



SACS

Readme

Version 13.1

LOUISIANA
ENTERTAINMENT.GOV



www.bentley.com

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1.	Before you Begin.....	4
2.	Introducing SACS CONNECT Edition V13.1 - CL	4
2.1	Bentley SACS Uncoupled Wind Turbine Cloud Process [Technical Preview].....	4
2.2	SACS Runfile Command Line Execution.....	4
3.	Installation Guide.....	6
4.	Product Activation	6
5.	Minimum System Requirements.....	7
6.	SACS System PC Recommendations	8
7.	Recommended Computer Specs for Wind Turbine Parallel Processing	9
8.	Documentation	9
9.	Bentley Cloud Services Overview.....	10
10.	CONNECT Licensing	10
11.	CONNECT Licensing Best Practices	12
12.	SACS License Usage Preview	12
13.	Product Licensing FAQ.....	15
14.	Bentley Select Open Access.....	23
15.	Bentley Offshore Be Communities Website.....	23
16.	Problem Reports.....	23

1. Before you Begin

Before you begin, please review the End User License Agreement (or EULA) carefully during the installation of SACS. By installing this release, you agree to the terms and conditions of the agreement. A copy of the End User License Agreement named "Eula.pdf" can be found in the SACS installation directory.

2. Introducing SACS CONNECT Edition V13.1 - CL

SACS CONNECT Edition V13.1 – CL release includes enhancements including:

2.1 Bentley SACS Uncoupled Wind Turbine Cloud Process [Technical Preview]

SACS can now execute the Uncoupled Wind Turbine Process on Bentley's Cloud Scalable Processing Service (SPS). The process offers the advantage of the virtually unlimited computing power of Azure cloud allowing the execution of hundreds of simulations in parallel potentially reducing the total analysis time by a factor of 10.

For more information see [SACS Cloud Services](#).

2.2 SACS Runfile Command Line Execution

SACS now support execution of analyses (runfiles) from the command line using the SACS Analysis Engine. This functionality also allows the execution of runfiles from scripts.

The command line syntax is as follows:

AnalysisEngine.exe *RunfilePath SACSInstallationDirectory*

Note: SACS must be installed on the computer that executes the Analysis Engine. The AnalysisEngine.exe executable is included in the SACS installation directory

Parameter	Description
<i>RunfilePath</i>	Path to the runfile to be executed. Runfile could be a multi-run runfile.
<i>SACSInstallationDirectory</i>	Path to the SACS installation Directory.

Demo 14 contains an example of executing the analysis engine in a simple member redesign workflow using python. In this example, the script executes the runfile

demo14.runx using the analysis engine. It then searches the result database for any members which Max UC is greater than 0.9. If any members are found, the script then searches the input file for the member's group definition. The script then increases the GRUP's wall thickness by 0.25 inches and executes the runfile again repeating the workflow until no members exceed the 0.9 MaxUC threshold.

3. Installation Guide

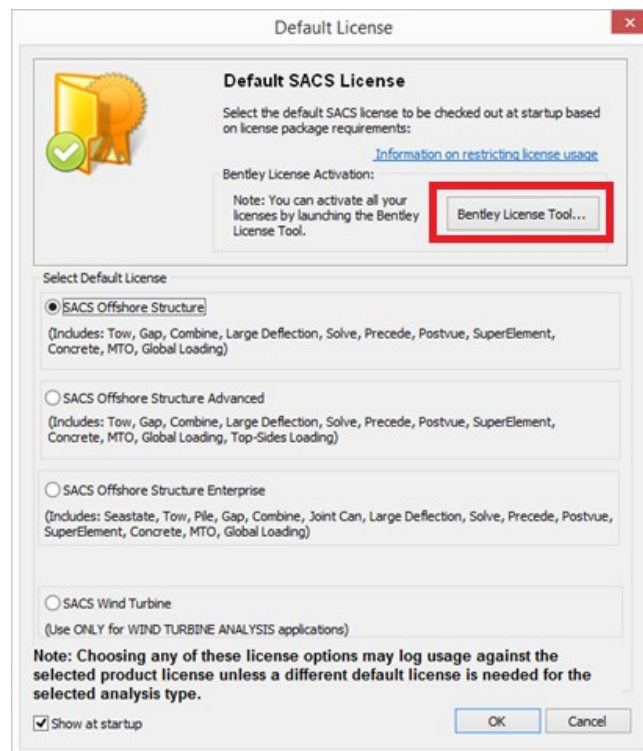
Please refer the separate Installation Manual for information related to downloading and installing SACS.

