# E3 Release Notes

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# CHAPTER 1 Introduction

Thanks for choosing Elipse's products! We are proud to offer the best solution for your needs.

E3's new version 4.6 presents new tools and resources that focus on the development of control and supervisory applications. This document present information about these resources.

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# Version 4.6

This section contains **New Features** and **Fixed Bugs** of E3 version 4.6.

## 2.1 New Features

**ActiveX**

- E3 now also considers Windows Registry to determine whether an object is an ActiveX or not (the **HKEY_CLASSES_ROOT\CLSID\{classId}\Control** key), which makes it much more easier to use ActiveXs generated in .NET.

**Domain, E3 Server, and Hot-Standby**

- A new process was created, E3DBEngine.exe, which replaces E3Run for the execution of all accesses to databases.
- Removed the **EnableLocalCreation** property of the Database Server. Viewers cannot access databases directly anymore, and all accesses are performed via server.

**E3 Admin**

- Now Statistics and Licenses windows of E3 Admin differentiate when an Elipse Power Studio or E3 Studio is connected to an E3 Server.

**E3DataAccess**

- Implemented the recycling of links in the **WriteValue** and **ReadValue** methods of E3DataAccessManager.

**E3 Tweak**

- Updated E3 Tweak to include new **Full** log keys.

**EPM**

- Implemented asynchronous readings and writings in E3AccessLayer.

**Expressions**

- Changed the timestamp rules of E3 expressions to consider the timestamp of constants only if there is no variables in the expression. For expressions that contain variables, the timestamp still is the newest.

**Protection Device**

- Updated the HASP driver (haspdinst.exe) installer to version 6.63.

**Installation**

- The file !register.bat now can be executed with elevated rights via Windows Explorer.
- Elipse Event Logs version 4.5.91 integrated to E3.
- Installers Full on 64-bit versions now also include 32-bit E3 Studio.

**Links**

- Created an option for Multiple Links to keep all their Links always in **Advise** mode (active).

**OPC Client**

- Implemented sorting of server identifiers on the window to select OPC servers.
- Now E3 OPC client executes in a separated process. Two new properties were created and implemented time-outs independent of Windows DCOM, thus avoiding locks in any OPC client operation.
- Added to E3 Tweak configurations relative to log keys of OPC Client.
- Created detailed logs of communication of E3 OPC clients. Logs are registered in file IOData, on section **OpcClient**.

**Other Implementations**

- Added texts identifying the 64-bit versions on several locations of E3: Studio's title bar, on About Studio and About E3 Admin windows, on logs of process statistics, and in the product's name on file details.

**Remote Domains**

- Implemented a time limit of synchronous requests to Remote Domain servers.

**Reports**

- Implemented in E3 support to identify and inform classes of objects without support on 64-bit versions. Among them there are Reports and occasionally any ActiveX used in the application.
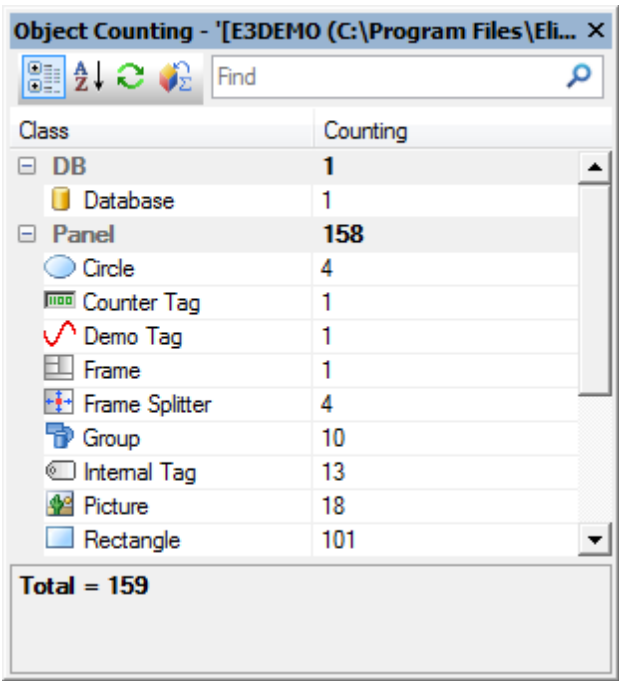
- Improved support for using the keyboard on Domain's or objects' error window.

**Storage**

- Storage licenses are now counted by the amount of active Storage fields in the application, and not by the amount of fields in the database.

**E3 Studio**

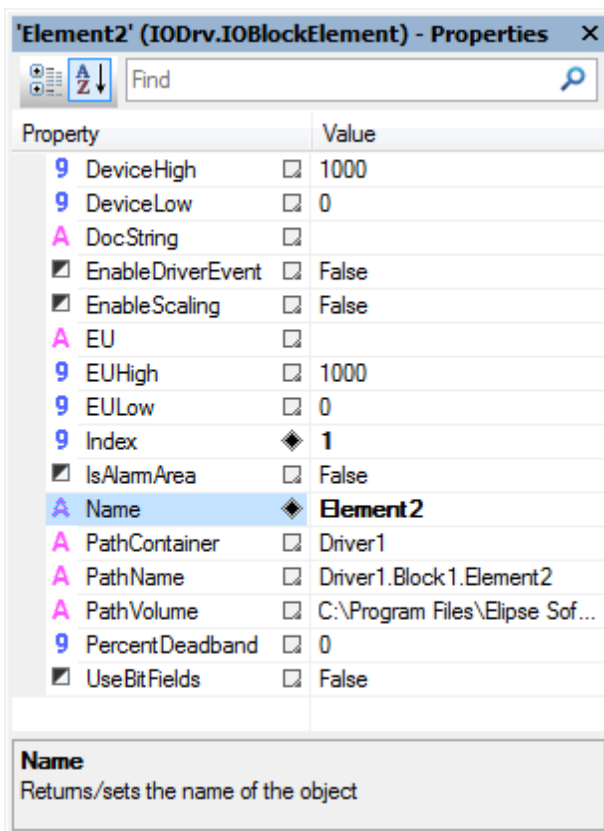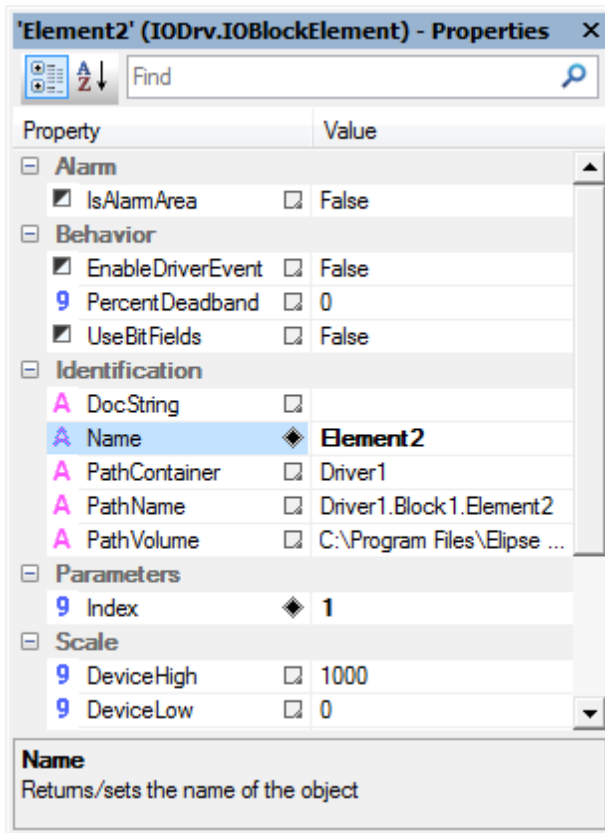- Implemented a tool to count objects in Studio.



**Object Counting**

- The Properties List of Studio now allows grouping properties by categories, and also allows applying filters.

**Properties List in alphabetical mode**

**Properties List in category mode**

- Implemented access to Driver DLLs at design time outside Studio (via IOServer process), allowing its usage on 64-bit versions of Studio.

**Documentation**

- Updated installation requirements of E3, relative to supported operating systems, throughout the documentation.Updated information on E3 User's Manual about E3Playback in **Demo** mode and the playback's assembling process.

- Added a note on E3 User's Manual about the impossibility of using Reports on 64-bit versions.

- Added the E3 Developer's Tutorial Online to the documentation.

## 2.2 Fixed Bugs

**Alarm Server and Alarm Configuration**

- Fixed a memory leak that occurred in a Viewer or in an E3 Server receiving alarm events. *This bug occurs since v3.1 Build 128*.

**Database**

- Fixed the processing of operation queues of E3 databases that may generate .e3o# (.e3o0, .e3o1, .e3o2, etc.) files on Domain's folder when processing operations marked as **ImmediateExecute**. *This bug occurs since v3.0 Build 36*.

- The **ConnectionActive** and **TotalFailedWrites** of a Database Server object now work correctly when used in Links.*This bug occurs since v1.21 Build 77*.

- Studio now creates correctly on a folder relative to the current Domain the files .mdb declared with relative paths. *This bug occurs since v0.1 (Beta) Build 24*.

- Studio now applies immediately all changes performed in advanced properties of a Database, such as connection's network library with a SQL Server database. *This bug occurs since v1.18 Build 16*.

- Fixed a possible lock that may occur in E3Run when creating a synchronous query to a database. *This bug occurs since v3.1 Build 170*.

- Fixed an Oracle session leak that occurred whenever a connection was finished due to a command time-out. *This bug occurs since v4.0 Build 14*.

- Fixed a problem in Oracle databases which may fail database operations if synchronous operations were executed, such as accessing Formulas or accessing the **E3Query.Execute(True)** method while consuming .e3i or .e3o files (error **ORA-03127**). *This bug occurs since v4.0 Build 14*.

**Domain, E3 Server, and Hot-Standby**

- Changed E3 Admin to detect when UAC (*User Account Control*) is turned off and to fail only if there is a need to elevate user privileges. *This bug occurs since v3.0 Build 348*.

- Fixed a GPF that occurred when attributing an object to the **Value** property of a Block Element with an enabled scale (the **EnableScaling** property). *This bug occurs since v0.1 (Beta) Build 7*.

- Implemented an immediate release of Driver licenses when finishing the E3Run process, thus avoiding a lack of Driver licenses if the Domain is restarted very fast after an E3Run failure. *This bug occurs since v3.0 Build 200*.

**E3Alarm**

- Fixed a problem where an E3Alarm lost its User Field configuration when connected to an Alarm Server in a Remote Domain, displaying the value "#WRONG INDEX#" on some columns.

**E3Browser**

- Fixed a GPF that may occur in Viewer when performing several queries in a row in an E3Browser object with a database configured with the **EnableLocalCreation** property set to True. The object may also get empty or display a message "DB disconnected". *This bug occurs since v2.5 Build 86*.

- Changed queries in E3 to always use brackets when delimiting field names, thus avoiding problems in queries with Oracle databases, which previously used quotation marks. *This bug occurs since v2.0 Build 30*.

**E3Chart**

- Fixed a failure on the connection of a chart line between historical and real-time data, in a Storage database. *This bug occurs since v3.2 Build 70*.

- Fixed a problem in E3Chart that may lock and display a message "Loading" if the database has its **EnableLocalCreation** property set to True. *This bug occurs since v1.22 Build 71*.

- Fixed the automatic query of E3Chart Pens when executed in the server. *This bug occurs since v1.21 Build 100*.

- Fixed a problem when removing queries by script, where Pens referencing another query had their **QueryName** property emptied. *This bug occurs since v4.5 Build 107*.

- Fixed the text color of E3Chart's legend header. *This bug occurs since v4.0 Build 206*.

- Improved automatic formatting of dates in E3Chart, to comply with customized Windows formats. *This bug occurs since v1.20 Build 367*.

**Query**

- Improved handling of results of asynchronous queries, so that an excess of queries do not lock Viewer's nor E3 Server's interface. *This bug occurs since v2.0 Build 92*.

- Fixed the display of items in Explorer and in Organizer that may show as unloaded, even when loaded. *This bug occurs since v4.5 Build 142*.

**ElipseX Libraries**

- Fixed error **8004FFF7**, which may be displayed without a reason during an update of XObject libraries, with a Domain executing. *This bug occurs since v2.0 Build 141.*

- Fixed the load of default values for properties created after ElipseX instances were already saved. *This bug occurs since v1.18 Build 115.*

**Find and Replace**

- Fixed a problem on error window of the Find and Replace tool, which displayed empty parentheses when an object load failed. *This bug occurs since v1.20 Build 236.*

**Formula**

- Fixed a problem that could lead to inserting duplicated records on a database if immediate execution operations interrupted the processing of .e3i or .e3o files. This could occur, for example, when executing in sequence the **CreateValue** and **SetValueData** methods of a Formula object whose **ImmediateExecute** property was configured to False. *This bug occurs since v4.6.95.*

**Installation**

- Now E3 installer provides the file ET32B.dll signed digitally. *This bug occurs since v4.5 Build 10.*

- Now E3 installer provides the file ET64B.dll signed digitally. *This bug occurs since v4.0 Build 144.*

- Now the file HKCustomer30.exe is signed digitally. *This bug occurs since v3.0 Build 307.*

- Now the file Interop.XPDLib.dll is signed digitally. *This bug occurs since v3.5 Build 80.*

**Interface**

- Fixed the abbreviation for seconds on the screen to start, stop, or update the Domain. *This bug occurs since v0.1 (Beta) Build 26.*

**IODriver and IOServer**

- Implemented a protection against using activation and deactivation of objects via scripts (the **Activate** and **Deactivate** methods) while there is an ongoing activation or deactivation operation. *This bug occurs since v2.5 Build 194.*

**OPC Client**

- Changed the window OPC Server Information of OPC Drivers to display server timestamps according to local time. *This bug occurs since v1.0 Build 0*.

- Changed the **Manufacturer** field on window OPC Server Information to display detailed information. *This bug occurs since v1.0 Build 0*.

- Implemented support for reading arrays of **VARIANT** using OPC DA 1.0a. *This bug occurs since v1.20 Build 406*.

- Now Tags with disabled reading preserve their values even if they loose the connection with an OPC server. *This bug occurs since v1.0 Build 0*.

**OPC Server**

- Hid from OPC server's browsing the **PathContainer**, **PathVolume**, and **IsAlarmArea** properties. *This bug occurs since v3.0 Build 196*.

**Other Fixes**

- In Studio now all **Enum**-type properties can have their values removed, if they do not apply to a specific object. In addition, some enum values may appear disabled when they are not supported. *This bug occurs since v1.18 Build 147*.

- Fixed a GPF that occurred when trying to drag and drop an object from one Studio to another. *This bug occurs since v4.5 Build 75*.

- Fixed the reading of Windows Registry keys by E3 Admin when UAC (*User Account Control*) is enabled. *This bug occurs since v4.5 Build 18*.

- Objects created at run time in E3Run are now automatically reconnected to pre-existing Links. *This bug occurs since v1.18 Build 26*.

**Reports**

- Fixed the behavior of Reports loaded in the server, when it was not possible to access server objects via Links. *This bug occurs since v3.0 Build 238*.

- Fixed a memory leak whenever a Report was loaded in Viewer. *This bug occurs since v4.0 Build 128*.

- Fixed a lock that may occur in the server if an error in a script occurred when generating a Report. *This bug occurs since v1.18 Build 114*.

**Screen Objects**

- Fixed information in the file ElipseKeyPad.dll to match the real version of E3 it belongs. *This bug occurs since v3.1 Build 11*.

**E3 Studio**

- Fixed a problem of reversing the order of Tags when several Tags were dragged to an upper position. *This bug occurs since v1.0 Build 1*.

- Fixed a leak on GDI objects when performing a drag-and-drop of items inside a view with EcoListCtrl. *This bug occurs since v0.1 (Beta) Build 26*.

- When closing an active tab, Studio now correctly selects the last tab that was active previously. *This bug occurs since v2.0 Build 39*.

- Fixed a GPF that may occur in Studio, E3Run, or Viewer x64 when deleting an object and the process uses memory beyond 4 GB. *This bug occurs since v3.1 Build 10*.

- Improved performance of searching in user fields in Studio, which was extremely slow in large applications. *This bug occurs since v4.5 Build 114*.

- On Screen's layer editor, when using the INS key, the new layers added now have an auto-incremented name. *This bug occurs since v4.5 Build 51*.

- Fixed a security vulnerability (ICS-VU-253665) in E3 Studio and in E3 Admin. *This bug occurs since v4.5 Build 232*.


**Undo Command**

- Fixed the update of the Properties List for several common properties of native Screen objects, when **Undo** or **Redo** operations are executed. *This bug occurs since v1.0 Build 0*.

- Fixed the **Undo** option for the **Effect3D**, **Effect3D_X**, **Effect3D_Y**, **Effect3D_ColorBase**, and **Effect3D_ColorTop** properties of Screen objects. *This bug occurs since v1.0 Build 15*.


**Users**

- Fixed the update of Viewer's **User** property, which may indicate (via Link) a wrong user when a login failed via the **LoginUser** method. *This bug occurs since v4.0 Build 144*.

- Implemented a check for Studio sessions when closing a running Domain with stop restrictions. *This bug occurs since v1.20 Build 322*.


**Viewer**

- Closing an accessory process (IOServer, E3UAClient, E3OpcClient, or E3DBEngine) does not cause a disconnection of the Viewer that was trying to access that process anymore. *This bug occurs since v1.20 Build 192*.

**Documentation**

- Updated links for KB articles on topic about Formula's **SetValueData** method on Scripts Reference Manual. *This bug occurs since v3.5 Build 76*.

- Fixed the measurement unit on the description of the **Width** property of E3Browser's Field object on Scripts Reference Manual. *This bug occurs since v3.1 Build 128*.

- Added a table with time units to the description of the **GetRealTimePeriod** method of an E3Chart's Axis on Scripts Reference Manual. *This bug occurs since v2.0 Build 29*.

# Version 4.5

This section contains **New Features** and **Fixed Bugs** of E3 version 4.5.

## 3.1 New Features

**Alarm Server / Alarm Configuration**

- Alarm Sources now support User Fields.

- Added the **UserFields** property (collection) in Alarm Sources and Areas, allowing to access and configure User Fields via scripts.

- Alarm's or Area's User Fields now can receive a value or a Link.

- The Alarm Server now allows configuring an unlimited number of User Fields.

- The window with fields to store on the Alarm Server is now resizable, has multiple selection, and the list of fields is sorted alphabetically.

- Added buttons to add and remove User Fields on the Alarm Server's property window.

- Added a statistical log to the AlarmHub.

- User Fields now can be configured to actively propagate their values to children Alarm Sources and Alarm Areas. So, when changing the value of an User Field, all alarms inheriting that value are instantly updated.
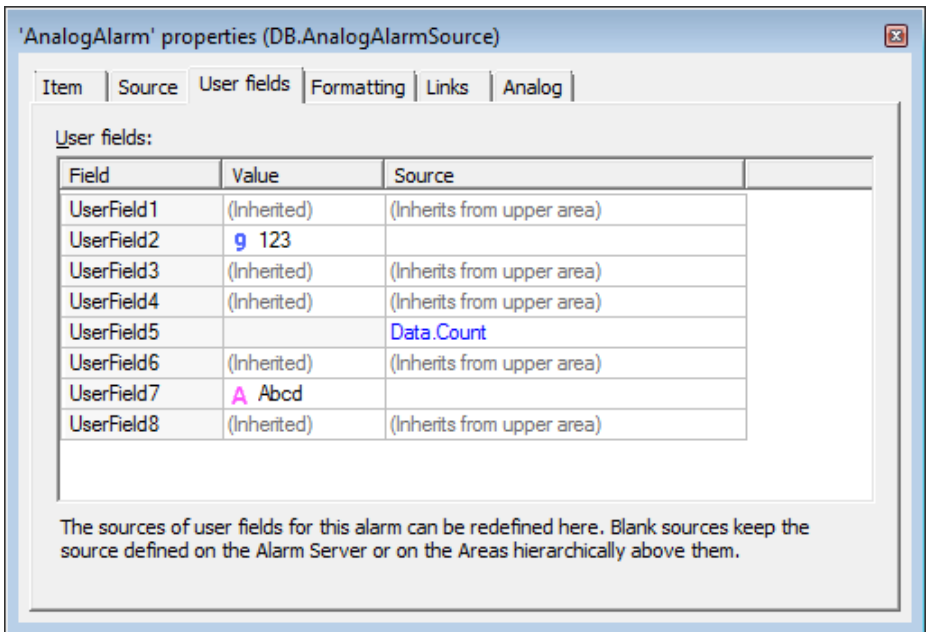
**Analog Alarm with new User Fields options**

**Database**

- Now it is possible to edit the SQL Server connection **String**, allowing, for example, connect to a SQL Server with Mirroring enabled.

- Improved server logs to indicate when an object such as the Database Server, Storage, or Alarm Server is searched by Viewer but not found, or it is not the expected type.

- When the load of Oracle client DLL (OCI.DLL) fails, the log registers the environment variable *Path*, to improve diagnosis.

