

SAP2000® Version 16.0.2

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SAP2000 v16.0.2 is a minor update from SAP2000 v16.0.0 through v16.0.1, and is distributed electronically by download from the internet using the CSI Installation Wizard.

PLEASE READ THIS FILE!

It contains important information that may be more current than what is in the Manuals.

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1. Installation Instructions for SAP2000 Version 16.0.2

SAP2000 Version 16.0.2 is available electronically as a full installation by download from the internet using the CSI Installation Wizard, or on DVD by request. Installing SAP2000 will not uninstall SAP2000 version 15.2.1 and earlier.

Whether you are using a standalone license or a network license, the full application must be installed on each workstation where SAP2000 will be used.

Use the Installation Wizard to guide you step-by-step through the process of installation and licensing. If you choose instead to use the DVD, follow the instructions provided in the installation browser that automatically starts up when the DVD is inserted into the drive on your computer.

Before installation, be sure you have your Activation Key available if you will be using a Standalone license. You should have received this by email from CSI or your dealer. If you will be using a Network license, it is necessary to have the licenses already activated on the license server that is accessible to the workstation.

To begin the CSI Installation Wizard, click this link:

<http://www.csiamerica.com/go/installation-wizard>

The Wizard will start and guide you through the process. The actual files needed for installation will be downloaded as necessary. An active internet connection is required throughout the installation and licensing process.

The license activation server ports are 8080 and 8443. If either of these ports is blocked, they need to be opened. Otherwise license activation will not be possible.

Windows User Account Control (UAC)

For recent versions of the Windows operating system (Windows 8, 7, Vista, and XP SP3), User Account Control (UAC) is enabled by default. When UAC is turned on, you must explicitly give permission to any program that wants to use "Administrative" privileges. Any program that tries to use Administrative privileges without your permission will be denied access.

The installation of the SAP2000 and the activation of the license require "Administrative" privileges to run. When installing SAP2000 with UAC enabled, you should expect to be prompted to allow the installer access to system folders and Windows registry. Please allow it to continue so that the installation can complete.

2. Installation Instructions for License Manager 8.5

The information in this section does not apply if you are using Standalone licenses.

Important: If you are using a network license and you have already installed the Sentinel RMS License Manager 8.5 Utilities described below, please re-install them now as these Utilities have been updated.

If you will be using a network license to run SAP2000, the License Manager and Utilities should be installed on a license server, which is usually not one of the client workstations. The Installation Wizard (and DVD) provide the following installations:

Sentinel RMS License Manager 8.5

- If you have an earlier version of Sentinel RMS License v8.x.x running, uninstall it after making sure no licenses are currently in use and no commuter licenses are checked out. Make a backup of the license file "lservc", and then proceed with the installation of License Manager 8.5.
- If you are already running the Sentinel RMS License Manager 8.5 or a later version, you can skip this installation.
- If you have an earlier version of Sentinel RMS License v7.x.x running, you will need to leave this installed as v8.5 does not recognize v7.x.x licenses. Install the Sentinel RMS License Manager 8.5 on a different server.

Sentinel RMS License Manager 8.5 Utilities

- The Sentinel Utilities for License Manager 8.5 needs to be installed even if you are running a later version of the License manager. The Utilities are to be installed on the same license server as License Manager. During the installation you will be prompted for a Network Activation Key. You should have received this by email from CSI or your dealer. Enter the key and click on Activate; a Network license will then be generated and copied to the server location or appended to an existing license at the server location. Note that the License Manager 8.5 needs to be running to activate the license.

On the client workstations

To speed up finding a network license when SAP2000 is launched, you can do either or both of the following:

- Create a text file, LEVEL.TXT, and enter the *ProgramLevel* in a single line. The *ProgramLevel* should be one of the following:

BASIC / PLUS / ADVANCED / ULTIMATE / BASICC / PLUSC / ADVANCEDC
ULTIMATEC / ADVANCEDI / ULTIMATEI

Save this file to the folder where SAP2000 is installed. This file will cause the program to find the license faster.

- Create a text file, LMHOST.INI, and enter the network name or IP address of the machine that is running the License Manager. If you are serving licenses on more than one machine, enter each name or IP address on a separate line of text. Save this file to the folder where SAP2000 is installed.
- Either the LEVEL.TXT file or the LMHOST.INI file can also be placed in the user settings folder, which can be found by entering “%LocalAppData%\Computers and Structures\SAP2000 16” (without quotes) in Windows Explorer. Accessing this folder does not require administrative permissions like the installation folder does. Files located in the user settings folder will take precedence over those in the installation folder.

As an alternative to using the LEVEL.TXT file, you can specify the program level as a command-line option. To do this, use the Windows Run command or create a shortcut pointing to SAP2000.exe in the installation folder. Add the following text to the command line after “...\SAP2000.exe”

/L ProgramLevel

where *ProgramLevel* is one of the values listed above for the LEVEL.TXT file. Specifying *ProgramLevel* on the command line will supersede the value in the LEVEL.TXT file.

