

Definiens XD 1.2.1

Release Notes

DEEPER INSIGHTS
FASTER RESULTS
BETTER DECISIONS

www.definiens.com



Imprint and Version

Document Version

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Dear User,

Thank you for using **Definiens** software. We appreciate being of service to you with image intelligence solutions.

At Definiens we constantly strive to improve our products. We therefore appreciate all comments and suggestions for improvements concerning our software, training, and documentation.

Feel free to contact us via web form on the Definiens support website
<http://www.definiens.com/support/index.htm>.

Thank you.

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Protected by patents US 7146380, US 7117131, US 6832002, US 6738513, US 6229920, US 6091852, EP 0863485, WO 00/54176, WO 00/60497, WO 00/63788 WO 01/45033, WO 01/71577, WO 01/75574, and WO 02/05198. Further patents pending.

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Overview

Definiens XD is a comprehensive image analysis platform for multi-dimensional image analysis. It contains all the client and server software needed to extract intelligence from any digital image in a fully-automated or semi-automated way.

About Definiens XD 1.2.1

Definiens XD 1.2.1 is a maintenance release. Customers currently using XD 1.2.0 previous versions of XD are recommended to update to this version of the software.

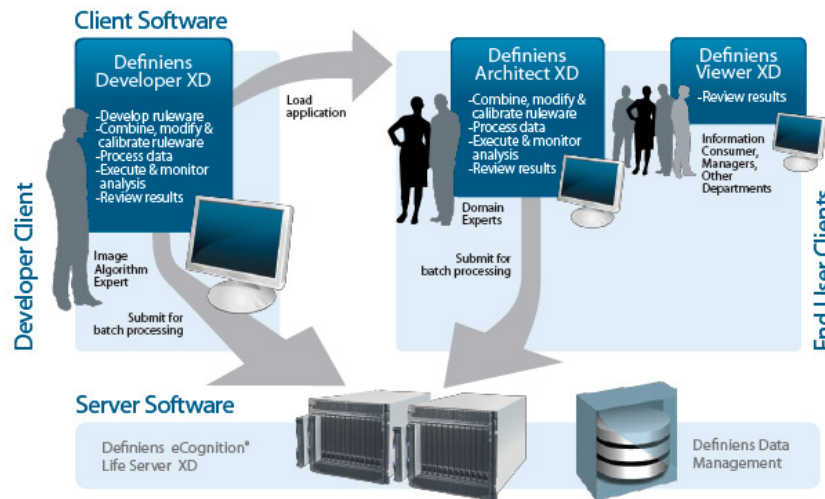


Figure 1: Definiens XD multi-dimensional image analysis software

Key Features

Role-based Definiens XD clients for application developers and end users

- Definiens Developer XD
- Definiens Architect XD
- Definiens Viewer XD

Definiens eCognition Life Server® XD

- A scalable, server-based batch processing environment for multidimensional analysis.

Comprehensive multi-dimensional data import

- DICOM support
- Generic import builder tool
- Multidimensional data model
- Support for many multi-dimensional image formats

High performance analysis of complex multidimensional data

- Definiens Cognition Network Technology® for XD

- Object-based pixel processing
- Multimap support and regions to support flexible analysis workflows including multi-magnification, registration and comparison workflows

Full multi-dimensional object model

- 3D features and algorithms
- Object linking for time series support

Multi-dimensional image viewing

- Multi-planner projections (XY,YZ,ZX)
- Animations of time series data
- Comparison views of multiple images side by side
- Linked object selection and picking
- Independent or synchronized views

Sophisticated 3D visualization

- Surface rendering of classified objects
- Rotation, zoom, class selection, transparency
- settings and export
- OpenGL hardware acceleration

Integrated image registration

- Rigid and elastic transformations
- Landmark and non-landmark based schemes
- Automated, semi-automated or manual landmark identification

Comprehensive SDK for integration of XD image analysis into existing workflows or applications

- Automation API
- Data IO API
- Engine API

New Features

Although Definiens XD 1.2.1 is primarily a maintenance release it does include a small number of functional enhancements as detailed below:-

Microsoft Windows 7 Support

- Microsoft Windows 7 professional is officially supported with this release for all clients and for the eCognition® Server.

Connectivity

- A new JPG2000 driver enables support for vary large JPG2000 images.
- An updated TissueGnostics driver allows for a complete TissueGnostics “project” to be loaded as a single image into Definiens XD.
- The Cellomics driver now includes native support for the Cellomics C01 image format.
- A new OME TIFF connector is available.
- An update to the Aperio driver now supports fluorescent images.