**Domain / E3 Server / Hot-Standby**

- E3 Server now supports unlimited E3DataAccess and E3AccessLayer connections, without consuming Viewer licenses or any other type of license.

- E3DataAccess does not consume a Viewer license anymore when connecting to an E3 Server (as long as the E3 Server version be 4.5.199 or newer). This type of connection is registered in E3 Server as "E3DataAccess".

- E3AccessLayer (used by EPM to collect data from E3) does not consume a Viewer license anymore when connecting to an E3 Server (as long as the E3 Server version be 4.5.199 or newer). This type of connection is registered in E3 Server as "E3AccessLayer.EPM".

- E3 Admin's License and Statistics windows now are resizable. They also identify

correctly the connections via E3DataAccess and E3AccessLayer, differentiating them from Viewer connections. The names of the other connections were standardized on both windows. Added a **Program** column on Statistics window.
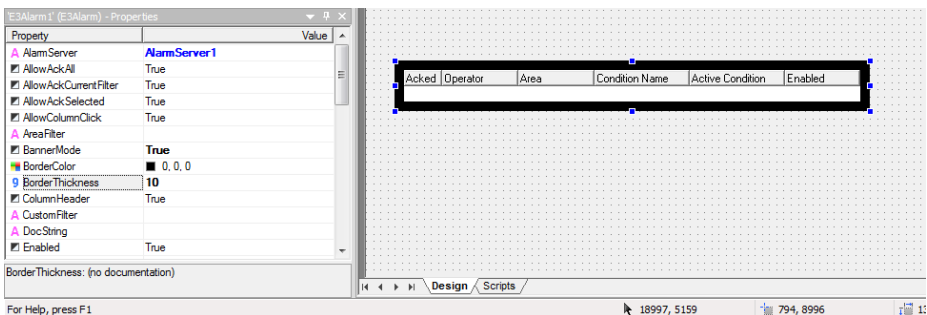
**E3Alarm**

- Added the **CustomFilter** property, which allows editing an expression to filter alarm messages. A propriedade **Filter** foi escondida e foi criada a propriedade **AreaFilter**.

- E3Alarm now support four sorting fields. Created four properties to allow configuring the third and fourth sorting level: **ThirdSortField**, **ThirdSortAscending**, **FourthSortField**, and **FourthSortAscending**.
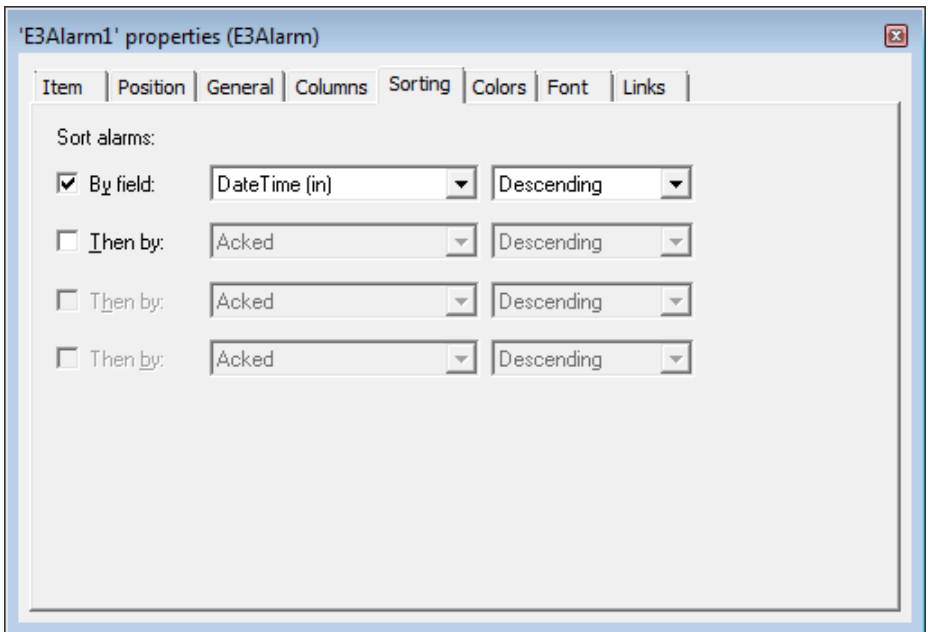


**New sorting options in E3Alarm**

- Added two properties in E3Alarm, **BorderColor** and **BorderThickness**. These properties configure, respectively, the color and size of E3Alarm's border.

- Added new counters for inactive and non-acknowledged alarms in E3Alarm, Alarm Server, Areas, and objects with the area behavior enabled (*ExtArea*). The new properties added are **InactiveNACKAlarms**, **InactiveHighNACKAlarms**, **InactiveMedNACKAlarms**, and **InactiveLowNACKAlarms**.

- The **Columns** tab on the E3Alarm's property window is now resizable.

- Added a **Banner Mode** option in E3Alarm. This mode displays only the first alarm of the current filter.

**E3Alarm's BannerMode, BorderThickness, and BorderColor properties**

## E3Chart

- Added the **CursorSearchStyle** property in E3Chart. This property allows the cursor to search for chart points according to the following options: nearest point, interpolated point, and previous point.

- Added the **ClearPenMarks** method in E3Chart, which removes search marks of all Pens.

## E3DataAccess

- E3DataAccess no longer depends on the E3Sys library and other E3 components, and it can be used in systems with a different version of E3 installed.

- Added methods to register and unregister callbacks in batch for items or Tags: **RegisterCallback**, **UnregisterCallback**, and **ClearCallbacks**.

- E3DataAccess now manages the connection to a server automatically.

## E3Query

- Created the **IgnoreQuality** property in E3Query (default is True), which works as the **Include BAD quality** option of the Storage's query configuration window.

- Created the **QueryType** property in Query objects, which allows indicating the type of query: **-1** (Undefined), **0** (DBServer), **1** (Storage) or **2** (OpcUa). The default value is **-1** (Undefined).
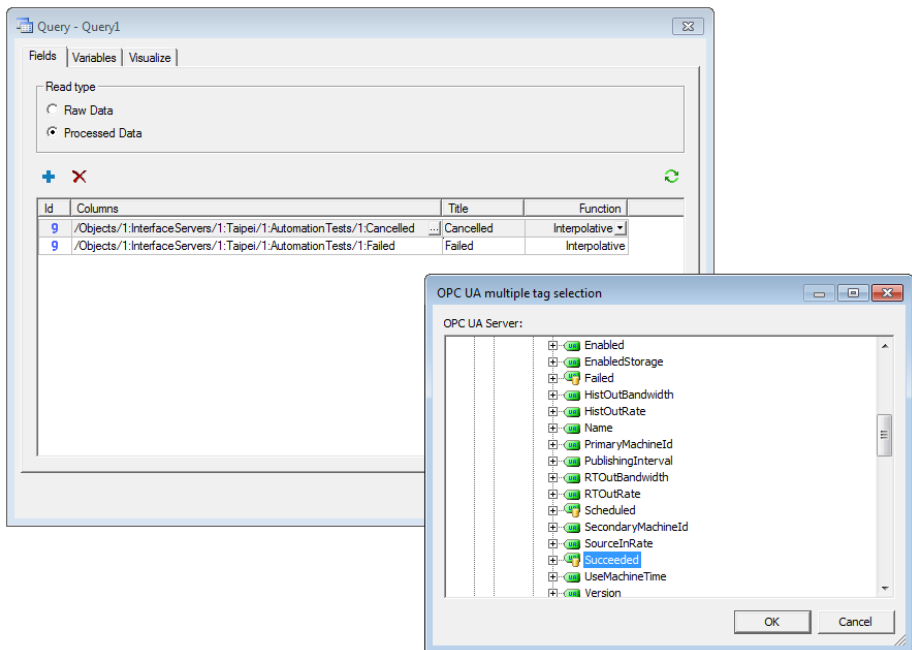
**Query using an OPC UA I/O Driver**

## E3 Tweak

- Added the **DisableThreadPool** option in E3 Tweak.

- Added the **WindowsExceptionCapture** option in E3 Tweak.

- Added the **ProcessInfo.E3UaClient** and **Full.UaClient** options in E3 Tweak.

## ElipseX Libraries

- Now it is possible to indicate if an XControl or XObject property is persistent, that is, whether its value is editable in Studio and stored in every instance (True) or it is a runtime-only value (False), restarted whenever the application starts.

## OPC UA Driver

- Created the OPC UA Driver object, which allows performing historical queries in EPM or any OPC UA server implementing them.

## Protection Device

- E3 log now displays a description of hardkey or softkey access errors.

- Updated the installer of HASP drivers (haspdinst.exe) to version 6.60.

## Installation

- Now the E3 WebViewer installer detects if there is another Elipse product already installed (for example, E3, Viewer, or Elipse Power) and displays a message asking for user confirmation. If the installation is silent, no message is displayed and aborts the installation.

- Updated the E3 demo application, with new screens and visual improvements. The screens automatically fit to 4:3 or 16:9 proportions, according to the system.

- The log generated during installation is now clearer and objective.

- Added the **ProductVersion** field on **Version** tab of installation file properties.

- Changed the icons of WebViewer installer and uninstaller.

- Added support to E3 installation on Windows 8 and Server 2012.

- Integrated eeLogs v4.5 Build 75, which ensures support to Windows 8 and 2012, in addition to other corrections and improvements on the management of repository, collecting, and viewing events.
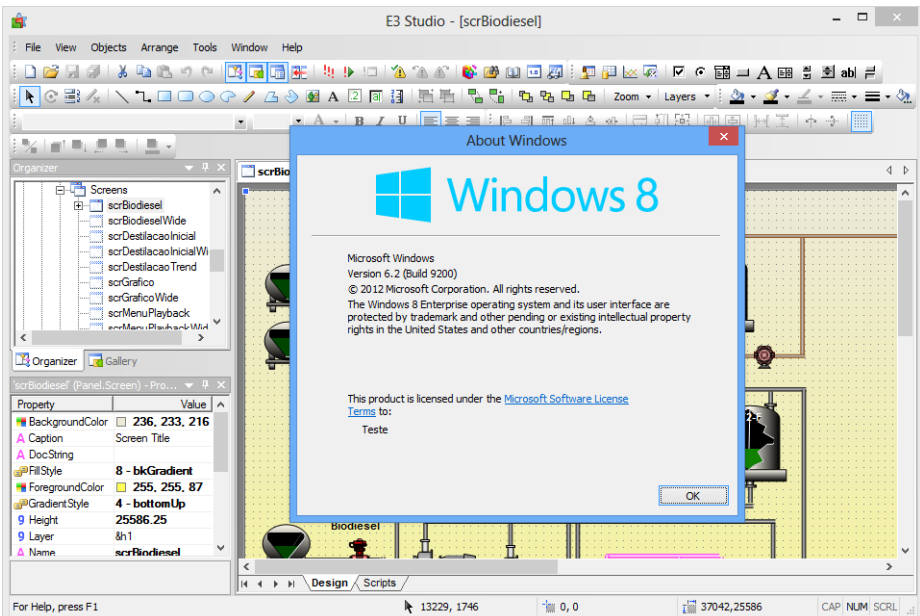


**Studio running on Window 8**

## IODriver / IOServer

- Implemented the **Pool of IOServer Processes**, which allows several Drivers to run in a single process, allowing applications with hundreds and even thousands of Drivers. This Pool can be configured and enabled in the Domain configuration

(the **Properties** tab), and can be controlled in each Driver object using the new **DisableIOServerPool** property.
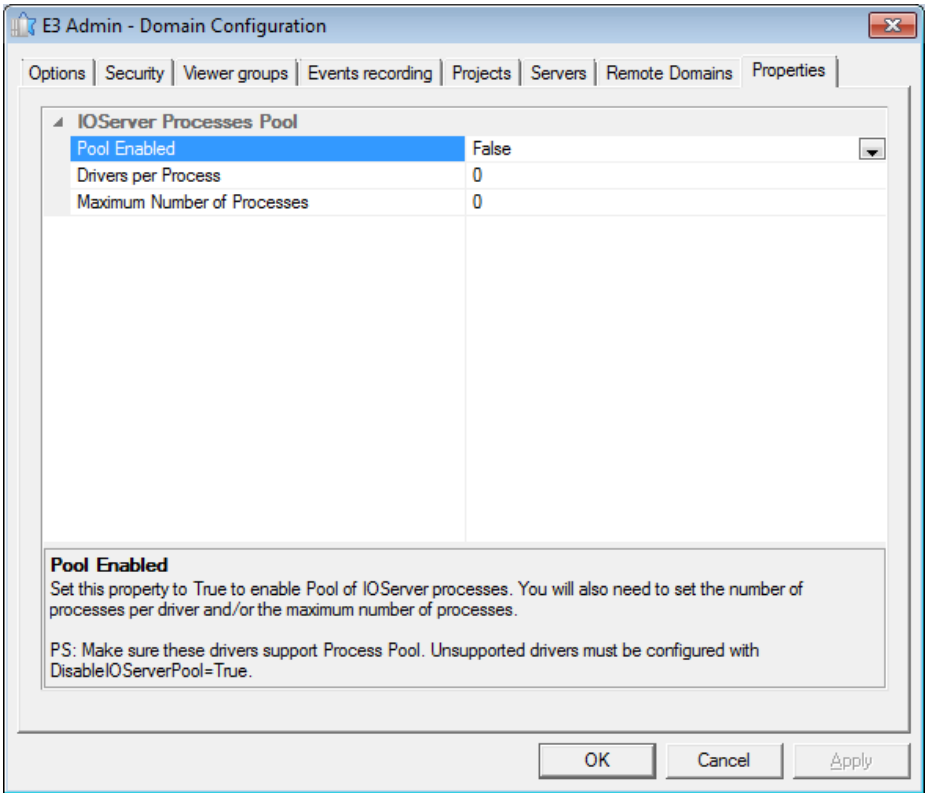


**IOServer Process Pool**

- Added support to Drivers that implement the **drvCreateDriverInstance** service, which allows several Driver instances to run in the same IOServer.

- The interval of statistical logs of Driver data processing (**IOQueue**) now can be configured via registry on the **HKLM\Software\Elipse Software\E3\Logs \IOQueueStatsSec** key. Four variables were added to the log: **AvgDelay**, **MaxDelay**, **AvgProcess**, and **MaxProcess**.

**OPC Client**

- In Studio, now the OPC Driver's window for selecting the OPC server allows viewing several domains and groups on the local network, and not only the group (or domain) of the computer running Studio.

**Other Implementations**

- Improved the performance when saving E3 objects.

- Added logs to detect and register locks in REC's internal methods, as well as improved several logs to indicate clearly the communication channel that generated a message.

**Playback**

- Changed the way Playback enumerates Database's table fields, improving performance of Playback's database assembling in SQL Server and Oracle.

- Playback (when licensed) now no longer calculates the complete time interval in the database, which makes the initial load (*assembly*) of the database much faster. The user is now free to choose a date and time to start the analysis.

**Studio**

- On Studio's Property List, implemented support for auto-detection of data types entered in a **Variant**-type property.

- Implemented a different icon to indicate, in Organizer, when a project is disabled.

- The Studio's Screen editor now has shortcut keys for **Bring to Front** (ALT + PAGE UP), **Send to Back** (ALT + PAGE DOWN), **Bring Forward** (ALT + HOME), and **Send Backward** (ALT + END).

**Users**

- The **Application.IsUserMemberOfGroup** method now has a second parameter that allows specifying the user. If this parameter is omitted or empty, uses the currently logged-in user.

**Documentation**

- Updated the minimum requirements to install E3 and Viewer in the Installation Guide.

- Updated the Gold Independent Software Vendor logo, USA branch address, and added a link to KB in the final page of E3 documentation in PDF format.

- Updated the Microsoft Partner and OPC Member logos of E3 documentation in PDF format.

- Added the OPC Foundation MIT license in the license document of E3.

- Updated the table of fields of a Pen's Legend with information about the number and name of each column, in E3 User's Manual, as well as in Scripts Reference Manual.

- Updated the description of the **DefaultValue**, **HelpString**, and **Retentive** properties of an ElipseX Property object in the Scripts Reference Manual.

- Updated the description of the **SetDisableTaskSwitching** method of the FrameSet object in the Scripts Reference Manual.

- Updated all models to generate PDFs for A4 printing format in all documents, except the E3 Installation Guide.

- Added a topic about Discrete Alarms in E3 Tutorial for Developers.

- The exercise in the **Hot-Standby - Configuring Hot-Standby** chapter of E3 User's Manual was changed to remove the explanation about every configuration option and replace them by links to specific topics in the chapter about Domains.

- Removed the topic **List of Events**, of **Drivers** chapter of E3 User's Manual, which was replaced by the topic **Tags Reported by Events**.

- Added a note in the E3 User's Manual explaining the functionality of the **Disable permissions check** on Studio's **Permissions** tab.

- Added EQATEC Analytics license to the E3 license document.

# 3.2 Fixed Bugs

**ActiveX**

- On Screen editor were removed the ARDesigner and ARViewer2 objects (from ActiveReports) from the contextual menu. *This bug occurs since v3.5 Build 69*.

**AppBrowser**

- Fixed a problem on AppBrowser window, which could separate the **Paste** and **Cancel** buttons when resizing it. *This bug occurs since v4.0 Build 60*.

**Database**

- Changed the behavior when renaming and changing the type of columns in Oracle databases. With this, now the minimum required Oracle version supported by E3 is 9R2. *This bug occurs since v1.00.019 Build 87*.

- Fixed the search for Database servers and Storage to ignore brackets in object paths. *This bug occurs since v1.00.018 Build 147*.

- Fixed race condition situations in asynchronous historical queries (ADO) in E3, which could lead to GPFs (including GPFs in ADO or OLEDB components).

- Fixed a GPF that may occur with Oracle connections when there were operation errors in the execution queue, as well as in immediate operations.

**Domain / E3 Server / Hot-Standby**

- Fixed the update in running Domains. When an update in execution was interrupted by another one, some objects could be updated but not active. *This bug occurs since v3.0 Build 23*.

- Now E3 Server restarts in situations of switching or removing the license. In addition, in case it closes due to a license switch with a running Domain, it does not notify the other Hot-Standby server. *This bug occurs since v3.0 Build 456*.

- Fixed the behavior of E3 Server when manually closed during the regressive counting to close (or restart) by a license switch (it may log the error **E00106** incorrectly). *This bug occurs since v4.0 Build 87*.

- Fixed Alarms Summary synchronism in Hot-Standby, which was not propagating the events' **EventCLSID** field. *This bug has occurred since v3.0 Build 109*.

**E3Alarm**

- E3Alarm now correctly removes messages that changed the status, so that they do not met the display filter. For example, if the filter was only by Alarms, a message that is changed from Alarm to Event would continue to display in E3Alarm. *This bug occurs since v3.2 Build 90*.

**E3Browser**

- Fixed the handling of finishing queries in E3Browser that, for example, never finished if the query returned an empty data set. *This bug occurs since v1.00.022 Build 5*.

- Fixed the notification of change that occurred in E3Browser whenever its field collection was saved. *This bug occurs since v1.00.018 Build 147*.

**E3Chart**

- Fixed a problem that lead an E3Chart to not display in a Report footer when a page break appeared inside the footer. *This bug occurs since v1.00.020 Build 174*.

- Fixed a GPF that could occur in E3Chart when updating queries in a Viewer with slow or unstable communication. This GPF occurred more easily if the application called the **UpdateData** and **FitAll** methods in sequence. *This bug occurs since v4.0 Build 50*.

- Fixed a problem with an E3Chart ignoring non-numerical values (**Null**, for example). *This bug occurs since v3.2 Build 105*.

- Now E3Chart's configuration windows put brackets in field names, when needed. *This bug occurs since v2.5 Build 22*.

- Implemented in E3Chart support for child queries with special characters in the

name (E3Chart automatically adds brackets when needed). *This bug occurs since v1.00.020 Build 172*.

- Fixed in E3Chart a problem when evaluating historical Pens with an expression in one of the axes, which could lead a Pen to always get a value of 0 (zero).*This bug occurs since  v4.0 Build 168*.

- Changed the E3Chart's drawing forced by Pens with queries, to show error status, even when there is no returned data. *This bug occurs since v4.0 Build 73*.

- Fixed the behavior of editing external queries of E3Chart Pens, which caused the display of invalid values on the combo box to select a query. *This bug occurs since v4.0 Build 107*.

- Fixed a problem in the **CopyConfig** method in E3Chart, which always connected the mark cursor of Pens in the destination E3Chart. *This bug occurs since v3.2 Build 89*.

- Fixed a problem in the **CopyConfig** method, which kept the destination E3Chart redrawing itself and configuring the cursor to search mode. *This bug occurs since v3.2 Build 68*.


**E3DataAccess**

- Implemented event notification support inside an Internet browser in E3DataAccess. *This bug occurs since v3.0 Build 69*.

- Fixed a possible increase in memory consumption (*leak*) when different threads create and destroy E3DataAccess objects. *This bug occurs since v3.0 Build 69*.

