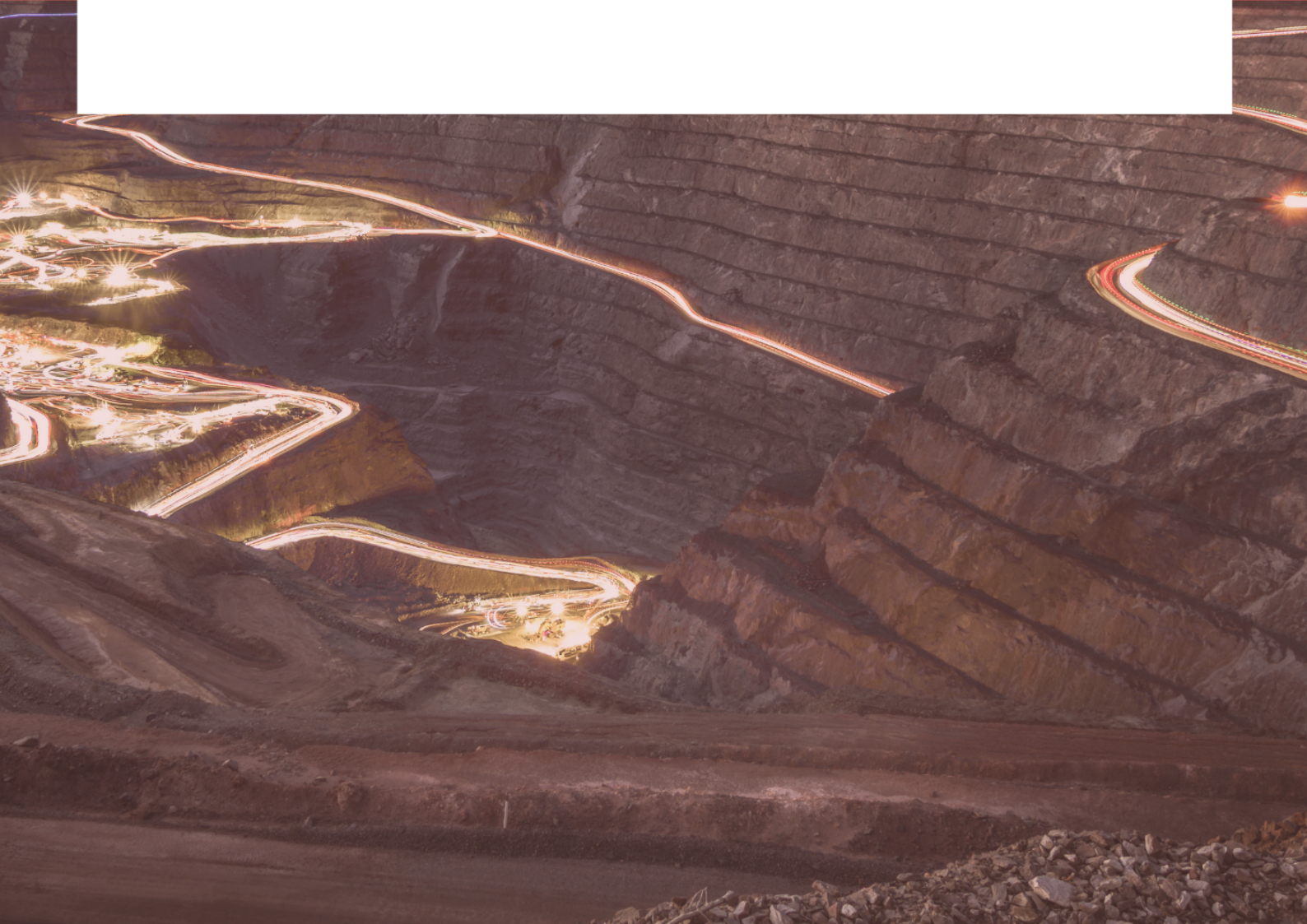


Release Notes

Studio NPVS+ 1.1



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The product described in this documentation may be connected to, and/or communicate information and data via, a network interface, which should be connected to a secure network. It is your sole responsibility to ensure a secure connection to the network and to establish and maintain appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of antivirus programs, etc.) to protect the product, the network, your systems, and the interface against any kind of security breach, unauthorised access, interference, intrusion, leakage, damage, or corruption or theft of data. We are not liable for damages or losses related to any such security breach, unauthorised access, interference, intrusion, leakage, damage, or corruption or theft of data.

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Overview



Studio NPVS+ is a strategic mine planning system that optimises both mine design and schedule in the search for maximum NPV. Studio NPVS+ features a powerful and flexible schedule generation engine that significantly reduces the time and effort to produce a reliable and practical schedule.

Studio NPVS+ is one of several products in the Studio product family, which includes:

-  **Studio EM** for exploration data analysis and modeling.
-  **Studio Geo** is for geological and structural modeling.
-  **Studio Mapper** for geological face mapping and reporting.
-  **Studio NPVS+** for strategic open pit optimization, design and enhanced scheduling.
-  **Studio OP** for open pit design and operational scheduling.
-  **Studio RM** for mine geology, reserve modeling and resource estimation.
-  **Studio Survey** for open pit and underground mine surveying and reporting.
-  **Studio UG** for underground mine design and scheduling.

Further Information

This document includes cumulative releases notes for Studio NPVS+ 1.1. As such, release notes are listed for all minor updates of the current major version, in reverse chronological order.

Release notes for other versions of Studio NPVS+ are available via the Support Portal

<https://www.dataminesoftware.com/support/>.

For the complete Studio NPVS+ documentation, see

<https://docs.dataminesoftware.com/StudioNPVS>.

Studio NPVS+ 1.1 Release Notes

Key Improvements

Haulage Integration

The **Haulage Analysis** tool is now integrated with the Scheduler to allow computing cycle times and truck hours required to move the material from all sources (pushbacks and stockpiles) to destinations (processing plants, stockpiles, and waste dumps).

