Release Guide

ERDAS APOLLO 2020

Version 16.6.0

26 September 2019

Contents

About This Release

Enhancements for ERDAS APOLLO 2020 are described in this document.

This document is only an overview and does not provide all the details about the product's capabilities.

See the online help and other documents provided with ERDAS APOLLO for more information.

IMPORTANT

READ CAREFULLY BEFORE YOU START INSTALLING THIS RELEASE

If multiple Hexagon's Geospatial division products are installed on the same server, it is required that every Platform Suite and Provider Suite product that is installed on the server must have the same release and patch version. Before you start installation, follow these steps to facilitate the server update process:

1. Verify the versions of the products installed on the server
2. Check if the product installation/upgrade concerns two or more of the following products:

- Platform Suite: GeoMedia WebMap, Geospatial SDI, or Geospatial Portal
- Provider Suite: ERDAS APOLLO

3. Make sure that for the products detected in point (2), there are compatible versions available.

Make sure all products detected in step (2) that are not compatible are upgraded to a compatible version before you initiate the ERDAS APOLLO instance upgrade procedure. Do not proceed with the installation if any of the products installed on the server do not provide a compatible patch.

Please contact Support in case of any questions regarding compatibility of products and patches.

New Platforms

Java

With the ERDAS APOLLO 2020 release, Java remains an external dependency in the server application and now also the Data Manager. ERDAS APOLLO 2020 is certified on the latest Long Term Supported (LTS) versions from Oracle (version 8 or 11), including other Java platforms such as OpenJDK and Amazon Corretto.

Operating Systems

Windows Server 2019 has now been certified as a Supported Platform for this release. In line with Microsoft's own product lifecycle, we recommend existing customers currently using Windows Server 2012 R2 start planning to upgrade.
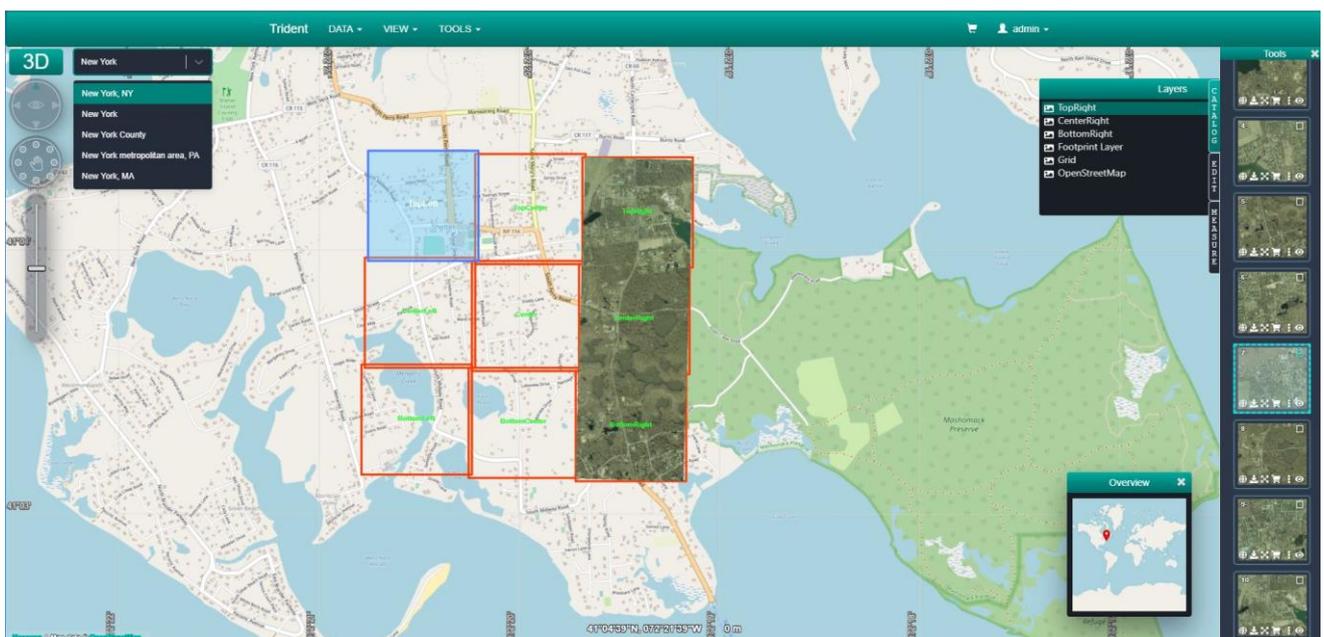
For ERDAS APOLLO Essentials Linux customers, support for Redhat v6.x has now been deprecated. ERDAS APOLLO 2020 now only supports v7.x based platforms and once more widely available we intend to add support for v8.x in an upcoming update.