- Two new methods were added, **ReadValue** and **WriteValue**, replacing the former **GetValue** and **SetValue** methods, which now should be avoided. These new methods correctly handle *IN* and *OUT* parameters when used in scripting languages. *This bug occurs since v3.0 Build 69*.

- E3DataAccess functions and properties now use data types compatible with VBScript and other typeless languages. *This bug occurs since v3.0 Build 69*.


**E3Query**

- The Query object does not save the size of the window and the position of the field area splitter in the application anymore. The query's configuration window now has its position and size saved in the computer running Studio, and the position fo the field area splitter is not saved anymore. *This bug occurs since v1.00.021 Build 164*.

- Fixed the return of **TypeName** for Query's Field and Field Collection objects. *This bug occurs since v1.00.019 Build 137*.

- Changed the behavior of the **SQL** property in Query object, to allow that the empty

value return to the behavior of generating the query text automatically.*This bug occurs since v1.00.019 Build 117.*

- Fixed the internal notification of changes in Queries, when query variables are overwritten with the same values. *This bug occurs since v1.00.020 Build 237*.

- Fixed the behavior of Storage queries to return, in the **GetADORecordSet** method, a Recordset positioned at the first record. *This bug occurs since v1.00.021 Build 76*.

- Now it is allowed to set the value **ftNoFunction** at run time in the **FunctionType** property of the Query. *This bug occurs since v1.00.021 Build 76*.

- Implemented a notification of change in the **Having**, **SQL**, **Table**, **Fields**, **Where**, **GroupBy**, and **OrderBy** properties of the Query object, when these properties change indirectly. *This bug occurs since v1.00.019 Build 137*.

- Fixed a memory leak on Query's configuration window. *This bug occurs since v1.00.021 Build 26*.

- Fixed problems when updating the preview window of Query configurations. *This bug occurs since v3.0 Build 186*.

**ElipseX Libraries**

- Changed the generation of ElipseX libraries in E3, to allow libraries generated in a system with a certain language to work correctly in systems using a different language. *This bug occurs since v1.00.018 Build 147*.

**Protection Device**

- E3 Server now tries to start the HASPLMS service before reading the license for the first time.

**Installation**

- Removed the installer of Microsoft Visual C++ Redistributable Package from E3 and WebViewer installers, because it may hang the installer in silent mode. The files of this installer now are moved directly to the Bin folder. *This bug occurs since v4.0 Build 37*.

**IODriver / IOServer**

- E3 is not limited to process 2000 values per second from a single Driver anymore. *This bug occurs since v1.00.018 Build 147*.

- Fixed a double counting on I/O Tag licenses when using the **WriteEx** or **Write** methods of a Driver with the same addressing of an existing Tag in the Driver.*This bug occurs since v2.0 Build 108*.

**Links**

- Optimized E3 Server performance when disconnecting a client with many Links. *This bug occurs since v3.0 Build 201.*

- Fixed the handling of discarded remote links, which generated unnecessary remote accesses when they were recycled. *This bug occurs since v4.0 Build 121.*

**OPC Client**

- Now change notifications of OPC Tag's **Quality**, **TimeStamp**, **RawValue**, **Value**, and **Bit00** to **Bit31** properties are generated only after all values have been updated. *This bug occurs since v1.00.018 Build 147.*

- The **Value** property of OPC Tags now receives *Null* if the scale fails (if the **RawValue** property is a **String**, **Null**, **Nothing**, or **Array** value, or if the scale configuration is invalid). Previously the property only kept its previous value. *This bug occurs since v1.00.018 Build 147.*

- OPC Block Elements now only generate **OnRead** events for changes sent by the OPC server (the only exception are writings using the **TrustWriteSuccess** mode). *This bug occurs since v1.00.018 Build 147.*

- Fixed an **Empty** value that occurred in OPC Block Elements that have never communicated. *This bug occurs since v1.00.018 Build 147.*

**Other Fixes**

- Corrected date, time, and time interval rounding when formatted with tenths or hundredths of seconds. *This bug occurs since v4.0 Build 133.*

- Changed the way the number of threads was calculated in each E3 process (used by **ProcessInfo** statistics), which used to nearly crash the system if there were a few hundred Drivers running with enabled statistics. *This bug occurs since v4.0 Build 31.*

- Changed REC channels sending and receiving logic to better tolerate slow networks situations. Also added **Pending Packets** column on E3Admin Statistics window.

- Fixed the handling of paths where the dot was not required after a name between brackets. *This bug occurs since v1.00.018 Build 147.*

**Remote Domains**

- Fixed a problem in Links of Remote Domains that started with brackets right after the Domain name. *This bug occurs since v3.0 Build 201.*

- Fixed a problem with simultaneous creation of Links of several Domains, when a failure could lead to failures in other Domains. *This bug occurs since v3.0 Build*

*201.*

**Screen Objects**

- Fixed a GPF that occurred in Viewer when a Screen object with keyboard focus was erased in a script. *This bug occurs since v1.00.019 Build 87*.

**Storage**

- Fixed a problem when retrieving data in Storage queries with the **CursorLocation** property equal to 1 (**clClient**) in E3Browser. *This bug occurs since v3.0 Build 260*.

**Studio**

- Fixed the border drawing of the active tab of docked windows in Studio. *This bug occurs since v4.0 Build 176*.

- Fixed a formatting problem in E3 window with a warning to not display the window anymore, when the text was too large. *This bug occurs since v3.5 Build 81*.

- Fixed a problem on the Color Palette window in Studio, which locked the properties list window after closing it. *This bug occurs since v2.0 Build 15*.

- Fixed a problem of not closing the active tab with the key combination CTRL + F4 when mouse was over the command buttons in Organizer, with a docked or floating window. *This bug occurs since v2.0 Build 100*.

- Fixed problems in selection and removal of Screen layers. *This bug occurs since v1.00.018 Build 155*.

- Fixed the update of **Variant**-type values when their types are changed via contextual menu (occurred in several locations in Studio). *This bug occurs since v1.00.018 Build 155*.

- Fixed the position of Text object when inserted on a scrolling Screen. *This bug occurs since v3.2 Build 214*.

- Now the cursor position is correctly updated when using the mouse wheel during the edition of a Text object. *This bug occurs since v1.00.019 Build 87*.

- In Studio's Screen editor, when pressing ESC during text edition, this edition is terminated instead of interpreted as an unknown character. *This bug occurs since v1.00.020 Build 289*.

- The WatchWindow window was changed to display common properties of objects, as well as specific properties of the instance. *This bug occurs since v2.0 Build 16*.

- Fixed unexpected closing (GPF) that occasionally happened in Studio when using WatchWindow. *This bug has occurred since v4.0 Build 121*.

- Implemented a notification of change on the Screen when moving the Rotation Center, or adding or removing an Anchor point of an object. *This bug occurs since v1.00.018 Build 155*.

**Translation**

- Fixed the opening text of E3. *This bug occurs since v2.5 Build 122*.

- Fixed the positioning of fields on Add User window. *This bug occurs since v4.0 Build 161*.

- Some messages using the term "connection with" were altered to use "connection to" instead.

**Viewer**

- Fixed a problem that prevented Read-Only Viewers from accessing via script properties and methods of Domain objects. **NOTE**: It also requires an update on the remote server if the Remote Domain channel is not read-only. *This bug occurs since v3.0 Build 201*.

- Fixed a retry in the REC connection when resolving the server's name fails. *This bug occurs since v1.00.021 Build 98*.

- Fixed a memory leak that occurred in Viewer during a Screen toggling with Viewer's cache disabled. *This bug occurs since v4.0.128*.

**Documentation**

- Fixed the usage example of the **InsertColumn** method of a Pen's Legend in Scripts Reference Manual. *This bug occurs since v3.2 Build 140*.

- Added the description of **Source** property of a Multisource Link Row in Scripts Reference Manual. *This bug occurs since v3.2 Build 175*.

- Added descriptions for **OnRead** events of OPC Block, OPC Block Element, and OPC Tag objects in Scripts Reference Manual. *This bug occurs since v1.00.018 Build 147*.

- Added information about the Storage Session object in Scripts Reference Manual, related to the **AddField**, **AddValue**, and **Commit** methods. *This bug occurs since v2.5 Build 128*.

- Created separated topics to enlist events, methods, and properties of Link collections (the **Links** property) and Discrete Alarm Source Subconditions (the **Subconditions** property) in Scripts Reference Manual. *This bug occurs since v4.0 Build 155*.

- Created in Scripts Reference Manual a new topic in common properties of Server Objects, which contains common properties of Server Objects behaving as Alarm Areas. *This bug occurs since v4.0 Build 169*.

- Updated the description of the **Write** method of the I/O Driver object in Scripts Reference Manual to remove a mention to an ever-synchronous data writing. *This bug occurs since v3.0 Build 57.*

- Added a new topic about Multiple Links in chapter **Links** of E3 Tutorial for Developers. *This bug occurs since v3.5 Build 164.*

- Performed corrections in several texts and exercises of the E3 Tutorial for Developers. *This bug occurs since v3.5 Build 164.*

- Fixed the description of the **Saves and Runs the Domain** button of Studio in E3 User's Manual and E3 Tutorial for Developers. *This bug occurs since v3.5 Build 163.*

- Updated the E3 Tutorial for Developers on the chapters where there are images with the configuration window for Analog Alarms. *This bug occurs since v4.0 Build 187.*

- Removed references to specific versions of E3 in documents where this information is not needed.

- Fixed the screen resolution of CHM files to comply with project configuration. Now all files are opened with the resolution of 1024 by 768 pixels. *This bug occurs since v3.5 Build 183.*

- Fixed the example of the topic **Reports - Usage Examples - Capturing a Screen and Generating a Print Preview**, in E3 User's Manual. *This bug occurs since v1.00.019 Build 87.*

- Fixed the item **ActorID** on topic **Alarms - Alarm Server - Configurations for Alarm Table Generation** in E3 User's Manual. *This bug occurs since v1.00.019 Build 383.*

# Version 4.0

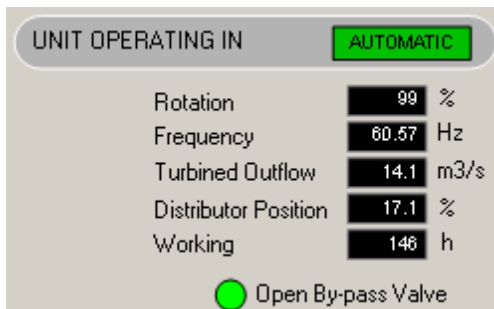This section contains **New Features** and **Fixed Bugs** of E3 version 4.0.

## 4.1 New Features

**Viewer**

- Implemented a **High Quality** mode on E3 Screens drawing, using GDI+. The quality of screen drawing is controlled by the new **RenderQuality** property of Viewer and Screen objects.
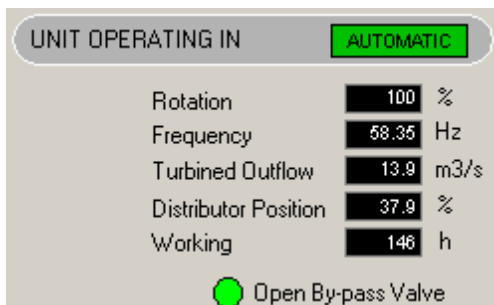

**Normal quality mode (GDI)**


**High quality mode (GDI+)**

- Added support to multi-touch for screen scrolling and zoom on Viewer and Studio, in devices accepting that functionality.

- Added zoom control on Screens via keyboard (CTRL + PLUS SIGN, CTRL + MINUS SIGN, and CTRL + ASTERISK) and mouse wheel.

- Added options to Viewer Screens' zoom menu to change the drawing quality of the current Screen, and for all Viewer's Screens.
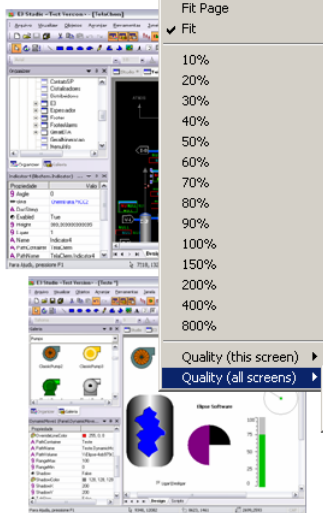
# The Product

# E3 Studio

- The Company
- The Product
  - E3 Studio
  - E3 Server
  - E3 Viewer
  - Application Preview
- Contact Elipse
- Start

Universal development platform with a friendly, modern environment. It has a complete graphical editor to create user operation interfaces, and also the following...

| Fit Width |
| Fit Height |
| Fit Page |
| ✓ Fit |
| 10% |
| 20% |
| 30% |
| 40% |
| 50% |
| 60% |
| 70% |
| 80% |
| 90% |
| 100% |
| 150% |
| 200% |
| 400% |
| 800% |
| Quality (this screen) ▶ |
| Quality (all screens) ▶ |

| Use Default |
| Force Normal Quality |
| ✓ Force High Quality |

· Unique configuration platform

· Multi-application

· Multi-user

· Vectorial Screens

· Full ActiveX integration

· Symbols Library

· Uses HTML/Frames

· Programming in VBScript

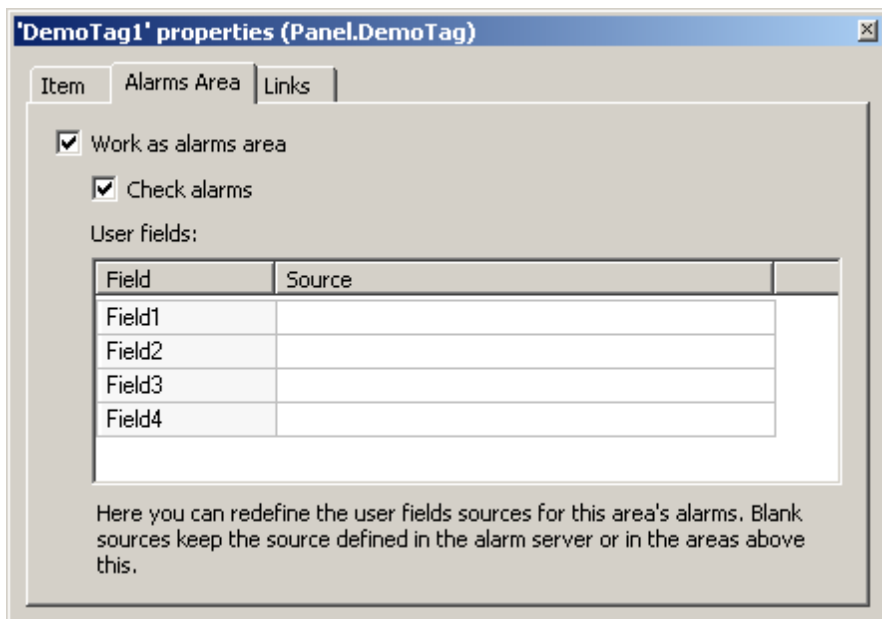· Online configuration

· tion

More ...

**Viewer's zoom menu**

## ActiveX

- E3 now install licenses allowing usage of controls of the ActiveX library Microsoft Common Controls 6.0. The DLL still needs to be copied manually.

## Alarms

- Implemented an optional Alarm Area behavior for any server object.

**Server object as an Alarm Area**

- Created the Discrete Alarm, which has a configurable list of subconditions.
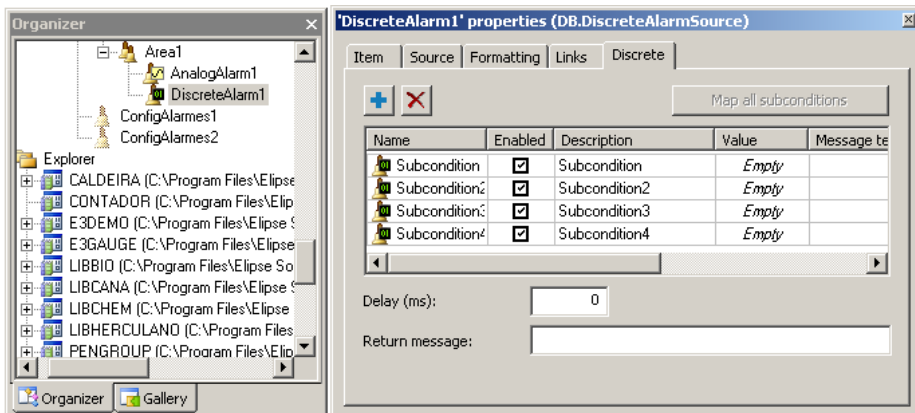


**Discrete Alarm**

- Created four new properties for Analog Alarm subconditions, which allow configuring separately whether a subcondition is handled as an event or not. These properties are **LoLoEvent**, **LoEvent**, **HiEvent**, and **HiHiEvent**.

**Analog Alarm**

### Demo Application

- Added the PenGroup library to the Demo application, which aims to provide a tool to search for data and display charts, thus creating a faster way of performing application settings, and also allowing a powerful analysis interface for the end user.

### Databases

- Improved log messages regarding connection, closing, and reconnection of the Database Server.

- Improved and standardized logs for data table update operations (Historics, Alarms, and Formulas) kept by E3.

### Domains / E3 Server / Hot-Standby

- Changed the configuration interface of the local access path to Domain files. Also implemented warnings about common configuration errors for this option.
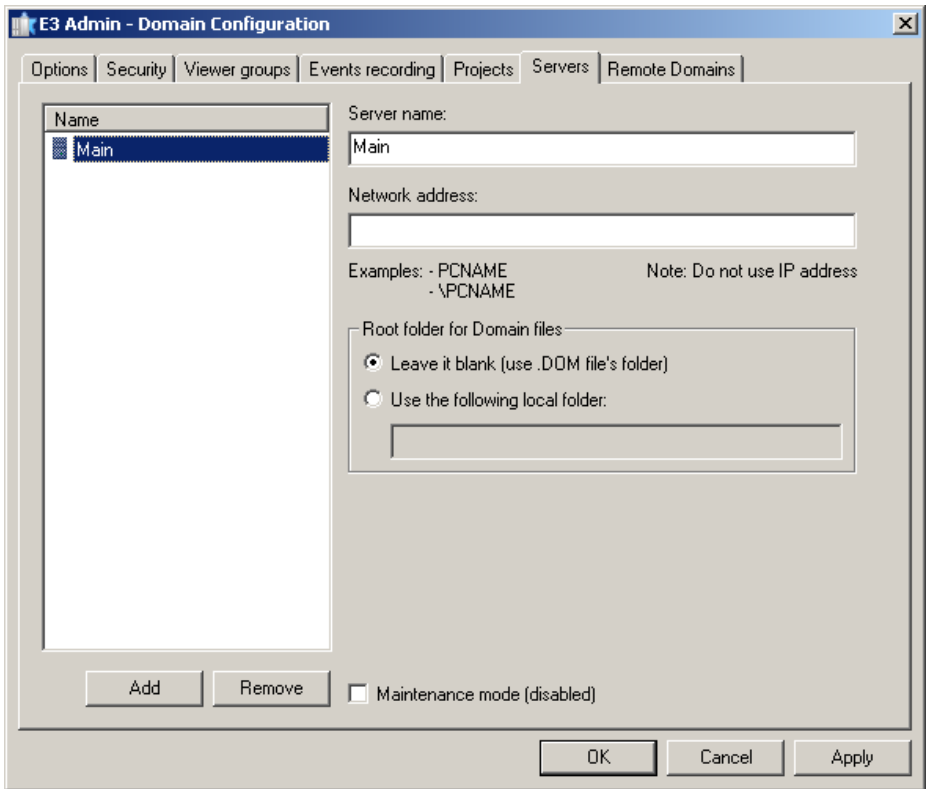
**Configuration interface of the local path**

**E3 Tweak**

- Added the module **OCIThread** to log section **FullDB** in E3 Tweak.

- Added the modules **ServerSubscriptionManager**, **AlarmQueue**, and **RemoteDomainsManager** to log section **Full** in E3 Tweak.

- Added log section **PowerEngine** in E3 Tweak. This section contains the modules **Input**, **LoadShed**, **Output**, and **PowerEngine**.

**Protection Device**

- E3 Server now allows reprogramming or replacing a hardkey on the fly. If licenses are removed, the E3 Server is automatically restarted. If licenses are added, then it may be necessary to restart the Domain to use these additional licenses.

- Updated the installer of HASP drivers (haspdinst.exe) to version 6.22.

**IODriver / IOServer**

- Implemented support for relative paths in I/O Driver's **DriverLocation** property.

**Installation**

- Changed the clause 4 of the software license, which deals with hardkey's theft or loss.
- Updated basic components of OPC Core Components (x86) in E3 installers.
- Integrated EELogs v4.5 Build 37, which corrects problems related to recovery of deleted files on some operating systems, support for installation on Windows 8, among other improvements.

**Links**

- Created object contexts, which work as shortcuts to parent objects, and can be used in Links (by using **@(context)**) and scripts (by using **Context("*context*")**).

