GBU Gesellschaft für
Betriebsorganisation und
Unternehmensplanung mbH

Inhaltsverzeichnis

10.14.350 Update | December 2023

Enhancements and Improvements
- Improvements to the new debugger tool – resolved issue with displaying correct values of Attributes in some cases.
- Minor bugs and fixes.

10.14.336 Update | January 2023

Enhancements and Improvements
- Added statement pane to logic editor for quick access to frequently used statements.
- Resolved crashing around deleting Multiunit locations.
- Resolved issues seen with tool tips persisting over other programs.
- Resolved issues around Cranes and priority of bumping.
- Improved error catching for system functions.
- Resolve potential crashing related to deleting shift files.
- Support for Minitab and SixSigma.
- Macro Intellisense now shows ObjectID().

10.13.271 Update | September 2022

Enhancements and Improvements
- Logic Editor inline compiling – user logic will now compile on the fly
  - Logic tool tips for how to use the statements and functions now available.
  - Logic Parameter tool tips added.
  - Logic now has a completion provider to help insure proper construction of logic.
  - Theme aware.
  - Errors as you type are displayed.
  - Logic snippets for If, While, and Do added – If the user types one of the 3 statements and then hits the TAB button twice, the structure of required logic is completed.
- Ctrl + Scroll wheel to increase logic font size added to new Logic Editor
- Initialization and Termination logic buttons were relocated to the Home Ribbon
- The General information window was adjusted
  - Initialization and Termination were moved to the ribbon.
  - Removed Option to adjust color and font size from the dialog

Rebranding
With ProModel and MedModel now being part of the BigBear.AI commercial offerings we have rebranded the software and trademarks in accordance with the Bigbear.AI marketing initiatives. Effected areas you will see are Icons, Splash Screen, Help About, and Getting Started panels.

10.12.224 Update | July 2022

Enhancements and Improvements
- Licensing now uses MS web edge view 2 runtime. This removes dependance of IE.
- Addressed Shift Carryover issues with Load Perm - improvements with recapture in some load perm situations were made to the engine.
- Removed error message about "square root of a negative number" related to conveyors.
- Resolved issue with Distance Traveled() - if the resource unit valued was less than what you entered for the function, you would see a misleading error message.

10.11.197 Update | April 2022

Enhancements and Improvements
- Critical update for issues related to Time Series data collection. We have resolved issues where time series data was being corrupted.

10.11.187 Update | April 2022

Enhancements and Improvements
- Updated Simulation Start Trace Step button to toggle when Trace is checked in the Simulation Options.
- Fixed issue with Model Instructions window from previous model being left open after starting a "New" Model.
- Upgraded the Visual Studio Pre Req for RDB server 32 and 64 bit from 2010 to 2013.
- Fixed issue where in some cases typing a local variable equals a negative local variable ("int a = -s").
- Improved debugger window to display the logic centered in the debug window.

10.10.143 Update | January 2022

Enhancements and Improvements
- Output Viewer COM enhancements:
  - Additional stability improvements for OV COM Automation for Entity Count Time Series
  - OV export register for 64 bit excel.

- Resolved issues seen with opening and closing Logic in Processing and Routing - This resolves a potential issue with closing down the move logic window and then trying to open it back up not working in some cases unless the user were to leave Process and Routing and come back.
- Resolved issue reported where Entities in the grid change size based on layout zoom level
- Resolved issue with Entity graphic isn't traveling through path - in some cases, instead it disappears and appears at the destination.
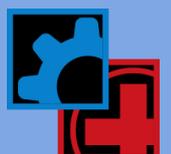
10.9.124 Update | November 2021

Enhancements and Improvements
- Output Viewer COM enhancements:
  - Added ability to export Time Series data for Entity Count using COM.

10.9.112 Update | October 2021

Enhancements and Improvements
- Output Viewer COM enhancements:
  - Decimal separator "," is interpreted as field separator and put the decimals in the next cell.
  - COM Export. VBA was not exporting with None grouping argument: ExportTimeSeries(@"C:\temp\OV Export\<model>.Baseline.rdb", "Day", @"C:\temp\OV Export\<model>.Baseline TimeSeries 2.xlsx", "Baseline", elements, "1", "None");
  - Output Viewer with exporting Time Series of variables where the correct date format was not formatted correctly upon COM export
  - Output Viewer had missing datapoints resolved - upon export through COM there was a missing data point.
- Navigating from Background Graphics issues resolved: This was an issue introduced when models are protected modules access is not available.
- Default Graphics Library is now set to PROMODEL.GLB.
- Upgraded LIBXL for PMServer - this update handles IF functions better with regard to arrays.

10.8.81 Update | August 2021

Enhancements and Improvements
- Added all new student models for new edition of "Simulation Using ProModel"
- Regular bug fixes.

10.7.53 Update | June 2021

Enhancements and Improvements
- Improved issues reported with cranes associated with scheduled resources
- Regular bug fixes

10.6.36 Update | May 2021

Enhancements and Improvements
- Improved Scenario grids
- Improved window section focus
- Improved Subroutine module stability
- Grid Blank Out resolved
- Caret selection stability improvements

- Tabbing stability issue improvements
- Logic tool tips improvements to display more intelligently
- Entity spot graphic in the grid improved view
- Improved Issues with model protection
- Improvements to dynamic plots
- OV viewer issues with resource name length improved
- Regular bug fixes.

NEW: Integration with ProModel AutoCAD® Edition | Requires additional subscription license

ProModel AutoCAD Edition now allows the user to build and simulate directly in AutoCAD 2019, 2020, 2021, and 2022 leveraging Factory Design Utilities.

ProModel AutoCAD Edition allows the user to build directly within AutoCAD:

- Locations
- Conveyors
- Process Flows
- Resource
- Path Networks
- Build Scenarios
- Push the model to ProModel for more advanced modeling capabilities

10.5.2.3726 Update | March 2021

Enhancements and Improvements

- Moved General Information to the Home Ribbon
- Improvements with Write statements
- Routing bounding box enhancements
- Shift Carryover improvements
- Downtime grid stability improvements
- Subroutine stability improvements
- Improved crane stability
- Improvements to Graphic Editor
- ProGraphic stability for 64 bit Excel

10.5.0.3688 Update | December 2020

Enhancements and Improvements

- Background color changes while panning during simulation
- Auto Orientation for Entities graphics while on conveyors
- Entities by default now rotate based on the orientation of the conveyor settings Widthwise (right side of the entity graphic) or lengthwise (top of the entity graphic).
- Runtime errors improvements.
- Regular bug fixes.

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10.4.2.3678 Update | October 2020

Enhancements and Improvements
- Licensing improvements from COM
- Resolved issues with SaveAs related to COM
- Improvements to COM command abilities
- Statistic collection stability enhancements
- Scenario manager display issues resolved
- Resolved Model Print text issues.
- Improvements regarding Save and SaveAs related to ProModel.INI
- Licensing Stability improvements
- Regular bug fixes.

ProModel Autodesk® Edition
- ProModel's Autodesk® Edition, now allows for users to mark conveyor factory assets as conveyor that can be used as part of the Process Flow.
- Improved granularity of DWG imported to the ProModel Model. This provides extremely high resolution along with precise placement of conveyor and location assets.

10.4.0.3594 Update | July 2020

Enhancements

System Functions
- DistanceTraveled() - Returns the distance traveled of a resource; and its unit/s.

ProModel Autodesk® Edition
- ProModel's Autodesk® Edition, now allows the user to start building your model right inside of AutoCAD® Architecture or Mechanical. Users can now mark assets as locations, assign entities and process flows within the DWG file and open the model to scale in ProModel.
- Changes to the DWG can be performed, move assets, walls add additional CAD elements; opening the drawing in ProModel will reflect those changes.

Bug Fixes and Improvements
- Save As improvements.
- Dynamic Plot enhancements.
- Tank creation improvements.
- Conveyor stability improvements.
- Graphic Editor stability improvements.
- Additional language support with licensing.
- Support for Minitab 19.
- Improvements with Model Collaborator opening the model after saving.
- Regular bug fixes.
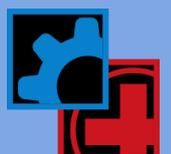
10.3.1.3536 Update | April 2020

Bug Fixes and Improvements
- Improved Error logging
- Improved array import stability
- Enhancements to licensing stability
- Resolved ability to disable shift in right-click menu
- Stability with hotkey improved.

10.3.0.3502 Update | February 2020

Enhancements

Licensing
All customers that are current on Maintenance and Support contracts will simply install the software on their machine and create a user account which they will then log in with. The new licensing will allow the following:

- Improve the ability to move from machine to machine without termination of license.
- Give ability to check out a license and go offline
- Enhance network license capability - No license software or hardware is now required to reside or be maintained on a server.

Office 64 bit support
- Office 32 bit and 64 bit are now supported for import/export, as well as ActiveX.

Bug Fixes and Improvements
- Shift Carryover improvements
- Resolved issues with scenario manager
- Array export sheet naming issues
- Regular bug fixes

10.2 Update SP3 | ProModel 2018 SP3 | 10.2.0.3428 | October 2019

Enhancements

Entity Spot Enhancements
- Entity Spots now will resize based on the zoom percent of the model. Drastically improving scaling ability.

Background Graphic to Scale
- With the Background Graphic to Scale option in the Insert Ribbon, you can select a background image, including DWG (requires AutoCAD® to be installed on your machine).
- The image can be zoomed in and out, and panned to find the correct section of the model that you want to place markers on to indicate distance and grid units desired. The image will be placed in the model as the background scaled accordingly to your specifications.

Unique Graphic Libraries
- Each model will now have the ability to have a unique Graphic Library located in the same directory as the model is stored.
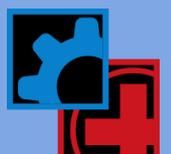
ProModel Autodesk® Edition
- ProModel, now has an edition which allows users to import Autodesk® Assets into your model, which allows you to use the assets to build your visual process within ProModel. You can then export those assets from ProModel to AutoCAD® and/or Inventor®.

Bug Fixes and Improvements
- Additional grid stability improvements
- Macro stability improvements
- Enhancements to Array properties
- Improvements to Contextual Help
- Regular bug fixes

10.1 Update SP2 | ProModel 2018 SP2 | 10.1.2.3366 | August 2019

Enhancements

System Functions
- ScenarioName() - Returns current scenario name when the function is invoked in logic; providing ability for more custom reporting.
- SysClock() - Returns the System Date and Time when the function is invoked in logic.

Bug Fixes and Improvements
- Resolved logic window stability
- Shift carryover improvements
- Auto Update improvements.
- Grid stability improvements
- File save stability improvements
- Regular bug fixes

10.0 Update SP1 | ProModel 2018 SP1 | 10.0.1.3260 | May 2019

Enhancements
- Macros usable in Array import/export fields. Macros can replace File, Sheet, and Cells; users can now experiment with import and exported arrays by changing the macro scenario parameters.

Bug Fixes and Improvements
- Resolved logic window issues with compiling
- Subroutine improvements and stability
- Shift carryover improvements
- Regular bug fixes

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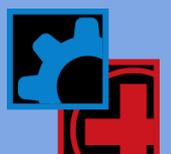
10.0 Update | ProModel 2018 | 10.0.0.3218 | December 2017

Features

Ribbon UI
- The traditional menus and toolbars have been replaced with a fluent Ribbon bar like the one you find in Microsoft Office applications. The new Ribbon makes it easier to access the various modules and features within the application and better facilitate touch screen and high-resolution devices.

Docking Windows
- Windows are now docked within the new workspace interface, which means that when you adjust the size of one window, the others automatically resize accordingly. Say goodbye to overlapping windows. You can also stack windows on top of each other and quickly access them from their respective tab thus saving valuable view space.

Right-Click Context Menus
- Context menus are available in every table and accessible by right-clicking in any field within that table. For example, you will be able to quickly delete, insert or move a record with a simple right-click of the mouse. The right-click context menus in Background graphics are improved and provide new access to editing other modeling elements such as locations and variables.

Quick Access Toolbar
- Add highly used ribbon buttons to the Quick Access toolbar (located in the upper left corner of the application) for fast and easy access to the program functionality they provide.

Window Persistence
- Tired of leaving a module only to return and have to reopen its sub-windows? In this new release, all windows persist! If you leave one module for another (e.g. to create a new global variable), when you return to that module, all its previously open windows will be reopened.

Single Background Graphics Mode
- No more discussion or decision on whether to go to Front of Grid or Behind Grid mode when creating background graphics. You simply just go to Background Graphics for editing images. Create shapes, add text and import pictures through the new Insert ribbon.

Recent Model List
- The list of recently opened models in the File application menu has been expanded from five to up to 19. Pin your favorite model files to the top of the list and hover over any model name to reveal the full path to the model.

Enhancements
- New and updated hotkeys for fast access to key modules and application features.
- Super Tooltips appear revealing hotkeys and help snippets when hovering over ribbon buttons, and selecting F1 opens online context help for the given button.
- Variable labels can be quickly created using the hotkey Ctrl+T and then clicking on the Layout.
- SimRunner Input Factors have been expanded beyond the previous limit of 500.
- Simultaneously run an optimization in SimRunner and continue editing your model.
- Conveniently cycle through all open windows using Ctrl+Tab.
- Name-Index Numbers are displayed in right-click context menus.
- Selecting Continuous Trace now opens a window and begins tracing (like Step Trace Events).
- When exporting your model to a text file, you are now prompted whether or not to open it right away.

Fixes
- In some cases, a location was not able to go down for a Usage downtime if an earlier Usage downtime had preempted one of the location's previous Shift downtimes at some point.

Includes Output Viewer 4.5.3.1260 containing the following fixes:

- "Failed to Export" error appeared when attempting to export Time Series data to Excel.