Studio NPVS+ employs a one-step optimization of the haulage plan, combining the "scheduling" and "haulage analysis" functions without the need for iteration. By optimizing the mining schedule directly for truck hours, you can reduce the maximum truck fleet size and delay the expansion of the truck fleet, while still meeting all other scheduling objectives.

The Haulage Information screens are also supported by new context-sensitive help files.

Multiple File Loads

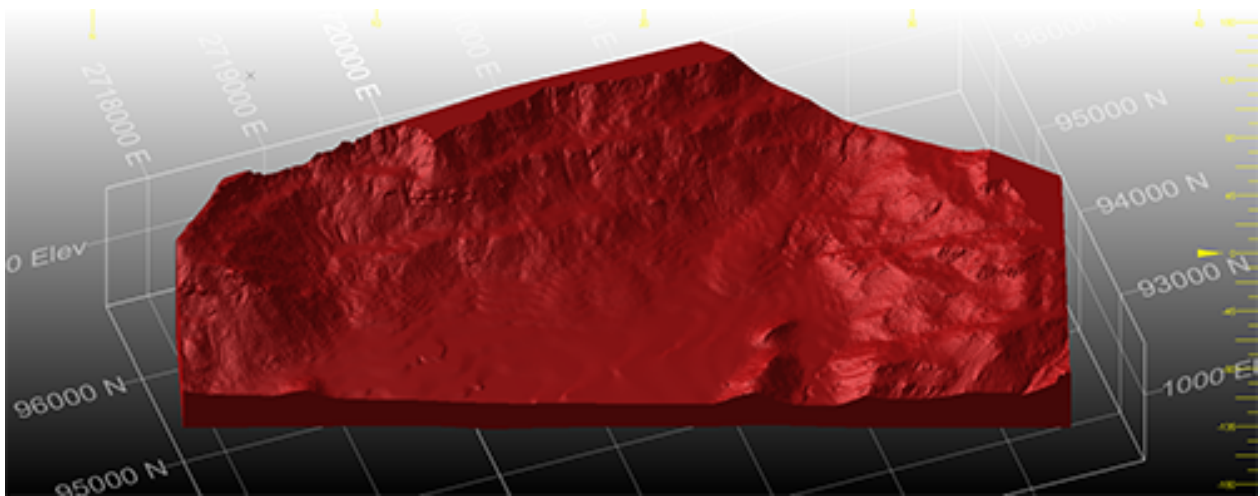
You can now import or load multiple files in one operation using new multi-file options. Just pick the files you want to load using a simple browser, and Studio does the rest. You still get to specify load and importation settings, including those specific to a particular driver, but now you can complete the process in a fraction of the time.

To access this function, click **Add to Project** or **External** on the **Data** ribbon and pick your files.

Either import multiple files to the project or load them directly into memory. These files can be of the same type and format or different ones, meaning you can pick a batch of files of various formats (CAD, BMF, DMX and more) and either add them to the project or load and display them after importation and conversion. This makes light work of importing files from other projects and applications.

To use the previous driver selection method, use a menu option to pick a data type or select the new "by driver" option for project import.

Leapfrog Data Import



You can now import Leapfrog mesh (.msh) and Leapfrog Project Model (.lfm) files using a new Data Source Driver. Data is imported as wireframes.

If importing a Leapfrog Project Model file, you can choose to import all associated mesh data or a subset, and can choose the attribute to use to store the original mesh name, making downstream data management much easier.

The new formats are also supported by Studio's drag-and-drop facility, meaning you can drag one or more files into the 3D view and default load settings are used to create the relevant objects in memory and display them.

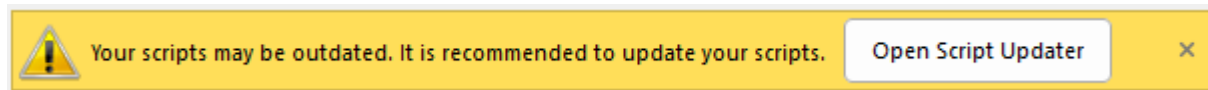
Safer Scripting

To maintain the highest level of local data security, we've rigorized our scripting interface in Studio products to provide a way to securely instantiate approved ActiveX objects through automation scripts. This provides a safer and more marshalled automation environment.

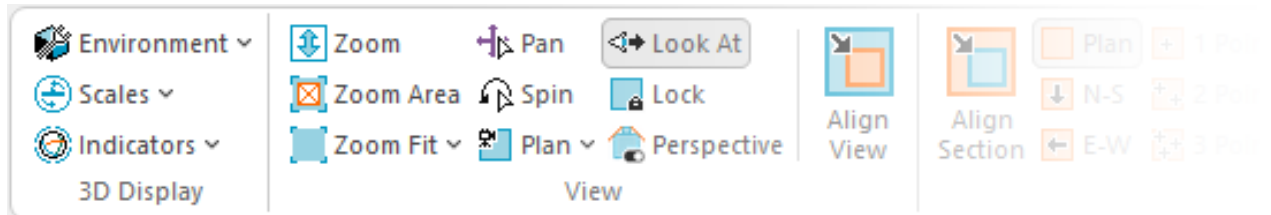
In brief, we've introduced a new Studio application method (`CreateObject`) that can be used in place of the deprecated `new ActiveXObject("Prog.ID");` instruction. A call to something like `window.external.System.CreateObject("Prog.ID");` allows approved ActiveX objects to be instantiated to support your scripts. Most importantly, the ones that provide the highest risk are blocked.

The **Datamine Studio Script Updater**, accessible via your **Home** ribbon, can update your scripts either individually or as a batch, automatically making them safer to use.

