



## **ANSYS ACT 2019 R1 Migration Notes**

---

## **Copyright and Trademark Information**

© 2018 ANSYS, Inc. Unauthorized use, distribution or duplication is prohibited.

ANSYS, ANSYS Workbench, AUTODYN, CFX, FLUENT and any and all ANSYS, Inc. brand, product, service and feature names, logos and slogans are registered trademarks or trademarks of ANSYS, Inc. or its subsidiaries located in the United States or other countries. ICEM CFD is a trademark used by ANSYS, Inc. under license. CFX is a trademark of Sony Corporation in Japan. All other brand, product, service and feature names or trademarks are the property of their respective owners. FLEXlm and FLEXnet are trademarks of Flexera Software LLC.

## **Disclaimer Notice**

THIS ANSYS SOFTWARE PRODUCT AND PROGRAM DOCUMENTATION INCLUDE TRADE SECRETS AND ARE CONFIDENTIAL AND PROPRIETARY PRODUCTS OF ANSYS, INC., ITS SUBSIDIARIES, OR LICENSORS. The software products and documentation are furnished by ANSYS, Inc., its subsidiaries, or affiliates under a software license agreement that contains provisions concerning non-disclosure, copying, length and nature of use, compliance with exporting laws, warranties, disclaimers, limitations of liability, and remedies, and other provisions. The software products and documentation may be used, disclosed, transferred, or copied only in accordance with the terms and conditions of that software license agreement.

ANSYS, Inc. and ANSYS Europe, Ltd. are UL registered ISO 9001: 2008 companies.

## **U.S. Government Rights**

For U.S. Government users, except as specifically granted by the ANSYS, Inc. software license agreement, the use, duplication, or disclosure by the United States Government is subject to restrictions stated in the ANSYS, Inc. software license agreement and FAR 12.212 (for non-DOD licenses).

## **Third-Party Software**

See the legal information in the product help files for the complete Legal Notice for ANSYS proprietary software and third-party software. If you are unable to access the Legal Notice, contact ANSYS, Inc.

Published in the U.S.A.

## Contents

Removal of methods from Analysis and MechanicalDataModel .....	1
Deprecated API properties for native tree objects .....	2
Deprecated APIs for named selection worksheets .....	2
Deprecated APIs for graphical views.....	2
Removal of property MaximumFaceSize for shell elements.....	3
Method SimulationDataAccess() now takes only a single argument.....	3
Changes to the object ContactTool .....	3
Property changes for the object ConnectionGroup .....	3
Property changes for the object ResultChart.....	4
API changes for Acoustic systems .....	4
API changes in the namespace .....	4
Move of Enum namespace/assembly (affects C# usage only) .....	6

## ANSYS ACT 2019 R1 Migration Notes

As improvements are made to ACT APIs and the way that they display and transmit data, great efforts are taken to ensure that changes are backwards-compatible. For your convenience, this section lists 2019 R1 API changes that might impact your existing extensions so that you can determine if any action is necessary before migrating them.

### Removal of methods from Analysis and MechanicalDataModel

Several methods deprecated in 19.1 have been removed in 2019 R1. You can download and extract [scripts](#) to help you migrate your extensions.

Below, primary bullets list the removed methods. Under each primary bullet, child bullets list the replacement methods. `IExtension` is `CurrentExtension`.