New Technology

New Catalog Client

Soon after the general availability of ERDAS APOLLO 2020, a new, modernized web client will be released. The client will be based on the LuciadRIA framework and serve as an integrated catalog client for both ERDAS APOLLO and LuciadFusion, allowing federated search to bridge both server capabilities. Other highlights include:

- Gazetteer
- Federated catalogs, including HxGN Content Program
- 2D or 3D views, including OGC 3D Tile support
- Enhanced download features
- Advanced queries

Since the client will be compatible with multiple catalog types, it will be delivered as its own package and will align with other LuciadRIA updates.

Having a central web client solution that appears identical to LuciadFusion is highly desirable to ease future technology transitions.

The existing Geospatial Portal solution will still be delivered in the core installer. Any existing Portal solution will continue to function in line with previous ERDAS APOLLO updates.

Advanced Logging Charts

ERDAS APOLLO 2020 has greatly improved the user reporting and visual reporting of the existing detailed logging across the server. There are now general Upload and Download charts that allow administrators to see how often data is being ingested and used. Administrators can now also see detailed usage in the following ways:

- Date Range: Using the date controls, a user can see what uploads or downloads have occurred within the given range.
- By User: Using the user control, a user can see how many datasets are being uploaded and/or downloaded by a given user.
- By Data Type: Using the data control, a user can see how many datasets of a given data type (imagery, vector, point cloud, etc.) are being uploaded and/or downloaded.
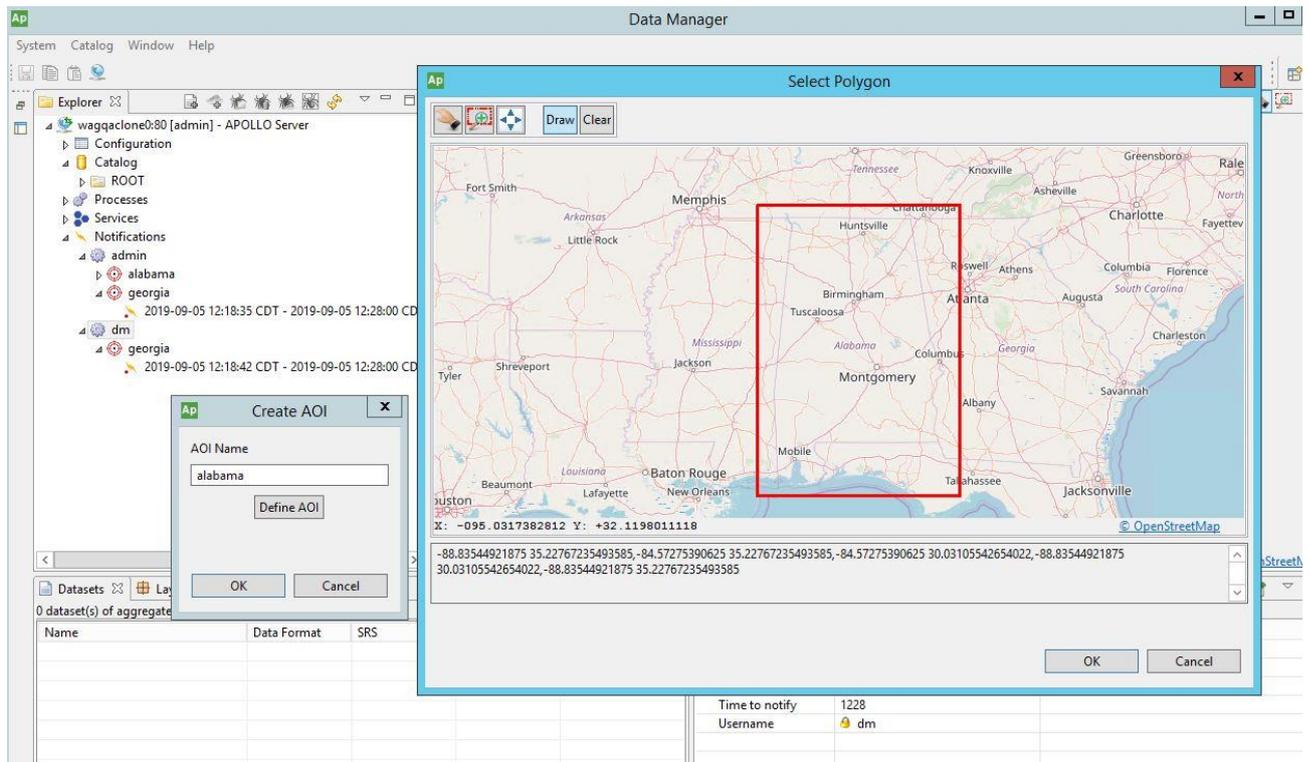
All of these can be combined to determine combinations of information such as "what data types a given user has uploaded within a given date range."