4. Product Activation

SACS CONNECT Edition V13.1-CL uses CONNECT Licensing, which is not supported by SELECT activation key(s). [CONNECT Licensing](#) features new behavior to enhance your organization's user administration and security with mandatory user sign-in via CONNECTION Client to access the SACS suite of programs. If you are already signed in to the CONNECTION Client, you have met this prerequisite. If you have not, please refer to the [Administrator's Resource Center](#) and/or contact your administrator for assistance in the registration and sign-in process.

With CONNECT Licensing, administrators will be able to control which users have access to Bentley software. License entitlements are granted and maintained through CONNECT Licensing's [Entitlement Management Service](#). By signing into the CONNECTION Client users can also find their organization's projects, download software updates, receive relevant notifications, and track their usage.

Click on the “Bentley License Tool...” button and follow the instructions described [here](#).



5. Minimum System Requirements

SACS CONNECT Edition V(13.1)-CL has the following minimum system requirements:

- Pentium 4 or higher central processing unit (CPU).
- 512 megabytes (Mb) of RAM minimum. SACS performance is dependent on the size of the SACS model and the amount of available system resources; see SACS System PC Recommendations below.
- Microsoft Windows 7
- Microsoft® Windows® 8/8.1
- Microsoft Windows 10
- Internet Explorer 6 or later
- Windows Media Player (for analysis sound file support)
- A hard disk partition with 800 Mb of free space is required for the SACS installation.
- A video card with a chipset that supports OpenGL. A reference list may be found at [Supported Graphics Cards](#).
- CD-ROM or DVD-ROM drive.
- Network Server and Network Client Installations - The Local Area Ethernet Network should be 100 Base-T or greater. TCP/IP network protocol is supported.

6. SACS System PC Recommendations

SACS CONNECT Edition V(13.1)-CL will run satisfactorily with most basic new PC configurations for both laptops and desktop PCs. For minimal configuration PCs or older PCs, the most notable degradation in performance will be in 3D rendering applications (Precede) and when model size exceeds 1000 joints. For models greater than 1000 joints it is recommended that additional memory and storage be added as stated below. The following recommendations are for optimal SACS performance.

- **RAM** - 1024 megabytes (Mb) of free (1) RAM minimum, 4096 Mb or more is preferred. SACS will utilize all available RAM. SACS performance is dependent on the size of the SACS model and the amount of available system resources.
 - (1) Free RAM refers to available RAM after all operating system processes have been loaded.
- **CPU** - A multi-core CPU is recommended although not required.
- **Operating System** - Windows 7 Professional or later.

Note: All x86 versions of Windows cannot utilize more than 3200 Mb of RAM. The x64 version of Windows should be considered to take advantage of additional memory as well as future SACS upgrades.

- **Hard Disk** - 800 Mb of free space is required for the SACS installation. A SATA RAID 0 hard disk is recommended for optimal analysis performance.

Note: After the SACS installation is complete the free space used for executions should not fall below 50% of the total drive capacity. Total free space for execution should be at least 1 gigabyte for small models solutions. Very large model solution could require 400 gigabytes or more.

- **Video Card** - A video card that supports OpenGL is required for all 3D rendering SACS products. *It is very important to make sure that the graphics drivers on your computer are up to date for maximum performance and correct operation.* A reference list of available video cards can be found at [Supported Graphics Cards](#)

7. Recommended Computer Specs for Wind Turbine Parallel Processing

- **Processor:** Fastest 64bit available (Intel i7 or better)
- **Number of Processors:** Minimum 12 (without hyper threading preferred)
- **RAM:** Minimum 12GB
- **BUS:** Fastest Available
- **Storage:** Solid State Drive 1.5TB-2.0TB Using the Optimal Number of Processors.

It's important to determine the optimal number of processors required for fastest processing by benchmarking the system by running multiple analyses using different number of processors to determine the number which gives the optimal speed.

NOTE: I/O to the disk/drive can be a bottle neck (hence the fastest bus and I/O requirements).

