes	Yes	Yes	No	Yes	No	Jong Lee
	5	GeoTiff Extractor by using GDAL (nrsa.geotiff.preview)	Extractor	Create a Geoserver layer for WMS service. It can be used in previewer	Yes	Py1	Yes	Yes	Yes	No	Yes	No	Jong Lee
	6	GeoTiff Metadata Extractor by using GDAL (Another implementation) (nrsa.geotiff.metadata)	Extractor	Extract geospatial metadata from Geotiff. It should be combined with #5 Geotiff extractor.	Yes	Py1	Yes	Yes	Yes	Yes	Yes	No	Jong Lee
	7	Historical River Extractor (nrsa.cv.river)	Extractor	Extract the river networks from the ancient hand-drawing maps and compare them with current river networks	Yes	Py1	Yes	Yes	Yes	Yes	Yes	No	Sandeep Puthanveetil Satheesan
	8	Normalized Difference Vegetation Index (nrsa.arccis.landsat7mosaic)	Extractor	Create a NDVI layer from Landsat data. Calculating vegetation indices such as NDVI and Surface Temperature from Landsat 7 and 8 satellite data.	Yes	Py1	Yes	N/A (Windows, ArcGIS)	Yes	No	Yes (Windows VM)	No	Sandeep Puthanveetil Satheesan
	9	River Chi Index (nrsa.chi_analysis)	Extractor	Identify the river dynamics in a river basin and evaluate human activities' influences through Chi index in the streams.	Yes	Py1	Yes	Yes	Yes	Yes	Yes	Yes	Sandeep Puthanveetil Satheesan
	10	GDAL Converter	Converter	Converts between TIFF and BIL (zip) and FLT (zip)	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Sandeep Puthanveetil Satheesan

	11	River Sinuosity	Extractor	Study the maturity and equilibrium conditions of a stream through the sinuosity index.	Yes								Sandeep Puthanveetil Satheesan Qina supposed to be delivering code - Dr K thinks it should make it in Beta
	12	Soil Moisture Change	Extractor	Determine role of hydraulic redistribution in AZ (riparian site / upland site) by studying soil moisture change throughout different seasons.	No								Sandeep Puthanveetil Satheesan Per Dr. K - will need discussed and can not be in Beta
	13	Species Classifier	Extractor	SAM based Species Classification from Hy perspectral data, Hyperspectral Indices, NDVI, SAVI, MSAVI, etc.	Yes								Sandeep Puthanveetil Satheesan Dr K does not think this will make it in Beta
	14	Floodplain Extractor by using TerEx (ncsa.arcgis.floodplain)	Extractor	Identify the flat polygons and the heights inside a river valley.	Yes (but procedure?)	Py1	Yes	No (windows)	Yes	No	Yes (Windows)	no	Bing Zhang
	15	Topographic Depressions	Extractor	Identify topographic depressions (TDs) and their distribution on landscape (Number, location, area, volume of TDs).	Yes - ready to review								Sandeep Puthanveetil Satheesan
	16	Tree Delineation (ncsa.arcgis.treedelin)	Extractor	Create a shape-file with polygons of tree canopy polygon from LIDAR data	Yes	Py1	Yes	N/A (Windows, ArcGIS)	Yes	Yes	Yes (Windows VM)	No	Sandeep Puthanveetil Satheesan
	17	Tree-wise voxelization		Tree-wise voxelization of waveform data for lidar metrics that describes canopy structure (max intensity, height, etc...). Individual tree delineation, tree leaf area density to describe vertical leaf distribution.	Yes (But extractor has to be developed)	No	No	No	No	No	No	No	Sandeep Puthanveetil Satheesan
	18	Valley Safety Zones	Extractor	Estimate submerging areas and water depths under extreme floods and map the safety zones in a river valley.	Yes								Sandeep Puthanveetil Satheesan emailed March and April. Sandeep will follow up with Qina.
Ecology	1	netcdf (ncdump)	Converter	Convert from binary netcdf to text.	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yan Zhao
	2	PEcAn (PEcAn#Ameriflux)	Converter	Convert Ameriflux data to PEcAn's netcdf CF format.	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yan Zhao
	3	PEcAn (PEcAn#DALEC)	Converter	Convert PEcAn's netcdf CF format to the format required by the DALEC model.	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yan Zhao
	4	PEcAn (PEcAn#ED2)	Converter	Convert PEcAn's netcdf CF format to the format required by the ED model.	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yan Zhao
	5	PEcAn (PEcAn#LINKAGES)	Converter	Convert PEcAn's netcdf CF format to the format required by the LINKAGES model.	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yan Zhao
	6	PEcAn (PEcAn#Sipnet)	Converter	Convert PEcAn's netcdf CF format to the format required by the Sipnet model.	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yan Zhao