9.3 Update SP1 | ProModel 2016 SP1 | 9.3.1.2081 | November 2016

Features

Resource Distance Traveled Statistics

- The distance your resources travel over the course of a simulation is now collected and reported in Output Viewer. It is displayed as Total Distance Traveled in Resource Summary reports and tracks the overall travel distance for individual units.

In-Process Resource Utilization Statistics

- Access the utilization of your resources at any time during simulation. Using the newly modified PercentUtil() function, you can find out the utilization of individual units of a resource or a summary of all units of a given resource type. This allows you to make dynamic logical decisions or write out custom statistics to a CSV or Excel file.

Identify Captured Resource Units

- In addition to determining which resource you've captured, you can now find out the specific unit of that resource as well. With the new OwnedResourceUnit() function, you can get the unit number of any resource owned by an entity. This is useful when collecting custom resource statistics at the individual unit level.

Quickly Access Element Definitions

- Have you ever been writing or viewing logic, and wanted to quickly see the definition (or details) of a specific subroutine, array, location, etc.? Well, now you can! Simply highlight that model element in logic, press the F12 key, and you will be taken to that element's specific record in its edit table. For example, if you highlight a subroutine name in logic and press F12, you will be taken to its exact record in the Subroutine table.

Programmatic Export of Statistics

- The statistical results of your simulation runs can be programmatically accessed through a new API to Output Viewer. You can get the raw data, down to the individual replication, or have it summarized or grouped (just like in Output Viewer) prior to accessing it. Either way, you can access your results, for example to load into Excel or a database, for analysis outside of Output Viewer.

Enhancements

- When exporting Array data at the end of simulation, the replication number is no longer written out in the Excel Sheet name if "Export after final replication only" is checked.
- Minitab version 17.3 is now supported.

Fixes

- After saving and closing a model, upon reopening it the Build menu would sometimes be disabled and prevent access to the model elements needed to build the model.
- Stat::Fit was crashing when attempting to execute an AutoFit for some customers.
- In some cases, during installation, the Setup would fail saying that Sentinel drivers could not install.
- Intellisense was not coming up when attempting to specify the 2nd dimension of an array being assigned to a local variable.
- ProGraphic.xls was not creating a graphics library.
- Output Viewer would open at the end of simulation, along with Minitab, even though it was unchecked in Simulation Options.
- If Process Simulator 2016 was installed before ProModel 2016, the product licenses would be invalid.
- 3D Animator would throw an error when attempting to create a package file.
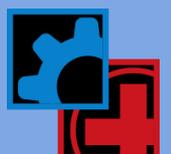
9.3 Update | ProModel 2016 | 9.3.0.2051 | June 2016

Features

Simplified Single Click Installation and Licensing
- Enter you Serial Number and Email address and click Install. Nothing more to do as the software is installed and licensed without further action.

Intellisense Optional
- If you like to enter your model logic freely, in your own format and without prompts, you can turn off the Intellisense feature and write your logic however you like.

Shift Carryover and Grouped Entities
- Resources that entities capture prior to grouping, and any that the grouped entity subsequently captures, can be pulled off shift and replenished through this shift carryover capability. The grouped entity will only resume processing once all resources have been replaced.

Failed Arrival Statistics for Ordered Entities
- Previously, only explicitly defined entity Arrivals automatically collected stats when failing to arrive (due to a lack of available capacity). Now, you can individually control which entity-location Order statement reports when it fails to arrive at its ordered location.

Fixes
- Performing a search within a Logic window would sometimes cause the application to crash.
- The font and font size for the Trace text were small and difficult to read.
- Entering some unique text in the Notes window of the Variables table, would cause the application to crash.
- Using the Expression Builder to enter a value in the Variation or Offset field in the First Time dialog of the Arrivals table, would crash the application after the dialog was closed.
- Text in an "Unable to simulate model" error message was being cut off.

Includes Output Viewer 4.5.1.1226 containing the following fixes:
- Negative x axis values were being displayed in Time Plot charts for simulation results with a Warmup period and Grouping set to None for the chart.

9.2 Update SP3 | ProModel 2014 SP3 | 9.2.2.1900 | March 2016

Features

Microsoft Compatibility
This release supports Windows 10 and Office 2016 (32bit).

Fixes
- Various user interface elements should appear better under different Windows DPI settings.
- GetResRate function was not being allowed in Subroutine Logic. The function is allowed in Operation and Move logic so it should only be checked when in context from where the subroutine is called.
- A crash would occur in a specific situation with cranes in a model.
- The first record listed in the External Files table would be switched to be a Shift type when the model was simulated.
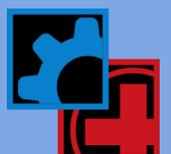
Includes Output Viewer 4.5.1.1225 containing the following fixes:

- "Index was out of range" error occurred when Grouping of None was selected for a Location State report.
- In Spanish and Portuguese versions, no stats were showing up in the Entity, Resource and Location Cost tables.
- In Spanish and Portuguese versions, Location Summary table values were being converted improperly to another time unit.
- The x axis discrete labels on a Histogram chart were displaying negative values when the Bar Width was defined with a number less than 1.
- The decimal precision of values displayed for some bars in a Histogram would exceed the user defined precision when the Bar Width was set to less than 0.17.

9.2 Update SP2 | ProModel 2014 SP2 | 9.2.0.1860 | January 2015

Features

SharePoint Connection

- Collaborating with your team while maintaining the integrity of the data driving the model just got easier. You can now store your external files in SharePoint 2010 or 2013 and simply reference them in your models. This includes Excel files used in Array Import and Export, Entity Location, and External Arrival files and text or CSV files used in Read and Write statements. SharePoint allows you to control who on your team has read or write access to the data and ensures the most up-to-date data set no matter where your models are simulated.

Multi-View Runner

- Tired of switching between views of your model during simulation to catch glimpses of activity in various sections? Why not be able to always keep your dashboard of variables in view while following an entity through the system? Well, now you can! Multi-View Runner allows you to configure up to 4 different views per monitor and designate which one will be displayed in each view window. This is also great for presentations in a group setting where you can simultaneously highlight different portions of your model by zooming in and displaying each on separate monitors.

Fixes

- Windows system memory was not being freed properly for models that contained EMF image files, which would continue to increase each time the model was loaded.
- A crash would occur after a shift carryover was initiated in a unique case where multiple units of a resource were re-captured and the entity continued to the next statement in logic when it should have waited for additional resources to be captured prior to moving on.
- Initiating a Save As on models that contained a period "." in the name and also output results (with a .pmov), would cause Output Viewer to crash upon attempting to view the results of the new model.
- Running an optimization in SimRunner on a model that had Model Instructions defined would cause the Model Instructions window to open at the start of each new experiment.
- Compiling a macro in a specific model caused the compiler to get stuck in an infinite loop.
- Upgrading an existing installation of the program to a new version, in some cases, would fail saying that it needed SQL Native Client x64 prerequisite installed.

9.1 Update SP1 | ProModel 2014 SP1 | 9.1.1.1658 | September 2014

Fixes

- Auto-update was not checking for new updates to the software.
- An array would fail to import if a prior array had already imported from the same Excel file and it was set to Keep the data between replications whereas the current array was set to Clear.
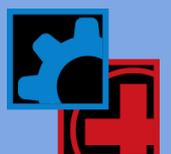
- In some cases, exporting array data to Excel was not working.
- Not all lines of logic in a Logic window would print.
- Model merge was producing an error and failing to merge.
- Output path in Simulation Options was not retaining any path entered.
- If the first array was disabled from importing from a file, any subsequent arrays importing from that same file would not import.
- In the Portuguese version, observation-based variables were being reported as time weighted in results.
- Context section of Debug window was overlapping the Logic section if the computer font settings were set to higher than 100%.
- "Internal Error: Resource state mismatched" error was occurring for a model with multiple cranes in the same network.
- In some cases the Debug window was not showing the line of code being highlighted (it was scrolled out of view).
- Importing a WMF image as a background graphic or into a graphics library would make the transparency areas of the image white.

Includes Output Viewer 4.5.1.1206 containing the following enhancements and fixes:
- On a Turkish Windows OS, statistics for entities and locations were not displaying in Output Viewer.
- Entity Cost table was incorrectly labeled Entity States.

9.1 Update | ProModel 2014 | 9.1.0.1639 | June 2014

Features

New Logic Windows
- New Logic Windows have been implemented to help you build your logic faster, easily verify it and more clearly understand it. Color has been added to visually distinguish your statements and functions, comments, and strings. You can even change the colors and font of the logic windows to customize them as you like. To encourage good formatting, auto-indentation for blocks of logic and begin-end brackets has been added. Every line of logic is numbered to quickly locate areas of your code during verification and troubleshooting. These new capabilities help better visualize your logic while Intellisense and the Syntax Guide help you build it faster.

Intellisense
- Intellisense is what it sounds like; an intelligent list of all logic elements that pops up as you define your logic so you can quickly write it. Isn't that what you thought it was? ☺ This list of elements appears as you type and includes all the statements, functions, locations, entities, resources, variables, attributes, arrays, distributions, etc… basically everything you need to write logic. And the beautiful thing is, you don't have to remember exact names. As you start typing, the list essentially filters and highlights the element name that begins with the characters you typed. If the highlighted element is the one you want, select tab, space, or enter and that name will be committed to your logic. Fast and easy!

Syntax Guide
- After a statement or function is added to your logic, a tooltip will appear displaying the syntax for the statement or function with all its possible options. No need to remember what is required or take time to look it up in Help; the Syntax Guide will appear and show you. This saves you time and keeps you focused on your logic.

Debug Window Expanded View
- Along with new Logic windows, the Debug window has been improved to show more than three lines of logic! As you step from line to line, you can scroll and see the entire window of logic and can anticipate where it will go next and understand where it has come from.

Probability Field Flexibility
- Varying probabilities for rework, line balancing, patient flow, etc. is now easier than ever to setup and include in scenario analysis. Simply add macros in your routing probability fields and define them as scenario parameters! Also, initialize and manage your routing probabilities through an array import.

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New Resource Search Type
- A new way to choose how entities capture resource units is by First Available. This search type gives priority to units 1, 2, 3, etc. in that order, which ensures that only the maximum number of units needed at any one point during the simulation is all that is ever utilized. This gives you the ability to run yourmodel in a pseudo unconstrained scenario and determine exactly how many units you need to complete the work defined in your system.

Model Instructions
- Document your models, provide instructions on how to run them, and even explain what the results mean through utilizing images and links to online content. All this can be included in a rich text formatted (RTF) document and added as Model Instructions. Whenever your model is opened, the Model Instructions window will appear, displaying the contents of your document. From this window, scenarios can be simulated or the window can be dismissed allowing the user to explore model.

Getting Started Panel
- With the new Getting Started panel, you have immediate access to demo models, a quickstart video, training resources, online help, the ProModel Support team, and a whole host of How To videos. It's easy to find since it will be the first thing you see when you start up the application.

New Demo Models
- New demo models have been added and some of our previous demos have been refreshed to include new graphic libraries, model instructions, and updated logic. View the list of our demo models by clicking on the Demos button in the Getting Started panel.

New Graphic Libraries
- The ProModel and MedModel default graphic libraries have been updated with enhanced metafile (EMF) images. These scale nicely giving you crisp, clear images no matter what zoom level you are at. All the demo models have been recreated with EMF images as well.

How To Videos
- Our Support team has been hard at work creating short How To videos to aid our customers in modeling techniques and other useful tips about how to use our products. We have brought all these videos together and organized them into one place for you to search and access. Simply click on the How To Videos button in the Getting Started panel to access them.

Now in Spanish
- ProModel has been translated into the Spanish language. First, run the installation in the Spanish language in order to ensure all supporting files are included. And then, if your Windows language settings are in Spanish, ProModel will also run in Spanish.

Enhancements
- All supported graphic formats can now be rotated and flipped.
- Organize logic using the new #region and #endregion statements, which allow you to collapse whole sections of logic.
- The Views panel can be set to display at the start of simulation by checking the option in the Simulation Options dialog.
- Array import using Excel has been optimized to populate data faster when the same file is used to initialize several arrays.
- Strings written out to text files using Write and Writeline statements now have the quotes removed.