- `analysis.CreateLoadObject(string objName)`
  - `analysis.CreateLoadObject(string objName, string extNameOrGUID)`
  - `analysis.CreateLoadObject(string objName, IExtension ext)`
- `analysis.CreateResultObject(string objName)`
  - `analysis.CreateResultObject(string objName, string extNameOrGUID)`
  - `analysis.CreateResultObject(string objName, IExtension ext)`
- `analysis.CreatePostObject(string objName)`
  - `analysis.CreatePostObject(string objName, string extNameOrGUID)`
  - `analysis.CreatePostObject(string objName, IExtension ext)`
- `analysis.LoadObjects`
  - `analysis.GetLoadObjects(string extNameOrGUID)`
  - `analysis.GetLoadObjects(IExtension ext)`
- `analysis.ResultObjects`
  - `analysis.GetResultObjects(string extNameOrGUID)`
  - `analysis.GetResultObjects(IExtension ext)`
- `analysis.UserObjects`
  - `analysis.GetUserObjects(string extNameOrGUID)`
  - `analysis.GetUserObjects(IExtension ext)`
- `dataModel.CreateObject(string objName)`
  - `dataModel.CreateObject(string objName, string extNameOrGUID)`
  - `dataModel.CreateObject(string objName, IExtension ext)`

- `dataModel.UserObjects`
  - `dataModel.GetUserObjects(string extNameOrGUID)`
  - `dataModel.GetUserObjects(IExtension ext)`

## Deprecated API properties for native tree objects

For a native tree object (`DataModelObject`), these properties have been deprecated:

- `GetPropertyNames`
- `GetPropertyValue`
- `IsPropertyVisible`
- `IsPropertyEditable`
- `GetVisiblePropertyNames`
- `GetVisibleProperties`
- `GetAllProperties`

For information about the new APIs for interacting with the properties in the **Details** view and for creating, querying, or removing the parametrization of a property in this view, see “Property APIs for Native Tree Objects” and “Details View Parameters” in the *ACT APIs for Mechanical Guide*.

## Deprecated APIs for named selection worksheets

Previous APIs for creating and populating named selection worksheets have been deprecated. For information on how to create and populate named selection worksheets, see “Scripting Named Selection Worksheets” in the *ACT APIs for Mechanical Guide*.

## Deprecated APIs for graphical views

For the API `ModelViewManager`, these methods have been deprecated:

- `Capture3DImage()`
- `CaptureModelView()`
- `CaptureObjectImage()`
- `RotateView()`
- `SetBackView()`
- `SetFitView()`
- `SetFrontView()`

- `SetIsoView()`
- `SetLeftView()`
- `SetRightView()`
- `SetTopView()`

You now use the API `IMechanicalCamera` to manipulate graphics. To export graphics, you use methods on the `MechanicalGraphicsWrapper`. For more information, see “Graphics” in the *ACT APIs for Mechanical Guide*.

## Removal of property `MaximumFaceSize` for shell elements

For shell elements, the property `MaximumFaceSize` on the object `Mesh` has been removed. To set the element size, you now use the property `ElementSize` instead.

## Method `SimulationDataAccess()` now takes only a single argument

For the method `SimulationDataAccess()`, you now specify only a single argument, which is for the object `Analysis`:

```
import clr
clr.AddReference("Ansys.ACT.WB1")
import Ansys

Ansys.ACT.Mechanical.Tools.SimulationDataAccess(load.Analysis)
```

## Changes to the object `ContactTool`

Contact tools have different behavior, depending on whether they are at the `Connections` level or under the `Solution` level. Previous versions used the same API object, `ContactTool`, for both. Now there are two distinct objects, `PreContactTool` and `PostContactTool`.

## Property changes for the object `ConnectionGroup`

- The property `UseRange` now has a data type of `bool` (True/False) rather than `int`.
- Because the property `MinimumDistanceValue` is always read-only, `set` is no longer available.

- The property `ConnectionType` now uses the enum `AutoDetectionType` rather than an `uint`.

## Property changes for the object `ResultChart`

- `Minimum` and `Maximum` have been renamed to `FilterMinimum` and `FilterMaximum`.
- `MinimumStress` and `MaximumStress` have been renamed to `Minimum` and `Maximum`.

## API changes for Acoustic systems

- For the object `Solution`, the methods `AddAcousticVelocityXFrequencyResponse()`, `AddAcousticVelocityYFrequencyResponse()`, and `AddAcousticVelocityZFrequencyResponse()` are replaced by `AddAcousticVelocityFrequencyResponse()`.
- For the object `Analysis`, the method `CreateAutomaticEquivalentSourceSurfaces()` has been renamed to `CreateAutomaticFarFieldRadiationSurfaces()`.
- For the object `AcousticPort`, the property `FaceLocation` has been renamed to `PortPosition`.
- The enum `FaceLocation` has been renamed to `PortPosition`.