	7	PEcAn (PEcAn#Ame rifluxBNL) PEcAn (PEcAn#FLU XNET2015) PEcAn (PEcAn#FAC E) PEcAn (PEcAn#PAL EON) PEcAn (PEcAn#NLD AS) PEcAn (PEcAn#CUR NCEP) PEcAn (PEcAn#GLD AS) PEcAn (PEcAn#GFD L) PEcAn (PEcAn#BIO CRO) PEcAn (PEcAn#CLM) PEcAn (PEcAn#GDA Y) PEcAn (PEcAn#JUL ES) PEcAn (PEcAn#LPJ- GUESS) PEcAn (PEcAn#MAA T) PEcAn (PEcAn#MAE SPA) PEcAn (PEcAn#PRE LES)			Yes	N/A	N/A	No	Yes	Yes	Yes	No	Yan Zhao
	8	PlantCV (terra.plantcv)	Extractor	Extract plant height, area, and color distribution from photographs.	Yes	Py1	yes	yes	yes	yes	no (bamboo test available , not being deployed)	no	Yan Zhao
	9	BIL (hyperspectral)	Converter	Convert bil.zip (contains raw & *.hdr) to *.terra.nc	Yes (The original code has been updated. Need to figure out if we want to update this)	N/A	N/A	yes	no, only test files available are very large and would take a long time	yes	no (bamboo test available , not being deployed)	no	Yan Zhao
Civil & Environmental Engineering	1	Body of Water Detector (ncaa.image.ponddetect)	Extractor	Land coverage, extract locations of bodies of water from satellite data.	Yes	No	No	No	Yes	No	No	No	??who??
	2	GI Identification	Extractor		Yes	Py1	Yes	Yes	Yes	Yes	Yes	No	Bing Zhang
	3	Human Preference Score (ncaa.image.humanpref)	Extractor	Assign a model derived human preference score to a given image of an urban environment.	Yes	no	no	no	yes	no	yes	no	??who??
	4	Route Greenness (ncaa.greenindex)	Extractor	Derive the green index of a city route.	Yes	Py1	Yes	yes	yes	Yes	Yes	No	Bing Zhang
	5	Social Media GI Preferences	Extractor	Determine if text contains references to visual or functional green infrastructure.	Yes	Py1	Yes	Yes	Yes	No	no	No	Bing Zhang