Fixes
- Changing an entity spot to an alignment spot in the Graphic Editor while the layout was zoomed other than 100% would cause the alignment spot to be drawn in a different spot.
- After adding an entity spot to a graphic in the Graphic Editor, you could only move the entity once.
- Fixed a couple issues related to shift carryover, one of which prevented a resource from being freed in a Move With Then Free statement if that resource was preempted to go on a break before arriving to fulfill a move assignment from another resource that had been preempted for shift carryover.
- If an entity was renamed to an entity that had no graphic defined, the application would crash if the renamed entity then attempted to move with a resource.
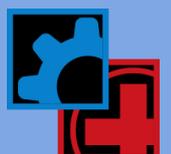
- Error flagging an undefined entity when reading an external arrival file now lists the row number in the file where the invalid entity is located.
- In some cases, the application would crash if the array import details did not specify an end cell.
- The move time was being ignored in the statement "Move With <resource> For <time> Then Free" if the resource was already owned by the entity.
- If a file was open in Excel when the model attempted to export data to it at the end of the simulation, no data would be exported and the user would not be alerted. We now display a message.
- A crash would occur if a tank location was created but the submodel was not merged into the model.
- The Autosave interval in Tools | Options dialog was not being saved if larger than 60.
- Number precision was being lost when assigning values from one expression array to another.
- Simulation terminated prematurely after the first entity in an arrival immediately exited the system, even though that arrival event had additional entities to process.
- A conveyor with limited capacity was incorrectly accumulating %Wait statistics when an entity was blocked from moving to the next conveyor because the load area was not cleared.
- A crash was occurring during model translation when attempting to catch an error using an attribute in an activated subroutine.
- Fixed a shift carryover issue with dynamic resources originally captured with a Jointly Get statement that was causing a "Usage Downtime miscarried! Module simdown.cpp line 421" error.
- A crash was occurring during simulation at a multi-unit location due to available capacity not being properly kept track of between entities en route and those actually at the multi-unit location.
- Importing data into an array from a SQL 2012 database was not working.
- A resource transporting an entity, both without a graphic defined, in some cases was causing the application to crash or display "CreateCompatibleBitmap" and "SelectObject" errors.
- Adding the % character in the Baseline scenario name would cause the application to crash when simulation was initiated.
- Warmup length was not changing between scenario runs if a macro was entered and used as a scenario parameter.
- "Failed to import data" error occurred when importing data into an array with exactly 700 columns of data.
- PMOV and PMCAL files would become corrupted when selecting "No" to overwrite an existing file during Model Package installation.
- "Internal Error: Wait completion event not found" due to an issue with a shift carryover.
- A runtime error occurred if the frequency of a downtime was less than or equal to zero.
- Some resources that took over work from other resources (due to a shift carryover), in some cases would not return to their work after being preempted away for a break or other downtime.
- A resource was not being properly freed and so the entity would produce a "resource still in use" error upon exiting. This would occur when completing its work after the resource was preempted away and used in another resource's downtime logic.
- A "resource can't be freed" error would occur is a specific situation related to shift carryover and other downtimes waiting to occur.
- An "Internal Error: Preempted event type mismatched" error occurred when an entity routed to a location with a preemptive priority (and preempted the location) while at the same time a shift carryover attempted to interrupt the resource carrying the entity.
- Model crashed while stepping through the Trace window due to an invalid internal unit reference of a resource being used at another resource's downtime.
- Opening a model with external files in the Silver Runtime edition would sometimes give an error stating that an external file was changed.

Includes Output Viewer 4.5.0.1203 containing the following enhancements and fixes:

- When a Report tab is created by adding a new chart, the name of the Report tab is based on the chart type added.
- A Cumulative Line option has been added to Histogram charts.
- Units in a Resource Usage chart were not being updated to select additional units introduced in new scenarios. Existing PMOV files must be resaved for these changes to take effect.
- New options for Tables in Output Viewer allow you to change the font and font size, bold the column headers, and center justify the columns of data.

- Log statement labels containing a dash "-" in the name would truncate the characters to the right of the dash.
- The title of a Location State time series chart was displaying the incorrect replication number.
- "ChartFX Expired" message was displayed in place of charts.

8.6 Update SP4 | ProModel 2011 SP4 | 8.6.2.1036 | November 2012

Enhancements

Upload to ProModel Enterprise

- ProModel Enterprise is our new cloud-based enterprise application. Upload ProModel, MedModel, or ServiceModel models and then create and run scenarios in ProModel Enterprise. Scenarios are run simultaneously while the results from all models can be compared and analyzed in one central location in Reports. Easily create report dashboards specific to your business KPIs and share them with others. There is nothing to install as ProModel Enterprise is accessed from anywhere through an internet browser. It can be hosted on premise or in the cloud and serves as a single unifying environment for predictive analytic collaboration across the organization.

Improvement in resource requirements analysis

- We now allow the number of units specified in a Use request to exceed the total number of units defined for a given resource. This allows you to create scenarios with fewer resources than a task or activity requires, thus effectively extending the overall time a task takes to complete. Compare these with other scenarios of varying resource quantities and analyze the effect on the overall process initiatives.

Compatible with Windows 8

- This release has been tested and verified to install and run on the Microsoft Windows 8 operating system.

Fixes

- The Find and the Find and Replace dialogs were launching the wrong help topic.
- The Help button in the Print Layout dialog would not open the help topic.
- Attempting to cancel a change to the font for a variable counter or location label would still apply the changes.
- Trying to create a model package with the Protect Model Data option checked would not work if the Windows UAC was turned on.
- "Internal Error: Resource type mismatched in simlogic:::Graphic() module. \simlogic.cpp Line 1914" would occur if a static resource (i.e. no path network defined) with three units only had two Layout Positions defined (i.e. Resource Points) and a Graphic statement was called to change the graphic of the third unit.
- A combination of capturing a resource through a GET, capturing two units of another resource in a USE, and then all resources being preempted for shift carryover could produce a unique situation where a shift carryover would not be fulfilled.
- A crash would happen if two resources owned by an entity were initially unavailable to be preempted for shift carryover and then were later preempted for shift carryover once the entity was in a preemptable state. If only one resource resumed one of the shift carryover preemptions, the crash would occur.
- A crash could potentially happen in a unique situation where multiple resources were captured through first a GET and then a USE, where some of the resources were preempted away while others were preempted for shift carryover and still other resources were not yet captured.
- A Microsoft Operating System update for Daylight Saving Time (see Knowledge Base article KB2633952) prevented some models from running in the Silver Runtime version. An error would occur stating that an external file was modified and so the model cannot be simulated.
- Simulation results were not being written out to the path specified in the Simulation Options dialog.
- If resources were transferred to another entity through an Ungroup or a Create Take statement, a problem could occur later for those resources when executing a shift carryover.

- Scenario manager was not accepting numbers consistently like the rest of the ProModel application. Specifically, periods as decimals in real numbers.
- Tanks were still filling and emptying even though they were on a downtime, if the tanks were designated as the Tank_To tank in tank transfer functions.
- In a certain situation while executing a shift carryover, a "Wait completion event not found" error would occur.
- A static resource (one not assigned to a path network) with no graphic selected for it would cause a crash at simulation time if that resource had a Resource Point defined.

Includes Output Viewer 4.3.2.952 containing the following fixes:

- Histogram bar width and Statistics options were not being saved in the Portuguese version.
- Percentile fields for Histograms were not showing up when viewing in Portuguese.
- Some strings in the ribbon were coming up in English when viewing in Portuguese.
- Entity states data was showing up blank if some of the entity types did not exit during simulation.
- Saving a chart with a blank x-axis title caused the application to crash when opening Output Viewer.
- A "Failed to Export error: Object reference not set to an instance of an object" error occurred in some cases when exporting chart data to Excel.
- Changing the model default time units caused Entity summary columns to not display.
- If the pmov file somehow got corrupted it could cause the application to crash when attempting to read the time series results file.

8.6 Update SP3 | ProModel 2011 SP3 | 8.6.1.996 | April 2012

Enhancements

- Shift carryover properly executes for resources captured by entities in the middle of unfulfilled logic delay statements such as Wait Until, Accum, Combine, Group, Join, Load, and Match.

Fixes

- In the Brazil time zone, a change from Standard to Daylight Saving Time would cause the CalHour() function to be off by an hour for a 24 hour period.
- Resources scheduled to change shifts during the hour of a Daylight Saving Time change were off by one hour; they either produced an hour gap or overlapped by an hour.
- Resources scheduled to take a break during the hour change from Standard to Daylight Saving Time (DST) were not coming back online again.
- Scheduling a User Pause that crosses a DST change would sometimes cause the pause to occur an hour before or after the specified time.
- Breaks scheduled to occur during the "dead" hour of DST (i.e. when changing from Standard to DST, this is the time from 2 am to 3 am that is skipped) are now ignored.
- Simulation Options dialog was automatically adjusting the Calendar Date start and end times if one or more were set during the "dead" hour of DST. Now you are prompted to change it.
- Simulation Options dialog would not remain open if an error message occurred (due to an invalid entry) after clicking OK or Run.
- A resource was incorrectly being freed after a Move With (and keep) if the original resource was preempted away for a shift carryover while traveling to fulfill the Move With.
- Entities moving on a queue or conveyor with captured resources would cause a crash if the resources were attempted to be preempted away for shift carryover.
- An entity that requested 2 or more units of the same resource and was not able to capture all units, would later cause a crash when capturing the other units if the originally captured units had been preempted away for shift carryover.
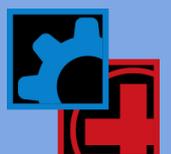
- A crash occurred in a unique situation where multiple units of the same resource were preempted away for Shift Carryover at the same time and other units were not immediately available to fulfill the shift carryover.
- The caption in the Logic Builder for an Expression was displaying "??????".
- The caption for the message asking you if you want to copy saved reports and results during a Save As, has been changed from a warning to more informative text.
- If you opened Scenario Manager when no scenarios existed and clicked the Ok button rather than Cancel, you were prompted that scenario results would be deleted (even though none existed).
- A scenario wouldn't appear to delete if no parameters existed.
- Attempting to delete a scenario before a model is saved for the first time could lead to an application failure.

Includes Output Viewer 4.3.1.931 containing the following fixes:

- When a resource utilization chart was grouped by scenario, the resource units didn't match the scenario displayed in the chart.
- Sorting of data in charts containing scenarios with varying numbers of resource units, was not taking into account that some scenarios may not have data for a particular unit.
- Time Plot time series charts were showing incorrect x-axis label times when the model had a warmup period and the data was being summarized.
- The Entity Count time series chart was showing incorrect weekly x-axis labels when the model had a warmup period and the data was being summarized with a weekly interval.
- The Entity State chart would show the states adding up to less than 100% if any of the replications had zero exits for the selected entity type.

8.6 Update SP2 | ProModel 2011 SP2 | 8.6.0.963 | December 2011

Enhancements

- Resource Shift Carryover extended to Use statement - this powerful capability, introduced in the last release, has been expanded to include resources captured with a Use statement. It enables you to carryover work started by a resource on one shift and continue it with another unit on the next shift. For example, hospitals operating 24 hours a day can transfer patient care from one shift to the next.
- Output report views and results copied with new model - when saving an existing model as a different name, if that model also has saved Output Viewer report views, you will be prompted and given the choice to copy the saved report views and any results files with the new model name.
- Charts linked in Output Viewer report views - charts are now automatically linked together if they exist in the same report tab. This means that when you add or remove a scenario from one chart, all other charts will have that scenario added or removed as well. Other Filter Options can also be linked and, if desired, charts can be unlinked so that changes only apply to the selected chart.
- Output Viewer Items sorted in original model order - Filter Options now show all elements in the Items list in the order they appear in the model tables. This is now the default Item sort, however, the list can also be sorted alphabetically.
- Scenario differences highlighted - in the Scenario Manager, you can visually identify which parameter values are different than the baseline values. Any differences are changed to a blue color and given a bold emphasis.
- Use Google SketchUp 3D graphics with 3D Animator! - Google SketchUp has thousands of free 3D graphics. We've created a plug-in for SketchUp that will allow you to properly export its graphics to 3D Animator.
- Move a chart and create a new Report - if you want to move an existing chart into its own new Report tab, simply drag the chart up to the plus "+" tab and drop it there. A new Report tab will automatically be created with your chart in the view.
- External Arrival and Entity-Location files now support the .xlsm and .xlsb Excel file formats.
- After installing a 3D Animator package file, you are now prompted to load the setup file.
- Output Viewer and 3D Animator now have context-sensitive online help.
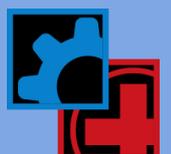
Fixes

- Location status lights would show as idle after panning during simulation.
- Resources captured with a Get or Jointly Get that already arrived at the location would not initiate a shift carryover if another one of the resources was still en route and was preempted away to go off shift.
- Incorrect reporting of %Waiting statistics for an entity if one of multiple resources captured by an entity with a USE statement was preempted during the USE.
- Output results were not being deleted when a scenario was renamed or deleted unless an Output Viewer reports (.pmov) file existed for the model.
- The Conveyor Only properties of an entity would take on the properties of a previous entity you were editing.
- A "No scenarios defined" error was encountered if attempting to simulate scenarios even though the baseline scenario existed.
- The error "Unknown class. Missing type qualifier" was encountered when opening 3D Animator if a resource graphic was deleted in the model and then synchronized with an existing setup file (.sup).
- The Search Next (F3) functionality in the Expression Search would stop working after encountering an instance of the word in the list of locations or resources in Shift Assignments.
- An entity being accumulated at a location was starting a new "accum" group (instead of associating with an existing accum group) if it was routed to another processing record for the same location.
- Context-sensitive F1 help was not invoking the online help for Initialization and Termination logic.
- Online help was not coming up for Scenario Manager and Six Sigma window help buttons for MedModel and ServiceModel products.
- The online help error "404 - File or directory not found" was encountered when pressing F1 with the Operation Logic window active.
- A resource preempted away from its own downtime, would cause the application to crash if it attempted to capture another resource after having resumed its downtime.
- In some models where locations had no associated graphics, the application would crash when moving all graphics at once.
- In a specific case where a location Entry downtime also captured resources, the application would crash if attempting to take that same location off shift.
- On Windows XP, SimRunner would cause the application to terminate if the experiments or replications produced large amounts of output data.
- A "Wait completion event not found" error was occurring when a resource attempted to execute a downtime. This was the result of multiple resources being captured by an entity and some of its resources initiating a shift carryover while others were preempted to go off shift.
- A shift carryover resource was not properly being freed if the resource it replaced on the previous shift was preempted to go off shift as it was traveling to the entity that requested it.
- The animation in 3D Animator would incorrectly resume after clicking OK to a Pause event that contained a message.
- Other windows applications would move in front of 3D Animator after browsing and selecting an external file (e.g. a movie file).
- Attempting to flood fill copy the <default> font for Labels in 3D Animator wasn't working.
- Double-clicking a .sup file was not loading the setup file into 3D Animator if it was already open.
- Copying and pasting a row of data for Background Graphics in 3D Animator was not pasting the scale and rotation fields.
- Entering a space in some fields of a 3D Animator table would clear out the subsequent values in that row of the table.
- Attempting to save a 3D Animator setup file into a non-write accessible directory, caused an unhandled exception.
- Changed the 3D Animator Navigation option label from "strafe" to "move".
- Some actions in 3D Animator would require you to select undo twice in order to undo a change.
- In 3D Animator, pausing an animation and then attempting to click on the layout would cause the application to freeze.
- Flood fill copy was not working for the Graphic filename column for the tables in the Objects section in 3D Animator. It was attempting to give the files unique names instead of copying.