**Other implementations**

- Created the option **HeapLog.{PROCESS}** in Windows Registry to generated detailed logs about memory usage of E3 processes.
- Added the option **OANOCACHE** in E3 log configuration in Windows Registry, which allows disabling the BSTR cache of OLE Automation. **NOTE**: It should be enabled only to improve BSTR memory leak diagnosis, because it degrades memory allocation performance for **Strings**.

**Playback**

- Playback queries retrieving Storage data were optimized when there are many Tags involved. Now the **In** function is used, instead of **>**, **<**, **AND** , and **OR** operators to indicate field IDs to search for.

**Studio**

- Improvements on Studio interface:
    - Implemented a middle-click to close the tab under mouse pointer
    - Implemented an option to display a button to close the active tab on the tab itself, or on the right side of all tabs. This option can be configured in the **Options** window, on **Tools** menu
- Other improvements in **Options** window of the **Tools** menu:
    - Changed the name of **Studio** tab to **General**, and also changed its position to

be the first one

- Changed the name of **Editor** tab to **Scripts Editor**

- Adjusted the size of **Studio** tab to conform to the standard

- Created shortcuts to open **Log Viewer** and **E3 Tweak** from inside Studio, as well as shortcuts to open **Log Viewer**, **Studio**, **Viewer**, and **E3 Tweak** from **E3 Admin**.
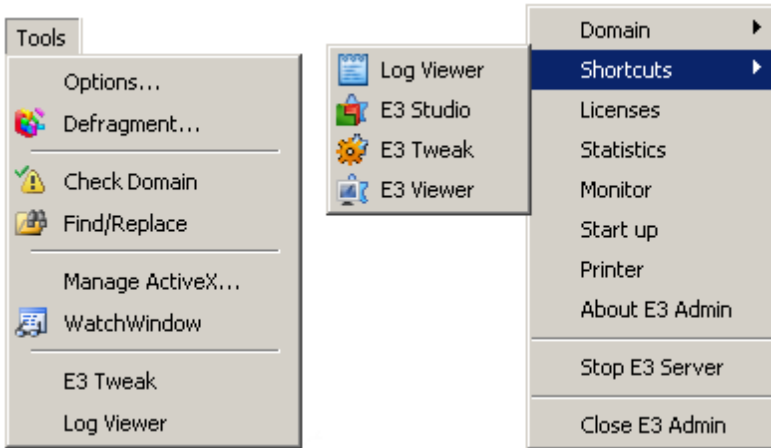


**Shortcuts on Studio and on E3 Admin**

- Created methods **CreateFile**, **CreateFolder**, and **CreatePRJ** in Studio's Application object.

- Created the method **RenameFolder** to rename a Folder via scripts running in Studio.

- Removed an unused space on the left side of cells on the first column of all tables in Studio that are not hierarchical (for example, the **Links** tab).

- Implemented a window for scripts execution errors in Studio (the same one appearing in Viewer).

- Implemented a cache of images or Metafiles in Studio. Thus, if the same image is used several times on the same Screen, or on different Screens, it is loaded on memory only once.

- Gallery does not display error messages relative to Screen or XControl loading anymore.

- The Screen Editor now always adjusts object coordinates to the nearest pixel (a *Snap to Pixel* effect). Also added the shortcut key CTRL + SPACEBAR, which moves the selected objects to the nearest pixel.

- Gallery thumbnails are now drawn using the **High Quality** mode (GDI+).
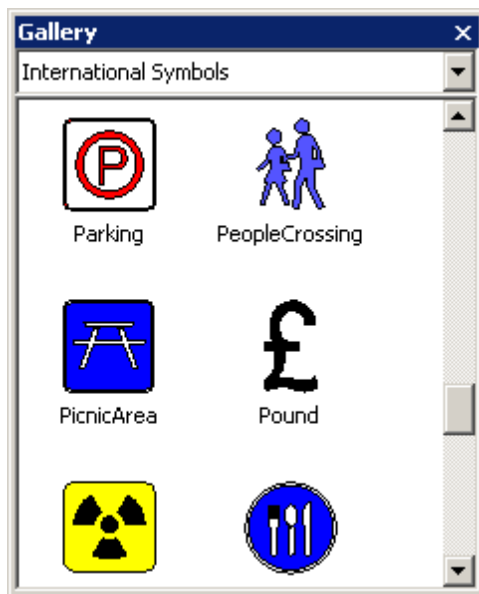
**Gallery**

**Users**

- The E3 users database now allows integration with Windows users.


**Login integrated to Windows**

- Names of E3 users and groups are not case sensitive anymore. For example, it is not allowed to create an "AAA" user anymore, if there is already an "Aaa" user.

When performing a login, case-insensitive typing is now allowed.

- The window for user edition (or the **Application.UserAdministration** method in Viewer) now allows removing and changing the Administrator configuration of the currently logged-in user.

**Documentation**

- Added information in **E3 User's Manual** about limitations of the **Demo** mode.

- Added feedback forms on Elipse E3's document topics in CHM format.

- Added address and phone numbers of the Elipse's Rio de Janeiro branch on PDF templates for documentation.

- Changed the topic structure of **E3 Scripts Reference Manual** to reflect the hierarchy of E3 Studio's Organizer.

- Added the **Developer's Tutorial** in E3 installer.

# 4.2 Fixed Bugs

**Databases**

- Database Server's **TimeoutConnection** and **TimeoutCommand** parameters were ignored in an OCI Oracle connection, and now they are respected, avoiding a long wait on operations.

- Fixed in log messages the value for how long backup and discard operations on database tables last. *This bug occurred since v3.0 Build 256*.

- E3Run now uses a thread pool to handle Database queries. This pool fixes a COM memory leak, which may occur in E3Run and in E3 Server.

**Domain / E3 Server / Hot-Standby**

- Fixed a problem in the procedure that creates or updates E3-handled tables, which stalled E3Run or Studio in case database table _Fields was corrupted (having two fields with the same FieldID). *This bug occurred since v1.00.019 Build 87*.

- Fixed a problem in E3 Server's Hot-Standby, where both servers entered a Hot state when one server was removed from standby mode. For further information, please refer to *http://kb.elipse.com.br/en-us/questions/1507*. *This bug occurred since v3.1 Build 1*.

**E3Chart**

- Starting an E3Chart query was unlinked from its drawing and linked to the refresh timer, leading to fast screen opening and lighter automatic queries when dragging

the Screen. *This bug occurred since v1.00.022 Build 71*.

**E3DataAccess**

- Fixed E3DataAccess' **RegisterCallback** method behavior, which did not work when used for the second time. *This bug occurred since v3.2 Build 123*.

**E3Query**

- Fixed a GPF in Studio, which occurred when testing a Query (E3Query) with a disabled OLE Automation BSTR cache (**OANOCACHE** equal to 1).

**Storage**

- Fixed a problem preventing a server with no Storage-recording licenses to perform queries on Storage's database. *This bug occurred since v3.5 Build 285*.
- Improved precision of interpolated data returned by Storage's **SampledData** query. *This bug occurred since v2.0 Build 163*.
- Small performance improvement for Storage's **SampledData** query. *This bug occurred since v3.0 Build 150*.

**E3 Tweak**

- Fixed the default value of REC compression (correct value is 0, not 6). *This bug occurred since v3.2 Build 209*.

**Expressions**

- Fixed a Viewer's memory leak when evaluating Links with expressions, which occurred when objects with Links were activated and then deactivated. *This bug occurred since v3.0 Build 137*.
- Implemented **Strings** usage on second parameter of **String** function on E3 Link expressions.

**Find / Replace**

- Fixed the implementation of tool **Find/Replace** to include in the search the properties **DocString**, **Public**, and **Retentive** of an ElipseX's property definitions. *This bug occurred since v1.00.019 Build 132*.

**Gallery**

- Fixed a problem when generating XControl thumbnails in the Gallery, which could cut their borders (or a cut border on larger borders). *This bug occurred since v2.5*

*Build 121.*

**Protection Device**

- Removed license information from Elipse Power that appeared when a license borrowing of Studio licenses to an E3 Demo occurred. *This bug occurred since v3.5 Build 111.*

**IODriver / IOServer**

- Fixed the IOServer's registration removal to not fail if the IOServer was not already registered. *This bug occurred since v3.1 Build 1.*

- Blocked reentrant generation of I/O Driver's **OnCommError** and **OnCommErrorEx** events.

- Fixed a problem when propagating quality and timestamp of I/O Tags, which occurred before updating Tag's value.

- The I/O Tag's **Value** property now receives Null on scale failure (if the **RawValue** property has a **String-**, **Null-** or **Array-**type, or if scale configuration is invalid). Previously this property simply retained its previous value.

- Fixed a problem in an I/O Block Element's **RawValue** property, which propagated an 'Empty' value instead of 'Null' when Block was read or deactivated, and the Element's index was invalid (for example, larger than the Block size).

**Import / Export**

- Fixed the Template Configuration window of the Import/Export tool, that does not list runtime-only properties anymore. *This bug occurred since v3.1 Build 113.*

- Fixed a problem with E3Chart Pens not being imported. *This bug occurred since v3.5 Build 264.*

**Installation**

- All links in installers now point to *www.elipse-software.com*. *This bug occurred since v3.0 Build 170.*

- Elipse E3 installers are now compatible with Windows XP Embedded, and they do not need to be restarted after finishing installation. *This bug occurred since v1.00.020 Build 183.*

- Fixed a bug in E3 installers, which prevented installation on hard disks with more than 2TB of free space.

- Fixed a problem with Microsoft Office that prevented it to open files downloaded from internet, or attached to e-mails after installing Elipse E3. *This bug occurred*

*since v1.00.019 Build 87*.

**Links**

- Improved performance of Screen switching (or activating objects on server) when using ElipseX objects connected to Remote Domain objects. *This bug occurred since v3.0 Build 201*.

- Fixed a deadlock that could occur between E3Run and E3 Server during Link removal. *This bug occurred since v1.00.019 Build 93*.

**Other fixes**

- Fixed a failure when decompressing REC packages. In case a package was received fragmented on a specific size, this could case a disconnection of the REC channel. *This bug occurred since v3.0 Build 9*.

- Fixed a memory leak occurring in Viewer or in E3Run when a Link containing a **String** or an **Array** was activated or deactivated. *This bug occurred since v3.0 Build 197*.

- Fixed a data and time rounding when milliseconds are not displayed. Also fixed a value rounding when displaying only deciseconds or centiseconds.

- Fixed a GPF when removing an object from a script, triggered by a user-defined event of the object itself. *This bug occurred since v2.0 Build 122*.

- Fixed a memory leak occurring on server (E3Run) when an object was removed at run time from scripts of the object itself.

- Fixed a formatting problem of large time intervals in statistical logs (RUN, UTM, and KTM) of E3 *ProcessInfo*. *This bug occurred since v3.5 Build 179*.

**Remote Domains**

- Improved the performance of E3 remote Links, by using a cache that keeps remote Links for at least 15 seconds, event when not used. *This bug occurred since v3.2 Build 108*.

- Fixed a memory leak that could occur in an E3 Server when using Remote Domains with asynchronous Link creation. *This bug occurred since v3.2 Build 122*.

- Fixed a memory leak that could occur in an E3 Server when a Remote Domain reconnected. *This bug occurred since v3.0 Build 201*.

- Optimized removal of Remote Domain Links, now performed in blocks. This prevents client-side crashes when disconnecting from a server Remote Domain. *This bug occurred since v3.0 Build 201*.

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**Screen Objects and Interface**

- Fixed a problem in Text, Display, and SetPoint objects, which did not change their values when receiving an unsupported value.

- The **DrawPicture.Convert** property now only accepts changing its value to 1 (convert to symbol) if the image is a Metafile (a .wmf or .emf file). For other image types (for example, .bmp, .jpg, or .ico), conversion fails and the **Convert** property still gets the value 0.

- Fixed a problem in the DrawPicture object, which even with a Metafile converted to symbol (the **Convert** property equal to 1) still tried to load the image from disk. In this situation, in case there was a failure during image load, the object was incorrectly drawn.

- Fixed a problem in border drawing of objects with partial fill (the **VerticalPercentFill** or **HorizontalPercentFill** properties less than 100) that are inside a group with the **EnableOverrideLineColor** property set to True, where the border was not drawn with group's color.

- Fixed a problem in DrawPicture objects that contain a Metafile (the **Convert** property equal to 0) with opaque background (the **BackgroundStyle** property equal to 1), and partial horizontal fill (the **HorizontalPercentFill** property less than 100), where the shadow was drawn with the background color (the **BackgroundColor** property) instead of the shadow color (the **ShadowColor** property).

- Fixed a problem in DrawPicture objects that contain a Metafile (the **Convert** property equal to 0) with opaque background (the **BackgroundStyle** property equal to **1 - Opaque**) and in **Wireframe** mode (the **OverrideFillMode** property equal to **1 - Wireframe**), where drawing the background.

- Fixed a problem in DrawPicture objects that contain a Metafile converted to symbol (the **Convert** property equal to 1), and partially filled (the **HorizontalPercentFill** or **VerticalPercentFill** properties less than 100).

- Fixed a problem with drawing of groups of objects (DrawGroup) in **Wireframe** mode (the **OverrideFillMode** property equal to **1 - Wireframe**), where the non-filled area of opaque child objects was filled with background color (this area should remain transparent in **Wireframe** mode).

- Fixed a problem with drawing of a DrawLine object with a dashed or dotted border, when this object has only two points (a straight line), and fill mode is different from **Hollow**.

- Improved E3 consistency with invalid color values (outside the range between &h00000000 and &h00FFFFFF), which could lead objects to be drawn with random colors.

**AppBrowser**

- The AppBrowser now correctly lists the **AddObject** and **DeleteObject** methods for all server objects where they can be used. *This bug occurred since v3.5 Build 41*.

**Script Editor**

- Fixed a problem in the Script Editor when there is a **String** terminated by "\". The rest of the sentence remained colored as if it belonged to that **String**. *This bug occurred since v2.0 Build 52*.

- Fixed a duplication of "%" characters in the list of compilation errors in Studio's script window. *This bug occurred since v1.00.019 Build 87*.

- Partially fixed problems in Script Editor when coloring lines started by "REM" where, in some cases, the text remained in green.

**Studio**

- Fixed a problem of not showing a button to open the window to search for files in Digital or Analog Link fields with properties expecting a figure filename, as the Picture's **FileName** property. *This bug occurred since v3.2 Build 137*.

- Now the window Position of Property Window keeps its selection, even when alternating between a Screen and a Screen control. *This bug occurred since v1.00.019 Build 133*.

- Now it is possible to alternate between uppercase and lowercase (or vice versa) for a root object, Folder, or Resource name without incrementing this name. *This bug occurred since v2.5 Build 32*.

- Fixed the update of the list of recent Files and Domains of the **File** menu in Studio, when opening an item fails.*This bug occurred since  v3.0 Build 223*.

- Fixed a problem in the **Close** button on the left side of Studio tabs, which could lose mouse clicks. *This bug occurred since v3.1 Build 98*.

- Fixed a memory leak in GDI objects of Studio's Screen editor, which occurred during edition of DrawString object's text.

- Fixed a problem in links to Scripts Reference Manual inside User's Manual not working when this document was opened inside Studio. *This bug occurred since v3.2 Build 118*.

- Fixed a problem in duplicated toolbars when installing a language version different from the previously installed one. *This bug occurred since v1.00.022 Build 71*.

**Translation**

- Fixed the translation of "licenses not available" for Viewer and E3Playback. *This bug occurred since v1.00.022 Build 71*.

- Fixed the message displayed by E3 Admin when a hardkey is disconnected. *This bug occurred since v1.00.022 Build 24*.

**Users**

- Screen folders now are not repeated in the User Permission window in Studio. *This bug occurred since v3.1 Build 150.*

**Viewer**

- Fixed a script error message occurring when a Viewer script tried to access a non-existing property or method in a Server object. The script error was displayed empty, instead of indicating "The object does not support this method or property". *This bug occurred since v2.0 Build 118.*

- Fixed the behavior of the Viewer's Login window, which did not stop login retries in case the window was canceled. *This bug occurred since v2.0 Build 118.*

- Fixed a problem when resizing modal windows, when the lower or right corner was displayed on monitor's negative coordinates (or monitors). *This bug occurred since v1.00.018 Build 155.*

- Fixed a problem when handling keys in Viewer's modal screens, which lead **KeyDown** and **KeyUp** Screen scripts to be executed twice or more on every pressed key. *This bug occurred since v2.0 Build 90.*

**E3 WebViewer**

- Fixed the behavior of keys in windowed screens open in WebViewer. *This bug occurred since v1.00.020 Build 216.*

**ElipseX**

- Fixed a problem with Links pointing to an XObject updated with the Domain still running. *This bug occurred since v3.0 Build 238.*

**Documentation**

- Added more information to Storage Field's **DeadBand**, **DeadBandUnit**, **MaxRecTime**, and **MinRecTime** properties, in **E3 Scripts Reference Manual**. *This bug occurred since v3.0 Build 308.*

- Added detailed information about subproperties of Text's, Display's, and Setpoint's **TextFont** property in **E3 Scripts Reference Manual**. *This bug occurred since v1.00.021 Build 17.*

- Changed IIS settings in Windows Vista and 7 in **Installation Guide** to remove the steps to create a new virtual directory. Settings are performed in the default website, created during IIS installation.

- Updated the chapter **Storage - Internal Queries - TagAttribute**, in **E3 Developer's**

**Tutorial**, to add the **Integer** data type. *This bug occurred since v3.5 Build 90*.

- Added detailed information about the behavior of E3Chart Pen's **AutoQuery** property, in **E3 Scripts Reference Manual**. *This bug occurred since v1.00.021 Build 119*.

This section contains **New Features** and **Fixed Bugs** of E3 version 3.5.

## 5.1 New Features

**Alarms**

- Now it is allowed to insert Alarm Sources anywhere in the application (as long as they run in the Server). Added the **AreaNameOverride** property to the Alarm Source object.
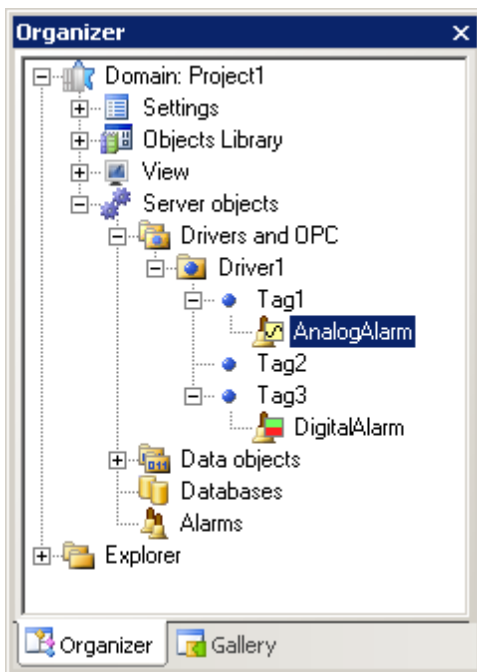


**Insert Alarm Source**

**Domains / E3 Server / Hot-Standby**

- The time for opening applications with many Tags has been optimized due to improvements in the I/O license management system.