## API changes in the namespace

### `Ansys.ACT.Automation.Mechanical`

- For the API `SolutionCombination`, the property `Worksheet` has been renamed to `Definition`.
- The API `SolutionCombinationWorksheet` has been renamed to `SolutionCombinationDefinition`.
- For the API `SolutionCombinationDefinition`, these methods from the former API have been deprecated:
  - `GetActiveState(int)`
  - `SetActiveState(int)`
  - `GetLoadCombination(int)`
- For the API `SolutionCombinationDefinition`, these methods have changed:
  - The method `AddColumn()` has been changed to `AddBaseCase(string, Analysis, double)`. `AddBaseCase()` can now be called with any or all optional arguments of `name`, `Analysis` object, and `time`.

- The method `AddRow()` has been changed to `AddLoadCombination(string, int)`. `AddLoadCombination` can now be called with any or all optional arguments of `name` and `CombinationType`.
- The method `SetEnvironmentId(int, int)` has been changed to `SetBaseCaseAnalysis(int, Analysis)`. `SetBaseCaseAnalysis` now takes an `Analysis` object rather than an ID.
- For the API `SolutionCombinationDefinition`, these properties have been renamed:
  - The property `ColumnCount` has been renamed to `BaseCaseCount`.
  - The property `RowCount` has been renamed to `LoadCombinationCount`.
- For the API `SolutionCombinationDefinition`, these methods have been renamed:
  - The method `DeleteColumn(int)` has been renamed to `DeleteBaseCase(int)`.
  - The method `DeleteRow(int)` has been renamed to `DeleteLoadCombination(int)`.
  - The method `GetComboType(int)` has been renamed to `GetLoadCombinationType(int)`.
  - The method `GetEnvironmentId(int)` has been renamed to `GetBaseCaseAnalysis(int)`.
  - The method `GetLoadCaseName(int)` has been renamed to `GetBaseCaseName(int)`.
  - The method `GetLoadComboName(int)` has been renamed to `GetLoadCombinationName(int)`.
  - The method `GetPhaseAngle(int)` has been renamed to `GetBaseCasePhaseAngle(int)`.
  - The method `GetTime(int)` has been renamed to `GetBaseCaseTime(int)`.
  - The method `SetComboType(int, int)` has been renamed to `SetLoadCombinationType(int, int)`.
  - The method `SetFrequency(int, double)` has been renamed to `SetBaseCaseFrequency(int, double)`.
  - The method `SetLoadCaseName(int, string)` has been renamed to `SetBaseCaseName(int, string)`.
  - The method `SetLoadComboName(int, string)` has been renamed to `SetLoadCombinationName(int, string)`.
  - The method `SetPhaseAngle(int, double)` has been renamed to `SetBaseCasePhaseAngle(int, double)`.
  - The method `SetTime(int, double)` has been renamed to `SetBaseCaseTime(int, double)`.



## Move of Enum namespace/assembly (affects C# usage only)

Affecting C# users only, all Enums that were in the namespace

`Ansys.ACT.Automation.Mechanical.Enums` in the assembly `ACT.WB1` are now in the namespace `Ansys.Mechanical.DataModel.Enums` in the assembly `ACT.Mechanical.DataModel`.

**Note:** ACT has superseded the ANSYS Workbench Software Development Kit (SDK) and External Connection Add-In as the best-in-class tool set for customizing ANSYS products. Support for the SDK and External Connection Add-in has ended as of 19.0. If you have used these deprecated tools for Workbench customizations, click [here](#) to quickly access the migration guide. On the [App Developer Resources page](#), the **Help & Support** tab also displays a link to this migration guide.