Includes Output Viewer 4.3.0.924 containing the following fixes:

- Output results with a long warmup period (e.g. 5 months) were plotting negative time values.
- The ribbon wasn't displaying properly if the Windows 7 font text was anything other than 100%.

- For Table charts, Time Unit choices in the Options section of the Filter Options panel now only display if they are applicable to the table.
- Double-clicking on an RDB file that is compressed in a ZIP file would produce an error when it attempted to open in Output Viewer.
- When adding a table, if only one scenario is selected in the Filter Options, then the table is displayed with the scenario column hidden.
- Sorting a table by clicking a column header and then changing the time units caused an exception.
- Double-clicking the splitter on the Filter Options panel will collapse and expand the panel.

8.5 Update SP1 | ProModel 2011 SP1 | 8.5.1.858 | June 2011

Fixes

- Editing a parameter value in Scenario Manager and then scrolling right or left before committing the change would put the Scenario Manager in a state where you couldn't commit the change.
- Array Import and Export dialog help now takes you directly their respective help topics.
- A "404 - File or directory not found" error for online help was encountered when clicking the help button in the Parameter Definitions dialog.
- Scenario parameters with names that were included in other scenario parameter names (e.g. "Cycle time Loc1" and "Cycle time Loc10") would push changes to both parameters. Sometimes this appeared as if parameter values were being overwritten or not saved.
- Renaming scenarios in the Scenario Manager was not removing the scenario results nor updating the scenario names for saved reports in Output Viewer.
- Changing the Run Name in Simulation Options was not updating the name for saved reports in Output Viewer.
- A model built prior to version 2011 that had Model Parameters defined with any of the parameter values set to the default macro text, would crash the application when opening the Scenario Manager.
- Saving a model as version 7.0 or 8.0 would throw an "Invalid file format" error when attempting to open the saved model in version 7.5 or 2010.
- In certain models, executing a search was not finding the search text and a search and replace would crash the application.
- On a 32bit OS, going to the entities module when it contains no entities and then clicking on the Layout would crash the application.

8.5 Update | ProModel 2011 | 8.5.0.847 | May 2011

Features

Resource Shift Carryover

- This powerful new capability allows you to carryover work started by a resource on one shift and continue it with another unit of that resource on the next. For example, manufacturing facilities that have extended task times or complex processes spanning multiple shifts or days can easily pass work from the first to the second shift. Hospitals operating 24 hours a day can transfer patient care from one shift to the next. Shift carryover works whether it's one resource or multiple resources performing a task. Each resource will independently be interrupted to go off shift and allow resources on the next shift to resume the work. Shift carryover currently works for resources captured by a Get, Jointly Get, and Move With statement.

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New .NET Scenario Manager
- The new scenario manager makes adding, modifying, and managing your scenarios a snap. The open interface displays all of your scenarios and their parameter values in one simple table. Each column of the table is a separate scenario where values can be quickly compared side by side between scenarios. All of this now makes your scenario analysis more straightforward and streamlined. (Note: RTI macros have been changed to Scenario Parameter macros to coincide with the new Scenario Manager.)

New Output Viewer time series charts
We are excited to introduce the following new and modified time series charts:

- Location Utilization - this new chart displays utilization of locations, as a percentage of contents versus overall capacity, over the course of the simulation run.
- Resource Usage - this new chart shows how many resources were used and when over the course of the simulation. Add a capacity line to the chart and compare the actual usage against the maximum potential resource usage. In order for existing models to generate this report, resources need to have Time Series selected for their statistics in the Resource edit table.
- Location State - this upgraded chart now includes the averaging of location states across replications. It is displayed as a 100% stacked column Gantt chart over time.

Enhancements
- Simulate Scenarios - now you can initiate the running of your scenarios without opening the scenario manager. Quickly simulate your scenarios by choosing Simulate Scenarios from the Simulation menu or toolbar.
- Package installation directory - when a package is installed, the suggested directory to install it into now points to the same directory where the package file exists.
- Standardized hot keys - we now use the standard hot keys Ctrl+O and Ctrl+S for File Open and File Save actions, respectively. We also now use Ctrl+A for Select All functionality in tables and logic windows. This means that we had to change the hot keys for accessing the Subroutines (formerly Ctrl+S) and Arrivals (formerly Ctrl+A) modules, to be Ctrl+U and Ctrl+I, respectively.
- Double-click to select element name - all element names, locations, entities, variables, subroutines, etc., are selected when double-clicking on them in their respective edit tables. This enables quick access for copying of the names.
- Data Grouping Interval for Statistic series - when viewing the raw data for time series charts, you can now set the grouping interval if Statistic series are added to the chart.
- Pooling time series statistics - Time Plot charts now have a pooling option that allows you to combine the values of the Items selected and display their joint average in the chart. Series for Statistics are also automatically pooled for all items selected and show as one joint Statistic, if the chart type has been set to stacked.

Fixes
- Installation was not installing the .NET 4.0 framework on Windows XP 64bit.
- In an isolated case, attempting to use the Debugger during simulation caused the application to crash.
- Merging two resources using Model Collaborator would not properly create a shift assignment for the resulting resource (list would be blank) and cause the application to crash when simulated.
- Both the Query and Stored Procedure options would be selected in the Array Imports dialog when reopening the dialog after Stored Procedures had been chosen and saved.
- The application would crash when attempting to import an external arrival file whose path and filename exceeded 164 characters.
- Normal Run was not being translated to "Execução Normal" for a model built in 7.5 or earlier and run in 8.0. This caused saved views in 3DR to not display any data for that scenario.
- Time-based path networks were not getting their shortest distance mappings properly calculated.
- A Crane resource was not immediately being reclaimed if it was temporarily freed by the entity using it (because the entity was preempted), and had started moving to a downtime node.
- A memory leak was occurring when displaying a resource utilization dynamic plot.
- Changing the PMCAL file for an existing Shift Assignment would appear to keep the old PMCAL file, but was actually an issue with the table not properly refreshing to reflect the change.

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- Changing the Date/Time setting for the simulation clock (to show in hours, for example) would cause the date-based functions CalHour, CalMin, CalDay, etc. to stop working.
- Having "Adjust for Daylight Saving Time" checked in Simulation Options, even though it was disabled, was incorrectly affecting simulations run in Weekly Time.
- The hotkeys for changing views during simulation would not work sometimes.
- Resources using an EMF graphic in a model built in 7.5, would disappear during simulation when run in 8.0.
- If the simulation ended during a warmup period, the initial value for location contents was not being reported.
- An error was thrown "Out of memory. Try reducing memory usage by simplifying your model (i.e. size of Arrays, number of Entities, etc.) or closing other applications" when a model was loaded that had corrupted background bitmaps.
- Variable counters sometimes would not display any values during simulation until the first time the variable changed

Includes Output Viewer 4.2.0.829 containing the following fixes:
- A scenario containing a period "." in the name, wouldn't be properly displayed in the Filter Options panel.
- Series from the Statistics list for time series charts were also being stacked when the chart type was set as stacked.
- Statistics series added to time series charts when Grouping was set to None (i.e. viewing raw statistics), were not properly being calculated and for Entity Count charts, caused an exception.
- Time plot charts wouldn't properly display data truncation annotations if the simulation ended during a warmup period.
- Warmup period was not properly being accounted for in Entity Count time series charts when the simulation had been run as Time Only.
- Zoom capability in Histogram charts has been disabled due to a crash caused by the third-party charting component used by Output Viewer.
- The dialog for exporting chart data to Excel was not remembering the previous directory data was exported to.

8.1 Update SP2 | ProModel 2010 SP2 | 8.1.0.623 | March 2011

Features
- Output Viewer 4.1 - this latest version has the following new capability:

Sort Column, Utilization, and State Charts
- Sort your chart data based on highest or lowest values. State charts will even let you choose which state should be sorted.

Export Time Series Data
- Similar to exporting Summary data, you will be able to export any of your time series results from any scenario to Excel.

Change Chart Type
- You will be able to change the chart style from bar to line, from line to area, from pie to doughnut, etc. Choose from several different chart style options.

Enhancements
- The simulation end date has been extended beyond the year 2037 to now be 2100.
- The scenarios dialog allows you to select or unselect all checkboxes by pressing Shift + left-click.
- Gold Runtime versions can now be updated through the Auto-update wizard.
- In Output Viewer, pressing Ctrl + left-mouse click will select or deselect all items within a group of items instead of all items in all groups, for example, in the Items list for Time Plots.
- If an item name in the Filter Options pane in Output Viewer is too long that it can't be viewed entirely, hovering over the name displays a tooltip displaying the complete name.
- In Output Viewer, a tooltip warning is displayed if entering an invalid value into the Custom Interval Time field for a time series chart.

- Histograms now display x axis labels as single values in between bars in Output Viewer instead of a range of values, which makes the histogram easier to view and interpret.
- Zooming and panning performance during model edit and simulation has been optimized.

Fixes
- "Undefined entity in the arrival file" error would occur during simulation initialization if extra spaces were added to the entity name in the Excel file.
- Opening a model and then immediately launching Output Viewer from the menu or toolbar was not auto-loading pre-existing simulation results into Output Viewer.
- Closing the Trace window by using the Trace Off menu item was not keeping the simulation paused.
- License Manager was not in the Tools menu if the application was licensed with a hardware key.
- Spaces were not being allowed in the Dimensions field in the Arrays table.
- If exporting array data to an XLS file, upon opening the file in Excel 2007 or 2010, a warning message would be displayed.
- The Cancel button for the Path Color dialog for Path Networks was not actually canceling.
- The Graphic Editor would save changes to a graphic library file (GLB) even though the file was marked as read only.

Includes Output Viewer 4.1.0.633 containing the following fixes:
- Application crashed upon attempting to create a time series chart if the data file (RDT) was very large (~4 GB).
- When viewing individual replication data series for Histograms, if additional Statistics were displayed they were showing for each replication rather than summarized for all reps.
- Time Plots were not displaying the correct start time for Time Only and Weekly based simulations with a warmup lasting longer than a week.
- Histograms would not display negative data values.
- Excel would not properly chart exported Output Viewer data due to the way it was formatted during export.
- When turning on annotations, in some cases they wouldn't display until the chart was modified through the Filter Options.
- If a simulation had a warmup period and ran multiple replications, the Entity Count chart when averaging the replications would incorrectly chart the data at the time the simulation started instead of the end of the warmup period.
- Changing the decimal precision for a chart's Data Table would revert back to original precision if a series item was added or removed from the chart through the Filter Options.
- When editing a Report View title, the options in the right-click context sensitive menu (Cut, Copy, and Paste) didn't work.
- The Filter Options pane would force the names of items to start with the initial character capitalized and the remainder of the characters to be lower case.
- A "Failed to generate filter options" error would occur upon loading Output Viewer if a variable name and a Log stat had the same name.
- Creating a Single Capacity Location Pie chart and then adding another scenario in which the selected location is a multi-capacity location caused an error.
- Resource state and Multi-Capacity Location state charts would have no title if the items selected in the Filter had no data.
- In some cases, the Node Entries - Blocked Entries Column chart could display blocked entries for the wrong node.

8.0 Update SP1 | ProModel 2010 SP1 | 8.0.1.566 | January 2011

Fixes
- A Tank location contents incorrectly appeared as zero in a Time Plot chart immediately after a warmup until a change in the contents occurred.
- Sentinel USB key drivers were not being installed with the Portuguese Professional install.
- In some cases a resource shift time was off by one second.

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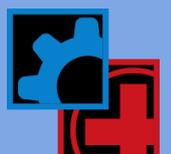
- A resource wouldn't exactly follow its assigned Calendar shift or would go off shift and not come back on shift if a warmup time was specified for the model.
- A change to the Output Path in the Simulation Options dialog was not persisting.
- Status Light legend would only open and display in the primary monitor.
- The error "Couldn't save array export file <file path and name>. The file may already be in use or may have read-only attributes" was thrown if attempting to export array data to Excel 2003.
- License Manager may have crashed when accessing it if ProModel 7.5 was installed prior to version 8.0 and was licensed with a software key.
- Deleting a row in the table in the Six Sigma Configuration dialog would delete all the rows after it.
- When selecting Database as the array import Source, in the Array Import File dialog, no option was being selected by default for the "Access Data by:" option.
- A scenario name with a % character would crash the application when running scenarios.
- An array import error would occur if no End cell was defined in the array Excel Import dialog.
- A version 7.5 model would crash upon loading in version 8.0 if a shift assignment record was defined but no shift file was specified.

Includes Output Viewer version 4.0.1.503 containing the following fixes:

- The time to load charts was optimized to be faster.
- In a Time Plot chart, the averaged data point plotted immediately following a warmup period was not being properly prorated if it did not fall exactly on the grouping interval boundary.
- In a Time Plot chart, a Grouping option of None was incorrectly listed after an additional Scenario was selected even though Replications were set to Average.
- The application would generate an error or possibly crash if a saved report view contained a Table chart with sorting options set.
- Entity Count charts did not plot the starting data point on the correct day if the simulation was run as Weekly Time and started on a Sunday.
- The Periodic Sum for Entity Count charts was not summing correctly when more than one entity was selected in the Items filter.
- Exporting Location State time series data for simulations run as Weekly time would incorrectly log the time values as one daily earlier than the actual times.
- Sometimes when viewing a report, some of the charts would be blank until you viewed a different report and then came back to the original.
- In the Format ribbon tab, clearing out the Font name and then pressing Enter would cause the application to crash.
- Upon starting the application, a "Failed to generate filter options" error occurred because a variable had been named the same as a location time series item name.
- Maximizing and restoring chart windows sometimes would cause the application to move behind all other open application windows.
- Data exported from a Histogram chart would display in Excel with some cell errors.
- In some cases, zooming in on a Time Plot chart could cause the application to lock up.
- For Entity Count charts, x axis labels were showing duplicated times when crossing the Daylight Saving Time change.
- In some cases exporting histogram chart data caused a "Failed to Export" error.
- Increasing the font size of the Data Labels using the up arrow button in the context sensitive Format ribbon caused the application to crash.

