

OPC Toolbox Release Notes

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Summary by Version

This table provides quick access to what's new in each version. For clarification, see "About Release Notes" on page 2.

Version (Release)	New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Latest Version V2.1 (R2007b)	Yes Details	No	Bug Reports Includes fixes	Printable Release Notes: PDF Current product documentation
V2.0.4 (R2007a)	No	No	Bug Reports Includes fixes	
V2.0.3 (R2006b)	No	No	Bug Reports Includes fixes	No
V2.0.2 (R2006a)	Yes Details	No	Bug Reports at Web site	No
V2.0.1 (R14SP3)	Yes Details	No	Bug Reports at Web site	No
V2.0 (R14SP2+)	Yes Details	No	Bug Reports at Web site	No
V1.1.2 (R14SP2)	Yes Details	No	Bug Reports at Web site	No
V1.1.1 (R14SP1)	Yes Details	Yes Summary	"Major Bug Fixes" on page 12	No
V1.1 (R14+)	Yes Details	Yes Summary	"Major Bug Fixes" on page 16	No
V1 (R14)	Yes Details	No	No bug fixes	No

About Release Notes

Use release notes when upgrading to a newer version to learn about new features and changes, and the potential impact on your existing files and practices. Release notes are also beneficial if you use or support multiple versions.

If you are not upgrading from the most recent previous version, review release notes for all interim versions, not just for the version you are installing. For example, when upgrading from V1.0 to V1.2, review the New Features and Changes, Version Compatibility Considerations, and Bug Reports for V1.1 and V1.2.

New Features and Changes

These include

- New functionality
- Changes to existing functionality
- Changes to system requirements (complete system requirements for the current version are at the MathWorks Web site)
- Any version compatibility considerations associated with each new feature or change

Version Compatibility Considerations

When a new feature or change introduces a reported incompatibility between versions, its description includes a **Compatibility Considerations** subsection that details the impact. For a list of all new features and changes that have reported compatibility impact, see the “Compatibility Summary for OPC Toolbox” on page 19.

Compatibility issues that are reported after the product has been released are added to Bug Reports at the MathWorks Web site. Because bug fixes can sometimes result in incompatibilities, also review fixed bugs in Bug Reports for any compatibility impact.

Fixed Bugs and Known Problems

MathWorks Bug Reports is a user-searchable database of known problems, workarounds, and fixes. The MathWorks updates the Bug Reports database as new problems and resolutions become known, so check it as needed for the latest information.

Access Bug Reports at the MathWorks Web site using your MathWorks Account. If you are not logged in to your MathWorks Account when you link to Bug Reports, you are prompted to log in or create an account. You then can view bug fixes and known problems for R14SP2 and more recent releases.

The Bug Reports database was introduced for R14SP2 and does not include information for prior releases. You can access a list of bug fixes made in prior versions via the links in the summary table.

Related Documentation at Web Site

Printable Release Notes (PDF). You can print release notes from the PDF version, located at the MathWorks Web site. The PDF version does not support links to other documents or to the Web site, such as to Bug Reports. Use the browser-based version of release notes for access to all information.

Product Documentation. At the MathWorks Web site, you can access complete product documentation for the current version and some previous versions, as noted in the summary table.

Version 2.1 (R2007b) OPC Toolbox

This table summarizes what is new in Version 2.1 (R2007b):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports Includes fixes	Printable Release Notes: PDF Current product documentation

New features and changes introduced in this version are

- “Graphical Display of OPC Data” on page 4
- “Time Series Objects Now Supported” on page 4

Graphical Display of OPC Data

The new `trend` function provides a graphical display of live OPC data for an OPC group object. You can now watch live data stream to a MATLAB® figure window while working in MATLAB. The `trend` functionality is independent of OPC logging tasks. More information is available on the `trend` reference page.