If you load a script that looks like it could benefit from additional protection, a banner appears atop your display area. This also provides access to the conversion utility:



Ribbon Standardization

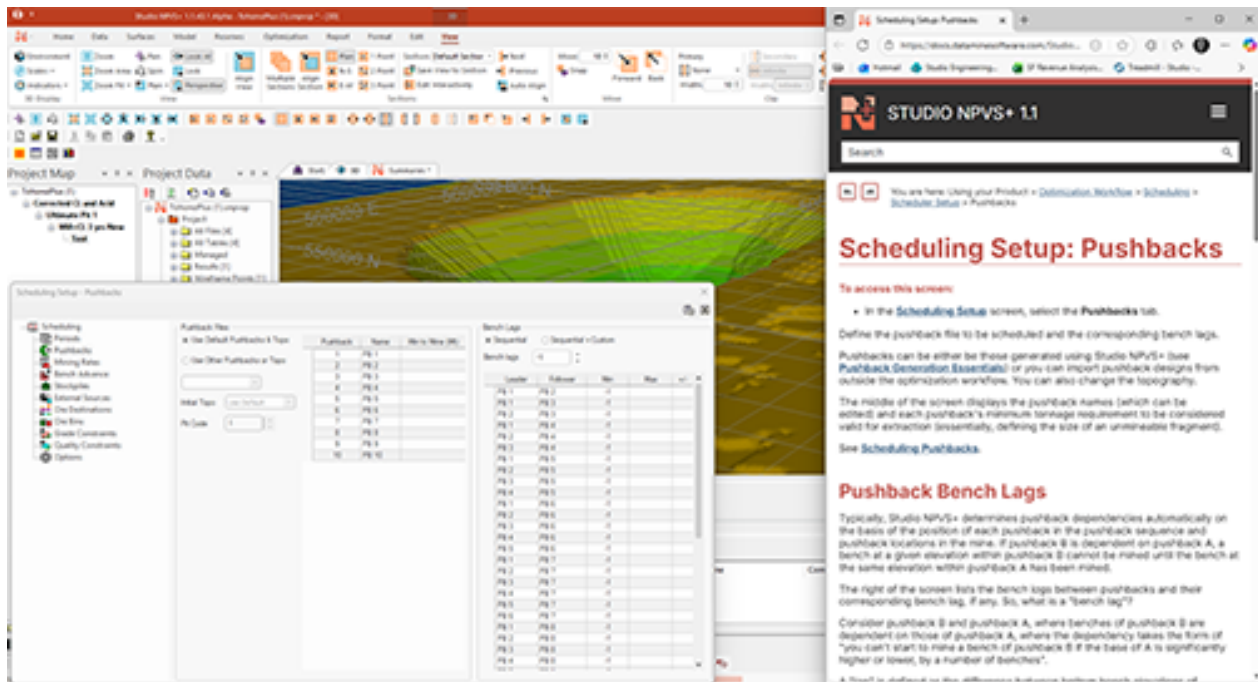


Following your requests to adopt a more consistent ribbon layout between Studio products for core (shared) commands, we've made a few changes for this update. This means your familiarity with one Studio is now useful if using another product in the Studio range. Where possible, we have standardized command grouping and positions for the **Data**, **Format** and **3D View** ribbons. We've maintained specific layouts where a particular operating domain demands it, such as grade estimation, resource modelling, pit design and field mapping functions, so these aren't changing.

We will continue to standardize our ribbons, where appropriate, in future releases.

Improved Documentation

As part of a wider campaign to improve how we support our customers, the Studio NPVS+ help file gets a big refresh with this update. Moving away from the "field details" approach and towards a more intuitive activity-based method, the new help files don't just explain what something does, in isolation, but how it forms part of a larger flow of activities to create the desired result.



Reference information still exists, but is presented more appropriately, meaning the information you want isn't hidden somewhere in the 10,000+ page collection that supports your product. In addition, stale information is being progressively renewed, and a tighter workflow adopted to ensure all application changes are considered when our documentation team works on new content for each release.

Other Command & Process Updates

- COPYMOD now supports retrieval criteria.
- A new command `digitise-doughnut` lets you create data representing fully enclosed internal structures.
- `smooth-gradient` can now be used to fully smooth (start to end) preselected strings.
- REBLOCK now supports retrieval criteria.
- INTEXT can now process data using either a data definition (INDD) file or a SETTINGS file, or neither.
- WIREFILL now supports retrieval criteria.

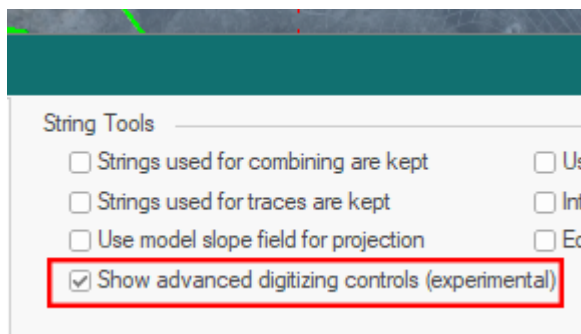
Early Access Features

Advanced Digitizing Controls

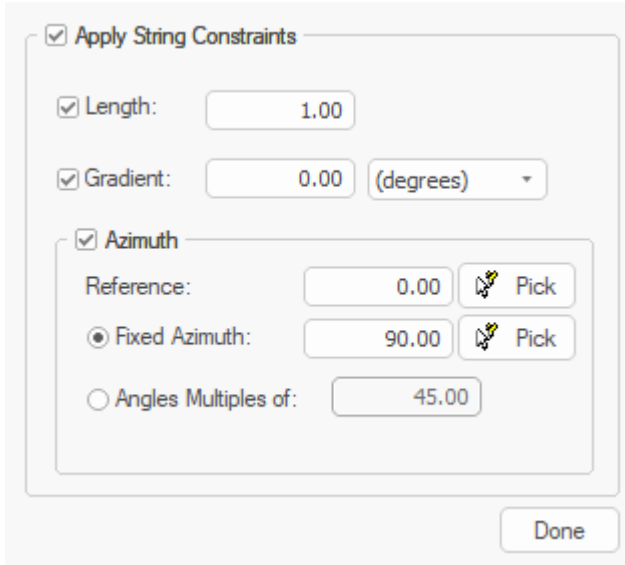
As part of a wider campaign to improve and extend our digitizing tools, we've introduced a new way of creating new string data in this update, and we'd love to know what you think before we finalize things.