Not only can this be presented in charts on a web interface, but all of this information can be exported to a PDF or Excel file to provide reports to management. These reports are configurable with a logo as well as which properties appear in the Excel spreadsheet.

AOI Notification Service

ERDAS APOLLO 2020 now provides a capability for users to register defined areas of interest and receive a notification email when new data arrives, or existing data is updated that meets their requirements. Only someone with admin role can register a user and create a notification region. However, any registered user in the system can be have a notification region created for them.

Notifications will be published once a day, but the user may specify the preferred time they would like to receive emails. When a notification is received, the user must have Data Manager access rights and access to the datasets based on their credentials to view any new or updated data. Therefore, it is possible to receive a notification regarding new data, but still not be able to view it. However, we hope to extend this capability to the new web client in the future to allow more access to users.

The access to this service has been defined and exposed as RESTful APIs and is available to be included within other clients.

This is an important new feature for customers with large catalogs and want to be proactive informing users in a self-service environment.

ECWP Browser Streaming Lives Again

Although the Enhanced Compression Wavelet Protocol (ECWP) has been valid for desktop systems since browsers discontinued plugin support, our previously deprecated Browser Plugin has been a commonly requested demand from many customers. Good news! Browser technology called WebAssembly combined with HTML5 webworkers, have now allowed us to revive ECWP for browser-based clients.

- Cross-platform browser support with the need for plugins
- Fast and interactive for users
- Minimal to no overhead on the server
- The heavy lifting is off-loaded to the client

There are some limitations initially. This capability will only support streaming ECW files, but JPEG2000 will be coming later. Google Chrome and Firefox remains the only supported browsers.

The ECWP WebAssembly decoder brings several advantages as well:

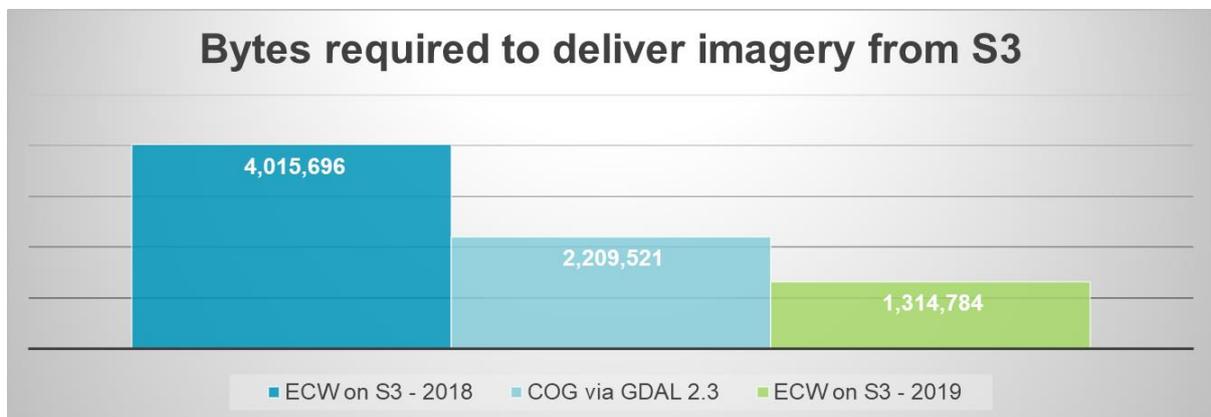- Seamless network speed adaptation due to progressive rendering

- 100% Offline is possible with blocks already downloaded in the wavelet pyramid
- Client-side image processing functions can be built working on the data, not a portrayal of the data (JPG)
- Reuses the existing delivery method from ERDAS APOLLO but now opens up to browser clients

The new Catalog Client will be the first implementation of the new ECWP technology.