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8.0 Update | ProModel 2010 | 8.0.0.557 | November 2010

Features

Windows 7 Certified
- Release 2010 is officially compatible with Windows 7!

Six Sigma Analysis with integration to Minitab
- Select which variable statistic you want to do: a Six Sigma analysis in your model, run the simulation, and Minitab will automatically open and create Capability Analysis and Capability Sixpack charts. Because the simulation data is populated in Minitab's spreadsheets, further Minitab tests and analysis can be performed.

Output Viewer 4.0
- Developed in the latest Microsoft WPF technology, the new output viewer simplifies the creation of views, provides quicker and more open access for modifying charts and tables, and allows for analysis and comparison of multiple output data sources. The new user interface follows the Microsoft fluent UI standard and uses a ribbon for providing access to all the reporting functionality.

Independent Scenarios
- Coupled with the capability introduced in the new Output Viewer, you can run new scenarios independently of each other and compare their results side by side with previously simulated scenarios.

Calendars
- Definition of shifts and time off (holiday, vacation, etc.) for locations and resources is now done using the new .NET Calendar Editor. It expands upon the previous Shift Editor and provides a more accurate and intuitive way for scheduling resource availability.

Additional graphic formats supported
- Additional graphic formats supported - JPG, TIFF, PNG, ICO and GIF89a with transparency.

Optimized path network mapping algorithm
- The method for finding the shortest path between two nodes in a path network now uses the Floyd-Warshall algorithm. For those of you with huge path networks, we've just saved you some time!

Recompile path network mappings between scenarios
- Path distances or times can be modified between scenarios for comparing the effect of different resource routes.

Excel 2010 support
- Excel 2010 support - for Array import and external Arrival and Entity-Location files.

Online Help System
- Online Help System - gives you access to the latest documentation… all the time.

Enhancements
- Time series statistical data querying has been optimized so that data from larger RDT files can be read and displayed in the new Output Viewer.
- Scenario parameter values are included in the Simulation Info table in the Output Viewer.
- Scenarios can now be enabled or disabled through a checkbox user interface element.
- Hardware Key Number or Serial Number can be entered during installation and is used during the licensing process and displayed in the Help | About dialog for easy access.
- Accelerator keys have been added for Background Graphics Behind Grid (Ctrl+G) and Reset Window Positions (Ctrl+W).
- The standard "Normal Run" simulation run has been renamed to "Baseline" and can be modified through the Simulation Options dialog.
- Array import database filepath is now automatically updated when a model package is installed.
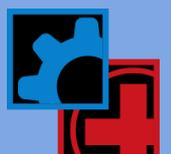
- DTLength - a new system function that returns the length of an off-shift and break downtime. (DTLeft has been changed to return the remaining length of an off-shift or break downtime.)

Fixes

- In certain cases, an entity waiting for resources requested through a JOINTLY GET statement could have captured those resources before another entity that had been waiting longer.
- The CalHour and CalMin functions were not returning the proper values for replications two and higher if they were used in the Initial Value field of variables.
- Expression array would not import properly if a start cell was specified but not the end cell.
- A "Usage downtime miscarried" error occurred in certain cases involving simultaneous preemptive location downtimes.
- A pending preemptive location downtime would not preempt an entity after the entity's resources returned from performing other tasks. The resources were performing these tasks because they had been freed due to the entity being preempted by another event.
- Routing to specific units of a multi-unit location, using the Load rule, at some point would stop routing entities to most of the units.
- An off-shift downtime was being skipped if a break downtime ran over into the off-shift period and "Skip Res DTs if off-shift" was selected in Simulation Options.
- Immediately after initiating a simulation run, the application would return back to edit mode. This was caused by an arrival record that referenced an arrival cycle and also had variation, offset, or daily or weekly repetition defined in the First Time arrivals dialog. Now an error message appears.
- The application would crash in a specific case where a dynamic resource was captured by an entity, the entity then moved to a location (not using the resource to perform the move) where there was no interface for the resource at that location, and then the resource was preempted by a downtime.
- A pending location Entry downtime would occur prematurely if a preemptive Usage downtime interrupted the currently processing entity.
- Reporting and Termination events were not occurring in this order: Periodic report, Warmup reset, Termination event. This caused some inconsistencies in statistical reporting.
- The application would lock up if around 64 KB of text was contained in a logic window and it was compiled.
- In certain cases with multi-unit locations, the available capacity was not properly decrementing and thus putting a unit of the location in a state where entities would not arrive or preemption would not occur.
- Multiple Load routings to the same destination location in a routing block would cause the Loads not to occur properly.
- When running a simulation with Common Random Numbers, seed values were not properly being reset after 200 replications.
- The PercentUtil function was only returning a valid result during the warmup period if the model ran with warmup.
- In some cases, if a resource returning to an entity it was preempted away from is again preempted before completely returning, would never return to that entity.
- The application would crash if attempting to install a model package in which the fully qualified path exceeded 252 characters. An "Unable to create file" error now occurs.
- In certain cases, a JOINTLY GET statement could preempt a resource while trying to determine if it could capture one of its requested set of resources and then capture a set of resources that did not include the preempted resource.
- The application crashed if a resource owned by a joining entity was preempted after the entity joined the base entity and transferred the resource.
- Implicitly creating an entity (utilizing a Route statement in Operation logic) would put the location in a non-preemptable state.
- The Simulation Layout window would not refresh properly if the application window was resized to extend beyond an individual monitor's screen resolution (i.e. extending the window across multiple monitors).
- Selecting "No" to the "Do you want to see the results?" message at the end of simulation no longer exports array data.
- If the Graphic Editor program was moved to a secondary monitor and then closed, upon reopening it the application window size would very small.
- An application crash would occur if an image was added as the second graphic for an entity when no graphic existed for its first graphic.
- Gradient fill was not being properly rendered during simulation.

- The order of days listed in Weekly Time dialogs was inconsistent with the order used by the simulation engine. Sunday was listed first when Monday should have been.
- Right-clicking in the Import or Export field for an array would open the Logic Builder.
- The View menu would be grayed out if the Layout window was maximized before running a simulation.
- Exporting array data to an Excel file that contains VBA code in the Workbook_Open method, for example, would generate a "file already exists in this location" error.
- An "InsertGraphicToList" error would occur if a Continue routing rule was used at a Queue location.
- A runtime error was not occurring if an entity was being split into its same entity type. The resulting split entities should be a different entity type than the entity it is splitting from.
- Time-based path networks were not using the time values to determine shortest distance between destinations.
- Compiling logic that contained a User Distribution which did not add up to 100% would produce a misleading error message about an undefined identifier.
- Performing a Search or Replace would not search the array database connection strings.
- If a week number greater than 52 was entered into the Simulation End week number field, the next time the week number drop-down list was accessed, it would be blank.
- A delayed routing to a specific unit of a multi-unit location by a Send, Join, or Load rule caused the routing entity properly initiate the route but it would never actually arrive at the specific unit.
- The Logic Builder now enforces the SAVE AS statement.
- The RESOURCE() system function was incorrectly showing up in the Logic Builder for Node Entry, Node Exit, Operation, Move, Arrival, and Macro logic.
- Number of characters allowed in Warmup Time, Run Time, and Number of Replications fields in Simulation Options dialog has been increased to allow for longer macro names.
- Cost statistics collection is now enabled by default for new models.
- Even though Cost statistics were disabled in Simulation Options, if cost statements or functions were used in logic incomplete cost statistics would still show up in Cost tables.
- Axis zoom settings were not being saved with dynamic plot configuration.
- Changing the text of a label in a dynamic plot was not being saved.
- Resources would remain blocked on a path network behind a node with its capacity set to one.
- Specifying a resource unit as part of a dynamic plot was not being saved.
- Resource Utilization of a parent resource displayed in a dynamic plot during simulation was not graphing the correct values.
- In some cases, multi-capacity locations with preemptive downtimes that got delayed (due to the location being in a non-preemptive state) were not being preempted when they finally got into a preemptive state.
- At a multi-capacity location, if a resource was preempted away from an entity and a location downtime was waiting to occur, the downtime would incorrectly be allowed to take the location down even though it was in a non-preemptable state, which resulted in an application error.
- During simulation, zooming in beyond a factor of 1000% was causing "CreateCompatibleBitmap" errors.
- Priorities for a Crane in a MOVE WITH statement were not being considered if the Crane had been captured previously by the entity and then used to perform the MOVE WITH.
- Merging a model with an External File specified with a relative path would be replaced with an UNKNOWN.xxx in the resulting merged model and cause an error at runtime.

7.5.5.374 | November 2009

Fixes

- In rare cases, during simulation the application would fail to find the USB key and force the application to be closed, prompting first for a model save.
- Resource State statistics were incorrect if the simulation was ended while any Resources were blocked during travel due to the capacity of the next node in its path being full.

- Data imported from files created in Excel 2007 (using the Excel Import option for Array Import) were limited to the Excel 2003 limit of 256 columns by 65556 rows. Now with Excel 2007 files, you are only limited by the amount of memory that your Windows Operating System can allocate.
- The application crashed when the mouse cursor was moved over the Layout window if the resource Points window was open for a static resource.
- A resource per use cost was incorrectly added to an entity's overall cost when the resource was preempted away and then returned to resume processing the entity.

7.5.4.373 | August 2009

Fixes

- Crane rail and bridge end coordinates for a Crane network were not readjusting their values when resized even though "Recalculate path lengths when adjusted" was checked in the Options.
- The application would crash during simulation after a preempted conveyor or queue came back online and attempted to regain a resource.
- The application would crash at the end of simulation if it ended when a location or resource was executing a shift that was completely blank (i.e. no work was defined).

Includes 3DR version 2.0.14.106 containing the following fixes:

- The hotkey to invoke the Histogram creation dialog was Ctrl+V and conflicted with the standard Windows hotkey to paste contents from the Clipboard.
- Failed arrival records showing zero failed arrivals no longer are included in the table.

7.5.3.364 | April 2009

Enhancements

Optimized the memory management of entities and attributes during simulation so that less memory is needed.

Fixes

- If ProModel 7.5.2 was installed after Process Simulator 2009 (version 6.0), the 3DR Output Viewer would not run properly.
- In some cases, an application crash would occur if a crane attempted to pick up another entity without moving from the position it was currently in.
- In some cases, a non-preemptive resource off-shift downtime caused the application to crash when the resource executed a USE statement before going off-shift.
- A location or resource would remain on-shift when it was supposed to go off-shift. This occurred when changing from one shift file to another if the current shift file had work defined at the time the next shift file (in the shift list) was scheduled to start but had no work defined at that time.
- The debugger would stop working for a grouped entity that did not use the AS option in the GROUP statement.
- In a specific case, an entity would not move to the end of a conveyor. This would occur if another entity would reach the end of the conveyor and leave before the entity in question completed its WAIT statement at the beginning of the conveyor.

Includes 3DR version 2.0.13.104 containing the following fixes:

- Changing the value of the Average/Total data by period for an existing time series plot would reset the custom zoom settings without being warned.
- Placing a ":" in the name of a View prevented the saved view from being displayed and if deleted would cause 3DR to crash.

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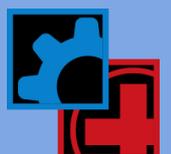
7.5.2.317 | February 2009

Fixes

- Setup statistics (found on the Setup tab of the General report in 3DR) were not being cleared at the end of a warmup period.
- Importing a background graphic with a path and filename greater than 126 characters was causing the application to crash.
- In certain cases, the Wait Until statement was not processing the entities in the same order as previous versions.
- When a Wait Until statement was used after a MOVE statement in Move Logic, the simulation would crash.
- Background text objects were disappearing when attempting to move them along with other object types (e.g. variable counters).
- In background graphics when panning using the hot keys (Ctrl + Shift + Right-click) the right-click menu would appear upon ending the panning.
- Defining arrays with more than 200 million cells was causing the application to crash when the simulation was started.
- When creating, splitting, unloading or ungrouping entities at a single capacity location (i.e. allowing temporary multi-capacity) the status light was not in sync with what the location state over time chart was showing in 3DR.
- When creating, splitting, unloading or ungrouping entities at a single capacity location (i.e. allowing temporary multi-capacity) the state of the location was not being consistently set. The priority for setting the state is given to entities processing Operation logic, then to entities Blocked in routing, and lastly to entities executing Move logic.
- Batches and Periods were numbered differently if a simulation run had a warmup that was defined in Simulation Properties versus using the Warmup statement in logic.

Includes 3DR version 2.0.12.103 containing the following fixes:

- Total time in use is now collected for Resources and is reported as Work Time.
- A database conversion error "File conversion error in 'Getting Period Data' section of the file" would occur if a space was included at the end of the report name parameter in the REPORT AS statement.
- Chart properties like the zoom or x axis time unit were being automatically reset when modifying the chart items. Now you are prompted whether or not to reset the chart properties.
- Batch Mean or Period names in charts (e.g. Location State) were not sorting correctly.
- A "No data available" message would appear in a category chart when attempting to graph series for <All> Periods.
- For Batch Mean or Period statistical reporting, the State and Utilization reports were incorrectly including periods in calculating the average where there was no Scheduled Time reported. This resulted in a State chart, for example, adding up to less than 100%.
- When running multiple replications, an informational/warning message will appear if data in a Time Series chart (Time-weighted, Simple, or Counts) is truncated to match the replication with the shortest run length. If all replications have the same run length, no data is truncated.