`new-string`, arguably the most commonly used design command in any Studio product, has been extended over the years and also supported by a range of other design functions to enhance more 'managed' digitizing often required in the mine planning domain, where design drafting with precise string properties can be critical to an effective design and schedule. The `extend-string` command has been similarly enhanced.

`new-string` and `extend-string` can run in an enhanced mode in this update. By default, both commands behave as before, but there's a new project setting that allows advanced settings to be applied during digitizing to constrain the orientation of the next string segment you create. Located on the **Points and Strings** screen, check **Show advanced digitizing controls** to activate enhanced mode for **new-string** and **extend-string**:



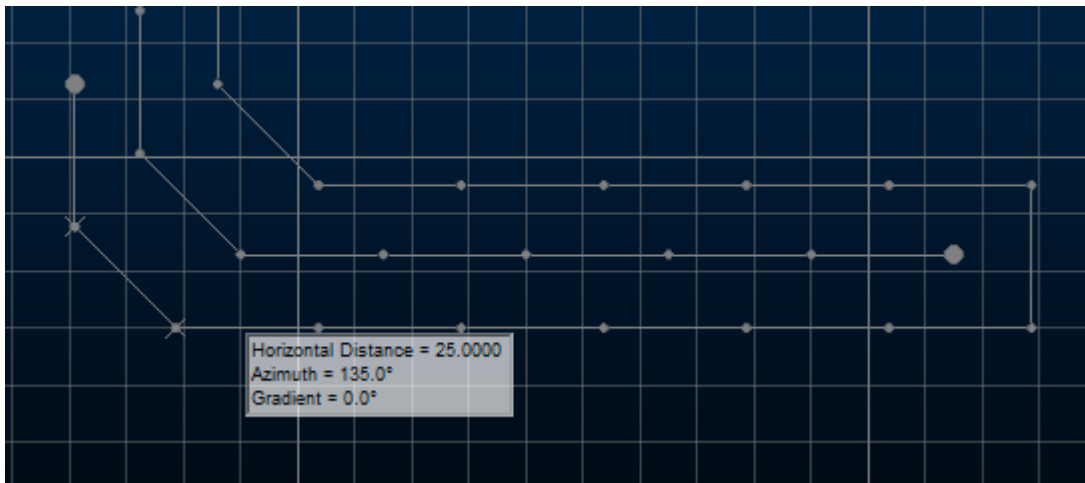
The next use of either command displays a popup allowing you to constrain the length, azimuth and gradient of the next string edge. For constrained angle changes, you can also ensure azimuth changes are made in fixed amounts from the previous string segment:



The dialog box is titled "Apply String Constraints" and has a "Done" button at the bottom right. It contains three main sections:

- Length:** A checkbox is checked, and the value is set to 1.00.
- Gradient:** A checkbox is checked, and the value is set to 0.00 with a unit dropdown menu set to "(degrees)".
- Azimuth:** A checkbox is checked. It contains three options:
 - Reference:** A value of 0.00 with a "Pick" button.
 - Fixed Azimuth:** A radio button is selected, with a value of 90.00 and a "Pick" button.
 - Angles Multiples of:** An unselected radio button with a value of 45.00.

This can help to ensure operational and design constraints are honoured during digitizing, saving time later by editing and adjusting design data. Help files for both commands have been updated to explain how to use the new controls. You can also press F1 when the new popup displays during digitizing.



Please let us know what you think of this early-access feature. We value your feedback!

All Improvements

- **NVPSPLUS-565** Project Data control bar functionality has been standardized across the Studio range.
- **NVPSPLUS-552** User interface profile commands have been added to the Home ribbon.
- **NVPSPLUS-540** The Bench Advance screen's Max Benches column is now wider.
- **NVPSPLUS-504** Studio NPVS+ documentation has been overhauled (online and offline content).
- **NVPSPLUS-497** The Pushback Settings wizard now has independent context-sensitive help for each page (press F1).
- **NVPSPLUS-494** An issue causing unnecessarily high ore waste dumping has been resolved.
- **NVPSPLUS-493** Haulage Information help files have been reformatted and rewritten to match Studio NPVS+ functionality.
- **NVPSPLUS-493** Haulage screens have been updated to remove references to redundant MAO functions.
- **NVPSPLUS-482** The date and time of generated charts and reports is now displayed.
- **NVPSPLUS-467** Warehousing mode help has been expanded to explain that mixed stockpiles with initial tonnage must be empty at the end of the schedule.
- **NVPSPLUS-465** Haulage Information screens now link to new context-sensitive help files.
- **NVPSPLUS-463** The Quality Constraints Scheduler settings page has been reorganized to make it more intuitive,
- **NVPSPLUS-456** Quality constraint **Min** and **Max** values can now be expressed as standard numeric values or multiples of thousands or millions.
- **NVPSPLUS-447** When defining Quality Constraints, **Add** and **Delete** buttons now appear above the **Global Targets** area.
- **NVPSPLUS-445** Added a Truck Hours target in Quality Constraints with units set to Truck Hours and fixed, non-editable coefficients that update automatically based on haulage information.
- **NVPSPLUS-444** Haulage parameters are now honoured by Maroma-solved schedules.
- **NVPSPLUS-439** Pushback computation is now much quicker, particularly where a large number of pushbacks are being calculated.