Cloud Optimized ECW

ERDAS APOLLO introduced initial support for AWS S3 in its Update 3 Minor Release. But the implementation was generic across formats and particularly sub-optimal when it came to reading ECW files. ERDAS APOLLO 2020 introduces new optimizations including:

- New async file I/O handlers to obtain higher throughput when interacting with object-based storage systems like AWS S3
- Reduction in I/O requirements offering potentially significant cloud storage savings on access costs
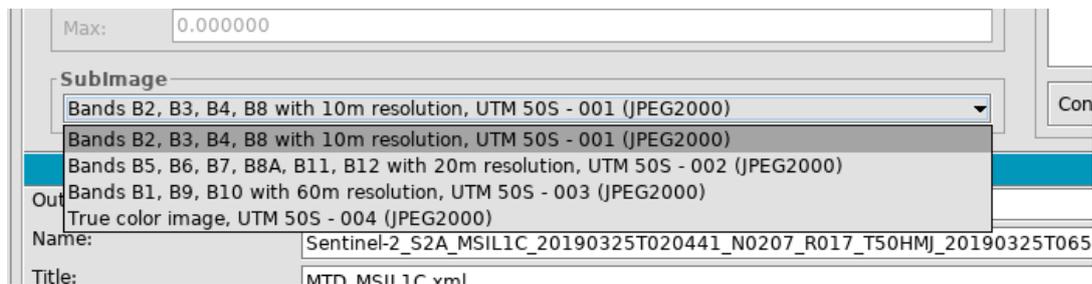

- Permit client-side visualization through WebAssembly with progressive rendering
- Server-side rendering >30% faster than equivalent Cloud Optimized GeoTIFF (COG) file
- Requires no changes to the ECW File format itself.

Other Improvements

Additional notable updates include:

- ERDAS APOLLO Core's out-of-the-box configuration is now 15% faster than 2018
- TIFF output format is now supported via the Core service endpoints
- Security enhancements and library updates to resolve several potential security vulnerabilities
- The Core Console now displays Sub-Dataset descriptions as well as Band descriptions to make advanced file type configuration far easier

- The Data Manager application has gone through several upgrades for this release.

- Supports Java 11 versions
- Java is no longer delivered as part of Data Manager and will run on Oracle JDK or OpenJDK
- Drag and drop is supported for crawling by dragging a file or folder on the aggregate in which to crawl the dataset
- Now a fully 64-bit application

System Requirements

ERDAS APOLLO

	ERDAS APOLLO Essentials	ERDAS APOLLO Advantage & Professional
Computer/ Processor	Intel® or AMD® quad-core processor with a clock speed of 2.0 GHz or higher	
Memory (RAM)	8 GB or higher (16 GB recommended)	
Server Disk Space	4 GB for application footprint	
Spatial Data Storage	High Speed Disk Storage, >15000 RPM, SSD, RAID Arrays, or External SAN/NAS[1]	
Server Operating Systems	• Windows Server® 2016 • Windows Server 2019 • Red Hat® Enterprise Linux® 7.x • CentOS 7.x	• Windows Server 2016 • Windows Server 2019
Cloud Environments	Amazon Elastic Cloud Compute (EC2)	
Supplementary Operating Systems for Testing & Development	Windows® 8 or higher can be used for development purposes, but deployments must be done on supported Server Operating Systems listed above.	
Software	• Microsoft® .NET Framework 4.7 or higher • Latest Java 8 or Java 11 LTS versions	
Licensing	Geospatial Licensing Administrator 2020	
Application Servers	• Microsoft® IIS 10 or higher (Windows) • Tomcat® 8.5 (embedded in installer) • Apache® 2.4 or higher (Linux)	
Databases	• SQLite (Essentials only) • Oracle® Database 12c (12.1.0.1), Standard or Enterprise Edition • Microsoft SQL Server® 2017 Express or Standard or Enterprise Edition (Express Edition should be used for testing & development purposes only) • PostgreSQL® version 9.6 or higher (with PostGIS 2.0 extension) • PostgreSQL version 10.8 or higher (with PostGIS 2.0 extension)	
Admin Tools	ERDAS APOLLO Core Console	• ERDAS APOLLO Data Manager • ERDAS APOLLO Style Editor (embedded in installer)