7.5.1.308 | November 2008

Enhancements

Zooming
Functionality for one-click zooming, zooming to a selected region, and mouse wheel zooming has been implemented and updated in both Edit and Simulation mode. o Ctrl + Shift + Left-click - zoom in

- Ctrl + Shift + Right-click - zoom out
- Ctrl + Shift + Left drag - draws a region (or "box") tzoom into
- Ctrl + Shift + Mouse wheel scroll - zooms in and out

Panning

- Functionality to click and drag the layout to pan to different areas of your model has been added to Edit mode and improved in Simulation mode.
- Ctrl + Shift + Right drag - pans the layout

Cursors

- Dynamic changes to the mouse cursor have been made throughout the application to provide visual feedback when you are in different modules graphically manipulating objects (such as moving or sizing locations) or defining objects (such as path networks and routing).

Fixes

- In foreign language versions of the product, buttons in the Logic Builder were missing.
- Search and Undo buttons in the Edit Logic window, which can be invoked to fix logic compiler errors during simulation, were not working.
- Buttons and other parts of the interface would turn black and would not reset unless the application was restarted.
- Clicking the Compile button in Initialization or Termination Logic would set the cursor to the first line in logic rather than staying on the line it was on before compiling.
- Background graphics would disappear, if Snap to Grid was turned on, when moved to the top left corner of the Layout.
- Graphics would disappear in the Graphic Editor if moved to the top left corner of the Layout.
- Merging nodes in Path Networks didn't always work.
- Using the mouse scroll wheel or keyboard down arrow, several Attribute, Array, Subroutine, or Macro records could be mistakenly created.
- You could not delete the last remaining Attribute, Array, Subroutine, or Macro record.
- Could not change the color of an EMF graphic after selecting it for an Entity, Resource, or Location.
- In some models where an entity activated a subroutine and then executed a WAIT UNTIL statement, the entity could mistakenly assume the attribute values of a different entity.
- If multiple LOAD statements were executed at the same location (in particular, when the location state does not change between LOAD statement executions), the IN <time> timeout value would only be triggered for the first LOAD statement executed.
- In some cases where a resource has a downtime and requests the use of another resource during the downtime, if the captured resource is preempted away, when it returns to resume being used in the downtime the application may have crashed.

7.5 Update | August 2008

Features

Model Collaborator

- The Model Collaborator not only gives modeling teams the ability to independently work on different sections of a more global model and then bring the individual models together to be simulated, it also gives individual model builders a more capable model merge.

New Shift Editor

- The Shift Editor has been completely rewritten in .NET. You can more quickly define your shifts and breaks in an easier to use interface.

New Array use

- Arrays can now be used to initialize the same ProModel fields that Macros have been able to. For example, you can initialize Location capacity or Resource units with an Array! The key is to make sure the Array data is imported from an XLS file or a database.

Enhanced LOAD statement

- The LOAD statement now has a PERM option that causes the load to act like a JOIN. Basically, entities can be permanently loaded (joined) onto a base entity. This extends joining capability but through the LOAD statement which already had great capability with the IFF <condition> and IN <time> options.

New Status Light state

- The Waiting state now shows as yellow for single capacity locations. Previously it would show blue, the same as Empty/Idle.

More preemption, more often

- More preemption checks have been implemented such that preemption should occur more regularly. In particular, in situations where a preemptor is initially denied in its attempt to preempt because the preemptee is in a non-preemptable state. Once the preemptee gets into a preemptable state, it should now check for a preemptor and be preempted in more situations than it had been.

Simulation engine optimization

- The simulation engine has been optimized to run models faster. Results will vary depending upon the model, however in one benchmark test the model increased in speed by over 300%.

Mouse wheel and scrolling tables

- The mouse wheel will now scroll your tables! Also, when grabbing the scroll bar to quickly move to different records (i.e. rows), the table will be dynamically refreshed showing exactly which record you are on (previously, the table would not be updated until you released the scroll bar).

New Check for Updates

- The automatic check for updates utility has been replaced with our latest .NET version so it is compatible with Windows Vista.

Excel 2007 files (.XLSX

- Excel 2007 files (.XLSX) are now supported.

EMF graphics supported

Graphic files of type EMF (Enhanced Meta File) can be imported into Background Graphics and the Graphic Editor.

- When importing graphics into ProModel, an "All Image Files" filter was added so that all supported graphic types (bmp, emf, gif, pcx, wmf) could be seen when choosing a file to import.
- The graphic library buttons and graphics toolbar have been updated to the Windows XP/Vista look and feel.
- Toolbar icons have been added to the menus in Windows Vista for better visual association between menu and toolbar items.
- In the First Time dialog box in the Arrivals table, the arrival time text box and Edit Arrival Time button have been swapped for ease of use and to reduce confusion.
- The LAN installation has been updated to contain the latest HASP drivers and License Manager.
- The DISPLAY statement in the Logic Builder now automatically adds quotation marks.
- The last Entity selected in the Tools window is persisted before exiting the Processing or Arrivals module. Now, when returning to one of these modules, the last Entity selected remains highlighted.

Fixes

- A created entity (from the CREATE statement) that obtains a resource in Move Logic through a GET statement was incorrectly setting the state of a single capacity location to Idle if the state of the location was Waiting at the time the created entity exited the location.
- When opening 3DR, a database conversion error was thrown that said, "File Conversion Error in 'Getting Entity Activity Data' section of the file: <filename>.rdb. Please contact technical support for assistance." This only occurred in MedModel and was due to an error not being caught where an entity, defined to have no stats collected, was renamed as another entity that was defined to collect stats.
- A compiler "Invalid or incomplete expression" error with context of "Resource Quantity: Line 0" was thrown after manually changing the units of a resource and then clicking the Add resource button to add a resource to the layout.

- If a Setup downtime required the use of a resource and that resource was preempted away, the time the location spent waiting for the resource to return was counted as Operation instead of Waiting.
- The time an entity spends waiting for a Setup downtime to complete was not being reported as %Waiting.
- Implicitly split entities (using the Quantity field in the Routing dialog) with more than one routing record in the routing block was causing the location's blocked time to be reported incorrectly.
- At a single capacity location, if multiple entities were unloaded or ungrouped (thus temporarily allowing additional capacity at a single capacity location), the location's state statistics were incorrectly collected if the entities could be routed to more than one destination location.
- State Values time series plot was not showing the correct state of a location if a resource was preempted away from the location in order to be used during another resource's downtime.
- If a dynamic resource was being used by another resource during its downtime, the Trace would incorrectly state that the resource being used "goes down at the current position" when it should say that it "is already available at this location".
- Entity statistics were not always being collected as %Waiting when an entity was in a preempted state.
- The right-click menu would not appear in the Graphic Editor like it does when right-clicking on graphics in the Background Graphics module.
- The Build menu would become disabled after editing a model, saving the model with a different name using Save As, simulating, and then re-opening the original model.
- "Implicit Wait" and "Implicit Move For" warnings would appear and then WAIT and MOVE FOR statements would automatically be added during compilation to logic that contained errors.
- The RAND function was sometimes returning the upper limit value and never a zero which is contrary to the documentation. For example, if RAND(10) was specified, a 10 would sometime be returned which is not correct.
- A resource moving to be used by another resource during its downtime, was having its move time counted towards Travel to Park statistics rather than Travel to Use.
- Imported background graphics disappear if the graphic is moved to the top left corner of the layout.
- The simulation would terminate without warning or error if a USE statement was found after a MOVE statement in Move Logic. An error message explaining that a "USE statement is not allowed after the MOVE statement" now appears.
- The Logic Builder was not allowing a paste of a "Move With OwnedResource()" statement without first providing an index number specifying a resource.
- The Arrays table Disable and Persist fields could not be toggled/set by using the space bar.
- The conveyor Speed and Length fields were limited in the number of characters that could be entered. They now can handle up to 512 characters.
- When changing Views or zooming while in the Locations module, the locations would scale appropriately in size but the background would not. Similar behavior occurred in other modules.
- When right-clicking in a Logic Window, the Logic Builder would appear rather than a menu with Cut, Copy, Paste, Select All, etc. choices.
- When compiling logic, the Logic Window would scroll to the top line of the logic rather than remain at the line of logic the cursor was at beforehand.
- The Tank_UpdateStats subroutine was in some cases not collecting the state statistics correctly.
- The Tank_DoOperation subroutine was ignoring any downtimes defined for the tank location.
- The incorrect graphic name would appear in the mouse tooltip when hovering over the buttons of graphic library icons.
- A crash would occur when importing GIF files that were created in PowerPoint. Now an error message is displayed explaining that GIF files with transparency are not currently supported.
- Changing the entity graphic in Arrival Logic using the GRAPHIC statement had no effect during simulation until the entity moved to the next location.
- If multiple entities were attempting to preempt other entities (and switch them to their preemption logic) at a multi-capacity location and the entities were in a non-preemptive state, only the first entity would get switched to its preemption logic (once it got into a preemptive state). The other entities would ignore their preemptive requests.
- Entities were not shown animating on their routing path if a MOVE FOR statement was included in a subroutine and that subroutine was called from Move Logic.
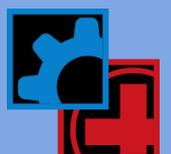
- A crash would occur for a model with many variable counter graphics when attempting to pan the layout during the model translation part of simulation.
- A location's state was not properly being counted as Waiting when an entity resumed processing (after having been preempted) and was waiting to reclaim its resource (that was automatically freed due to the preemption).
- The LocState function was returning the location's state as Empty/Idle when it was really Waiting.
- The Quantity field in the Arrival Qty dialog (where Arrival Cycles can be specified) in the Arrivals table, only allowed 17 characters to be entered.
- An error "Internal Error: Cannot find an available location unit" occurred when an entity arrives at a multi-unit location after having preempted an entity that attempted to resume processing after having been preempted by previous entity.
- An entity was incorrectly routing to one of its three possible route destinations when that route became available. The entity should have remained and taken the route to the destination that it had already preempted after the entity it preempted finished executing its preemption logic.
- Having a GET or USE statement in preemption logic caused a crash.
- When an entity in operation at a location was preempted by another entity, the time spent in operation by the preempting entity was being logged as Empty/Idle instead of in Operation for a Time Plot State Values chart.
- A "None of the ROUTE statements were encountered in this execution pass" error occurred when an entity attempted to move to its destination location after having been preempted and executed its preemption logic.
- A Location's state for the Time Plot State Values chart was not being properly logged as Waiting.
- Some entities were executing their post move logic before they had finished moving to the end of an accumulating conveyor. This was more likely to occur if a previous entity had been blocked for a short period of time at the end of the conveyor but long enough for the next entity to stop moving and queue up behind it.
- Some entities were loading onto the front of an accumulating conveyor before there was actual space to do so. In some situations, the animation revealed this. There was an error in the internal calculation versus graphical representation of the load zone space.
- An "Animate3.cpp" error occurred after zooming or changing Views during a simulation run where the model had many Variable counter graphics.
- The application might have crashed during a simulation where a Crane was captured by an entity and the Crane was already at the same location the entity was at.
- On Windows Vista, ProModel shortcuts were not being installed correctly into the ProModel Solutions\ProModel directory.
- DTDELAY() function used in shift or break logic was incorrectly giving an 'improper usage' error.
- Location Information for ALL locations was not showing location states as Down when Called downtimes were initiated by the DOWN statement.
- The application locked up when compiling logic in any Logic window where its text exceeded ~64 KB in size.
- The Edit menu was being enabled after simulating a model even though no tables were open. Accessing the menu caused the application to abruptly close.
- The incorrect array record was being updated when selecting the import or export file.
- Executing a CREATE TAKE statement in Operation Logic followed by a MOVE WITH statement using OWNEDRESOURCE() in Move Logic would cause a crash if the resource involved was a crane.
- A shift file consisting of seven 24-hr shifts (with no breaks) was causing the application to either crash or a resource assigned to the shift to take random downtimes.
- The RESOURCEUNIT() function was not properly working for the first resource listed in the Resource table.
- If a downtime at a multi-capacity location preempted a processing entity, switching it to its preemption logic, once the entity exited the location the downtime would not occur.
- The application crashed in a special circumstance when a location downtime attempted to take a location down. This only occurred after a first preemptive downtime completed but had been initially delayed due to an entity, which had captured the location capacity, was traveling to the location. Once the entity arrived, it was properly switched to its preemption logic and then exited the location allowing the first downtime to occur. Once this downtime completed, the location would appear to come back online. However, when the second downtime attempted to take the location down, the application would crash.