Time Series Objects Now Supported

OPC Toolbox now supports time series objects, allowing easier analysis and visualization of time domain data in MATLAB. The addition of this functionality involves the extension of the existing OPC Toolbox functions `getdata` and `opcread` to support the creation of MATLAB time series objects. The new functions `opcstruct2timeseries` and `opcqid` have also been added to OPC Toolbox to support this feature. More information is available on the reference pages for these functions.

Version 2.0.4 (R2007a) OPC Toolbox

This table summarizes what is new in Version 2.0.4 (R2007a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
No	No	Bug Reports Includes fixes	No

Version 2.0.3 (R2006b) OPC Toolbox

This table summarizes what is new in Version 2.0.3 (R2006b):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
No	No	Bug Reports Includes fixes	No

Version 2.0.2 (R2006a) OPC Toolbox

This table summarizes what is new in Version 2.0.2 (R2006a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports at Web site	No

New features and changes introduced in this version are

opcregister Function Enhanced

The `opcregister` function has been enhanced with a `'-silent'` option to install OPC Foundation Core components without dialog boxes.

Version 2.0.1 (R14SP3) OPC Toolbox

This table summarizes what is new in Version 2.0.1 (R14SP3):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports at Web site	No

New features and changes introduced in this version are

- “Full Event Log” on page 8
- “Changing TimerPeriod Property” on page 8

Full Event Log

The event log is no longer cleared when a new event arrives and the event log is full. Instead, the oldest event is removed to make space for the new event. For more information, see the reference page for the EventLogMax property, by typing

```
doc EventLogMax
```

Changing TimerPeriod Property

You can now change the TimerPeriod property while a client object is connected.

Version 2.0 (R14SP2+) OPC Toolbox

This table summarizes what is new in Version 2.0 (R14SP2+):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports at Web site	No

New features and changes introduced in this version are

- “Support for Simulink: OPC Toolbox Block Library” on page 9
- “New Item Property: QualityID” on page 9

Support for Simulink: OPC Toolbox Block Library

This release of OPC Toolbox includes support for communicating with OPC servers from Simulink®. The OPC Toolbox block library includes blocks for reading data from an OPC server, writing data to an OPC server, and running a Simulink simulation in pseudo real time (by slowing the simulation to run at system time). For more information on using OPC Toolbox with Simulink, see “Using the OPC Toolbox Block Library” in the User’s Guide.

New Item Property: QualityID

The QualityID property has been added to daitem objects. The QualityID, expressed as a 16-bit unsigned integer, represents the quality of the data item when last read. To work with the QualityID property, you use the function `opcqparts` to convert the QualityID property into vendor, major, substatus, and limit status information; and the function `opcqstr` to convert the QualityID property into a string. For more information, see the QualityID property reference page.

Version 1.1.2 (R14SP2) OPC Toolbox

This table summarizes what is new in Version 1.1.2 (R14SP2):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports at Web site	No

New features and changes introduced in this version are

- “QualityID Property” on page 10
- “Quality String Limit Status” on page 10
- “Default Quality Value” on page 10

QualityID Property

The QualityID property has been added to the daitem object. QualityID represents the quality of the item’s data value as an integer. The opcqparts and opcqstr functions are provided to enable you to work with the QualityID property.

Quality String Limit Status

A limit status has been added to quality strings. The limit status indicates whether the data value has been limited in any way. For more information, see the reference page for the Quality property.

Default Quality Value

The default value for Quality has changed from an empty string to 'Bad : Out of Service' to reflect the true status of that data value.

Version 1.1.1 (R14SP1) OPC Toolbox

This table summarizes what is new in Version 1.1.1 (R14SP1):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	Yes—Details labeled as Compatibility Considerations , below. See also Summary.	Fixed bugs Details below	No

New features and changes introduced in this version are

- “Timeout Property Setting” on page 11
- “Vector Displays of Item and Group Objects” on page 11
- “OPC Tool Enhancement” on page 12
- “Referencing Object Properties” on page 12
- “Major Bug Fixes” on page 12
- “Loading OPC Toolbox Objects Has Changed” on page 12

Timeout Property Setting

The Timeout property can now be set to Inf. This disables any timeout handling in OPC Toolbox. With a Timeout value of Inf, the toolbox will wait forever for a task to complete, or until you break out of the wait with ^C (Ctrl+C).