Social Science & Humanities	6	Stanford CoreNLP - Sentiment (ncaa.nlp.SNLP.Sentiment)	Extractor	Assign a sentiment score to a piece of text.	Yes	Py2 Java equiv.	Yes	Yes	Yes	Yes	No	No	Gregory Jansen
	7	TUV Triaxus	Extractor	Towed Undulating Vehicle Data Analyzing Tools	Yes	Py1	yes	yes	yes	yes	yes	No	Yan Zhao
	1	Bertillon Card Cell Extractor (ncaa.image.dmp)	Extractor	Extract table cells from a Bertillon Card.	Yes	Py1	Yes	No	No	No	No	No	Sandeep Puthanveetil Satheesan
	2	Census Form Cell Extractor (census-section-segmentor)	Extractor	Extract table cells from a 1930s Census form.	Yes	No	No	No	Yes	No	No	No	Sandeep Puthanveetil Satheesan
	3	Handwritten Decimals Extractor (ncaa.image.sphog.debod)	Extractor	Extract handwritten decimal values from an image.	Yes	Py1	Yes	No	No	No	No	No	Sandeep Puthanveetil Satheesan
	4	Killed Photos (ncaa.image.killedphoto)	Extractor	Identify depression era photos "killed" by Farm Security Administration director Roy Stryker, indicated by a hole punch in the image.	Yes	Py2	Yes	Yes	Yes	Yes	no	no	Sandeep Puthanveetil Satheesan
	5	Mean Grey (ncaa.cv.meangrey)	Extractor	Mean grey values of black and white photos.	Yes	Py1	Yes	Yes	Yes	Yes	Yes	no	Bing Zhang
	6	Movie Slice (ncaa.movieslice)	Extractor	Generates movie slice visualization from video files	Yes	Py1/Py2 not used	No	No	No	No	No	No	Sandeep Puthanveetil Satheesan
	7	Person Detector (ncaa.video.person_detector)	Extractor	Extract locations of people in an image.	Yes	Py2	Yes	Yes (MATLAB external)	Yes	Yes	Yes	No	Sandeep Puthanveetil Satheesan
	8	Person Tracker (ncaa.video.person_tracking)	Extractor	Extract locations and paths of people moving in videos.	Yes	Py2	Yes	Yes (MATLAB external)	Yes	Yes	Yes	No	Sandeep Puthanveetil Satheesan
Biology, Genomics, Medicine	9	Video Analytics Toolbox (ncaa.cinemetrics_batch)	Extractor	Extract shot descriptors from videos.	Yes	Py1/Py2 not used	No	No	No	No	No	No	Sandeep Puthanveetil Satheesan
	1	FSL (mri2mesh)	Extractor	Creates a finite element mesh from a set of mr images	Yes	Py2	no	yes	yes	no	no	no	Yan Zhao
	2	Glomeruli (ncaa.msc.diagnosis)	Extractor	Extract glomeruli from Kidney biopsy images.	Yes	Py1	Yes	Yes	Yes	Yes	no	no	Yan Zhao

General

Domain		Tool	Type	Description	Code	Py1 /Py2	JSON-LD	DCKR	Test File	TC	DPL	DL	Assignment
	1	Calibre (ebook-converter)	Converter	Convert e-books to a number of document formats.	Yes	N/A	N/A	Yes	Yes	Yes	No	Yes	Bing Zhang
	2	CMU Sphinx (ncaa.audio.speech2text)	Extractor	Audio recognition to extract text for speech within audio.	Yes	N/A	Yes	Yes	Yes	Yes	No	No	??who??
	3	Daffodil (daffodil)	Converter	Convert formats with a provided DFDL schema to XML.	Yes					Yes	Yes	Yes	Kenton McHenry
	4	DBPedia (ncaa.dbpedia)	Extractor	Find and define named entities within the given text.	Yes	Py1	Yes	Yes	Yes	Yes	Yes		Luigi Marini
	5	FFmpeg (ffmpeg)	Converter	Convert between a large number of video formats.	Yes	N/A	N/A	Yes	Yes	Yes	No	Yes	Bing Zhang
	6	FLAC (flac)	Converter	Convert to and from the FLAC format from other audio formats.	Yes	N/A	N/A	Yes	Yes	Yes	No	Yes	Bing Zhang
	7	Ghostscript (ghostscript)	Converter	Convert between document formats.	Yes	N/A	N/A	Yes	Yes	Yes	No	Yes	Bing Zhang
	8	htmlDoc (htmlDoc)	Converter	Convert HTML to a number of document formats.	Yes	N/A	N/A	Yes	Yes	Yes	No	Yes	Bing Zhang
	9	ImageMagick (ImageMagick)	Converter	Convert between a large number of image formats.	Yes	N/A	N/A	Yes	Yes	Yes	No	Yes	
	10	ImageMagick (ncaa.image.metadata)	Extractor	Pull available EXIF image metadata from a given image.	Yes	Py2	Yes	Yes	Yes	Yes	Yes	Yes	
	11	Kabeja (kabeja)	Converter	Convert between a handful of 3D and image formats.	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Kenton McHenry
	12	OpenCV - Faces (ncaa.cv.faces)	Extractor	Find faces in an image and return their locations.	Yes	Py1	Yes	Yes	Yes	Yes	Yes	Yes	Kenton McHenry