Image Proxy Server Monitor

- A new facility is provided to allow a user to monitor the status of the image proxy server. This can be accessed from the *Tools>Manage Local Servers* menu.

Bug Fixes

Definiens XD 1.2.1 contains a significant number of bug fixes designed to improve stability and reliability of the Definiens XD products. The most significant of these bug fixes are detailed in the table below.

Ref #	Category	Description
13443	Algorithm	No error displayed if a user attempts to copy source map 'map2' to target map 'main' which is a permanent map. Error should be displayed that explains you can't overwrite the project settings. Use synchronize map instead.
14892	Algorithm	Algorithm throw and catch processing block logic error.
14898	Algorithm	Performance of coating algorithm is poor.
14623	Algorithm	Haralick features which don't use explicit layer, don't calculate.
14879	Algorithm	Quadtree algorithm can cause Developer to crash due to over allocating memory for certain 3D examples.
14682	Algorithm	Multiresolution segmentation "create level below" does not work as expected.
14788	Algorithm	Standard Nearest Neighbour features are not being saved for new classes.
14805	Algorithm	Copy and rotate maps can cause unexpected rotation results.
14897	Algorithm	Active pixel incorrect when user clicks out of bounds value.
14681	Developer	Crash with multiresolution segmentation for certain scale values.
14882	Developer	Crash clicking in empty viewer after adding actions.
14824	Architect	Crash: LuTA pre-processing in Architect.
14893	Developer	Crash possible on saving and immediate loading of a class hierarchy.
14895	Developer	Using predefined import when project is already created can cause crash. This menu should be disabled in this context.
14900	Developer	Crash when selecting new thematic layer from annotation.
14918	Engine	Disconnected objects are not disconnected in time series.
14761	Image Proxy Server	IPS crashes when loading some images with internal pyramids.
14763	Image Proxy Server	IPS crashes when loading certain images.
14961	Image Proxy Server	Closing Image Proxy Server monitor tool can cause crash.
14989	Image Proxy Server	Stopping the control services of one installation version causes the Image Proxy Server to be stopped for all installations.
14964	Image Proxy Server	Introduce a warning if a client attempts to connect to an Image Proxy Server with a different version.
14856	Maps	Map display feature has problem displaying maps without levels.
14762	Import	Image displays in colour for 100% zoom level but other levels it shows black and white incorrectly.
14938	Import	JP2K crashes with large files. Old driver removed and replaced with new driver capable of dealing with large

		images.
14810	DICOM	DICOM: importer decides for data type on file level, wrongly decides for float32
14829	DICOM	DICOM driver shows negative values for unsigned short dataset
14843	DICOM	DICOM 3D import can fail when in the dataset slices are distributed along y direction. DICOM Import assumed that the images are distributed along z direction.
14891	DICOM	3D DICOM import fails when the dataset contains both original and annotated slices.
14899	DICOM	DICOM driver can't read 32bit values.
14860	Import	Connector: Analyze driver does not work for large files
14871	Import	RDIDriver: Mirax: can't import two channel-mirax files
14872	Import	Aperio images can contain artefactual pixels
14886	Import	Only 3 layers imported for ZVI images containing > 3 layers.
14937	Import	Hamamatsu connector is missing from configuration.
14950	Import	Predefined import for multiple Leica LIF files can be slower than expected.
14793	Installation	SDK: Installation: DrvrCommon.lib missing
14884	Installation	Disabling the local server does not stop the job scheduler.
14885	Installation	Installing local server and GRID installation on the same machine can cause jobs to hang.
14650	Installation	Haralick features missing from server algorithms e.g. Haralick Homogeneity (quick).
13523	Processing	Hamamatsu is a windows only driver. When processing on Linux an appropriate error message should be displayed/recorded should a user attempt to analyse images with no available driver.
14804	Processing	Different results in Developer and GRID caused by missing Haralick features in the server package.
14812	Processing	In some circumstances with concurrent access there can be errors reading .csv output files due to temporary locks. Introduced retry to avoid temporal locks affecting processing.
14836	Processing	Software allows main map to be overridden. An error message should be displayed stating that the target "main" mpa can't be overwritten
14834	Processing	"Pixel-based object resizing" when used in certain process flow loops can cause engine crash.
14991	Processing	Certain rule sets can perform more slowly with XD than with EII, particularly where processor has less internal cache available.
11189	Support	Crash dumps can't be written on Vista and Windows 7. Crash dumps are now written in the user profile application data folder, based on product version. - this is done for all products (client and server).
14887	Thematic Layers	Copy map always copies thematic layers. This needs a switch implemented in the algorithm.
14890	Thematic Layers	Chessboard segmentation mixes up thematic layer settings.
14697	User Interface	Option item added to enable zoom behaviour on mouse wheel.
14722	User Interface	Select process algorithms dialog does not allow selection.
14789	User Interface	GUI: Sample editor: Dropdown lists for classes do not show more than 36 classes