Vector Displays of Item and Group Objects

Displaying vectors of item and group objects has been enhanced. When you display a vector of group and/or item objects, additional information about each object in the group or item vector is displayed in the Command Window.

OPC Tool Enhancement

The **Add To Session** behavior of OPC Tool has changed. When you use the **Add to Session** option of the **File** menu, any clients that exist in the file and in the current session are merged using the following rules:

- Groups with different names are created inside the client that exists in the current session.
- Groups with the same name as a group in the current session are created with a new group name. The new group name has the text "_merged" appended to the group name. If that group name already exists, a unique number is added to the group name.
- Existing groups are *not* merged with groups that are loaded using the **Add to Session** option.

Referencing Object Properties

You can now reference elements of OPC Toolbox object properties. For example, the command

```
clientName = grp.Parent.Name
```

is now legal.

Major Bug Fixes

OPC Tool Memory Usage

OPC Tool no longer consumes large amounts of memory when being used for a long time.

Hyperthreading

Hyperthreading machines no longer crash OPC Toolbox.

Loading OPC Toolbox Objects Has Changed

A change has been made in how an object's properties are overwritten when you load an OPC Toolbox object a second time in the same session.

Compatibility Considerations

In previous releases, if you loaded an OPC Toolbox object twice in the same session, the second load command would overwrite the properties of the objects that existed in the file, but would leave added children of the client object unchanged. No warning would be issued.

OPC Toolbox now restores the entire client hierarchy to the state of the client that is loaded. When loading an object that exists in memory, the load command now issues a warning and takes the following actions:

- Deletes those groups or items that exist in memory but not in the file being loaded
- Creates those groups or items that exist in the file being loaded but not in memory
- Sets those properties of any objects in the file that differ from those in memory, to the values stored in the file

Version 1.1 (R14+) OPC Toolbox

This table summarizes what is new in Version 1.1 (R14+):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	Yes—Details labeled as Compatibility Considerations , below. See also Summary.	Fixed bugs Details below	No

New features and changes introduced in this version are

- “Improved Support for Large Name Spaces” on page 14
- “Enhanced Add Item Dialog Box in OPC Tool” on page 15
- “Support for Public Groups” on page 15
- “LanguageID Property Removed” on page 16
- “Subscribing into Properties Not Supported” on page 16
- “Major Bug Fixes” on page 16

Improved Support for Large Name Spaces

This release provides improved support for servers with large name spaces. Previously, the name space on a server was retrieved in one step, and this would take inordinately long for a very large server. This release allows you to retrieve the name space incrementally, using *browse filters* for the `getnamespace` function. The browse filters allow you to specify a starting point for name space retrieval, and a browse depth, which controls how far "down" the tree you will be retrieving the name space.

Compatibility Considerations

This change has resulted in the following changes to behavior from previous versions:

- The `getnamespace` function now returns a hierarchical name space as the default. Previously, the name space was presented as a flat name space, even if the server stored the name space hierarchically. To get the same behavior as in previous versions, you can use the following code:

```
flatnamespace(getnamespace(da))
```

- The `getnamespace` function no longer accepts the 'hierarchical' flag.
- The OPC Tool graphical user interface (GUI) now loads the name space incrementally. This allows OPC Tool to be used with servers that have large name spaces.
- The **Add Item** dialog for OPC Tool has been reimplemented to allow for incremental loading of the server name space. Consequently, the **Available Server Items** list has been replaced by a tree view.

Enhanced Add Item Dialog Box in OPC Tool

The Add Item dialog box in OPC Tool includes the following enhancements:

- You can add multiple items to a group more easily. You can now use the **All below** button to add all items below a particular node to the **Selected server items** list.
- The **Available server items** list is now a tree view. If an item has already been added to the group, or is selected for addition, the item will appear greyed out in the tree view. This allows you to see, in the context of the name space, which items have been added to the group already.
- If you know the Item ID of the item you want to add to a group, you can now type that Item ID in the **Enter ItemID(s)** field.