Compatible Client Applications	• Modern ERDAS APOLLO/LuciadFusion Web Client 2020 • Geospatial Portal 2020 (embedded in installer) • ERDAS APOLLO 2020 Catalog Web Client (embedded in installer) • GeoMedia® 2020 • GeoMedia Viewer 2020 • GeoMedia Professional 2020 • ERDAS IMAGINE® 2020 • Esri® ArcGIS® for Desktop plugin • ECWP-enabled applications • OGC-compliant WMS, WMTS, WCS, WPS client applications
Admin Tools Operating Systems	• Windows 8 • Windows 10 • Windows Server 2016 • Windows Server 2019 • RHEL / CentOS v8.x (Essentials only)

Issues Resolved

ERDAS APOLLO Core 2020

Issue #	Summary
IW-6398 00049425	DatabaseUpgrader with configuredatabase param creates wrong encoded connection string
IW-6396 00049549	Implement bbox JSON parsing from ArcPY requests to our GeoServices interface
IW-6395 00049423	ERDAS APOLLO Core - config.xml file was rewritten when there is no disk space
IW-6376 00048619	ERDAS APOLLO Core 16.5 update 3/4: WMS shows no bounding box when based on multiple virtual folders
IW-6294 00044728	Unable to disable FeatureInfo from WMTS getcapabilities
IW-6273	Add the subimage descriptions to the console UI
IW-6259 00043434	Image size will not be updated in ERDAS APOLLO Core Console
IW-6230	Remove the old samples from the installer
IW-6225	Database upgrader - TableMigrater
IW-6224	Remove -1 in Physical Folder Table
IW-6216 00041211	WMS for ERDAS APOLLO-Catalog not working properly
IW-6211	Do not call euclideon udSDK unless filetype supports it
IW-6208	Investigate the File Locking in sqlite v3
IW-6200	Web API documentation for 2018 is incorrect
IW-6195 00040831	Error messages in ERDAS APOLLO Core.log when crawling a file (com.intergraph.imagine.spatialmodeler)
IW-6192 00040777	Unable to create new service
IW-6190	Increase the idle timeout for fcgi installs
IW-6180 00039985	ERDAS APOLLO Core Console doesn't find the OpenJDK installed
IW-6152	Installer minimum requirements shows outdated IIS and .NET version
IW-6149	Corruption of PhysicalFile + PhysicalSubFile indexes after upgrade
IW-6138 00038842	ERDAS APOLLO Core will crash on startup if the dump folder location is null
IW-6137	ERDAS APOLLO Core no longer reporting crash dumps on startup
IW-6130	Issue with QGIS consuming out WMS LegendURL
IW-6102 00037184	ERROR Information in ERDAS APOLLO Core-SMSDK.log

IW-6091	Expose band descriptions in styling dialog for improved hyperspectral configuration
IW-6065	Add temporal support to the WMTS REST interface
IW-6063	Configure wizard crashes if the quote the SQLite database
IW-6061	Miscellaneous naming changes
IW-6060	Add RPM GPG signing to ERDAS APOLLO Core Linux
IW-6058	ERDAS APOLLO Core Linux is crashing
IW-6051 00035722	Statistics error when working with virtual mosaic dataset
IW-6048	ERDAS APOLLO Core Linux restarted unexpectedly
IW-6034	Upgrade Qt to 5.12 LTS before release
IW-6025	User credentials for SQL Server being logged
IW-6019	Verify Windows Server 2019 support
IW-6017	Update looks.jar on Linux, and use system one on Windows
IW-5997	Configuration Wizard does not support quotes in user inputs for Oracle
IW-5990	ERDAS APOLLO Core CustomCredentialsPage config wizard page not shown
IW-5981	In-memory cache can become out-of-sync with database (add/remove folders)
IW-5972	Modifying capabilities name then copying the dataset within the service will cause cache to become out of sync with database
IW-5967	Improve statistics endpoint error when statistics are not configured
IW-5963	Statistics fails for SampleIWS_images_temporal when viewing WMS-T Time series sample
IW-5953	UI Improvements to New File/Folder Dialog Boxes
IW-5946	EcwpMgr API should not allow enabling watch dir on folders
IW-5945	Linux: Connection issues with Apache and ERDAS APOLLO Core
IW-5940	Replace Intel Performance Primitives (IPP) JPEG encoder/decoder with libjpeg-turbo in GDAL
IW-5934	Investigate crash dumps in WMS GetMap when Advanced Security is enabled and Oracle DB in PorkyPig is used
IW-5931	Server should log and shutdown gracefully if the config file is invalid
IW-5907	Input credentials for Advanced Security authentication will not add inputs to request in CentOS 7
IW-5902	Pop-up window in renaming folder is labeled dataset name
IW-5899	ImageX requests from the console don't encode plus signs
IW-5894	ERDAS APOLLO Core will not run in Ubuntu 16 & 17
IW-5882	Some datasets don't advertise native footprint in dsinfo
IW-5855	Reprojection error with ImageX when Imagchain is applied and SRS is not specified in a specific tiff file
IW-5810	Removing required parameters for WMS 1.1.1 GetCapabilities should return an error message
IW-5802	Drag and Drop a folder with datasets to a new service does not work
IW-5736	Capabilities open twice when selected in console
IW-5702 00026397	Esri Geoservices fails to load to ArcMap
IW-5658	Investigate ways to improve the system test configuration workflow