General	13	OpenCV - Eyes (ncaa.cv.eyes)	Extractor	Find eyes in an image and return their locations.	Yes	Py1	Yes	Yes	Yes	Yes	Yes	Yes	Kenton McHenry
	14	OpenCV - Closeups (ncaa.cv.closeups)	Extractor	Determine whether an image is a closeup of a person or not.	Yes	Py1	Yes	Yes	Yes	Yes	Yes	Yes	Kenton McHenry
	15	OpenCV - Profiles (ncaa.cv.profiles)	Extractor	Find human face profiles in an image and return their locations.	Yes	Py1	Yes	Yes	Yes	Yes	Yes	Yes	Kenton McHenry
	16	Langid (ncaa.nlp.simplelanguage)	Extractor	Identify the language of the given text.	Yes	Py2	Yes	Yes	Yes	Yes	No	No	Gregory Jansen
	17	LibreOffice (unoconv)	Converter	Convert to and from a variety of document formats.	Yes	N/A	N/A	Yes	Yes	Yes	No	Yes	Bing Zhang
	18	NLTK - Summary (ncaa.nlp.summary)	Extractor	Summarize a body of text.	Yes	Py2	Yes	Yes	Yes	Yes	No	No	Gregory Jansen
	19	Siegfried (siegfried)	Extractor	Extract information about a given file relevant to identifying its type and validating its format.	Yes	Py2	Yes	Yes	Yes	Yes	No	No	Gregory Jansen
	20	Stanford CoreNLP (ncaa.nlp.SNLP)	Extractor	Natural Language Process extractions such as parts of speech, named entities, language, etc.	Yes	Py2 Java equiv.	Yes	Yes	Yes	Yes	No	No	Gregory Jansen
	21	Tesseract (ncaa.image.ocr)	Extractor	Object Character Recognition (OCR) to extract text from images containing text.	Yes	Py1	Yes	Yes	Yes	Yes	Yes	Yes	Bing Zhang
	22	Tika (ncaa.nlp.tika)	Extractor	Document extractions such as language identification, ...	Yes	older Py1	Yes	Yes	Yes	Yes	No	Yes	Gregory Jansen
	23	txt2html (txt2html)	Converter	Convert text documents to HTML.	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Bing Zhang
	24	Versus - Color Distribution (ncaa.versus.image)	Extractor	Generate a distribution of color values within an image to be used for comparing how similar two images are.	Yes	Py1	Yes	Yes	Yes	Yes	Yes	Yes	Bing Zhang
	25	VLFeat (ncaa.image.caltech101)	Extractor	Classify images as to whether they contain objects from the Caltech101 dataset (e.g. people, airplanes, motorcycles, cougars, ...).	Yes	Py2	yes	yes	yes	Yes	yes	no	Sandeep Puthanveetil Satheesan
	26	Zip (zip)	Converter	Unzip zip archives.	Yes	N/A	N/A	Yes	Yes	Yes	No	Yes	Bing Zhang

<https://opensource.ncaa.illinois.edu/confluence/display/BD/Transformations> (Under development, Being Refactored)

GeoTiff Extractor by using