- The configuration of the Hot-Standby integrity IP now accepts multiple IP values, increasing the reliability of the integrity checking.
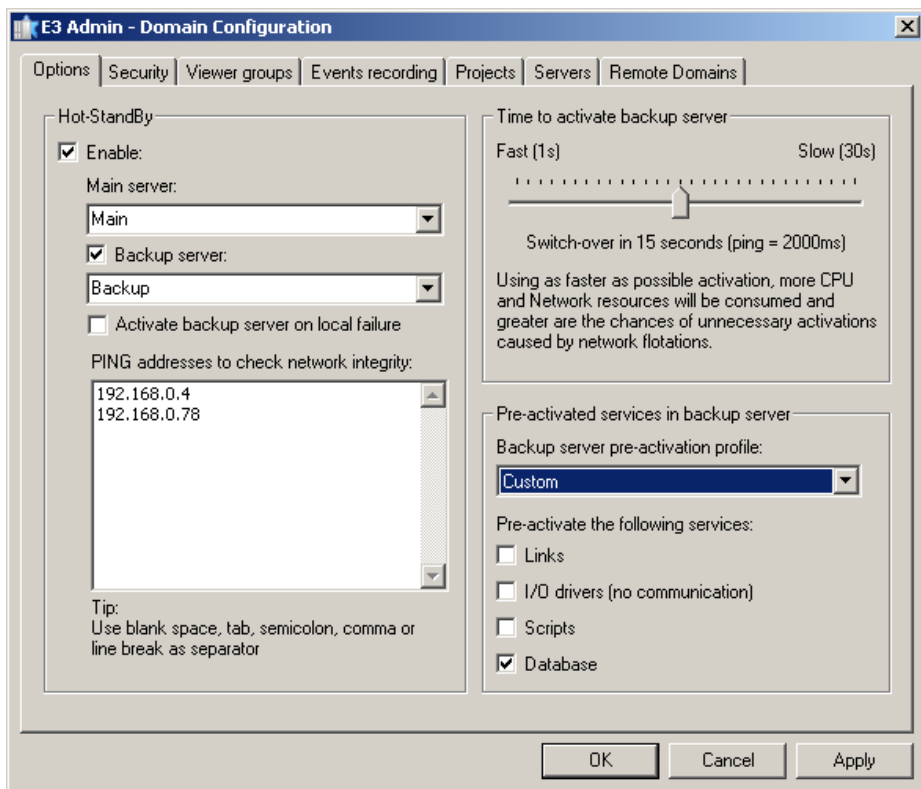
**Checking multiple IP addresses**

- In Studio, the option for creating several objects at the same time was optimized (for example, the time for creating 10000 Demo Tags has been reduced from 95 to 4 seconds).
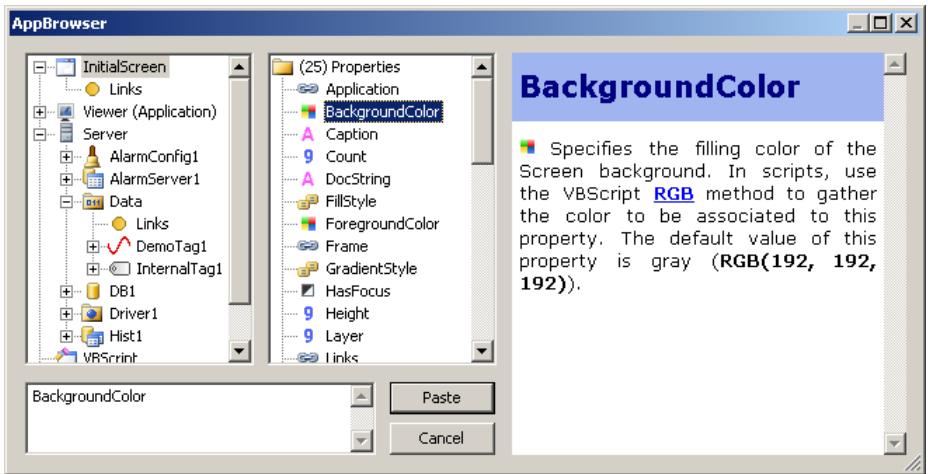
**AppBrowser**

- Added to the AppBrowser window a new area displaying the documentation corresponding to the selected method or property.

**AppBrowser window with documentation**

**E3Chart**

- The **MaxGapTime** property was added to the Pen object of the E3Chart. This property allows specifying the limit time to be considered to create a visual connection between the historical and real time part in the Historical & Real Time Pen.

- Added new properties to the Axe and Legend of the E3Chart, which allow more color customization: **Axis.EnableTextColor**, **Legend.EnableTextColor**, and **Legend.BackColor**.

- Created the **HighlightMaxGapTime**, **MaxGapTimeStyle**, and **MaxGapTimeColor** properties to allow highlighting, if desired, the line which connects historic to real time in the Historical & Real Time Pen, when this connection depends on the value of the **MaxGapTime** property.

- Improved the Pen's status message to help diagnose configuration problems.
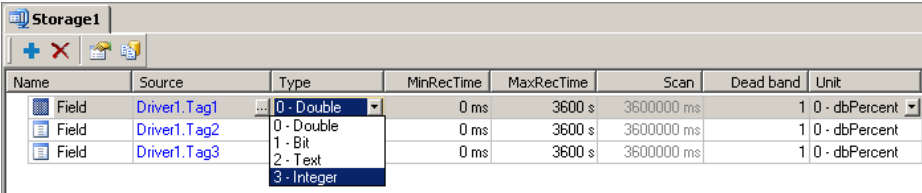
**E3Query**

- The default value of the **CursorLocation** property of the E3Query object has been changed to **clClient**.

**Storage**

- E3 Storage has been revised and several improvements were implemented. Among them, a new log section in E3 was created, called **Storage**, which allows debugging values that entered the Storage algorithm and which values were sent to the Database.

- A new field type has been added to Storage, **Integer**. Just like fields of type **Bit** and

**Text**, the **Integer** fields are not submitted to the compressing algorithm of the Storage.



**New Integer data type**

- Now it is possible to configure empty Storage objects (without fields) to allow querying data generated by other applications.

- A new parameter has been added to Storage fields, **ScanTime**, in milliseconds. Therefore, the following changes have been performed:

  - Added the **ScanTime** property (defined in milliseconds) to the StorageField object.

  - Added an optional parameter *ScanTime* to the **CreateNewSession** method of the Storage object.

  - Added an optional parameter *ScanTime* to the **AddField** method of the StorageSession object.

  - Three new attributes are available in the attribute reading query of the Storage, **Size** (10), **VARTYPE** (11), and **ScanTime** (12).

  - Added a new field in the "xxx_Fields" tables, **FieldScanTimeMs**.

  - Storage now simulates a scan of Tags which are not varying, feeding data to the compressing algorithm and making it to be sent to the database quickly (the simulated scan only starts after the Tag remains more than one minute without receiving any variation).

  - Storage now fills in records of **MaxRecTime** between two values in case the timestamp difference between them is greater than **MaxRecTime**.

  - A timer has been created to flush after 2 seconds the value which remains in cache in the timestamp filter of the Storage.

- Created two new methods in the field collection of the Storage. **AddField**, which adds a field to the collection, and **RemoveAll**, which removes all fields.

**Protection Device**

- Added support to softkeys (Hasp SL) in E3.

- Implemented new hardkey licenses in E3 to allow **IHM**, **LITE**, and **Gateway** versions.

- The hardkey's access library (Hasp SRM) in E3 was updated to version 5.10.

- Integrated version 5.3 of HKCustomer to Elipse E3 installers.


**IODriver / IOServer**

- The E3Run process does not load or unload Driver DLLs anymore, then decreasing a little the memory consumption of the process and avoiding memory leaks caused by DLL unloading.


**Interface / E3 Studio**

- The property list of Studio now displays a button to open AppBrowser when the **Source** property of the Alarm Source object is selected.

- The read-only cells of grids (like the ones in Drivers and Data Server views and some windows like Links and Property Lists) are not editable anymore. It is not allowed typing values anymore, which would be discarded because it was a read-only cell.

- The windows with a variable number of buttons, like the ones displaying the options **Yes To All** or **No To All**, have been standardized according to layout recommendations from Microsoft.

- Changed the color view in the result list of the Search/Replace window. Colors now are displayed in RGB and the column does not show an icon with the data type anymore.

- Changed the behavior in searching or replacing dates and times, allowing searches and replaces only for dates, times, or both.

- Added two buttons in the **Alignment** toolbar of E3 Studio, **Horizontal Flip** and **Vertical Flip**.



**Horizontal and vertical flip options**

- The Property List of E3 Studio now displays the documentation of the selected property. Besides, it also displays the text "null" or "empty" italicized when a Variant property has a type VT_NULL or VT_EMPTY, respectively.
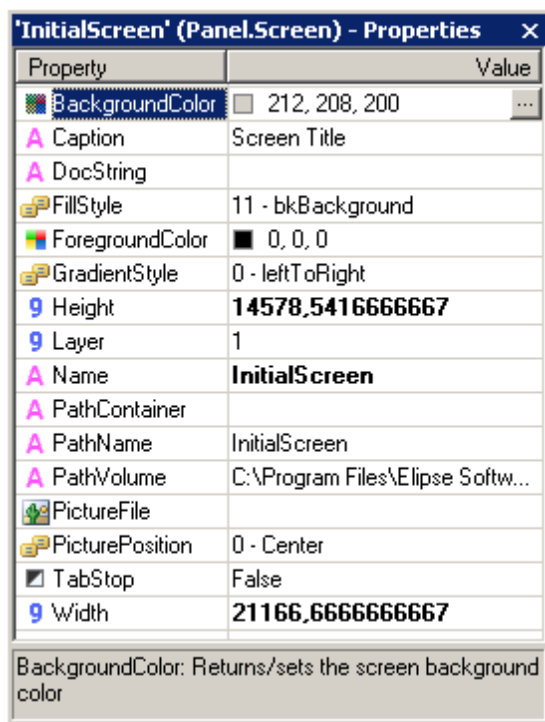
**Documentation of the selected property**

- Implemented the Connector object in the Screen editor. This object allows connecting points among two or more Screen objects. Connections among objects are displayed during drag and drop operations in the Screen editor. Besides, the implementation of native E3 Screen objects has been revised, to ensure the correct positioning of Connection Points of objects in any combination of rotation, resizing, reflection, or distortion.
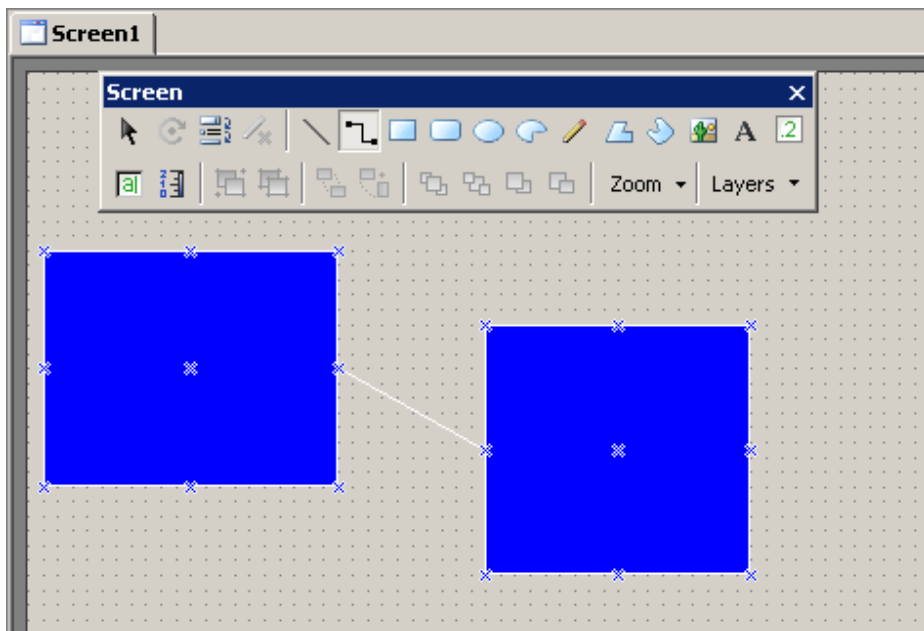
**Connector object**

- Added a tool for editing Connection Points for XControls.
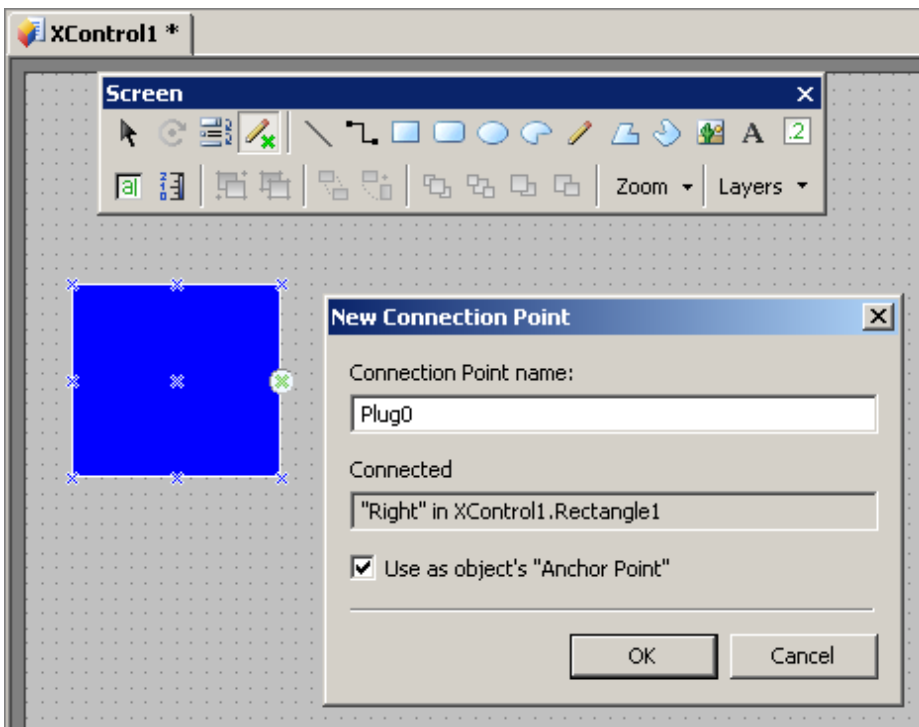
**Editing Connection Points in XControls**

- Changed color formatting in the EcoListCtrl, from hexadecimal to RGB. It was also improved color editing, allowing input of values in RGB or numbers.

**OPC Client**

- Created the **WriteFeedbackMode** property in the OPC Driver object. The behavior is similar to the I/O Driver, except in the case of asynchronous writings and the **WaitNextRead** and **TrustWriteSuccess** modes.

**Playback**

- E3Alarm and E3Playback now use the same icons to represent alarms: active (red), active acknowledged (red with a green check), inactive (yellow), inactive and acknowledged (green with a green check), and disabled (gray).

| Ack... | Active Condition | Enabled | Category | DateTime | Message | |
|--------|------------------|---------|----------|----------|---------|---|
| No | No | Yes | Level | 12/23/2009 10:29:27 AM | Normal | 6 |
| No | Yes | Yes | Level | 12/23/2009 10:30:02 AM | High | 7 |
| No | No | Yes | Level | 12/23/2009 10:30:08 AM | Normal | 6 |
| No | No | Yes | Level | 12/23/2009 10:30:09 AM | Normal | 1 |
| Yes | Yes | Yes | Level | 12/23/2009 10:30:09 AM | Low | 1 |
| No | No | Yes | Level | 12/23/2009 10:30:23 AM | Normal | 5 |
| No | Yes | Yes | Level | 12/23/2009 10:30:24 AM | Low | 2 |
| No | No | Yes | Rate of Change | 12/23/2009 10:30:24 AM | Normal | 3 |

**New alarm icons**

- Improved the time for assembling Playback database. The queries which checked the amount of data available in each table were simplified to check only the date interval that the table contains. For a good performance, it is mandatory that all table have at least one index starting by the **E3TimeStamp** field.

## Remote Domains

- Improved logs for client Remote Domains, indicating time between retries and the name of the servers associated to each connection.

- Improved performance of **GetObject** method, when called from Viewer or from Remote Domains.

## Scripts / Script Editor

- Added new global methods to E3, available on links and scripts: **E3Format**, **IIf**, **Choose**, **BShr**, **BShl**, **GetBit**, **SetBit**, **OPCIsGood**, **OPCIsUncertain**, **OPCIsBad**, **OPCGetLimit**, **OPCSetLimit**, **OPCGetSubStatus**, **OPCSetSubStatus**, **OPCGetQuality**, **OPCSetQuality**, **OPCGetVendor**, **OPCSetVendor**, **OPCMakeQuality**, and **GetComputerName**. The following methods are only available in scripts: **GetLocalTime**, **GetLocalTimeUTC**, and **GetCurrentWindowsUserName**.

- Added an optional parameter to the **AddObject** method to inform a name for the object.

- The Script Editor does not color expressions or word started by rem anymore.

## Users

- The *ActorID* parameter of several methods and events now assumes the current Viewer user in case it is omitted. The affected methods are:

  - Alarm Server

- **AckArea**
- **AckAllAlarms**
- **LogTrackingEvent**
- Alarm Source
  - **Ack**
- Power Command Unit
  - **Operate**
  - **Select**
  - **Cancel**
  - **DoAbort**
- The affected events are:
  - I/O Driver
    - **OnTagWrite**
  - OPC Driver
    - **OnTagWrite**
  - Power Command Unit
    - **OnOperateFinished**
    - **OnSelectFinished**
    - **OnCancelFinished**
    - **OnSelect**
    - **OnCancel**
  - Power Configuration
    - **OnCommand**

**Viewer**

- Created two new methods in the Viewer object (**GetMouseX** and **GetMouseY**) to return the X and Y position of the mouse (referring to the whole computer screen), and two new methods in the Screen object (**FromPixelX** and **FromPixelY**) which convert values from Pixel to Himetric. Added a note in the description of the **GetMouseX** and **GetMouseY** methods of the Viewer object, alerting for script failures in situations where the current mouse position cannot be determined.

- Implemented in the Viewer object the **ViewerLanguageId** property, which informs

the numerical code of the Viewer language (or WebViewer) that is running.

**E3 WebViewer**

- Added the **URLToLoad** property in the WebViewer's download ActiveX, which starts with "e3web2.asp" as the default value, and if it is changed by the user then loads (navigate to) the new configured value. This property can be read and written.

**Other features**

- Reduced the basic memory usage of native E3 objects, meaning a general reduction of 5% of RAM memory used by E3Run at run time.

- The default E3 grid control (EcoListCtrl) was prepared for better supporting of cut, copy, and paste operations of the configuration editor of Elipse Power objects.

- The elements of lists in the WatchWindow and DomainBrowser windows now are displayed in alphabetical order.

- Implemented a statistical log for REC connections and an individual statistical log of processes. Logs may have their frequency controlled by Windows Registry and may be completely shut down (frequency 0).

- SmartHeap (memory management library used by E3) has been updated from version 8 to version 9.01.

- Created an **E3GetActor** method in the Application Server object. This method returns the logon of the user who commanded the current E3Run operation. If E3Run is not currently handling an operation generated by another process, then returns "System". If there is no user logged on in the process which generated the current operation, then returns "Anonymous".

**E3 Tweak**

- Added two new configuration options in E3 Tweak, **PingRetries** and **PingRequired**.

- Added the log section **Storage** in E3 Tweak and its three modules: **Input**, **Stored**, and **Dropped**. Added also a new item which allows filtering Tags from the section **Storage** which are stored in the log.

- Added an option in E3 Tweak to configure the frequency of statistical logs of the REC.

- Added items in E3 Tweak to configure statistical logs of processes for modules **E3Admin**, **E3PowerEngine**, **E3Run**, **E3Server**, **IOServer**, **Studio**, and **Viewer**.
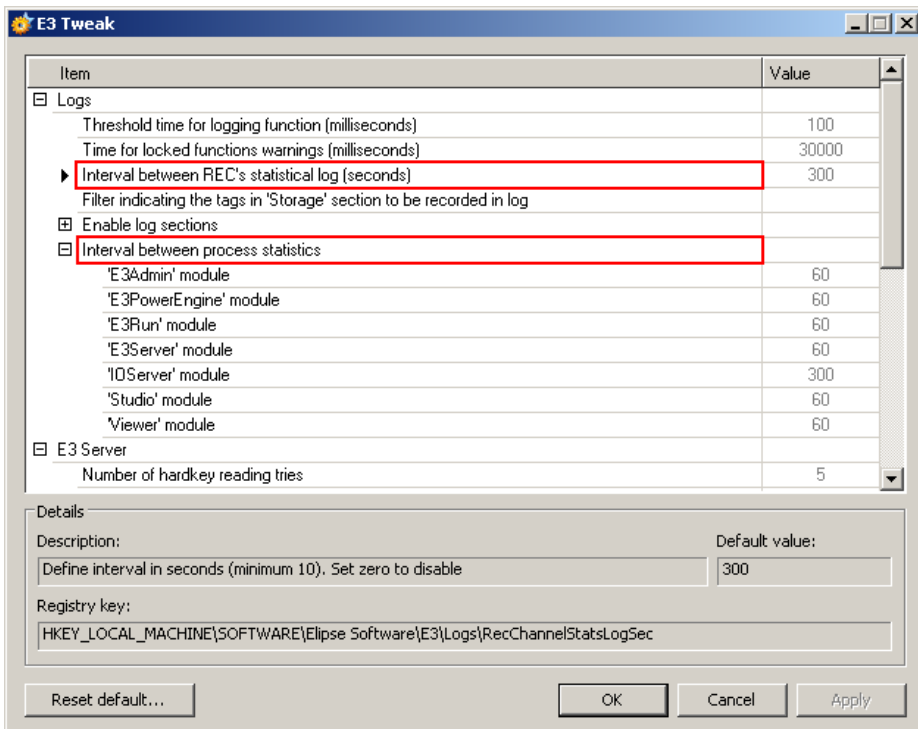
**New log configuration items in E3 Tweak**

**Documentation**

- Updated the address of Elipse Taiwan in the templates for generating E3 documentation in PDF format.

- Added information in **E3 User's Manual** about the new parameter **URLToLoad**, responsible for loading a web page after installing the E3 WebViewer.

- Updated the section **E3Chart - Runtime Behavior - Legend State Column**, in **E3 User's Manual**, to include information about new status messages of E3Chart Pens.

- Added the **Previous** and **Next** buttons in the toolbar of the documentation in CHM format, to facilitate navigation among topics.

- E3 Release Notes now contain bug fixes and new features added on previous versions (starting at version 3.2), not only the current version.

- Added a link to the official documentation from Microsoft about the ADORecordSet object, returned by the **GetADORecordSet** method of the Query object in the E3 Scripts Reference Manual.