IW-5607	WMS request with invalid missing service is allowed
IW-5601	Warnings log when using advanced security
IW-5587	Errors logged on Linux during startup
IW-5494	set_and_return_info does not work for the default case
IW-5340	Systemtest: Image chain reference images has changed
IW-5325	Upgrade systemtest to latest databases
IW-5313	Add STYLEPARAMS example link to Styling Dialog
IW-5150	Invalid ERS files results in ERDAS APOLLO Core hanging
IW-5098	Reduce the amount of projection error/fatal log entries
IW-5075	ERDAS APOLLO Core has unexpressed dependency on X11
IW-5058	SystemTest: Create tests for WMTS RESTful interface
IW-5017	Add dynamic compression to ERDAS APOLLO Core Linux
IW-4958	Create system tests for database upgrader
IW-4926	(Technical debt)Fix database upgrader to avoid future upgrading requires existing upgrade changes
IW-4902	Prepare build infrastructure to move to MSVC141 (Visual Studio 2017)
IW-4856	Core Linux with an Oracle database produces different PNGs
IW-4838	Re-investigate database performance
IW-4829	Submit our Qt changes back to Qt
IW-4733	Coordinate with ERDAS IMAGINE for upgrade Qt to v5.x
IW-4610	Not able to load nitf images into ECW Browser plugin
IW-4582	Server enters infinite loop adding mislabelled ERS file
IW-4487	Console does not complain if you rename datasets to something existing
IW-4430	Error in projecting subimage in Linux
IW-4380	Remove the .bin install requirement to run as root
IW-4323	Upgrade Lizardtech DSDK to v9.5.1.4427
IW-4314	Support .aux files natively in Essentials
IW-3523	Implement CORS headers
IW-3467 00038363	Improve LegendURL configuration
IW-3201	AE Linux: Configuration settings are not persisted when server restarts
IW-3173	Links on Example pages inacurate
IW-3163	Add offline mode to browser plug-in
IW-3082	Re-selecting streamable JP2 sub image disables ECWP
IW-3026	Postinstall.sh assumes apache will always be httpd
IW-2903	Disable WMTS entirely for EPSG:0/WGS84 local datasets
IW-2893	WMS/WMTS rendering of UDS files very slow for dense point clouds
IW-2701	Invalid ERS hangs / crashes server
IW-2501	On Linux, JSViewProxy call to query pixel values will result in a "libpng error: Read Error"

IW-2432	ERDAS ECW plugin method to "lock extents"
IW-2431	Linux: Imagery from OTDF file contains image artifacts (grey bars)
IW-2426	Background colour changes when viewing sample ADS-80_v3.ecw dataset.
IW-2008	Document how to create an OTDF file that aligns with the well-known tile matrix set
IW-1552	Digitally sign ERDAS APOLLO Essentials linux installer
IW-1375	The watermarking "Open File" button should be disabled from non-localhost connections.
IW-1352	Add jpegxr configuration parameters to the console
IW-1332	CreateView method would fail in Firefox
IW-1322	JPIP doesn't work over IPv6
IW-1229	Incorrect initial extents when setting geolinking mode
IW-1190	Local disk cache location not set until config window is closed
IW-1098	ECWP browser plugin installation directory name to be changed from ERDAS to Intergraph
IW-713	Mouse wheel in html example on Firefox does not work correctly
IW-435	Add web monitoring tool