- The application crashed when an entity would exit a location it had incorrectly preempted and routed to. Having two destinations to choose from, the entity should have waited and routed to the first destination it had preempted and had switched the occupying entity to its preemption logic. However, while it waited for the preempted entity to complete its preemption logic, the entity incorrectly preempted an entity at the second destination location (no preemption logic) and promptly routed to it.
- In a special situation involving multi-unit locations and the LOAD statement, an entity ultimately arrived at the correct location unit to be loaded but upon leaving the previous location would execute the move logic pertaining to a different location unit.
- % Setup statistics were being collected as %Operation statistics if a Setup downtime was preempted by any Scheduled downtime (clock or shift). The %Setup that occurred before the preemption was being included as %Operation.
- When using a Macro to define the Empty or Full speed of a crane resource, the Hoist speed value was ignored and the Bridge speed was used for the Hoist speed instead.
- In a complex use of the USE statement where multiple resources were being requested, the incorrect resources were being captured.
- A translation error occurred when a macro was used in the Full and Empty Speed fields of a crane resource.
- In a special case where the same resource was preempted multiple times by different accumulating requests, the resource was captured by an entity that required an additional resource but the entity would incorrectly proceed to execute its logic without acquiring the other resource.
- If a resource was transporting an entity to a location when a preemptive downtime for the resource occurred, the resource would not be preempted and go down when it arrived at the destination location but would have to wait until the entity freed the resource.
- A compiler error now occurs if a time value is specified in a MOVE WITH <res> FOR <time> statement and the resource being used is a dynamic resource. "FOR" only applies to static resources.
- External files selected by double-clicking the filename in the Open File dialog, could inadvertently save the file to the wrong External File record.
- In a special situation involving a GET and a USE statement, a "Wait completion event not found" error might have appeared.
- The compiler now correctly gives an error if a System function is found on the left side of any Boolean condition in a WAIT UNTIL statement (e.g. - "<system function> = 10" or "Var1 = 1 OR <system function> = 10"). They are only allowed on the right side of a Boolean condition in a WAIT UNTIL (e.g. - WAIT UNTIL var1 = <system function>).
- Resource State statistics were not adding up to %100 because the time designated as % Blocked in Travel was not properly being added to either %Travel to Use and/or %Travel to Park statistics.
- An "Internal error" would occur when a resource downtime was terminated (preempted) by another resource downtime while the original downtime was attempting to GET a resource.
- A Parameter button was showing up for the MOVE statement when the Logic Builder was opened from within Move Logic.
- Waiting statistics in the Entity Activity and State tables contained negative values if entities in the model were grouped (not renamed with AS option) and then later explicitly RENAMEd while still grouped.
- A "Stack overflow pushing integer" error would occur if a MOVE WITH OWNEDRESOURCE() statement was executed without the entity actually owning any resources.

Includes 3DR version 2.0.11.93 containing the following fixes:
- When modifying chart items to add or remove series in an existing chart, the titles in the chart were being reset to their default formatting.
- When changing the decimal precision, the chart title was being reset to its default formatting.
- In Windows Vista, scroll bars in reports and charts were being clipped so that they were only partially in view.
- 3DR would throw an error and not load the statistics RDB file if the path and filename were longer than 126 characters.
- The Variables table was not showing up in 3DR when simulating a model having Tanks and there were no entity arrivals defined.
- Changing the name or "alias" for a chart series in a saved View was not persisting after the View was closed, reloaded and resaved.
- The starting point for bucketing values in a Counts Time Plot chart was based on the first data point in the series rather than zero (or the warmup end time).
- The line width and style of a series in an existing chart, if changed, was being reset when adding or removing series from the chart.

- Saved views were not persisting when first created (i.e. the IVD file was not generated) in the case where 3DR was left open and a simulation was started (which triggers 3DR to be automatically closed).
- The General table in the General Report was coming up blank if a saved view contained a Failed Arrivals table but the simulation generated no failed arrivals.
- Colors were incorrectly displayed in a State Values Time Plot chart containing series from multiple scenarios if the chart was part of a saved view and the model was re-simulated with one of the scenarios disabled.
- Downtime statistics were not being displayed for static resources that were listed before any dynamic resources in the Resource table in ProModel

7.0.12.243 | September 2007

- The number of characters allowed in the array import database Connection String and the Data Access Command fields was not properly set to 1024 and 4096, respectively.
- The automatic updates utility was broken in the 7.0.11 update.

7.0.11.241 | May 2007

- The application was terminating in a situation where a WAIT UNTIL statement was used in the Move Logic of a Load or Join routing.
- Array data was not importing when running a specific replication (using the "@" symbol) with the Persist option set to "Keep".
- Statistics generated for Resource Groups were showing a value of "-1.#IND" when the resource group is not used or there are no resources defined in the group.
- In a specific case 3DR was not being properly shut down if open at the start of a simulation.
- Physical memory usage in a specific instance was not being released between scenarios.
- Stored procedures could not be used in the query string field for importing data into Arrays from a database.
- The application would terminate if an entity was ORDERed to a specific unit of a multi-unit location.
- In some models, scrolling up or down in the location or resource tables could cause a crash.
- Attempting to have an entity MOVE ON a crane type path network, as opposed to MOVE WITH a resource assigned to a crane network, would terminate the application.
- Simulating a model before any processing records are defined caused a crash.
- Importing a graphic into Background Graphics and then moving that graphic over the top left-hand corner of the Layout, would cause the graphic to seem to disappear.
- When opening the Array Import File dialog, some UI elements exclusive to the Excel import option would be inadvertently displayed along with the Database import UI elements.
- Double-clicking the cell in the array table to open the Import Array dialog would cause any modified data not to be saved after closing the dialog upon completion of editing.
- Total Entry statistics for a tank location were not being calculated correctly when using the Tank_TransferUpTo subroutine.
- In a specific situation where a dynamic resource was preempted by a break downtime, the application might crash.
- For location and resource clock downtimes, if the frequency was ever evaluated as zero no additional occurrences of that downtime would take place.
- The limit on the number of input factors allowed in SimRunner has been increased from 60 to 500.

7.0.10.228 | December 2006

- An entity request for multiple resources using a JOINTLY GET statement was not being fulfilled in a situation where the resources were not initially available but later became available.
- The application was ultimately terminating due to a situation where multiple resources had been requested through a JOINTLY GET statement but not all resources were immediately available to fulfill the request.

- The application was terminating at the start of a simulation run (during translation) when the Text field for a Macro was left blank.
- The events list in the simulation engine was not properly clearing out after each replication which resulted in unnecessary memory accumulation.
- In the Portuguese version of ProModel: o The word "Desabilitar" was misspelled as "Disabilitar"
- o The "Custom Trace Options" window (accessed during simulation) did not have check boxes.

Includes 3DR version 2.0.6.85 containing the following fix:
- In some cases the order of variables listed was different than the order listed in ProModel.

7.0.9.227 | September 2006
- Ending the simulation while the Debug window was open caused the application to crash.
- The string lengths for the Array Import DB Connection and Query string fields have been extended to 1024 and 4096, respectively.

Includes 3DR version 2.0.5.84 containing the following fixes:
- Warmup time was not being properly displayed for a Time Plot State Values chart.
- Time Plot State Values chart was showing a Location's state as Empty/Idle instead of Waiting while in a JOIN, LOAD, or MOVE WITH state.
- Time Series statistics for Tank Locations were listed and displayed as Simple Values instead of Time-weighted Values.

7.0.8.225 | August 2006
- Added Entity conveyor width and length to the Entity graphics data table in the ProModelData COM interface.
- An array of type integer was not appropriately populated when using database connectivity.
- Animation scripts were not generated properly which caused Resources to have incorrect graphics in 3D Animator during animation.

7.0.6.216 | June 2006
- If the values entered for the First Time and Frequency of an arrival were greater than half the maximum run length, the arrival would incorrectly occur at the beginning of the simulation.
- When two logic windows (e.g. Operation and Move) were open and then one was closed, the toolbar disappeared in the window that remained open.
- If a model was simulated in which a resource had a zero entered for its DT Frequency, ProModel would crash.
- ProModel would not recognize an array import/export file path if the path contained an unmapped drive.
- Variable counter graphics would display more than 2 significant digits if the value to be displayed was extremely small (e.g. 10-14).
- Background graphics would inadvertently shift to the right when clicked on.
- Version 6.x models containing entity spots that were placed to the extreme far right on the layout would disappear when the model was loaded in 7.0.
- When a model was loaded and run in ProModel using the ActiveX interface, and that model had a runtime error, the "Do you want to collect statistics" message would incorrectly appear.
- Entity movements (i.e. Move For, Move On, Move With) were not being correctly generated for a 3DA animation script, which resulted in no entity animation in 3DA.
- The Xsub reference model was giving a run-time error.
- ProModel was incorrectly calculating some statistics for resource groups.
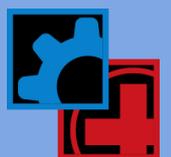
- ProModel would crash if an entity was ordered to a multi-unit location.
- Attributes were generating an error when used in an expression array.

Includes 3DR version 2.0.4.83 containing the following fixes:

- Time Series State Plot was showing the time a single-capacity location was in a Waiting state as Empty/Idle instead.
- The x-axis labels would disappear when zooming in on a Histogram chart.
- The top left and top center charts in the Process Simulator default view would overlap.
- If there are no Failed Arrivals in the model then the Failed Arrivals tab will not be displayed.
- 3DR was crashing when attempting to access Time Series data from a huge RDT file (e.g. 300+ Mb).
- The upper and lower confidence intervals for the statistics displayed in the Process Simulator scoreboard in 3DR were incorrectly being calculated for computers with regional settings set to something other than US.
- 3DR would unexpectedly close if a General Report was created while any other chart was maximized within 3DR.

7.0.5.207 | May 2006

- Wait Until statement did not work properly in a particular instance unless Trace was running.
- If a Free <resource> statement was used in that same resource's clock downtime logic, it caused a crash.
- Variable counters during simulation had different background colors per digit.
- Modifying path network mapping information caused the application to crash.
- Graphics for Locations, Entities, and Resources were missing when opening a model.
- Deleting a location unit and then deleting the parent location caused a crash.
- A unidirectional path mapped to go in the opposite direction caused a crash.
- Snap to grid in the Graphic Editor was not working.
- Canceling out of exporting a graphic within Background Graphics caused a crash.
- During a SimRunner optimization ProModel crashed during random experiment numbers.
- A combination of a multi-unit resource, preemptive resource DT, and preemptive location DT caused a crash.
- An array mapped to a variable that had no statistical collection and no counter defined caused a "No ROUTE statement encountered" error.
- In the RDB object model, a column header in the Locations Costing table was not properly written out to the RDB file.
- Implemented an ObjectID() system function that returns a unique ID of an entity.
- Added the entity ID within the Trace during simulation.

Includes 3DR version 2.0.2.79 containing the following fixes:

- A manual change to the Y-axis value of a Time Weighted Time Series Plot was not persisting in a saved view.
- Values using a comma as decimal point when the computer regional settings are defined to handle a comma were being saved with a decimal point.
- Views saved in German regional settings did not open correctly in English regional settings.
- Axis range values changed in Time-weighted Time Series Plots when the time unit was set to anything other than hours were not persisting in a saved view.
- An error occurred when using a comma as a decimal in the value specified for the bar width of a Time Series Histogram.
- Changes made to chart properties were not persisting when selecting or deselecting a series element in the Display & Alias window.

7.0.4.201 | April 2006

- There was a statistical issue when an entity that was created through the ROUTE statement was later joined to a grouped entity.
- When several entities that were created by a ROUTE statement were loaded onto another entity, the UNLOAD statement did not properly unload.
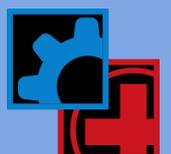
- Anyone with "Power User" rights to their computer was not being prompted when an update became available.
- The Portuguese version did not have the "Trace at Start" check box in the Simulation Options dialog.
- Counters for Tanks were not showing their true fill level.
- Table rows would not automatically move from the bottom of the table to the top when using the Enter key to scroll down the table, which caused the highlighted row to go out of view.
- Default animation speed was set to 100 instead of 55 when creating new models
- Duplicate resource or location names in the shift assignments table were causing a crash at simulation.
- Graphics | Dimension dialog in the Graphic Editor did not work.
- The Universal Update was installing a network version file that is not needed.

Includes 3DR version 2.0.1.77 containing the following fixes:

- Changing the position of an object (variable, entity, etc.) in its corresponding table broke any saved views containing that object.
- 3DR did not load properly if it was previously closed when minimized.
- "Value History" text was appended to the name of a variable if the word "Contents" was at the end of the variable name.
- A tooltip displaying "Y axis" incorrectly appeared when the mouse hovered over the X axis in the Time Series State Plot.
- State Charts did not show all percentage values when displaying Point Labels.
- Graphic color on the end of a bar in a State Chart was gray.
- In some cases, the order of variables listed in the General Report was inconsistent with the order in the model.

7.0.3.198 | March 2006

- Fixed a problem with a multi-unit location where the error "Internal Error: Cannot find an available location unit" would appear during simulation in a specific situation.
- Fixed a crash that occurred when a USE statement would attempt to obtain more units of a resource than that resource actually had.
- Fixed a problem where the daylight savings feature would be used when Weekly Time was selected.
- Fixed a problem where incorrect resource cost was calculated when the default time unit was set to seconds, hours or days
- Fixed a crash that occurred when a resource was called on break while moving and 'Skip Res DTs when off-shift' was checked
- Added a 'Trace at Start' checkbox to Simulation Options

7.0.0.194 | February 2006

- Fixed the website link on the Shortcut Panel for MedModel and ServiceModel to point to www.promodel.com
- Added a Shift Editor button on the application toolbar next to the Shift Assignment button.
- Fixed an issue where the toolbar show/hide checkmark in the View menu was not persisting.
- Fixed a crash with the array import if no data was present in a cell of the spreadsheet.

7.0 Update | 7.0.0.191 | January 2006

Features

- User Pause by Calendar Date and Weekly Time
- Enable/Disable Array records
- Persist or clear Array data between replications
- Time series data now collected for all replications
- USB LAN hardware keys now available

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- Relative paths (instead of full paths) can be specified for all external files (graphic library, shifts, array xls import, read, write, etc.)
- Model package creation will retain the relative paths and folders of any external files and will create those relative folders when the package is installed.
- New HTML help system
- Option to skip downtimes that occur during an off-shift period for a resource.
- New software licensing wizard allowing automatic licensing using a serial number.
- Expression and string array types (including import/export to Excel)
- Comparison of strings in conditional logic.
- Array import from a database using SQL connection string and query.
- Arrays are no longer exported if the user chooses not to collect statistics at the end of a simulation.
- Individual application settings for multiple user login to the same computer.
- "End Simulation" option added to right-click menu during simulation.
- XP themes are now supported.
- The main application now has toolbars.
- Logic windows have been redesigned with new toolbars and a status bar.
- Tooltips showing graphic names in the Graphic Library.
- PKG files can now be searched for and opened using the Open dialog.
- Ctrl+H hotkey invokes the Search and Replace dialog.
- ProModel will automatically check for available software updates when the application starts.
- Time unit for simulation warm-up is now user-specified.