14795	User Interface	GUI: 3D View: No update of the MPR View after processing an algorithm
14799	User Interface	WinXP look and feel broken if using it over 2 screens. This look and feel option should be removed.
14791	Workspace	Thematic layer paths are not update when copying a workspace
14881	Workspace	Project statistics in workspace are not displayed correctly, old columns are not deleted.

Known Issues and Limitations

Users migrating to XD from Enterprise Image Intelligence™ Suite 7.0.9 may experience a reduction in performance for certain existing rulesets when the processor is constrained by a small cache. This will be more noticeable on older multicore processors where cache sharing may become a performance bottleneck. It is recommended customers also consider processor internal cache when selecting processors. For more details please contact support@definiens.com.

Documentation Errata / Late Changes

Using the Image Proxy Server Monitor

The image proxy server monitor tool is accessible from the dialog. Click on the start IPS monitor tool to launch the tool. *Tools>Manage Local Servers*

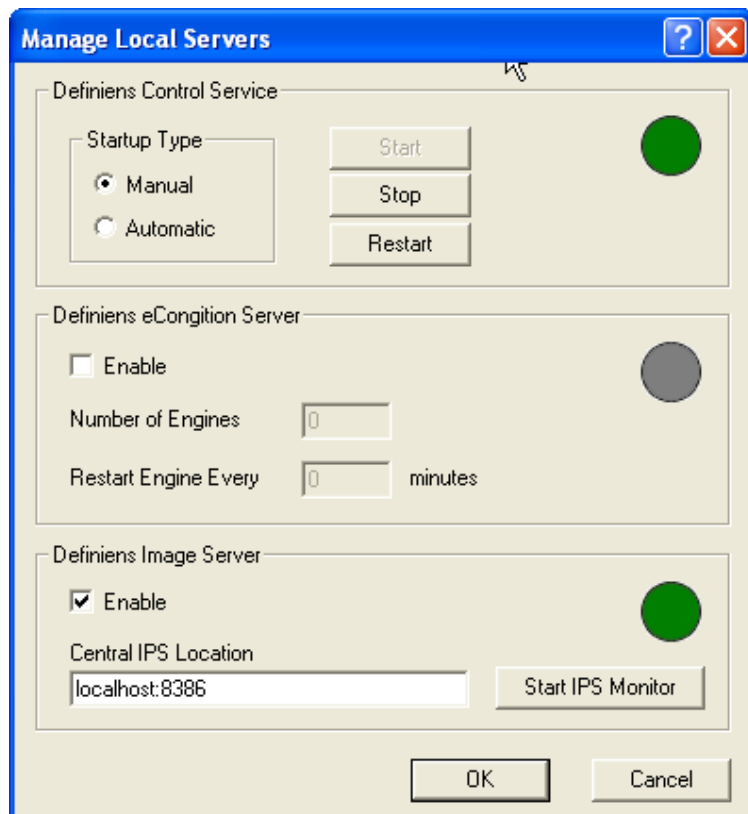


Figure 1: Manage local servers dialog

The image proxy server monitor enables you to review the configuration, process threads and cache files managed and created by the Image Proxy Server.