- **NVPSPLUS-380** You can now access Default Project Settings and toggle the display of the Tasks Pane using the Home ribbon.
- **NVPSPLUS-188** When resizing the **Quality Constraints** screen, the Variables table now resizes, not the Global Targets area.
- **NVPSPLUS-183** This version includes an update to the Maroma solver (v1.8.1.3).
- **NVPSPLUS-180** When setting Quality Constraints, you can now insert earlier periods.
- **NVPSPLUS-160** Min to mine is now applied by period, not total.
- **NVPSPLUS-143** Documentation has been added to explain the impact of multi-core processing on schedule optimization results.
- **CORE-9827** .dmx.tmp files are now ignored by the **Project Files** and **Project Data** control bars.
- **CORE-9775** As part of the project to standardize Studio ribbons, icon updates have been made.
- **CORE-9732** Read-only DM files are now converted to read-only DMX files during project or utility-initiated conversion.
- **CORE-9711** Documentation for EXTRA's RAND and RANDBETWEEN numeric functions has been improved.
- **CORE-9649** Block model fields in the Text Importer are now ordered more sensibly.
- **CORE-9604** The default field of view angle for new projects is now 45 degrees (set-view-fov command).
- **CORE-9586** To increase system security, we have blocked the display of online content in the Customization window.
- **CORE-9583** In Files, Fields and Parameters screens running in Dark mode, text in dropdowns is now more readable.
- **CORE-9579** COMPDH now supports up to 5 ZONE fields to composite within, and five optional fields DOM1 to DOM5 can now be specified to record dominant categorical values (by length) within each composited sample.
- **CORE-9578** The Script Recorder now generates syntax that aligns with Datamine's safer scripting policy.
- **CORE-9574** The legacy script converter utility has been removed from product distributions.
- **CORE-9561** Rationalization of baggage files for help systems means Studio installation file sizes are now smaller.

- **CORE-9551** The **Datamine Studio Script Updater** has been provided to automatically convert your scripts to more protected versions.
- **CORE-9550** The Studio scripting environment now offers a safer scripting syntax, minimizing the potential impact of malicious thread actors.
- **CORE-9546** New calculated (virtual) fields are now available to calculate the dip angle (**_PDIP**) and direction (**_PDIPDIR**) of the best fit plane through a data object.
- **CORE-9542** A more secure mechanism for data object automation has been implemented. Consult your online help for more details.
- **CORE-9540** You can delete selected 3D overlays of the Project Data using the <DELETE> key.
- **CORE-9539** The **CalculateEdgeMetrics()** method now calculates values for the final edge of a closed perimeter.
- **CORE-9528** The Plots window **Section** and **View** ribbons now have new icons.
- **CORE-9526** It is now quicker to read and process DMX files containing alphanumeric columns.
- **CORE-9522** **WIREFILL** now supports retrieval criteria.
- **CORE-9521** **COPYMOD** now supports retrieval criteria.
- **CORE-9519** **REBLOCK** now supports retrieval criteria.
- **CORE-9490** The Text Importer can now be automated using any Studio product.
- **CORE-9482** The `switch-drillhole-points-traces` command is now available on the Format ribbon (Display Mode group).
- **CORE-9474** The **Text Importer** and **INTEXT** documentation has been extended and corrected.
- **CORE-9473** **INTEXT** can now process data using either a data definition (INDD) file or a SETTINGS file, or neither.
- **CORE-9449** The **CENTRE** file for the **ELLIPSE** process is no longer dependent on search, variogram or zone parameter file inputs.
- **CORE-9409** An issue causing an unsorted block model to become locked after a previous attempt to load it has been resolved.
- **CORE-9398** In **COMPDH** it has always been the case that if the **LENGTH** field in the input sample file is not equal to **FROM - TO** the **LENGTH** field is set to **TO - FROM**. This behaviour remains, but a maximum of 10 messages are issued in a process run.

- **CORE-9383** The **3D View** ribbon layout is now consistent between Studio products.
- **CORE-9382** The **Format** ribbon layout is now consistent between Studio products.
- **CORE-9378** The **Data** ribbon layout is now consistent between Studio products.
- **CORE-9359** Your product now includes a new control bar: **Project Data**. This combines the power of previous bars to categorize and display files, loaded objects and plot data.
- **CORE-9391** When using the Text Importer, you can now import alphanumeric trace and absent values into a destination field that is numeric.
- **CORE-9340** Unload all overlays of a specific data type using a new **Sheets** and **Project Data** control bar menu option.
- **CORE-9301** Legend controls within various screens have been reverted to more popular legacy behaviour (with improvements) and restyled.
- **CORE-9277** Quick Filter drop down lists now inherit the current look and feel theme.
- **CORE-9252** Project data bar icons for the Plots and 3D folders have been updated.
- **CORE-9233** By request, flat-rendered wireframes are now less shiny.
- **CORE-9229** **Text Importer** scenario files (.dminsv) now appear in the Project Data control bar.
- **CORE-9228** If opening a Text Importer scenario, file detection has been improved and you can now browse for missing files.
- **CORE-9103** The **Project Data**, **Loaded Data** and **Holes** control bars now inherit visual themes.
- **CORE-9097** An issue that could make data picking difficult where data was precisely coincident with the section plane has been resolved.
- **CORE-9082** **Drillhole Importer** now recognizes "Hole_ID" as a BHID mapping type.
- **CORE-9014** All commands relating to the obsoleted **Visualizer** window have been removed from the application.
- **CORE-8999** Tooltips have been added to the **Group Lithology** and **Assign Lithology** tasks.
- **CORE-8980** When adding a new unique value legend item in the New Legend Wizard, you can now add any other colour to the current palette.
- **CORE-8839** Documentation on snapping to a grid has been improved.