Support for Public Groups

The OPC Data Access Specification provides functionality to allow multiple clients to share group configuration, through the use of *public groups*. One client may configure a group with a number of items, and share that configuration with other clients by making that group public.

This release adds support for public groups to OPC Toolbox, allowing you to create public groups, connect to existing public groups on a server, and remove public groups from the server.

For additional information on public groups, see *Working with Public Groups* in the OPC Toolbox User's Guide.

LanguageID Property Removed

The LanguageID property has been removed.

Compatibility Considerations

This may cause errors in any code that tries to access this property. Removal of this property has no effect on toolbox internal code behavior.

Subscribing into Properties Not Supported

OPC Toolbox no longer supports subscribing into OPC Toolbox properties.

Compatibility Considerations

Previously, using dot-notation referencing allowed you to subscribe into properties. This functionality has been removed, as the subscribing operation did not work correctly for all cases. As a workaround, you must first get the property, then use subscribing on that property. For example, instead of using

```
grpName = da.Group.Name;
```

you must now use

```
grp = da.Group;  
grpName = grp.Name;
```

Major Bug Fixes

- `opcreset` no longer removes objects from the OPC Tool GUI. An error is generated if you attempt to call `opcreset` while OPC Tool is running. You must close OPC Tool before you call `opcreset`.
- The LanguageID property of a `dagroup` object has been removed. Previous versions of OPC Toolbox provided this property, but did not use the property at any time.

Version 1.0 (R14) OPC Toolbox

This table summarizes what is new in Version 1.0 (R14):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	Not applicable	No	No

New features and changes introduced in this version are

Product Features in First Release

OPC Toolbox is a collection of M-file functions and MEX-file dynamic link libraries (DLLs) built on the MATLAB® technical computing environment. OPC Toolbox allows you to connect to an OPC server directly from MATLAB and gather plant information and log data, so that you can perform analysis in MATLAB and write values back to the OPC server from MATLAB. OPC Toolbox also allows you to log data to disk and memory, so that you can get a history or time series of data to analyze and process in MATLAB.

The toolbox provides you with these main features:

- A framework for interacting with one or more OPC servers directly from MATLAB.
- Compliance with the OPC Foundation Data Access Standard, version 2.05a.
- Event-driven interaction with OPC servers.
- An object-oriented hierarchical structure for managing connections to OPC servers, creating and interacting with groups of OPC server items (also known as tags), and communicating with servers in a flexible and efficient way.
- The ability to log data from OPC Data Access servers without the need for Historical Data Access support on the OPC Server.
- An intuitive graphical user interface (GUI) for browsing OPC servers, creating OPC Toolbox objects, and initiating logging tasks.

For more information on OPC, and particularly the capabilities of OPC Toolbox 1.0, consult the documentation on OPC Toolbox.

Compatibility Summary for OPC Toolbox

This table summarizes new features and changes that might cause incompatibilities when you upgrade from an earlier version, or when you use files on multiple versions. Details are provided in the description of the new feature or change.

Version (Release)	New Features and Changes with Version Compatibility Impact
Latest Version V2.1 (R2007b)	None
V2.0.4 (R2007a)	None
V2.0.3 (R2006b)	None
V2.0.2 (R2006a)	None
V2.0.1 (R14SP3)	None
V2.0 (R14SP2+)	None
V1.1.2 (R14SP2)	None
V1.1.1 (R14SP1)	See the Compatibility Considerations subheading for this new feature or change: <ul style="list-style-type: none"> • “Loading OPC Toolbox Objects Has Changed” on page 12
V1.1 (R14+)	See the Compatibility Considerations subheading for each of these new features or changes: <ul style="list-style-type: none"> • “Improved Support for Large Name Spaces” on page 14 • “LanguageID Property Removed” on page 16 • “Subscribing into Properties Not Supported” on page 16