- Added links to articles on the Elipse Knowledgebase website in the E3 Scripts Reference Manual, about how the **SetValueData** method of the Formula object

works.

- Added information in the E3 User's Manual and the E3 Scripts Reference Manual about the operation, methods and properties of the **Elipse KeyPad**.

- Added a description of the **DefaultValue** and **HelpString** properties of the Property object of an XObject in the E3 Scripts Reference Manual.

- Modified the topic structure of the E3 Scripts Reference Manual to allow the documentation integration with AppBrowser.

- Generated an E3 Tutorial in Spanish, available on installations of that language.

- Added the Basic Tutorial CHM to the installer. The shortcut to the CHM is available in the documentation folder.

- The topic **Tab Order among Objects** of the chapter **Screens and Screen Objects - General Configurations** of the E3 User's manual was rewritten, adding more information and a link to the topic **Object Overlaying**. Besides, the example of the topic **Tab Order** of the chapter **Frequently Asked Questions** was moved to that topic.

- Added a note in the chapter **ActiveX** of the E3 User's Manual, alerting for the need to install ActiveX objects not automatically registered by E3, in case these objects have a need to be accessed in several computers, specially Remote Viewers.

- Added in the FAQ about Alarms of the E3 User's Manual a question about how to display textual expressions for numerical values of the **Severity** field of an Alarm.

**Installation**

- Updated the installer of HASP drivers (haspdinst.exe) to version 5.95.

- Integrated EELogs v4.5 Build 18, which corrects performance problems detected on event generation, after changes on the security level that Windows 7 and 2008 R2 systems specify for access to certain users to object on the operating system.

- Installers were modified to support the Windows 7 operating system.

- Added the Tutorial in Spanish to the installer e3full-x86-esn.exe.

- The name of the folder which contains files referring to the hardkey has been modified from HInstall to HASP.

- The former E3 Tutorial (e3tutorial_enu.chm) was removed from E3 installers.

- Updated the digital certification used in E3 installers and binary files (exe, ocx, dll, etc.). The new digital signature expires on 9/13/2011.

# 5.2 Fixed Bugs

**ActiveX**

- Corrected a problem with a class registered by the user not showing on the list to be inserted in E3, nor showing any registry error message. For this, the window Add ActiveX has been redesigned, aiming to make it easy to register new controls, as well as viewing the ones already loaded in E3. This window has been renamed to ActiveX Control Configuration. This bug occurred since v1.00.018 Build 147.
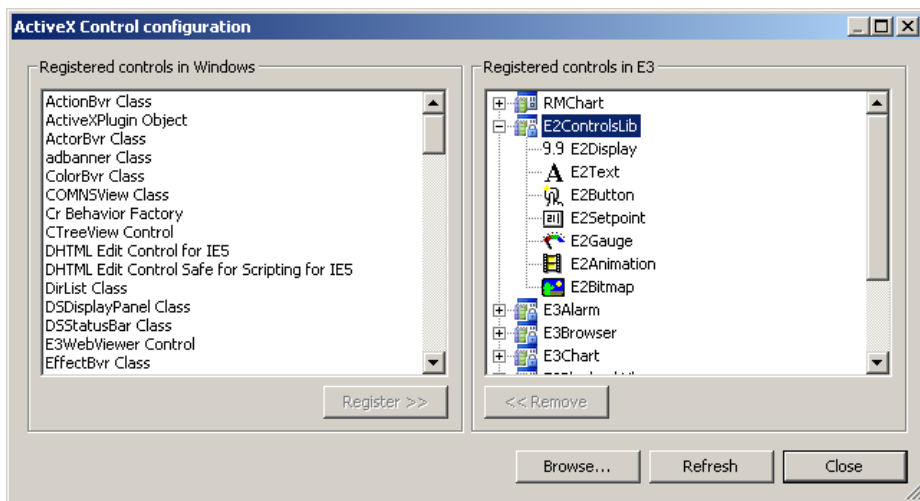


**ActiveX Control Configuration window**

**Alarm Server / Alarm Configuration**

- Corrected the behavior of the **ActiveNackAlarms** property, which remained in True when the Alarm Source object was disabled (property **AlarmVerify** equal to False), making the NACK counters of the Areas to remain incorrect. This bug occurred since v3.2 Build 90.

**Demo Application**

- Corrected texts and formatting of the E3 Demo Application. The multi-language feature was extended to all Screens and scripts. This bug occurred since v1.00.021 Build 67.

**AppBrowser**

- Modified the behavior of the AppBrowser to not display folders of the container object which appears repeatedly on top of the object tree. This avoids, in some cases, generating useless scripts at run time. This bug occurred since v2.0 Build 38.

- Improved the behavior of the AppBrowser when generating script expressions for access to objects inside XObject definitions. Thus, it is not suggested anymore the access to other child of the XObject using expressions like `Parent.Parent.Parent.Item()`, when could be simply used `XObject.Item("")`. This bug occurred since v2.0 Build 79.

- Corrected the way the AppBrowser worked when used to select object for an ElipseX property. Now this mode takes into account the correct context of the object. Also, the object itself which contains the property does not appear in AppBrowser anymore. This bug occurred since v2.0 Build 38.

- The **Paste** button of the AppBrowser now is disabled in cases where it is useless. Besides, properties and methods of folders do not appear anymore in cases where they are not supposed to appear. This bug occurred since v2.0 Build 38.

**Database**

- Corrected a problem with the management of connections with SQL Server and Access database, which made valid Formula connections to be discarded, generating an excessive consumption of resources, and also preventing the **SaveFormulaValues** and **SetValueData** methods of the Formula object to work, and may lead to GPFs in the E3Run process. This bug occurred since v3.2 Build 217.

- If a Database connection fails, now E3 does not consume the database operation queue anymore, until connection is successful. In addition, any connection failure leads to using a reconnection policy (waiting time). *This bug occurred since v1.00.018 Build 147*.

- Corrected a failure in the processing of .e3i and .e3o files larger than 4 GB. This bug occurred since v2.0 Build 35.

**Domains / E3 Server / Hot-Standby**

- Corrected a locking in the E3Server which could happen when using an asynchronous link creation in Remote Domains. This bug occurred since v3.2 Build 81.

- Increased the limit of virtual memory of all E3 processes, from 2GB to 4GB. This change specifically affects E3Admin, E3Server, IOServer, and Viewer. This bug occurred since v1.00.018 Build 147.

- Fixed GPFs that may occur in E3 Server when Viewers called methods **IsUserMemberOfGroup** or **GetFullUserName**. *This bug occurred since v1.00.018 Build 147*.

- Applications with several drivers no longer take a long time to start up. This bug occurred since v3.5 Build 180.

**E3 Studio**

- The Domain Checker now performs a name consistency for Database Servers and the table of the Alarm Server object. This bug occurred since v1.00.018 Build 147.

- Added support for Undo operations when changes are made through the **Replace** tool. This bug occurred since v1.00.020 Build 382.

- Corrected a problem with searching or replacing properties of type Color, where a value inside the color were found and replaced, which would change the final color of the property. For that, the behavior of the search and replace tool has been modified to identify the data type of the search: String, Date, Color, Boolean, or Number. This bug occurred since v1.00.020 Build 382.

- Corrected a message of insufficient memory displayed in Studio when Search or Replace is performed in objects which cannot be loaded. This bug occurred since v1.00.020 Build 263.

- Corrected a problem in Studio when replacing values in fields already deleted, which may lead to a GPF. This bug occurred since v1.00.021 Build 80.

- Fixed a problem which caused E3 Studio to unexpectedly quit when pressing ESC in the Filter Class Configuration window of Importing and Exporting objects to CSV (**Export - Advanced - Filters - Change**). This bug occurred since v2.5 Build 63.

- Corrected a memory leak in Pick objects. This bug occurred since v1.00.020 Build 22.

- Corrected a problem when mirroring Arc objects when they are already rotated. The drawing of the Arc rotated and mirrored now is correct. This bug occurred since v1.00.018 Build 147.

- Corrected a GPF in Studio when displaying the Property List or the Link window and the name of an ElipseX property is a special character (for example, a greek letter). This bug occurred since v1.00.018 Build 147.

- Now E3 Sudio asks the user if he wants to save an unsaved application when Windows is restarted or shut down, or when the user logs off. This bug occurred since v1.00.018 Build 147.

- Corrected a GPF which occurred in Studio when trying to convert a very complex metafile (WMF or EMF file) to a symbol. The conversion process has been also improved, what could take seconds, now is nearly instantaneous. This bug occurred since v1.00.018 Build 147.

- Corrected a problem which occurred in windows which allowed moving splitters. The cursor icon remained the default, while it was supposed to change to horizontal and vertical arrows. This bug occurred since a v3.1 Build 1.

- Fixed a GPF (stack overflow) which occurred in Studio when a large number of objects (for example, 5000) of a Screen were selected at the same time. This bug occurred since v1.00.018 Build 147.

- The file msstkprp.dll now is installed and registered in the System32 Windows directory. The **Font** and **Color** tabs of E3Alarm, E3Chart, and E3Browser objects rely on this file. This bug occurred since v1.00.018 Build 147.

- Corrected a problem when double-clicking values of type Enum in the Property List. In this case, double-clicking was not changing the following value if the numbers were not continuous. This bug occurred since v1.00.018 Build 147.

- Corrected the behavior of auto-incrementing names of Studio spreadsheets in several locations where names are not supposed to differentiate upper from lower case. This bug occurred since v1.00.018 Build 147.

- Fixed a problem in E3 Screen Editor in point editing of Polyline or PolyBezier objects. The operation of creating points was not being undone. This bug occurred since v1.00.018 Build 147.

**E3 Admin**

- Corrected a problem of displaying the same message twice  when using a hardkey with an expired license. This bug occurred since v3.0 Build 372.

- Corrected the behavior of the item **Options** of the menu **Domain** in E3Admin, which was always disabled in case of an E3 Studio license remotely borrowed. This bug occurred since v3.0 Build 348.

**E3Alarm**

- In the property window of E3Alarm, the combo box to select the Alarm Server was replaced by an edit box with a button to open the AppBrowser, thus avoiding a problem with viewing Alarm Servers which were created inside several nested folders. This bug occurred since v1.00.022 Build 13.

**E3Chart**

- Because of performance issues, dotted Pens with width 1 (one) are now drawn the same way as Pens with width zero. This bug occurred since v3.2 Build 68.

- Fixed a problem causing a real time part of a Real Time & Historic Pen not displaying if the historic part query was incorrectly set. *This bug occurred since v3.1 Build 189*.

- Fixed a problem when using complex field names in Storage fields with E3Chart PEns. *This bug occurred since v2.5 Build 15*.

- Fixed a GPF in Historic Pen expressions. *This bug occurred since v3.2 Build 89*.

- Fixed a problem in E3Chart causing the historic part of a Real-Time Pen to be plotted in certain configuration combinations. *This bug occurred since v3.1 Build 189*.

- Starting an E3Chart query is now asynchronous, avoiding Viewer locks in case a Database connection is slow. *This bug occurred since v1.00.019 Build 87*.

**Storage**

- Now it is possible to manually add data (using **Storage.CreateNewSession**) to a Storage object without configured fields. This bug occurred since v2.5 Build 102.

- The compression algorithm of the Storage now discards consecutive data which have the same timestamp, using only the last value of a sequence of values with the same timestamp. This bug occurred since v1.00.020 Build 354.

- Corrected the behavior of **MinRecTime** in the compression algorithm of the Storage, which in certain situations was recording data without respecting the time configured in **MinRecTime**. This bug occurred since v1.00.020 Build 192.

- Corrected a problem in the compression algorithm of the Storage which made the linking record of **MaxRecTime** not being recorded in some situations, or recording two records when reaching **MaxRecTime** instead of one. This bug occurred since v2.5 Build 102.

- Corrected a problem in the **SampledData** Query of the Storage which failed if at least one of the Query Tags had duplicated data (more than one value at the same timestamp) at the beginning of the Query period, or at the end of the period. This bug occurred since v3.0 Build 150.

- Corrected a problem in the compression algorithm of the Storage which made the linking record of **MaxRecTime** being generated with an incorrect timestamp in certain situations, may leading to incorrect data interpolations. This bug occurred since v2.5 Build 102.

- Corrected a problem in the Storage which lead to a failure when creating tables with more than 100 fields in Access databases. This bug occurred since v1.00.021 Build 43.

- Corrected a problem which deleted Storage fields in the database if there were duplicated fields in the Storage configuration. This bug occurred since v1.00.021 Build 43.

- Performed several improvements in the Storage to avoid creating duplicated fields in the database, or preventing duplicated data to be recorded in a Storage field. Logs generated by the Storage were improved to provide a more accurate diagnosis of configuration errors and problems found at run time. This bug occurred since v1.00.021 Build 43.

- Corrected a problem when updating Stored Procedures used by the E3 Storage in SQL Server, which were always deleted and recreated as soon as the DBServer was activated, which could lead to problems on queries from other DBServers using the same database. This bug occurred since v1.00.021 Build 26.

- Fixed a problem occurring when Storage was executed with more fields than the

available licenses, which lead the first field of each table to be erased, and the last field to be duplicated. *This bug occurred since v3.5 Build 285*.

**Expressions**

- Corrected the behavior of the operators >= and <= in E3 expressions, which returned 1 instead of -1. This bug occurred since v2.5 Build 93.

**IODriver / IOServer**

- Corrected a memory leak in the file Et32b.dll. This leak may affect any Driver working with lists of values, but it was noticed first on DNP3 driver with callbacks enabled.

- The configured dead band in Block Elements now works. This bug occurred since v1.00.018 Build 147.

- Corrected a memory leak of a few KB which occurred in E3Run and E3 Studio when a Driver was activated and deactivated. This bug occurred since v1.00.018 Build 147.

**Installation**

- Added the Release Notes file in Spanish in the installation e3full-x86-esn.exe. This bug occurred since v3.2 Build 242.

- Corrected spanish translation problems in E3Alarm and Alarm Server objects, and in E3 Studio.

- Tested the compatibility of RMChart with Internet Explorer 6, 7, and 8. In IE8 there is a workaround: Access the option **Tools - Internet Options**. In the **Advanced** tab, section **Security**, uncheck the option **Enable memory protection to help mitigate online attacks**. After restarting IE8, a WebViewer with an RMChart is correctly loaded.

- Corrected a problem in the installers, which caused a rollback in the installation when the files ped.exe, scrwiz.dll, ped.hlp, htmlr000.htm, htmlref2.htm, index.htm, and vbsref.htm were not present during the configuration of the Microsoft ActiveX Control Pad component. This bug occurred since v3.0 Build 268.

**Interface**

- Corrected the positioning of the editor of Variant values in cells of default Studio spreadsheets, which was overlapping the icon identifying a data type. This bug occurred since v1.00.018 Build 147.

- Corrected the behavior of windows with the message "Do not show this warning again", when this warning was displayed again even when the checkbox was

checked. This bug occurred since v3.2 Build 49.

- Blocked the opening of selection boxes in read-only cells of editing spreadsheets inside E3. This bug occurred since v3.2 Build 128.

- Changed the messages of the amount of licenses in the E3Admin window to agree with singular and plural forms, and simplified the messages in case of no licenses. This bug occurred since v1.00.018 Build 147.

**Links**

- Corrected a problem which occured when a row in a Multiple Link was created at run time and the Link of that row got a bad quality. This bug occurred since v3.2 Build 85.

- Corrected a GPF which may occur during the handling of reentrant variations of links. This bug occurred since v1.00.018 Build 147.

- Improved failure logs of sending link events from E3Run to E3Server, as well as improved the logic of quitting in case of repetitive failures. This bug occurred since v1.00.018 Build 147.

- Corrected a problem with links using Local Aliases which were not reconnecting correctly. Now, links which use Local Aliases and are created disconnected, will behave just like the links which were created connected, that is, they are created and maintained without considering the Domain as part of their path. This bug occurred since v3.1 Build 203.

**OPC Driver**

- Corrected the behavior of the **OnTagWrite** event of the OPC Driver, which was not generated when performing asynchronous writings if the communication with the server used the OPC DA 1.0 standard, or if the asynchronous writings failed immediately. This bug occurred since v3.2 Build 95.

**Remote Domains**

- Improved the limit time and implemented a heartbeat during the REC connection of Remote Domains and Hot-Standby, as well as improved the limit time of connection of E3 Studio with E3Server. This corrects a problem with the Client Domain not reconnecting to the Server after several disconnections, due to network problems.

- Corrected a problem in reconnecting Remote Domains when the Client Remote Domain delayed several minutes to update or start the Domain. This bug occurred since v3.0 Build 201.

- Corrected a problem in the threads for reconnecting and sending data from Remote Domain clients, to ignore Windows message floods, which makes the

Client Remote Domain to fail on reconnection. This bug occurred since v3.0 Build 201.

- E3Server no longer hangs when there are too many accesses to a Remote Domain from which alarms are viewed. This bug occurred since v3.0 Build 201.

- Improved the performance of the **GetObject** method when called by a Viewer or by Remote Domains.

- Revised the management of alarm subscription connections in E3Server, fixing failures (GPFs) and increasing the asynchronism of operations. This bug occurred since v3.1 Build 68.

**Scripts / Script Editor**

- Corrected a problem when enabling or disabling texts in the window for editing user events via the Link Editing window. This bug occurred since v3.2 Build 46.

- Corrected the appearance of the calendar opened by the **ShowDatePicker** method in computers with a changed screen DPI. The screen appeared truncated, displaying only days from Sunday to Thursday.

- Corrected a bug in the Search/Replace tool of the Script Editor, which returned odd results when there were empty rows adjacent to the rows containing the text searched. This bug occurred since v3.1 Build 5.

- Corrected a problem in the Search/Replace tool of the Script Editor, which counted as replaced the texts found at the first and last rows of the script (which cannot be modified). This bug occurred since v2.5 Build 110.

- Corrected leaks in the USER and GDI objects in E3 Studio when using the Search/Replace window of the Script Editor. This bug occurred since v2.5 Build 94.

**Reports**

- Fixed the behavior of the progress window of Reports, which may cause problems on Viewer's modal windows. *This bug occurred since v2.0 Build 91*.

- Fixed the E3Chart behavior, which was displayed empty when printed isolated on a Report page. *This bug occurred since v1.00.022 Build 1*.

**Viewer**

- Corrected a problem in the **Application.ESign** method, which did not work if called by certain events (for example, **ComboBox.Change**) on a non-modal screen. This bug occurred since v1.00.020 Build 394.

- Corrected a problem in the **Application.ShowDatePicker** method, which did not work if called by certain events (for example, **ComboBox.Change**) on non-modal screens. This bug occurred since v1.00.020 Build 65.

- Corrected the **ShowDatePicker** and **ShowPickColor** methods to use omitted parameters instead of -1 to indicate window coordinates. Negative values may be valid as coordinates in case of more than one monitor. This bug occurred since v1.00.020 Build 65.

- Corrected a memory and handle leaks which occurred at each disconnection on a REC client. This bug occurred since v2.5 Build 135.

- Corrected a problem which may lead E3Server to cancel a Viewer or WebViewer connection during or after a very large download. Implemented new options in the Windows Registry to configure the **ping** that E3Server sends to clients trying to connect to it: **PingRetries** indicates the amount of retries and **PingRequired** indicates if it is mandatory that the client answers the **ping**. This bug occurred since v3.0 Build 303.

- Corrected a problem with the returned value of the **Viewer.ChangePassword** method, which was returning False even when the operation was successfully performed. This bug occurred since v3.0 Build 115.

**E3 WebViewer**

- Modified the behavior of the E3Downloader to:
    1. Not install or reinstall E3Web when there is another E3 installed (for example, Full, Viewer).
    2. Not install or reinstall E3Web if the current version is equal or greater than the one in the server.
    3. Avoid downloading the installer when there is no need to install E3Web. This bug occurred since v1.00.020 Build 319.

**ElipseX**

- Corrected a problem with indirect links among ElipseX properties of type Object, which may not connect, depending on the order in which the properties were declared. This bug occurred since v1.00.020 Build 282.

- Corrected the connection of links in ElipseX properties which referenced other properties of type **Link** of the same ElipseX. This bug occurred since v1.00.022 Build 60.

**Other bugs fixed**

- The loading or closing time of very large applications (which have many objects in the same folder) was greatly improved. This bug occurred since v1.00.018 Build 147.

- Corrected a translation problem in Studio, from "Covert to symbol" to "Convert to symbol".

**E3 Tweak**

- Included in E3 Tweak an option to control the module **IOServer** in the log section **Track**. This bug occurred since v3.1 Build 32.

- Corrected the path of the registry key displayed in E3 Tweak interface when the operating system is 64 bits. This bug occurred since v3.0 Build 30.

- Now E3 Tweak considers the range of values of type **DWord** when editing items of numeric type. This bug occurred since v3.2 Build 196.

- Corrected a problem when validating numeric values which occurred in cases where a value outside the default range was used to indicate that the item is disabled. This bug occurred since v3.2 Build 196.

- Corrected problems on the registry key description and creation of the item **Filter enabling** (the **COMFilter** option) of E3 Tweak. This bug occurred since v3.1 Build 30.