- **CORE-8805** File case names are now preserved in the default overlay when dragging and dropping files into the 3D window.
- **CORE-8763** 3D properties and similar screens now use a clearer and expanded toolset for legend management. See you help file for more details.
- **CORE-8699** An issue causing the `insert-by-segment-length` to fail when working with large data has been resolved.
- **CORE-8673** Issues causing unpredictable selection behaviour (or presentation of selected data) in the Plots window have been resolved.
- **CORE-8654** Selecting the outer boundary of a plot sheet now enables the **Manage** ribbon (not the **Home** ribbon as previously).
- **CORE-8625** **Drillhole importer** now recognizes more field names when automatically mapping to system fields.
- **CORE-8519** Studio Data, Report and 3D View ribbons have been made standard in all Studio products other than Studio Mapper.
- **CORE-8510** The **Project Data** control bar now displays files external to the project folder with the same vertical line indicator as the Project Files control bar.
- **CORE-8196** `MODSPLIT` can now output either **MODELOUT**, **FULLMOD** or both. Previously, both outputs were always generated.
- **CORE-8143** It is now quicker to close a project without saving it.
- **CORE-7746** A new command `digitise-doughnut` lets you create complex string data in relation to an external perimeter and one or more closed internal strings.
- **CORE-7506** The **Drillhole Planner** now inherits the current visual theme.
- **CORE-7272** The **Edge Editor** is now available in this product. Use it to dynamically adjust string edges.
- **CORE-6637** This update features early access to a preview of our advanced string digitizing controls. Constrain the azimuth, length and gradient of new string segments as you draw. Enable this beta functionality using the **Project Settings** screen.
- **CORE-5878** The Project Data bar now permits multiple item selection.
- **CORE-5550** `smooth-gradient` can now be used to fully smooth (start to end) preselected strings.
- **CORE-1878** You can now import or load multiple files in one operation using new multi-file options.
- **GEO-718** The layout of the **Drillhole Importer** screens has been improved.

Utilities & Supporting Services

- **CORE-9629** This update includes an upgrade to the mesh wireframing engine (2.0.2.54).
- **CORE-9577** Your product installs a major update to License Services (7.0). This introduces encrypted traffic options for enhanced data traffic security.
- **CORE-9536** The Start Page environment has been made more secure.
- **CORE-9481** Data Source Drivers now export virtual data columns.
- **CORE-9362** If using the DmFile SDK, reading and writing records is now twice as fast as before.
- **CORE-8826** You can now import MineScape prism models where data overlaps in Z.
- **CORE-8524** An encrypted traffic option is now available to License Services server administrators. Requires a compatible client installation (7.0 or higher).
- **CORE-8524** We have added a new driver! Import UBC voxel model data using the new **Geosoft** driver option.
- **CORE-8160** The MineScape Block Model Importer has been added to the Data Import screen as a new driver: "MineScape strata model".
- **CORE-6521** You can now import and load Leapfrog mesh and project model file data using a new Data Source Driver.
- **MSO-1558** Documentation for MSO version 5.0 has been completed for this version.
- **MSO-1581** Evaluation method descriptions on the **Report** screen have been updated for consistency and clarity.

Documentation & eLearning

- **Multiple Cases** The ongoing **Studio Documentation Refresh** project continues unabated with hundreds more topics reviewed, reformatted and (in some cases) rewritten. We're still on track to complete this project in 2026.
- **NPVSPLUS-521** Additional information on the "Min to Mine" setting has been added to the Scheduler settings **Pushbacks** help file.

Defect Fixes

- **NVPSPLUS-597** We have fixed the Mining Blocks file so waste tonnages now correctly match the scheduler and legacy Fresh PBs reports.
- **NVPSPLUS-573** We have fixed the pushbacks report so that Mined Total now correctly includes all waste tonnes, matching the scheduler's total mined tonnes.
- **NVPSPLUS-512** An issue causing quality constraints to be violated where negative coefficients existed has been resolved.
- **NVPSPLUS-511** Added all individual waste rock types as separate quality constraint inputs (including when haulage is undefined) and ensured their targets are correctly written to the XML for scheduling.
- **NVPSPLUS-498** Fixed an issue where Quality Constraints *Min* and *Max* values were incorrectly divided by the selected multiplier when adding a new target variable definition period.
- **NVPSPLUS-496** Scheduler settings screen fields now expand or contract correctly according to screen size.
- **NVPSPLUS-491** An issue causing the Scheduler to fail when only one core was specified in Default Settings has been fixed.
- **NVPSPLUS-473** The MAO/MFO tab is no longer displayed in the Summaries window.
- **NVPSPLUS-458** The Reclaim from stockpile initial tonnage is now included in ore tonnage target.
- **NVPSPLUS-452** An issue causing system instability after defining quality constraints has been resolved.
- **NVPSPLUS-451** You can now visualize the schedule model after creation as expected.
- **NVPSPLUS-450** A ratio target is now correctly ignored by the scheduler if disabled.
- **NVPSPLUS-422** Mining Dilution and Mining Recovery labels now fully appear in Economic Settings.
- **NVPSPLUS-409** Stockpile values are no longer converted when units are changed.
- **CORE-9921** EXTRA's FLDFAIL parameter's default value of 1 has been reinstated (previously 0) to match earlier application versions.
- **CORE-9919** An issue causing system failure, if v1 or v2 commands were used in conjunction with plane alignment options, has been resolved.



- **CORE-9875** An issue preventing the initial display of colour chips on the Assign Lithology screen has been resolved.
- **CORE-9868** A data-specific issue causing Deswik import to fail has been resolved.
- **CORE-9855** An issue causing issues when snapping and zooming in conjunction with vertical 3D scene exaggeration has been resolved.
- **CORE-9826** An issue preventing the successful import of Deswik wireframe data has been resolved.
- **CORE-9761** Picking of data symbols rendered in 2D in screen space can now be selected as normal.
- **CORE-9745** An issue causing `REBLOCK` to delete the input block model, if additive fields are used, has been resolved.
- **CORE-9717** The Project Data Bar's "Create from Loaded Data" menu option now works as expected.
- **CORE-9716** Grids and Sections folders can no longer be removed from the Project Data bar.
- **CORE-9714** An issue causing the incorrect rendering of 3D drillhole cylinders has been resolved.
- **CORE-9710** Modeless dialogs are now reset as expected when a default profile is reinstated.
- **CORE-9700** When translating strings, points or wireframes, decimal values now persist correctly between dialog sessions.
- **CORE-9673** 3D overlay group projections in Plots now react immediately to Project Data or Sheets control bar changes.
- **CORE-9670** The `UNFOLD` wizard now has context-sensitive help.
- **CORE-9653** When importing DXF/DWG points data, the 'Include Hatches' option is no longer displayed.
- **CORE-9642** 3D window axis and scale indicators now hide and show immediately following window configuration changes.
- **CORE-9631** The `INTTEXT` process no longer stalls indefinitely if settings are unexpected.
- **CORE-9622** An issue causing `SELWF` to run more slowly than expected has been resolved.
- **CORE-9618** An issue causing move-points to pick an incorrect target has been resolved.
- **CORE-9615** An issue preventing the import of a Vulcan block model has been resolved.