3. New Features for SAP2000 Version 16.0.0

SAP2000 v16.0.0 is a major new release, and significant new features have been added or enhanced since Version 15.2.1.

For a full list of features and capabilities, please visit the SAP2000 news page at <http://www.csiamerica.com/SAP2000/news-V16>

4. File Compatibility with Older Versions

SAP2000 Version 16.0.2 can open model files (*.SDB), from older versions of SAP2000, as well as import older SAP2000 database files (*.S2K, *.\$2K, *.XLS, and *.MDB). Note that once you save or run these models in Version 16.0.2, they will not be usable by older versions of the program, so you should save them under a new name after opening or importing them in v16.0.2.

Models from SAP2000 version 14 and prior that contain Bridge Modeler data, lanes defined from bridge layout lines, or vehicles with code-dependent features should use product CSiBridge instead of SAP2000. These models can be opened in SAP2000 v16, but not all of the bridge-related data will be accessible or retained, as follows:

- If bridge objects are detected, you will be asked whether or not you wish to retain Bridge Modeler data.
 - If Yes, this data will be protected, but will not be accessible within SAP2000. You should import this model into CSiBridge to access the data.
 - If No, this data will be deleted.
- If Bridge Modeler data is detected but no bridge objects are found, all Bridge Modeler data will be deleted.
- Lanes defined from frames will be retained, but lane-width data will be removed. Lanes defined from bridge layout lines will be deleted. In SAP2000 v16, lanes are now called “paths”.
- Code-based standard vehicles will be deleted. General vehicles will be retained, but code-based features, length effects, and width effects will be removed.

See the CSi Analysis Reference Manual, chapter “Moving Load Analysis”, for more information on the features supported in SAP2000 and CSiBridge.

5. Significant Changes from Version 16.0.1

For a complete list of all changes, please see the separate file *ReleaseNotes.PDF* in the Manuals subfolder of the SAP2000 installation and available by using the *Help > Documentation* command in SAP2000. Note that most incidents do not affect most users.

Analysis

Incidents Resolved

Incident	Description
58798	An incident has been resolved where the mass source, when specified to be from loads, may have used the incorrect load patterns for point loads assigned to joints. This error did not affect the default mass source, which is from element mass and additional mass, and it did not affect mass source from loads on elements other than joints. The following is a more detailed description. This error could occur when the loads at a joint had not been assigned to all load patterns in sequence from the first defined load pattern and including all load patterns used for mass source. For example, if the first three load patterns were "A", "B", and "C" and no loads had been assigned in load pattern "A" for a particular joint, then any loads assigned in load patterns "B" and "C" for that joint may have been incorrectly used to calculate mass source. If any loads were assigned at that joint in load pattern "A", even if not used for mass source, no error would occur. The common case where loads used for mass source were assigned to the first load pattern, "DEAD", was not affected. This error affected versions 16.0.0 and 16.0.1.
59178	An incident has been resolved where incorrect results could have been produced for a linear load case that applied a strain or temperature load to frame objects if that load case used the stiffness from the end of a time-dependent staged-construction load case where the modulus of elasticity of the loaded frame objects varied with age. The most notable effect of this error was for the forces and stress in the frame objects that had both the applied strain or temperature load and time-varying elasticity, although the displacement results could also have been incorrect, having a lesser effect on other response in the model as well. Only the specific situation described was affected. Only version 16.0.0 and 16.0.1 were affected.
59823	An incident has been resolved for rigid-body constraints where the coordinate system used for the constrained rotational degrees of freedom (DOF) was not always correct in the following restricted cases: (1) All three translational DOF were constrained and either one or two rotational DOF were constrained. (2) No translational DOF were constrained and either one or two rotational DOF were constrained. (3) Two translational DOF were constrained and two rotational DOF were constrained, but the two pairs of DOF were not along the same pair of axes [for example, UX, UY, RX, RZ]. (4) Two translational DOF were constrained and one rotational DOF was constrained along the same axis as one of the two translational DOF [for example, UX, UY, RX]. Constraints where all three of the rotations or none of the rotations were constrained were not affected. Common constraint cases were not affected, for example: Diaphragm [UX, UY, RZ], Plate [UZ, RX, RY], 2-D Beam [UZ, RY], 3-D Beam [UY, UZ, RY, RZ], Shaft [UX, RX], Full-body [UX, UY, UZ, RX, RY, RZ], and permutations of these. Equal and Local constraints were not affected. Weld constraints were affected for the same selections of DOF's as affected Body constraints. When this error occurred, the selected rotational DOF were constrained about an axis or axes that may have been different from those specified; these axes were model-dependent and were not easily predicted. This error, while not common, affected all versions prior to v16.0.2.