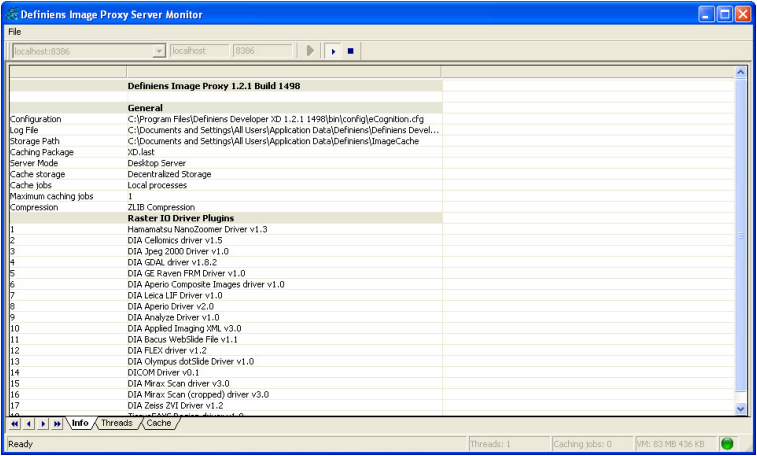


Figure 2: Image Proxy Server Monitor – Informational information tab.

Additional Information

For additional information please contact support@definiens.com

Upgrading to Definiens XD 1.2.1 from previous versions of XD

Upgrading Definiens Client Products

You may choose to install updated versions of the client software along side previous versions. When installing please name the folder and program menu to distinguish clearly between different versions. If you wish to install multiple XD 1.2.x clients please ensure you set the local server service to start manually. This will allow you if using the local server to control which version of the local server you are using.

Upgrading your eCognition Server

If you wish to update all components of your server environment you may install all of the GRID components. Please note that previous installations should be removed as installing multiple versions of the GRID on the same computer will cause processing problems.

Alternatively, if you are using XD 1.1.1 or XD 1.2.0 you may download the server package and upload this with the administration console. This has the advantage that you can continue to use the previous version of the engine in parallel.

Please feel free to contact support@definiens.com with any questions you may have about this release and the upgrade process.

Moving to Definiens XD from Definiens Enterprise Image Intelligence™ Suite

Definiens XD has been designed carefully to enable customers currently using the Definiens Enterprise Image Intelligence™ Suite to move to Definiens XD. This is possible as Definiens XD provides a comprehensive range of backwards compatibility features.

The following features have been designed to enable a smooth transition for existing production applications.

- **Definiens XD GRID will support XD 1.0 packages and Enterprise Image Intelligence 7.0.x packages**

7.0.0 - 7.0.6

A v7.0.x package can be hosted within an XD GRID. This allows customers to run 7.0.x analysis applications unchanged in the XD GRID.

An appropriate Enterprise Image Intelligence license is required to run these engines.

7.0.7-7.0.9

A 7.0.7 package can be hosted within an XD GRID. This allows customers to run 7.0.7 analysis applications unchanged in the XD GRID.

When an engine is started it checks for a valid license. If a 7.0.7 engine is run it will first check for availability of an Enterprise Image Intelligence 7.0.7 engine license. If 7.0.7 license is not found a Definiens XD engine license will be consumed in place. This ensures that customers will not be required to maintain Enterprise Image Intelligence and XD licenses.

- **An Enterprise Image Intelligence 7.0.x client can submit jobs to an XD Grid.**

Enterprise Image Intelligence v7.0.x clients will be able to submit jobs to an XD GRID if the appropriate package has been uploaded and the appropriate licenses are available (See point 1 for licensing)

- **Definiens XD and Enterprise Image Intelligence Clients can be installed on the same PC**

Clients from both Definiens XD and Enterprise Image Intelligence can be installed on the same PC. These consume the appropriate license for this client software.

- **A Definiens XD Client can submit a 7.0.x rule set.**

An XD client can be used to submit an existing 7.0.x rule set. This will run on the GRID successfully if the required package is available and licenses are present. Results will be as per execution on 7.0.x GRID. The user will be required to adjust the advanced configuration settings which will default to XD values in order to do so.

- **An XD Client can load an 7.0.X rule set, if this rule set is then saved then the rule set is converted to XD**

Once saved the rule set is converted to XD format. The rule set should run as before. The results will only be viewable using an XD client. An XD license will be consumed. Since the conversion of the rule set is a one way process, therefore it is strongly recommended that 7.0.x rule sets are backed up before deploying XD products.

- **Definiens License Server**

As the license server component is shared between Enterprise Image Intelligence and XD your existing license server can be used to serve both the Enterprise Image Intelligence and XD product licenses.

For detailed information regarding the new capabilities of Definiens XD products please see the respective user guides. These also contain difference between XD and the 2D product range to assist with planning upgrades.

The Definiens services' team has built extensive experience planning migrations and upgrades for our customers. We recommend before planning a migration you consult with Definiens service team, who will be happy to provide insight into the migration process.