- **CORE-9613** An issue causing incorrect display of Information Mode output, if the 3D view was orthogonal to the active section, has been resolved.
- **CORE-9595** The Command Toolbar contents are now more easily visible in Dark mode.
- **CORE-9582** The Move String command is now available again on the ribbon.
- **CORE-9562** Crash reports are now registering successfully in Freshdesk.
- **CORE-9537** DMX files input to transform-coordinates now generates output files usable by Datamine Supervisor.
- **CORE-9518** You no longer see an empty message box when trying to save an object to an open DMX file.
- **CORE-9517** The Text Importer is now storing the Delimiter correctly if not a comma.
- **CORE-9509** The Text Importer now reads fixed width values correctly.
- **CORE-9503** "Ignore Clipping" instructions at the overlay level are now applied immediately.
- **CORE-9499** An issue preventing string editing in plan view with >1 exaggeration in Z has been resolved.
- **CORE-9419** The Point Cloud Reconstruction wizard now automatically generates a scenario on entering a new scenario name.
- **CORE-9403** An issue causing the incomplete display of model cells in intersection at some section orientations has been resolved.
- **CORE-9370** An issue causing unexpected data rounding in `TRIFIL` has been resolved.
- **CORE-9357** `WIREFILL` now correctly interprets default plane information, and a `@PLANE` parameter is added to allow behaviour override.
- **CORE-9353** An issue causing `SELWF` to fail when processing retrieval criteria has been resolved.
- **CORE-9348** The select-perimeter command no longer behaves inconsistently when called from a script.
- **CORE-9264** An issue causing incorrect IJK values to be generated via the Text Importer has been resolved.
- **CORE-9236** An issue causing the incorrect alignment of a georeferenced image has been resolved.
- **CORE-9231** An issue preventing the successful reinstatement of a UI profile has been resolved.
- **CORE-9100** When transforming coordinates, and converting EPSG 5533 to WGS 84 and exporting to Earth, Lat/Long columns are no longer inverted.

- **CORE-9012** When transforming geographic coordinates, you can now generate output files on a non-primary drive.
- **CORE-8952** The zoom command now accurately centers the screen if the scene is exaggerated.
- **CORE-8794** An issue causing clipped block model data to be rendered invisible, when the clipping section deviates from the major axes, has been resolved.
- **CORE-8696** An issue causing smooth-gradient (smg) to fail with a large string data file has been resolved.
- **CORE-8632** Importing Deswik wireframe data now imports all available attributes. Previously some were not imported.
- **CORE-8582** An issue causing unexpected view navigation in scenes with vertical (Z) exaggeration has been resolved.
- **CORE-8259** 3D window section clipping is now reapplied correctly when the section corridor width is changed.
- **CORE-8052** An issue causing **SAMPOUT** to be created incorrectly when writing alphanumeric fields has been resolved.
- **CORE-7929** 3D plot overlay labels now react to clipping settings as expected.
- **CORE-6800** Studio now supports the concept of a temporary session-only data attribute.
- **CORE-5413 REBLOCK** no longer fails if there is a space in the file in the project folder.
- **CORE-5270** Unable to cancel (ESC Key) Set Section about a single point
- **CORE-5137** Adding a trailing space to a new project name no longer causes Studio to create 2 project folders.