ERDAS APOLLO Advantage/Professional 2020

Issue #	Summary
AP-11051	Modify clip zip ship rest api to allow download of files without zip
AP-11047 00049785	Geoprocessed dataset owner is always "admin" for geoprocessing
AP-11045	Update WMS_MS_Capabilities.dtd for legacy WMS 1.1.1 OGC CITE Tests
AP-11037	Unnecessary ERDAS APOLLO ports need to be closed
AP-11034 00049898 00047190 00048689	Custom objects crawling functionality
AP-11031	Portal loses user authorization when trying to display a WMTS
AP-11015 00044915	Configwizard crashes when using United States-International keyboard (INTL)
AP-10999	Port setting not updated in web.config files when switching to/from SSL
AP-10993 00042759	ERDAS APOLLO generate wrong BBOX for aggregate with PDF document
AP-10992	Updates to ERDAS APOLLO Upload/Download Analysis
AP-10991 00042387 00043079 00042595	Portal issue in CZS with a geographic CRS and EPSG:3857

AP-10988 00042483	PostGIS based WFS returns error if outputformat=shapefile
AP-10985 00042385 00040794	Missing legend graphic on Map Content->Layers
AP-10982 00041484	Documentation update needed for DataManager.ini
AP-10981 00041490	Re-run ERDAS APOLLO config wizard overwrite HTTPs and public-facing setting @ web.config files
AP-10971 00041000	Data manager vector database crawling job disappear even there is a lot ERROR in decodingservice log file
AP-10963 00040729	LOG_ENTRY TABLE - Issues with Spatial Query from Portal when using large amount of geometry points
AP-10958 00040292	ERDAS APOLLO 2018 Update 2 Handling of jobs is throwing ERROR Messages
AP-10956 00040081	Geoprocessing input cannot be optional
AP-10953 00037143	Issues with REST API for crawling files in Cluster
AP-10952 00039936	Disabling the download permission doesn't work on documents ("Enable Download Service" set to false doesn't work on documents)
AP-10933 00038764	Failed to crawl mpeg video
AP-10930	Enhance the Advanced Logging Reports
AP-10928	JDK compatibility Update
AP-10922 00037631	Limit the number of queryable to 15
AP-10917	getLayer link available for any register WMS
AP-10916 00040837 00038209	Unable to see Arabic characters via vector services in ERDAS APOLLO via WMS GetFeatureInfo
AP-10915 00037753	"No Inspector found" error for Uniform Roads , DiscreteRoadClassification, Range Road Classification styles (legacy vector style editor)
AP-10914	Multiband Image Processing is slowed down greatly by opening all the bands
AP-10905	Datum/J2 customer issues
AP-10886 00037753 00037368 00037379	Making a getFeatureInfo on more than 1 layer returns you only one answer and without the layer name
AP-10885	Layer name missing from the getFeatureInfo response - ApolloCatalogWMS in Portal
AP-10864	Remove Java 1.7 dependency from Data Manager
AP-10841	Implement Rest API for AOI Notifications

AP-10821 00034075	EHCACHE setting for Apollo Cluster with multibple Networtinterfaces	
AP-10759 00031402	apollo-portal: ISO Metadata does not show thumbnail	
AP-10742 00022785	Tomcat crashes, vector legacy services	
AP-10707 00030640	Administration Console > User Maps & Workflows, creates "invalid token" error with Windows Authentication	
AP-10676 00029720	ERDAS APOLLO failed to crawl Aster (HDF) images	
AP-10640 00038816	ERDAS APOLLO (legacy WMS) failed to display float double image (even after create raster style)	
AP-10538	.hdf files fail during crawl	
AP-10359 00023045	Shift for cataloged vector data (ESPG:5235)	
AP-10317 00022774	Error Crawling SQL Server DB	
AP-10294	AvailabilityDate property is not getting updated as expected with services/rpc test	
AP-10229	Upgrade log4j from 1.2.14 to 1.2.17	
AP-10223 00022395	Datasets (images) having Thai names are not working! The images are not displayed correct.	
AP-10182 00022146	Geospatial Portal - Clip-ship-zip fails if all bands are deselected	
AP-10180 00022119	Clip-Ship-Zip - second email not sent when CZS failed	
AP-10120	ERDAS APOLLO is locking files after the crawling	
AP-9860 00020945	ERDAS APOLLO WPS geoprocessing output cleanup doesn't work at all	
AP-9690 00014481	Document Tomcat Delayed Start option if license service is also on the ERDAS APOLLO server	
AP-9017 00036002 00028926	Be able to control what user/role can do CZS/download @ Apollo portal	
AP-1433	Need to document patterns used for tables when creating the mapping xml	