**Documentation**

- Corrected formatting and displaying problems with links in the E3 documentation in PDF documents included in the Downloads section of the Elipse website. This bug occurred since v3.2 Build 242.

- Added a chapter in all E3 manuals with search tips for CHM documents. This bug occurred since v3.2 Build 115.

- Corrected the default value of the **EnableReadGrouping** property of the I/O Driver object in the item **Drivers - I/O Driver - Methods** of the E3 Scripts Reference Manual. The correct default value of this property is True. This bug occurred since v2.0 Build 135.

- Corrected the examples of use of the **LoadFormulaValuesQuiet** method of Formula and Viewer objects in the E3 Scripts Reference Manual. This bug occurred since v1.00.022 Build 30.

- Added descriptions to the **RenameValue**, **SaveFormulaValues**, **SetUnitData**, and **SetValueData** methods of the Formula object in the E3 Scripts Reference Manual. This bug occurred since v3.2 Build 140.

- Corrected the description of the **Query** method of the Report object, to exclude the reference to the **SourceQuery** property, which is a private property of the Report. This bug occurred since v1.00.020 Build 418.

- Corrected the description of the **AllowAckSelected** property of the E3Alarm object and the name of the chapter about User Libraries in the E3 Scripts Reference Manual, to match the E3 User's Manual. This bug occurred since v1.00.021 Build 150.

- Corrected example scripts of the **AddObject** method and the **Application** and **Links** properties, all from the chapter **Programming in E3**, in the E3 Scripts Reference Manual. This bug occurred since v3.2 Build 151.

- The **FillStyle** property now is described only in the properties of the Screen object, containing all values and restrictions for all Screen objects. This bug occurred since v1.00.022 Build 37.

- Added descriptions for the **CommErrorBkColor**, **CommErrorText**, **CommErrorTextColor**, and **EnableCommError** properties of the Viewer object in the E3 Scripts Reference Manual. This bug occurred since v1.00.021 Build 144.

- Added to the E3 Scripts Reference Manual the description of the **nRetries** property of the Database object. This bug occurred since v3.0 Build 218.

- Added the description of the **AboutBox** method of the E3Alarm object in the E3 Scripts Reference Manual. This bug occurred since v1.00.021 Build 109.

- Added the description of the **AboutBox** method of the E3Browser object in the E3 Scripts Reference Manual. This bug occurred since v1.00.021 Build 109.

- Added the description of the **Retentive** property of the Property object of an XObject in the E3 Scripts Reference Manual. This bug occurred since v3.2 Build 151.

- Added descriptions for several properties of the IOFolder, OPCGroup, DrawGroup, DynamicRotate, and XMethod objects, and also properties common to Screen objects. This bug occurred since v3.2 Build 140.

- Added the value corresponding to the option of centering the window (2048) in the description of the *Flags* parameter of the **SetFrameOptions** method of the FrameSet object, in the E3 Scripts Reference Manual. This bug occurred since v1.00.021 Build 123.

- Added a **Locate** button on the toolbar of CHM files, which allows locating the selected topic in the **Search** tab during a search. This bug occurred since v3.2 Build 131.

- Replaced the figure displaying a Multiple Connection in the chapter **Links** of the E3 User's Manual, to a more representative figure of this type of connection. This bug occurred since v3.2 Build 136.

- Corrected the description of the functionality of the field **Ping Addresses to check network integrity**, which is not quit immediately when detecting network interface problems, but enter the **Standby** mode. This bug occurred since v1.00.020 Build 364.

- Corrected the description of the animation options of menus in E3 Studio in the E3 User's Manual to include the **Default** item, default for Windows, to differentiate from the **None** option, default for E3. This bug occurred since v2.0 Build 124.

- Added direct links to events, methods, and properties in the E3 Scripts Reference

Manual which are referenced in the E3 User's Manual. This bug occurred since v3.2 Build 131.

- Added information in the E3 User's Manual about the need of a specific hardkey license to use E3 as an OPC server. This bug occurred since v3.0 Build 233.

- Added a description of the procedures to enable ports in Windows XP, Vista, and 7 Firewall in the E3 User's Manual. This bug occurred since v2.5 Build 28.

- Corrected the description of the item **Query Object** in the chapter **Reports** of the E3 User's Manual. This bug occurred since v1.00.020 Build 418.

- Corrected texts in several chapters of the E3 User's Manual. This bug occurred since v3.2 Build 131.

- Corrected the description of the measurement unit of the **MaxRecTime** column, in the chapter about **Storage Configuration** in the E3 User's Manual. This bug occurred since v1.00.021 Build 135.

# Version 3.2

This section contains **New Features** and **Fixed Bugs** of E3 version 3.2.

## 6.1 New Features

**Playback**

- A new tool, called **Instant Chart**, was implemented in E3Playback to display a Tag's value directly on the Timeline. This tool will allow you to track a Tag value's variation in a fast, practical way. Check sample application at *http://kb.elipse.com.br/en-us/questions/1983/*.
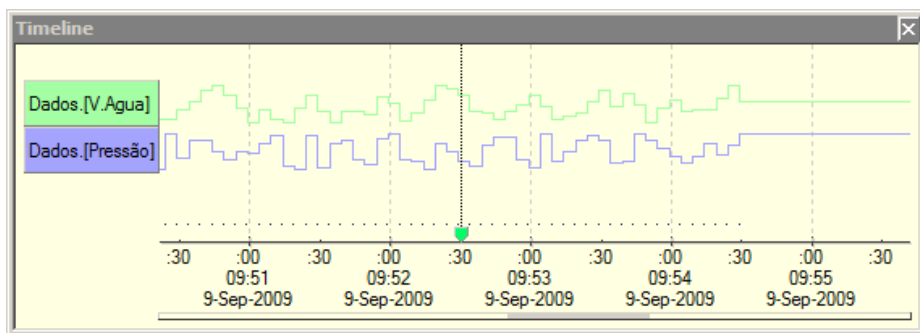


**Instant Chart**

- The video recording tool has been improved, and now it also allows you to record audio and mouse pointer.

- E3Playback now comes with **Bookmarks**, which allow users to pinpoint certain events on the Timeline and define marks to outline these events. The Timeline will display all user-created Bookmarks.
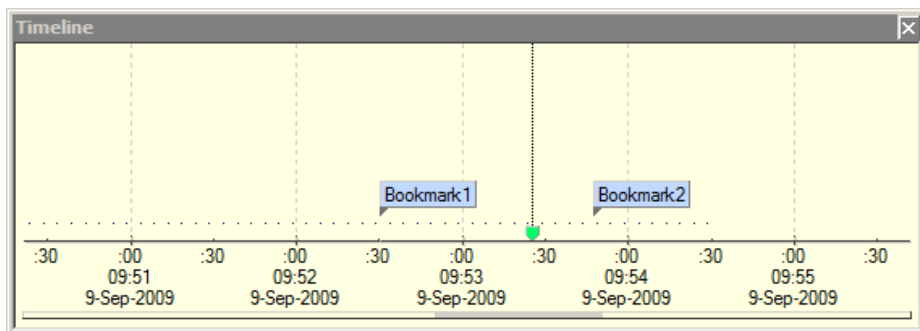


**Bookmarks**

- The colors on the window displaying the Timeline were changed to make it clearer, more attractive.

**Alarms**

- E3Alarm's **Colors** tab was redesigned to allow new settings. Now, in addition to color configuration for inactive and acknowledged alarms, you can also configure colors for text, background, foreground, and blinking options for each different severity type inside an alarm. You can also preview how these settings will look like at run time.
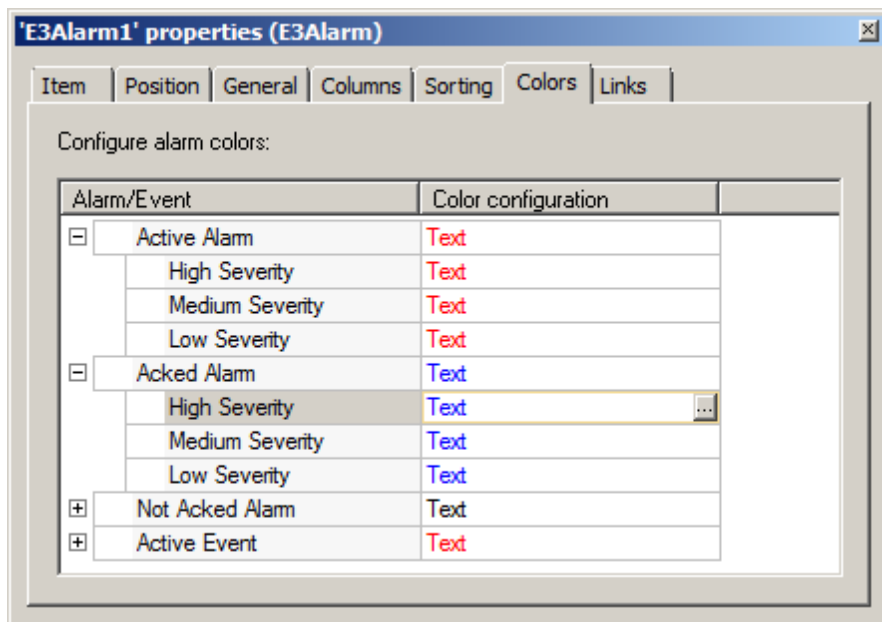


**E3Alarm's Colors tab**

- Three new methods were added to provide alarm acknowledgement via scripts: **AckSelected**, to acknowledge the selected alarm; **AckCurrentFilter**, to acknowledge all alarms of the current filter; and **AckAll**, to acknowledge all alarms. Check sample application at *http://kb.elipse.com.br/en-us/questions/1981/*.

**E3Chart**

- E3Chart's **Pens** tab was redesigned to facilitate Pen edition. Now, Pens are visualized in a table, which also show their main properties. These properties can be edited directly on the table, for multiple Pens at once. On **Style** column, it is possible to visualize how the Pen will be drawn at run time.
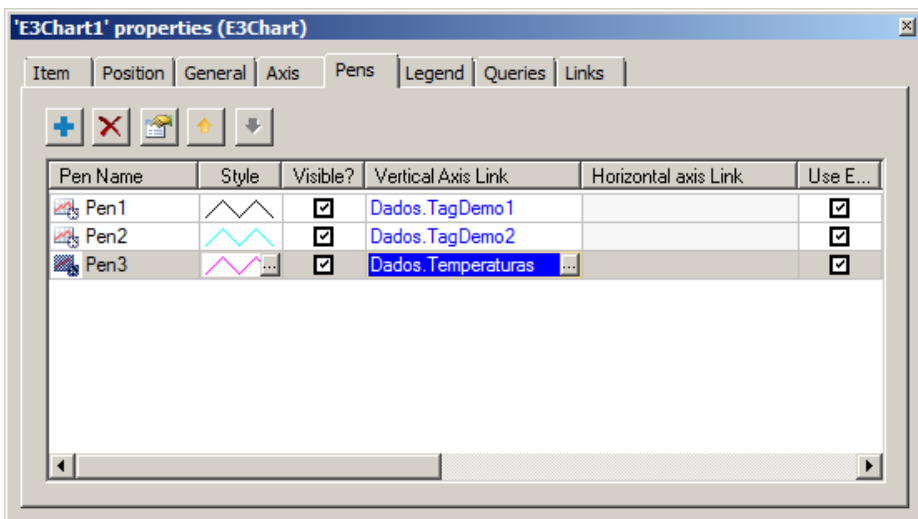
**E3Chart's Pens tab**

- It is now possible to use **Search/Replace** tool in Pen's properties; it is also possible to copy and paste Pens inside the same E3Chart, or among E3Charts.

- Three new properties were added to E3Chart: **ShowPopupMenu**, to set whether E3Chart's default menu will be displayed when the user right-clicks the chart; **MouseMode**, to control mouse mode via scripts: **Zoom**, **Pan**, **PanH**, **Search**, and **Cursors**; and **Padding**, to set the width of the padding between E3Chart's internal and control edges. Check sample application at *http://kb.elipse.com.br/en-us/ questions/1984/*.

- A new method was added to E3Chart's Pens and Pen Collections: **SetCursorPos**, to set each Pen's cursor in E3Chart.

- Another new Pens' method is **GetPoint**, which returns both X and Y coordinates of the point closest to the input value. In addition, Real Time Pens now have the option to show or hide bad quality points (**ShowBadPoints**). This option, which was previously configured only via scripts, is now also available in the Pen's properties window.

- A new, optional parameter was added to Pens' **AddPoint** method to indicate the quality of the inserted point.

**Interface / E3 Studio**

- There are several new improvements in E3's interface for version 3.2. First, all icons were reviewed and updated, which makes its interface clearer, with 24-bit colors. In addition, windows' alignment and internal spacing now follow Microsoft's standards.
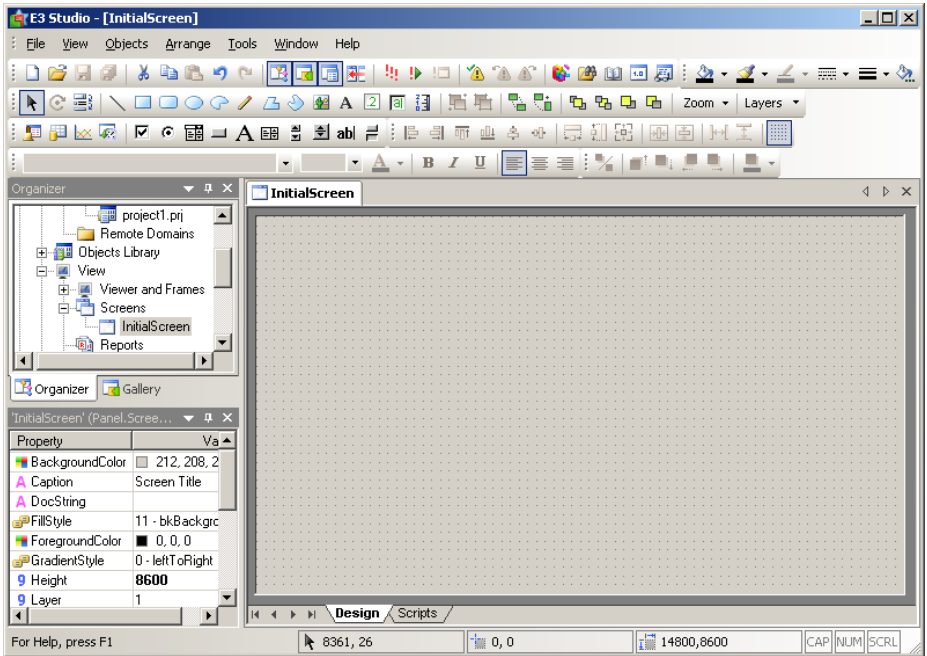
**New Icons**

- Properties Window's **Links** tab and Links Edition window now have new icons to identify link type, which makes the task of creating links more intuitive.
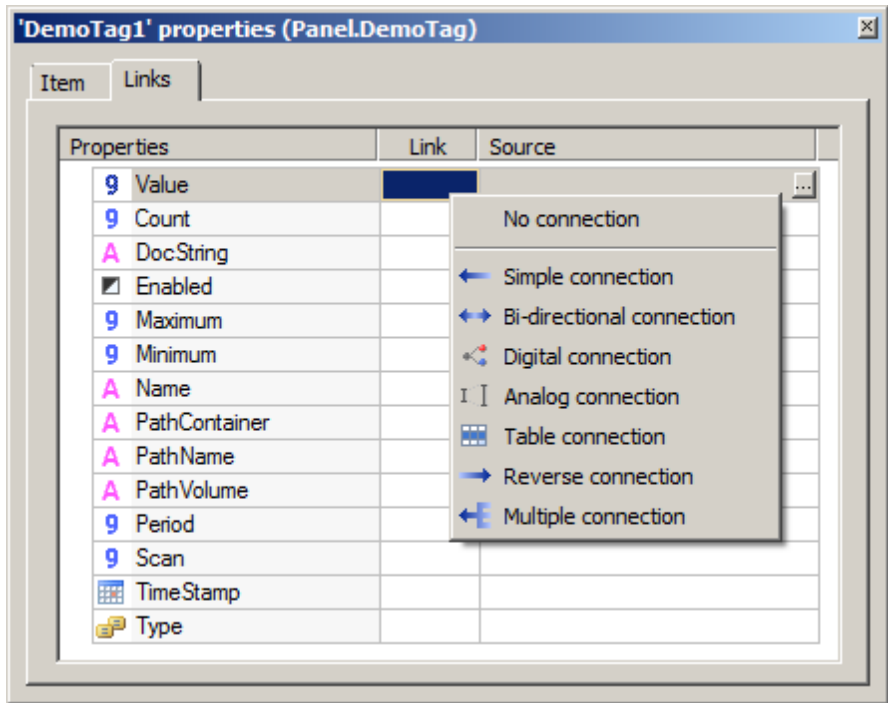
**Icons**

- In Studio, all read-only cells have a slightly darker background. This makes it easier for users to identify which columns or properties are not enabled for editing.

- A new shortcut (F2) was created to edit a DrawString text selected on screen. This shortcut also works for objects with **Caption** or **Value** properties; in such cases, editing is performed on Properties List.

- On Properties List, there is a new icon for properties containing a file path to an image (for example, **Screen.PictureFile** and **DrawPicture.FileName**). Unlike previous versions, this icon clearly describes an image, not a text.

**ElipseX**

- Created a **CustomConfig** event for ElipseX objects. This event is called inside the Studio by ElipseX's instances' contextual menu. The menu text is configured in ElipseX's **CustomConfigText** property. Check sample application at *http://kb.elipse.com.br/en-us/questions/1980/*.

- XObjects' properties can now be set as retentive.

**Viewer**

- Five new properties were added to Viewer object, which allow you to set the default behavior of windows created by this object: **WindowBorder**, **WindowResizable**, **WindowMovable**, **WindowStayOnTop**, and **WindowSmallTitle**.

- Furthermore, a new method was added to FrameSet object, **SetDisableTaskSwitching**, which enables or disables Viewer's task switching at run time.

**IODriver / IOServer**

- Implemented a *WatchDog* mechanism to monitor IOServer's work. If a Driver causes a Server hanging for more than one minute, the process is automatically destroyed, thus avoiding E3Run hanging (a message with error E00501 is then logged).

**OPC Client**

- Two new events were implemented in OPCDriver object, **OnTagRead** and **OnTagWrite**. Event generation is controlled in each OPC Tag by the **EnableDriverEvent** property. In addition, logs were added to the OPC client's external calls to detect OPC Server's hanging. These messages are generated in logs' **Full** section, in **Studio** and **E3Runtime** modules.

**Remote Domains**

- On Remote Domains settings window (**Options** - **Remote Domains**), now there is a button labeled **Advanced**, which allows you to set each Remote Domain's connection parameters. There, you can configure connection timeout, **ping**, and heartbeat, as well as set if link creation in the Remote Domain is asynchronous.
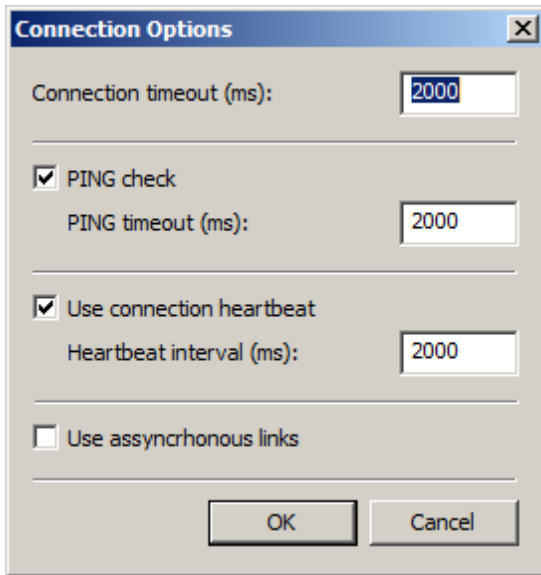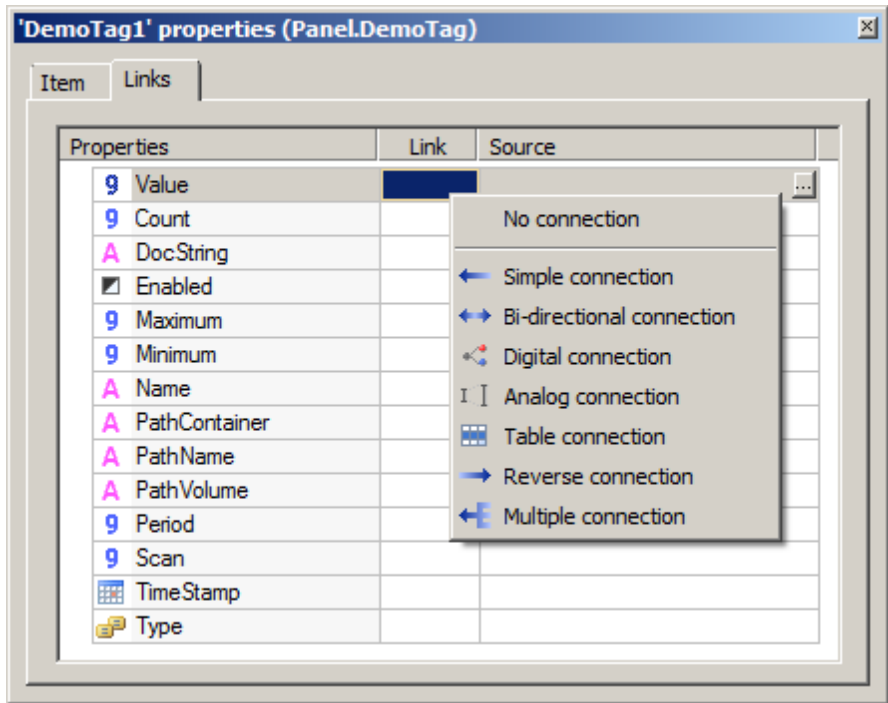
**Advanced settings**

- Now, the localhost address, or any other resolving as the loopback IP (*127.0.0.1*), will also work so that a Remote Domain be considered as a local alias.