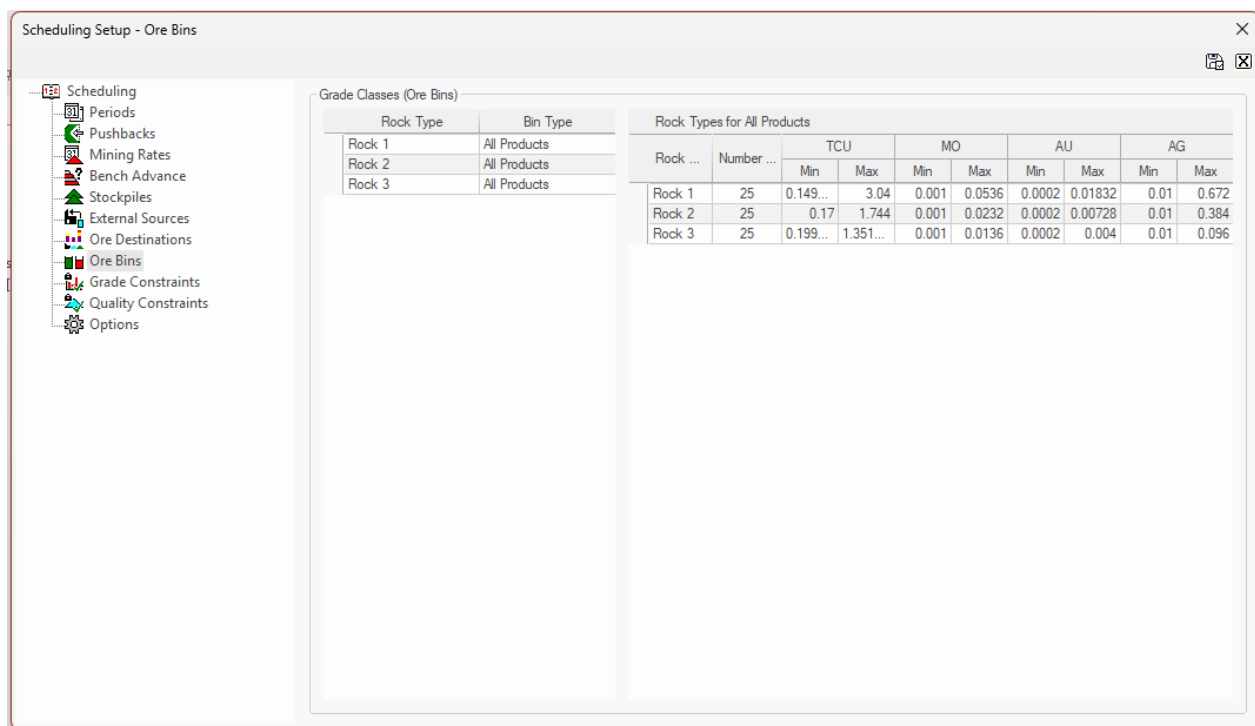
Studio NPVS+ 1.0 Release Notes

Note: Studio NPVS+ does not currently support Multimine projects. This facility will be available in a future version.

Studio NPVS+ 1.0 represents a significant step forward in software for strategic mine planning.

Based on the tried and trusted Studio NPVS technology, Studio NPVS+ is a supercharged evolution with a more powerful and flexible scheduling solver - **Maroma**. Go from resource model to a LOM plan in two days instead of two weeks.

Maroma is a new mixed integer programming solver tailored for mine planning optimization and similar problems. It incorporates the BZ linear programming algorithm, embedding it into a new integer programming framework. This enables Studio NPVS+ to solve very large-scale optimization problems that are unsolvable with conventional solvers, and to solve problems of smaller scale much faster than would be otherwise possible.



The Maroma scheduling console in Studio NPVS+

So what does this mean, in practical terms? For strategic mine planners, **Studio NPVS+** significantly extends the reach of software to solve strategic operation challenges. It does this by:

- Providing a truly optimized schedule combining scheduling, MAO, and MFO at the same time, keeping schedule runs to an absolute minimum. MAO and MFO are no longer required (and are not available in Studio NPVS+).
- Supporting multiple parallel constraints simultaneously, taking full advantage of your processing power.
- Being flexible enough to deal with variable length periods.
- Presenting a simplified workflow coupled with easier and more intuitive controls.

Accessible using the familiar **Optimization** task bar, and replacing the legacy scheduling, MAO and MFO functions, Maroma is designed to be far easier to access and use than legacy functions, and anything else on the market.

A key benefit of the Maroma solver is its ability to solve problems previously out of reach of other engines, and that it takes more parameters into account when providing a solution that meets constraints and capabilities of the mine. For example, Studio NPVS (the predecessor) would often require multiple, iterative runs of the schedule and a (at least) a run of MAO to produce a practical schedule, possible MFO as well.

Studio NPVS+ greatly reduces the number of attempts to reach the final schedule, ready for downstream operation planning and design. It also makes MAO redundant, speeding up the task even further.

So, whilst a single Maroma run may take longer than a single run of the old Scheduler, with **Studio NPVS+** the overall time spent in creating the optimal schedule is greatly reduced, and no longer the domain of experienced users, requiring much less fine-tuning of parameters to solve the most practical schedule to meet input parameters.

Studio NPVS+ is Datamine's platform for future development of strategic planning functionality. It's a great time to start using this game-changing product that really puts you in touch with the long term plan.

Studio NPVS+ Licensing

Studio NPVS+ requires a dedicated license. You cannot activate Studio NPVS+ with a legacy Studio NPVS license.

Contact Datamine to discuss a transition to Studio NPVS+.

Studio NPVS+ Key Benefits

Other than the significant benefit of a more advanced scheduler, Maroma offers the following key advantages over other strategic planning products:

Flexible Stockpiling

The speed achieved by Maroma is partly gained by the way in which it treats *stockpiles*. For each parcel, there is a decision variable for each mining period and each of its possible destinations. If a parcel is mined in a particular period and sent to a stockpile, there is a separate decision variable for each of the later periods that it can be reclaimed and sent to the plant. Maroma defines two kinds of stockpiles:

Warehouse and Mixed.

See [Mixed & Warehouse Modes](#).

Combined Scheduling Solution

Maroma produces a truly optimized schedule combining all capabilities of the previous scheduler plus integrated support for MAO and MFO. All parameters are considered in the same run, eliminating the need for separate parameters for schedule refinement.

Parallelization

Maroma can consider multiple parallel constraints simultaneously, meaning a solution is more considerate of the combination of constraints specified.

Note: As scheduler runs always make use of available cores, there is no need (nor is it possible) to add a schedule run to a batch, as in the predecessor Studio NPVS application. You can still batch process the economic model, ultimate pits and pushbacks in **Studio NPVS+**.

See [Using Multiple Cores for Scheduling](#).

Flexible Periods

Maroma can deal with variable length periods easily.

See [Scheduling Setup: Periods](#).

Accessibility

We've considered not only the power of the scheduling engine, but also how you use it. We've taken a long look at how our users typically engage with strategic planning software and designed a simplified workflow, coupled with an easier to use and more intuitive user interface.

Moving from Studio NPVS to NPVS+?

The transition from Studio NPVS to Studio NPVS+ is simple.

- Studio NPVS+ can open all Studio NPVS and NPV Scheduler projects.
- A new project file with a **.snpvsp** extension is created in your project folder.
- All settings except SCH / MAO are preserved.

Other things to consider:

- Studio NPVS cannot open a Studio NPVS+ project.
- You can run Studio NPVS and Studio NPVS+ on the same machine concurrently (if both licenses are available).
- 3D data generated by Studio NPVS+ can be loaded into any Studio product.
- Studio NPVS+ can read DM and DMX files, but generates DMX format files by default.
- Studio NPVS+ is now Datamine's focus of future development for strategic open pit planning and core system functionality. It's a great time to transition to the new product.



Datamine enables efficient and sustainable mining through the application of world-leading technology and services.

Read the Docs

docs.dataminesoftware.com

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www.dataminesoftware.com/contact

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