Geospatial Portal 2020

Issue #	Summary
SR-6451	There is no Welcome Page for Geospatial SDI
SR-6450	Setup Manager is no updated after installing any of WebGIS product
SR-6448	Missing Features Window in GWM Config Wizard has less features name than from previous cycle

SR-6438	Error and warning in Webmap Configuration Wizard and Admin Console Service
SR-6437	Small translation mistake on WebMap installer in polish OS
SR-6414	WFS features with line type are not highlighted
SR-6413	Measure area functionality enables measurement of incorrectly drawn surface geometry
SR-6412	Adapt SDI Tools to build both .NET 4.7.2 and 4.0 assemblies
SR-6410	Move ChannelFactoryHelper class to sdi-tools
SR-6409	Allow Admin Console to configure WMPS searchers for Consumer Portal for HTTPS
SR-6400 00051504	$GP.dynamicFeatureEvents don't work with WMPS
SR-6399	Introduce the upgrade paths mechanism for Consumer backend, BackendWMPS and WMPS services
SR-6391	Save Map option is not visible in Admin Portal on polish OS version
SR-6377	Adapt WMPS bindings configuration to handle reliableSession in HTTP only
SR-6376	Transfer the binding creation mechanism from the Portal to the Consumer Backend
SR-6356	No results on WFS-G search in Geospatial Portal instance
SR-6354	WFS 16.6 cannot be displayed on Consumer Portal 16.6
SR-6324	The "consumer-backend-16.6.5-template.zip" artifact is created without all the required files
SR-6323	Adding new Map Server Pool in the Administration Console doesn't increase number of MapSrv Modules processes.
SR-6303	No possibility of configuring Geospatial Portal and WebMap Publisher Portal instances. using AdminConsole
SR-6251	Errors during the AdminPortal upgrade
SR-6249	Wrong MapSvrMngr.exe interopin sdi-services dependency
SR-6245	Wrong versioning scheme of WebMap .NET dlls (COM and COM Interop possibly)
SR-6244	Force recreation of *.aspx.designer.cs files for GWMPub.aspx and Mobile.aspx
SR-6243	WMS Basic Originating Pipe's WMS web.config template wrong attribute case
SR-6238	Error in the GeoMedia WebMap Configuration Test - A valid license is not found
SR-6188	MapSvr.exe is not registered correctly
SR-6187	Errors in Administration Console Service log
SR-6161	PSS features are not returned until Portal page is refreshed
SR-5904	Fix inter-module dependencies in full-portal-template-msm
SR-5313	Unable to add Personal Layer feature class in MapWithToolbar.aspx

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Hexagon's Geospatial division creates solutions that deliver a 5D smart digital reality with insight into what was, what is, what could be, what should be, and ultimately, what will be.

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Hexagon Geospatial reserves the right to revise these Terms at any time. You are responsible for regularly reviewing these Terms. Your continued use of this Document after the effective date of such changes constitutes your acceptance of and agreement to such changes.

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This Document is created and controlled by Hexagon Geospatial in the State of Alabama. As such, the laws of the State of Alabama will govern these Terms, without giving effect to any principles of conflicts of law. You hereby irrevocably and unconditionally consent to submit to the exclusive jurisdiction of the United States District Court for the Northern District of Alabama, Northeastern Division, or the Circuit Court for Madison County, Alabama for any litigation arising out of or relating to use of this Document (and agree not to commence any litigation relating thereto except in such courts), waive any objection to the laying of venue of any such litigation in such Courts and agree not to plead or claim in any such Courts that such litigation brought therein has been brought in an inconvenient forum. Some jurisdictions do not allow the exclusions or limitations set forth in these Terms. Such exclusions or limitations shall apply in all jurisdictions to the maximum extent allowed by applicable law.

Questions

Contact us with any questions regarding these Terms.