**Links**

- Created a new type of Link, **Multiple connection**. With this Link, you can specify multiple sources, selected according to the main source's numerical value.

**Multiple Connection**

**Scripts**

- Created an Application object for Studio scripts. Currently, this object has only one method, **GetObject**, which returns a Domain object running in the server.

- The **GetChildObject** method was added to all E3 objects, and it retrieves child objects from paths relative to the current object.

**E3 Tweak**

- E3 Tweak's interface was redesigned to display Windows registry's changes in a clearer and more practical way. It also now validates keys' maximum and minimum values.
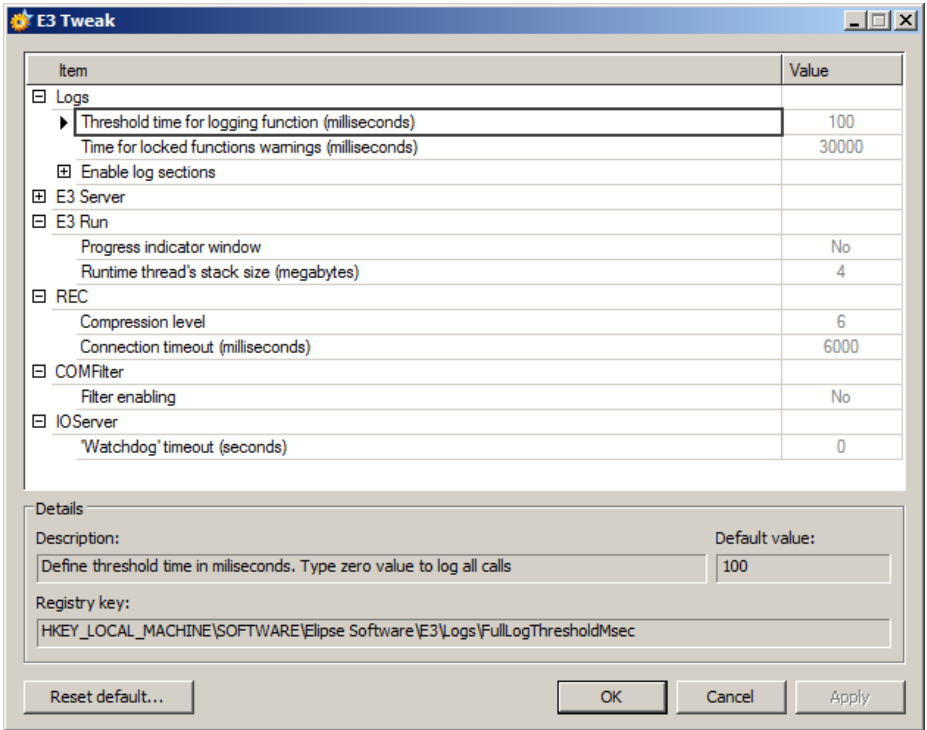
**E3 Tweak**

- E3 Tweak also presents new options to configure IOServer's WatchDog time (the maximum duration before a call to IOServer is considered stalled, **StallTimeoutSec**), and to enable the following **Full** log sessions: **StandbyAlgorithm**, **EventQueue**, **ServerLinkManager**, **ServerControl**, and **RemoteDomain**.

**Other features**

- All E3 manuals and E3-related products manuals (E3 Tweak, Elipse Event Log Viewer) are now presented in CHM format, lighter and more practical, allowing easy access by using a hierarchical structure. Furthermore, all manuals are linked to each other, making it easy to search for information in all different manuals supplied by Elipse Software.

- E3's Scripts Reference Manual has been redesigned: its chapters are now object-oriented, organized in the same sequence as User's Manual, and each object is presented alongside its own events, methods, and properties.

- **Full** logs were added to some Domain calls and objects in the Database (**AdoRowset** and **ADORecordSet**), which can run in the server and be accessed via Viewer Scripts.

- The IOKit installed alongside E3 has been updated to version 1.15.

- The digital certification used for installers and other binary files (EXE, OCX, DLL, etc.) in E3 was updated. It is now valid until September 13th, 2010.

- E3 version 3.2 brings Elipse Event Logs new version, 3.0. It has been greatly improved, especially concerning graphical interface usability:

  - **Elipse Event Log Viewer**: allows you to insert bookmarks in events, sort events out per fields, and save filter configurations of each log file. Furthermore, date visualization is now always on the time zone of the place where the file was generated

  - **Elipse Event Log Export**: you can now choose event fields to be decoded during export

# 6.2 Bugs Fixed

**Alarm Server / Alarm Configuration**

- Fixed a bug when closing the Domain or deactivating the Alarm Server, which eventually lead to losing some alarm messages (up to 99) that had not been recorded in the database yet. {active since v1.00.018 Build 147 (or previous)} For further information, please refer to *http://kb.elipse.com.br/en-us/ questions/1919*

- Fixed a bug that could cause Viewer script errors after **Deactivate** method call, in reference to an AlarmServer object. {active since v1.00.021 Build 96} For further information, please refer to *http://kb.elipse.com.br/en-us/ questions/1928*

- Fixed Alarm Summary's behavior when the Domain stops. Previously, the Summary was erased whenever the Domain stopped (without closing it). Now, Summary messages are only erased if the Domain is closed. {active since v1.00.021 Build 96} For further information, please refer to *http:// kb.elipse.com.br/en-us/questions/1929*

- Now, when deactivating and then reactivating the AlarmServer at run time, the Alarm Summary hides (when deactivating) and reappears (when reactivating). No message will be logged to the database during this process. {active since v1.00.018 Build 147} For further information, please refer to *http://kb.elipse.com.br/en-us/questions/1947*

- Fixed E3 Alarm's behavior, which allowed an alarm message to remain active in the Summary if the related AlarmSource was disabled (**AlarmVerify** = False) via Studio, and later the Domain was updated. Now,when updating the Domain, this message is removed from the Summary, and a message with **Enabled** = 0 is logged to the database. {active since v1.00.021 Build 96} For further information, please refer to *http://kb.elipse.com.br/en-us/ questions/1948*

- Now alarms are only checked after AlarmConfig's complete activation, which

happens after the execution of **OnStartRunning** scripts and Link creation. This allows alarms to be completely reconfigured during application activation (or during some object's reactivation via **Activate** method), which includes renaming areas, enabling or disabling alarm acknowledgement, changing verification limits, etc. {active since v1.00.020 Build 242} For further information, please refer to *http://kb.elipse.com.br/en-us/questions/1961*

- The alarm's acknowledgment status is no longer lost when the AlarmSource restarts (either by refreshing the Domain, or by using **Deactivate** or **Activate** commands). {active since v1.00.021 Build 96} For further information, please refer to *http://kb.elipse.com.br/en-us/questions/1960*

## AppBrowser

- Removed prefixes (such as "v", "bstr", "str", "vb", "p", "var", "va", "d", "i", "l") from names of E3's methods and properties parameters

## Data Server

- Fixed a bug that caused a Timer Tag's **OnPreset** event set as a daily trigger (**TriggerType** = ttDaily) to be called just once. {active since v3.0 Build 122} For further information, please refer to *http://kb.elipse.com.br/en-us/questions/1959*

- Fixed a bug that caused a Counter Tag to sometimes skip numbers (for example 1, 2, 3, 3, 5). {active since v3.0 Build 137} For further information, please refer to *http://kb.elipse.com.br/en-us/questions/1973*

- Fixed Internal Tag's behavior, which propagated changes in **Quality** property before updating **TimeStamp** property when receiving a new value either via Link or via **WriteEx** method. {active since v1.00.021 Build 96} For further information, please refer to *http://kb.elipse.com.br/en-us/questions/1975*

- Fixed an E3Run hanging when a connection to an Oracle database is down while a query to the same database is running. {active since v1.00.018 Build 147 (or previous)}

## Database

- Changed text value formatting in SQL code generated for MS SQL Server, to support Unicode characters correctly

- Now a Database inserted into an XObject works properly at run time {active since v1.00.021 Build 96}

## Domain / E3 Server / Hot-Standby

- Fixed a potential E3 Server's glitch when an IOServer is unexpectedly

terminated. {active since v3.0 Build 359}

- Fixed retentive Tag's implementation, which handled Tag's name as case-sensitive and caused a Tag renamed from "tag" to "TAG" to lose its retentive value. {active since v1.00.021 Build 96}

- Fixed a bug that occurred if an object was attributed to a retentive Internal Tag's value. The next time a Domain started (or when there was a switchover), all retentive Internal Tags remained in error. Now a retentive Internal Tag will only retain object's value that had been attributed to it. {active since v1.00.021 Build 96}

- Fixed a memory leak in E3 Server (only when in Hot-Standby) whenever an object was attributed to a retentive Tag. This bug ended up causing an Out of Memory error after a few hours. {active since v1.00.021 Build 96}

**Domain Checker**

- Fixed a bug in E3 Studio that caused valid Links to be displayed in red if there was any Viewer (Screens, Frames, etc.) or Server (Alarms, Drivers, etc.) object in the root with the same name. {active since v3.0 Build 238}

**E2Controls**

- Fixed a GPF that occurred when E2Text's **Value** property was changed and the object had no configured default Zone. {active since v3.0 Build 219}

- E2Text's Zones properties tab is now updated correctly when another object is selected. {active since v3.0 Build 219}

- E2Text's properties tab now correctly updates the Tip text box when a new Zone is selected. {active since v3.0 Build 219}

- Fixed Zone samples on E2Text's properties tab, which presented problems due to lack of a background update. {active since v3.0 Build 219}

- E2Control's properties tab are now translated to Portuguese in E3's Portuguese version. {active since v3.0 Build 219}

- Fixed **Delete** button's behavior on E2Animation's Zone tabs (previously, the button did not work). {active since v3.0 Build 219}

- Fixed a **Toggle**-type E2Button's bug, which kept alternating its value if the space button remained pressed. {active since v3.0 Build 219}

- E2Text's **Value** property is now saved alongside the object's configuration; property type has been changed from **Variant** to **Double**. {active since v3.0 Build 219}

- Fixed behavior of E3 Studio's properties list, which did not open a window for file selection when E2Bitmap's **Filename** property's button was clicked.

{active since v3.0 Build 219}

- Fixed several bugs on E2Text's Zones tabs

- Fixed E2Animation's **Border** property behavior, which did not draw the border when set to True. {active since v3.0 Build 219}

- E3 Studio's properties list now allows to configure E2Button's **Bitmap0** and **Bitmap1** properties when clicking the ⋯ button. {active since v3.0 Build 219}

- Fixed an incompatibility of E2Animation's and E2Button's redraw, which shrunk or stretched the image, unlike Elipse SCADA, which always kept the image's original size (by cutting it or filling it with the background color). {active since v3.0 Build 219}

- Changed the name of E2Animation's Zone edition tab from **E2Animation** to **Zones**. {active since v3.0 Build 219}

- Fixed E2Text's and E2Animation's drawing, which did not fill the object's background when there was no active Zone in the current value. {active since v3.0 Build 219}

- Reviewed E2Controls' properties descriptions, which were incomplete in the AppBrowser. {active since v3.0 Build 219}

- Fixed the behavior of E2Setpoint's and E2Display's **Multiline** property, which now can only be turned on when the object is set as **String** or **Date** types. {active since v3.0 Build 119}

- Fixed E2Setpoint's line break when **Multiline** is enabled, which did not break any words larger than the control's length. {active since v3.0 Build 119}

- When a value of a type other then the one set in E2Setpoint is attributed via scripts, E2Setpoint now accepts a value from the original type, but displays the formatted value according to Setpoint type. If conversion fails, the Setpoint is left empty. {active since v3.0 Build 119}

- Fixed E2Setpoint's behavior of showing the keyboard's cursor at an incorrect place when **Multiline** property is enabled, and had more than one line of text. {active since v3.0 Build 119}

- E2Bitmap now correctly displays an "X" when an image path is invalid or empty. {active since v3.0 Build 219}

- Fixed redraw bugs in buttons for choosing colors on E2Text's **Zones** tab. {active since v3.0 Build 219}

- Added a new button to select an image file on E2Animation's **Zones** tab

- E2Text's and E2Animation's **BlinkTime** property can now be changed at run time. {active since v3.0 Build 119}

- Fixed behavior of E2Text's and E2Animation's **Zones** tab. Now **Min**, **Max**, and

**Blink** options are disabled when Zone is the default one. {active since v3.0 Build 119}

- Improved image opening time in E2Controls, especially images with no transparency. {active since v3.0 Build 119}

- Changed enumeration names on E2Button's **Type** property to English. {active since v3.0 Build 119}

- Fixed E2Gauge drawing; ticks' texts are now centered according to them. {active since v3.0 Build 119}

- E2Controls now have two different versions, English and Portuguese (other versions use the english version). {active since v3.0 Build 219}

**E3Alarm**

- Fixed a problem that caused the text to be cropped when not using a True Type font, with size 12 or smaller

**E3Chart**

- Fixed a bug in E3Chart's legend, which displayed the message ":256" on Pen's status, even when it is properly connected. {active since v1.00.020 Build 385}

- Fixed a bug in E3Chart Pens' draw style: when not solid (for example, dotted), and sized 1 or higher, it used to display a continuous drawing

- Fixed E3Chart's **Dot Search** mode, which did not work if data on X axis was not sorted out in ascending order

- Fixed E3Chart's Pens and Axes collections' behavior, which allowed the creation of objects with the same name. {active since v1.00.021 Build 96}

- When using a real time scale, now there is a 2-pixel margin on E3Chart that keeps Pen's current data from hiding behind the Axis line. {active since v1.00.021 Build 96}

**Storage**

- E3Storage's cache is now emptied every 1 second, thus keeping data from holding for much longer for cache filling up. {active since v1.00.021 Build 96}

- Fixed a value validation in Storage fields' **Type** property: now it will not accept invalid values passed via scripts

**E3 Tweak**

- E3 Tweak now allows to individually configure log sessions **Full.E3Admin** and **Full.ServerControlMonitor**. {active since v3.1 Build 32}

**Find / Replace**

- Fixed E3 Studio's **Find/Replace** tool, which did not find values in fields of Table Link rows. {active since v3.0 Build 88}

**Frames**

- Fixed a bug which caused modal screens (**DoModal**) inheriting settings of a resizable Viewer not to be resizable themselves

**Historic**

- Fixed the text alignment on Historic's property window (**Historic** tab) and Storage's property window (**Storage** tab). {active since v3.1 Build 188}

**IODriver / IOServer**

- Re-implemented version and copyright information in IOServer.exe file. {active since v3.1 Build 11}

**Installation**

- Removed Service Pack verification for Windows Vista. {active since v3.1 Build 115}

**Interface**

- Fixed input of property's limit values on the Links edition window for Analog Links, which did not allow typing negative or fraction values
- Fixed a bug that prevented E3 Server from recording events on Windows' events log. {active since v3.1 Build 1}
- Changed behavior of PLUS SIGN (+), MINUS SIGN (-), and ASTERISK (*) keys to open cell edition, even on the first column, for Studio's flat (non-hierarchical) spreadsheets. {active since v1.00.021 Build 96}
- Removed the 🔵 button from the lower left corner of Studio's Personalize window. {active since v2.0 Build 10}

**Links**

- Fixed a bug that caused some Links from a Remote Domain to be stalled after Domain disconnection, instead of assuming a Null value and a bad quality
- Fixed the behavior of XControls in E3 Studio when these oens are linked to complex or constant expressions, as well as Links only between XControl's

internal objects (Links were not activated). It is now possible to view the XControl's proper behavior in E3 Studio. {active since v1.00.021 Build 96}

- Fixed a bug when updating Links with expressions referring to multiple Tags. {active since v3.0 Build 449}

- Fixed E3's behavior for object or property names containing a single letter, except for ASCII characters, where brackets may not be added when needed

- Fixed a bug when handling Link events, when an event opening a window could not be handled completely until there was another variation in a property referred by a Link. {active since v3.0 Build 213}

**Playback**

- Fixed a bug that caused E3Playback queries to fail if the Alarms table was using **EventTimeDbl** field, and if the database was an Oracle server. {active since v3.1 Build 115}

- Fixed a bug in playback data loading, which failed with an 80020005 error in case any field definition table had a NULL value (that usually occurred only if users updated tables manually)

- E3Playback's events list now supports double-click on an event to move the playback's clock to the time of the event (this behavior also works on **Play** mode, or if the event had already been selected on the list). {active since v3.1 Build 189}

**Remote Domains**

- Fixed a delay in the initial attempt to connect to a client Remote Domain. Improved failure or success detection time for a **ping** command at disconnection or reconnection

**Screen Objects**

- Changed Boolean values formatting behavior to follow user's language, similar to Script behavior

- Fixed a bug in E3 Studio when pasting non-western characters, such as Cyrillic

- Fixed a bug in E3 Studio's screen editor that caused excessive CPU consumption (which could hang the process) when users selected the DynamicMove or DynamicRotate objects applied to drawings with many details. {active since v1.00.021 Build 96}

- Fixed a bug on keyboard browsing: the Label (MSForms) object was capturing the TAB key when **TabStop** property was set to True, thus preventing the focus

to move to other objects. {active since v1.00.021 Build 96}

- Fixed a bug in SetPoint's or Display's word processing in Studio, which incorrectly doubled their sizes every time they were edited if the text was empty. {active since v1.00.019 Build 87 (approximately)}

### Scripts Editor

- Fixed behavior of E3's Scripts Editor, which used to move the cursor to the beginning of the script again when gaining focus, which made the edition of large scripts more difficult. {active since v3.1 Build 232}

- Fixed behavior of objects and events selection lists on Scripts Editor toolbar, which was left blank if the selected object in another script view was not erased. {active since v2.0 Build 69}

### E3 Studio

- Fixed minor translation and typing errors in different places in E3 Studio. On **Toolbar** and **Options** tabs of **View - Personalize** menu, and in the Domain Wizard

- Fixed some graphical interface elements in E3 Studio that used a different font (Segoe UI) from the rest of the software (Tahoma). {active since v3.1 Build 1}

- E3 Studio resumed recording the current user's preferences in Windows Registry. This includes default configuration for new objects (foreground and background colors, font, alignment, etc.), screen editor's configuration, among others. {active since v2.0 Build 52}

- Fixed **Paste** command's behavior in the object's contextual menu in edition views

- Fixed Storage configuration's Drag and Drop behavior, which used to display a plus sign when dragging a field (indicating a copy). The plus sign has now been removed, since copy operation is not supported

### Translation

- English: the term "Packages" is now translated as "Packets"

- Spanish: the position of the word "contraseña" was corrected on DBServer's **Settings** tab in E3 Studio

- English and Spanish: replaced the term "Associações" on E3Admin's Domain settings window with the term "Links"

- English: fixed translation bugs on the column's properties window in the Legend, as well as on E3Chart's **Legend** tab

- English: fixed some minor translation and alignment bugs throughout E3

**Viewer**

- Shortcut keys now work on modal screens opened with another shortcut key

- Fixed a GPF occurring in Viewer under some conditions after closing a modal screen containing an E3Browser. {active since v1.00.021 Build 96}

- Fixed Viewer's and Application's **GetFrame** method to force a script error when it fails. {active since v1.00.021 Build 96}

**E3 WebViewer**

- The file rmchart.dll is now installed in System32 folder

- Fixed a bug that resulted in a blank screen when using E3WebViewer with Internet Explorer 8. {active since v3.0 Build 288}

- Fixed E3WebViewer's scrollbar behavior, which was being displayed even when it was not needed

**ElipseX**

- Fixed a bug that caused an ActiveX created in the Viewer at run time with the **AddObject** method to disable its user interface. {active since v1.00.021 Build 96}

**Other bugs fixed**

- Removed a dependency with Iprop.dll, which does not exist in Windows Vista x64, and which was preventing E3 x64 programs from running on that platform

- Fixed !register.bat file to record E3Playback's OCX as well. {active since v3.1 Build 97}

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