Fixes

- Fixed a View Text issue when the number of lines exceeded 32768.
- Fixed a View Text crash when a line of macro logic is greater than 1024 characters.
- Fixed some issues with closing 3DR when simulation begins.
- Fixed an output problem with time series charts when clock precision is in days.
- Fixed some internal memory access issues.
- Fixed a GRAPHIC statement issue in move logic after a move to a conveyor.
- WAIT and WAIT UNTIL statements were not being properly restricted from use in Initialization and Termination logic.
- Fixed problems with transparent counters not displaying correctly at runtime.
- Optimization - changed compiler to only allocate memory for arrays during simulation translation, not at edit time.
- Fixed a View Text crash in the Processing records section.
- Fixed some issues with Portuguese language version.
- Fixed an issue where the transparent frame setting on variables was not persisting.
- Fixed the duplication of resource records in a 3D Animator script file.
- Fixed a problem with the overwrite option for animation file synchronization
- Fixed a crash in Logic Builder when viewing external files.
- Fixed an issue in the array dimensions field if it contained a space.
- Fixed an error message that made reference to ProModel version 3.5
- Fixed an issue with resource home, break, and off-shift node selection not persisting if node names are arranged in a certain way in the path network table.
- Fixed an issue with the Edit menu being enabled when you first load a model.
- Fixed an issue with double-clicking a .MOD file for automatic launching of ProModel and loading of the model if the model named contained a "-" in it.
- Fixed a crash when more then 20 dimensions are entered in the array edit table.
- Fixed an issue where users with limited write access to their computers could not run ProModel.
- Fixed a crash that occurred when clicking Cancel in the Debug window after selecting Global Change and User Condition options.
- Fixed an issue where costing statistics were not reset at the end of a warmup period.

- Fixed an issue where extra time series statistics were being written out at the end of the simulation.
- Fixed a problem where a text value was saved as a default for the Conveyor speed.
- Fixed a crash when adding additional entity graphics out of sequence.
- Fixed an issue with the COM interface where the Output Path contained in the Simulation Options dialog was not being properly returned.
- Fixed a problem where two View menus would appear in the application.
- Fixed a crash when attempting to import a GIF file that was too large.
- Fixed an issue with the Logic Builder where a Quantity button improperly appeared for a Tank subroutine.
- Fixed several issues in the Logic Builder where clicking back and forth between statement parameter buttons would not properly reset the list of options.
- Fixed a crash with the variable() function when it receives a value of 0 as a parameter.
- Fixed a crash due to multiple resource downtimes with priorities in the 900 level.
- Fixed a problem where a resource usage DT would cease to occur if the frequency of the DT ever dropped lower than or equal to the duration.
- Fixed an issue where macro names do not update in the conveyor speed and length fields when their names are changed in macros table.
- Fixed a problem where the TimesUsed() function doesn't compile correctly in DISPLAY statement.
- Fixed a crash with a model due to an infeasible mapping constraint.
- Fix an issue with daylight savings time adjustment not applying correctly to resources on shifts.
- Fixed a problem with the MOVE WITH THEN FREE statement duplicating the cost of a resource.
- Fixed a crash when the ENTRIES() function is used for a location whose statistics collection option is set to None.
- Fixed an issue where the cost of an entity incorrectly increases if a resource is preempted on its way to that entity.
- Fixed a crash when the ENTITY() function is used on a grouped entity that was previously routing using a ROUTE statement.
- Fixed a crash due to an arrival with the Occurrences evaluating to zero and the First Time set to Weekly or Calendar date with either Repeat Weekly or Daily options checked.
- Fixed a crash caused from a Preemption Process record not having any routing defined and the application finding a non-preemption process record with routing.
- Fixed an issue where the user-defined font did not apply to the Initialization and Termination logic windows.
- Fixed an issue with the margin in logic windows not always being consistent.
- Fixed a problem where the tab key did not work in Initialization and Termination logic.
- Fixed an issue where a location record would be added to the table when selecting the location table window from the Window menu.
- Fixed a crash due to a resource downtime requesting another resource not assigned to the same path.
- Fixed a crash if you try to run a simulation where an entity moves with a resource on a path network that has only nodes and interfaces defined but path segments.
- Fixed the Filtered Trace treeview icons to have a transparent background.
- Fixed a statistics problem with a multi-unit location that joins an entity onto another.
- Fixed a statistics problem where Average Time Waiting could show negative numbers for a conveyor location that was preempted.
- Fixed a problem where an incorrect compile error would appear if the user incorrectly used the PROMPT statement.
- Fixed issues when ProModel is displayed in a secondary monitor and messages from ProModel would appear in the primary monitor.
- Fixed a problem where ProModel uses 100% of the CPU when the simulation was paused.
- Fixed a COM issue where a critical error with a model that would normally cause the simulation to end, would be hidden and allow the simulation to continue.
- Fixed a problem with the Graphic Editor where reopening it after it was viewed in a secondary monitor would cause the application window to be really wide.
- Fixed an issue where the application window would begin to flash if two blank routing records were created.
- Fixed the Output Path in Simulation Options to be automatically set to a valid path if the original path it contained was not valid.
- Fixed a memory overwrite that happens when running scenarios with macro names longer than 49 characters.
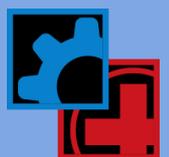
- Fixed a memory overwrite issue in View Text
- Optimization - changed some routines in the logic compiler that speeds up simulation.
- Fixed an issue in the Logic Builder where a time option was incorrectly being added to the MOVE statement.
- Optimization - made some simulation speed improvements for some larger models.
- Changed Array Import fields to accept 259 characters.
- Fixed a crash due to location downtime requesting a resource and then that location being preempted by an entity while the resource is traveling to the location.

6.2.1.130 | June 2005
- Fixed COM access to called downtime fields.
- Implemented ability to add and edit background text graphics via the COM interface.

6.2.1.127 | May 2005
- Fixed an output problem with time series charts when clock precision is in days.
- Implemented a LoadDefaults() COM function.

6.2.0.118 | February 2005
- Fixed INI file handling so that no default values are used until after string table has been set to proper product.

6.2.0.117 | January 2005
- Extended range of years to 2037 when running by calendar date

6.2.0.115 | November 2004
- Fixed some crashes when the last resource in the table has zero units
- Fix for bug #4148 - crash in arrays table.
- Fix for bug #4079 - Array Import/Export table button crash
- Fixed bug #6070 - crash when dragging a box around several objects on the layout.
- Fix for bug #6030 - WAIT UNTIL on an array cell mapped to a variable may work differently when trace is on or off.

6.2.0.96 Maintenance Update | August 2004
- Generates script for 3D Animations - new checkbox has been added to the Simulation Options window, allowing script generation to be turned on or off.
- Common Random Numbers bug fix.
- USB hardware keys are now available.

What's new and improved in Version 6.0 and 6.1?
- Easy to use auto-updates
- Custom Trace
- Views Panel
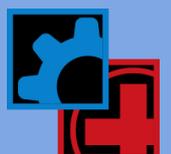
- Common Random Numbers
- Location Time Series Stats
- Location Downtimes (DOWN() Statement)
- New statements - see 60Addendum.pdf

6.1.47 Maintenance Update | January 2004

- Locked graphics can no longer be moved with the arrow keys
- Graphics text boxes no longer revert to Arial font for each new box
- Problems resolved with array edit table fields
- DOWN statement no longer allowed in the initialization logic
- Output path can now exceed 128 characters
- Fixed Log:SING error that was occurring when using certain statistical distributions, including Uniform, Beta, Gamma, Pearson5, and Pearson6, evaluated to rare, non-allowed values.
- Fixed Uniform distribution so that it will no longer return a value at the minimum or maximum of the distribution range. For example, a U(.5,.5) will never return a 0 or a 1. Also added a limitation so that the Uniform distribution cannot have a half range of 0. For example, U(1,0) is not allowed.

6.1.41 Maintenance Update | September 2003

This update includes the following changes and fixes:

- New daylight saving time option in Simulation Options allows the user to disable the daylight saving time feature.
- Changed Array Export so that it will not append an "R1" to the sheet name on the first replication. The first replication will always export to the sheet name exactly as specified by the user. Any additional replications will export with the specified sheet name with R2, R3, etc appended to the name. If multiple scenarios are run, then the R1 will appear on the first replication.
- Updated Output Viewer 3DR Help file to reflect changes to 3DR.
- Fixed defect with the Graphic Editor so it no longer crashes if pathname is more than 80 characters. Limit is now 256 characters.
- Fixed defect with the Shift Editor where shifts with names exceeding 80 characters can now be saved.
- Fixed defect with resource downtime & pre-emption
- Fixed defect with plotting time-weighted variables in 3DR.
- Fixed defect with saving views in 3DR.
- Fixed defects with the Array Import/Export fields.

This update also includes Hotfix 6.0.30 updates, which included the following changes and fixes:

- Added Menu options to launch the License Manager and Check for Updates.
- Updated ActiveX documentation, available in ActiveX.pdf file.
- Fixed bug in model packages, where model packages that were created in 6.0.20 Professional versions, which contained external files, were unable to run a simulation in Run-Time Silver versions of the software.
- Fixed bug in Model Package Association, where the default path for installing the model package was shown as an incomplete path.
- Fixed bug in Output Viewer 3DR, where Scenario Labels displayed incorrectly.
- Fixed bug, where ProModel PI could not detect a stand-alone hardware key after installing ProModel 6.0.20.
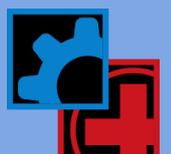
6.0 Update | April 2003

New & Modified Features:
- Custom Trace - allows users to see the trace only for particular locations or entities.
- Views Panel - a "Stay on top" view selector for easier selection of views during animation
- Common Random Numbers - when enabled, it ensures that the sequence of starting seed values for each stream in a set of replications is identical to the starting seed values for corresponding replications in every other scenario.
- Location Time Series Statistics - you can now plot location state information over time.
- Location Downtimes - Implemented a Location DOWN() statement to locations onto downtime based from elsewhere n your model.

New & Modified Statements and Functions:
- GetReplicationNum() - Returns the replication number
- LocState() - tells you what the state of a given location is (Busy, Waiting, etc.)
- PercentOp() - tells you the current Operation % for a location
- PercentUtil() - tells you the current Utilization % for a resource
- ResourceUnit() - tells you what unit number of a resource is being utilized.

5.0 Update | April 2002

Software Keys
- Customers will now use software keys instead of hardware keys. SW Key activation is handled by our Tech Support Department, via email or by phone.

License Manager
- Customers will be able to move their license to other computers, or "check-out" their license to another machine for a defined period of time.

Output Viewer 3DR
- We will keep the current output viewer, but allow our new and improved Output Viewer 3DR to be set as the default stats output program. This 3DR program will automatically convert our rdb (output file) into an idb format that is then read into the 3DR program. This feature provides excellent new charting and plotting capabilities. Customization of default charts and reports, etc.

Variable display settings retain formatting
- Change the formatting (Variable display size) for one variable and all successively created Variable selected for display will inherit the new display appearance.

Change the default .glb for new models
- In the past, the default graphic library (when creating a new model) has been promod4.glb. When creating a new model, the user will have to specify their own glb each time, or customize the provided promod4.glb with their own icons. Now the user can change the default glb to whatever glb file they would like, and set it as the default (saved in their promod.ini settings).

Array exports for replications
- When exporting arrays to Excel spreadsheets, the user can now export the arrays for each replication and scenario--each replication and scenario is saved to a separate worksheet in the Excel file.

Anchored background graphics
- Any background graphic can be "locked" into place so that it cannot be accidentally moved.
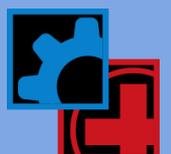
Alignment function for layout graphics
- Select your background graphics and align them (left, right, centered, top, bottom, or middle) or distribute them evenly.

Zoom in a box
- During simulation run, drag box around the desired zoom area and quickly zoom in to the desired area.

Yes to all
- Yes to all when creating model package

Graphics coordinates (x,y)
- Graphics coordinates (x,y) allows layout coordinates to appear in top left corner of layout screen (can be toggled on and off). Tells the model builder the x and y coordinates of the curser location.

XLS format in addition to WK1 format
- XLS format in addition to WK1 format allows the direct reading of xls files for Arrival Files and Entity-Location files. This is in addition to the archaic wk1 format that has been our standard.

Pre-translation check for path networks
- At simulation run time, when the model code is compiling, a check is done to see if the path networks have changed since the last compile. If they have not changed, then ProModel will not recompile the path network mapping logic--this will save many model builders a ton of time!

4.5 Features | April 2001
- Improved capability of Dynamic Plots
- Simple, transferable User Interfaces
- Customizable Tools Menu (add custom links to custom apps)
- CalMonth() and CalYear(), CalDOM() functions
- SimRunner 3.0
- Power Tools

4.21 & 4.22 Features | second half of 1999
- Array Import and Export directly from Excel spreadsheets
- Local Find and Replace
- Undo Button (within each operation logic window)
- Tank subroutines use default time units for flow rate.
- Save Chart Views in the Output Viewer

4.2 Features | first half of 1999
- Dynamic Plots
- Save As Excel - saves output file as an Excel spreadsheet.
- Tank Logic Builder - easier to create tank logic
- Model Protection

4.1 Features | October 1998
- Appointment module
- Independently scheduled arrivals
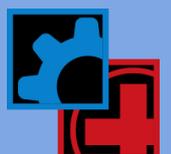
- 24 hour on-screen clock
- Resource grouping
- Additional OLE capability