8. Documentation

Program Help: Detailed feature information may be accessed directly from the calling application by selecting the Help command, or by pressing the Help button from any of the application dialogs. Be sure to explore the program Help for answers to your questions.

On-Line Documentation: On-line documentation is available in PDF format and is accessible through Executive "Manuals" tab.

9. Bentley Cloud Services Overview

There is little doubt that the design of every infrastructure project today involves the collaboration of many individuals and organizations across multiple disciplines. It is with this context that we have developed Bentley Cloud Services to facilitate successful project outcomes for you and your organizations. Bentley Cloud Services helps you produce better designs by facilitating collaboration, interoperability, standardization and skills development. For an organization and enterprise, Bentley Cloud Services provides greater insight and control over project design, deliverables and the people working on them. In the sections that follow we look at some of the capabilities and services that are delivered today, with more being added every week, with Bentley Cloud Services to help you achieve even greater project and personal success. Please visit www.bentley.com/connect to keep up to date on the latest capabilities.

The core premise of Bentley Cloud Services is to facilitate successful project outcomes through common capabilities and shared services across desktop, mobile, server and cloud. To enable this, Bentley has utilized Microsoft's Azure cloud-service to connect uniformly and consistently with and across users, projects, and enterprises. To enable the value and your success on Bentley Cloud Services it is imperative that users register for a complimentary CONNECTED account, sign in when using your CONNECT Edition products and associate your design models with a CONNECTED Project.

For more information on the benefits Bentley Cloud Services, you can visit the [Bentley Cloud Services Overview Communities](#) website.

10. CONNECT Licensing

SACS CONNECT Edition V(13.1)-CL uses Bentley's new licensing model. CONNECT licensing is, providing enhanced security and optimized value for your Bentley Subscriptions. It is integrated with Bentley's Identity Management System (IMS) and the Bentley CONNECT technology platform to allow near real-time reporting of usage, improved alert messaging to users and increased administrative capabilities to license administrators in your organization. It will not only give you more options to monitor and manage usage but also provide new, advanced licensing features that will enhance digital workflows.

Activation

SACS CONNECT Edition V13.1-CL uses CONNECT Licensing, which is not supported by SELECT activation key(s). [CONNECT Licensing](#) features new behavior to enhance your organization's user administration and security with mandatory user sign-in via CONNECTION Client to access the SACS suite of programs. If you are already signed in to the CONNECTION Client, you have met this prerequisite. If you have not, please refer to the [Administrator's Resource Center](#) and/or contact your administrator for assistance in the registration and sign-in process.

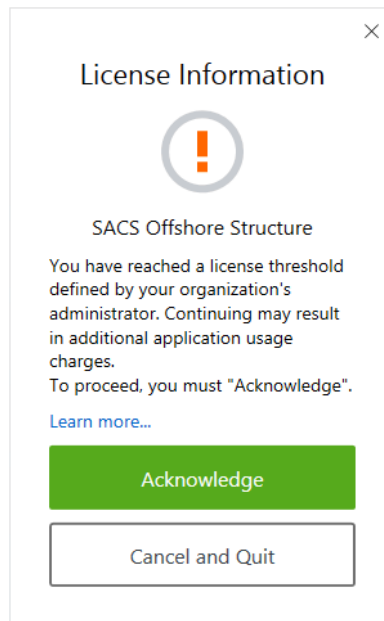
With CONNECT Licensing, administrators will be able to control which users have access to Bentley software. License entitlements are granted and maintained through CONNECT Licensing's [Entitlement Management Service](#). By signing into the CONNECTION Client users can also find their organization's projects, download software updates, receive relevant notifications, and track their usage.

IMPORTANT: By default, access is granted to all licenses and there are no restrictions on usage. It is imperative that any restrictions modifications are applied before any usage is logged.

You can find more information on configuring CONNECT Licensing [here](#).

Alerts

CONNECT Licensing features the new license alerts notifications that [can be set](#) by an organization's license administrators to let the users know when they reach a set usage threshold. These notifications will alert the users that if they continue to use the SACS product described in the alert notice, a term license may be issued. Below is an example of a threshold alert:



The user in such a situation has the choice to quit SACS Offshore Structure before a license is used or acknowledge that a term license may be generated and proceed with starting a SACS Offshore Structure usage, based on what settings the administrator chooses.

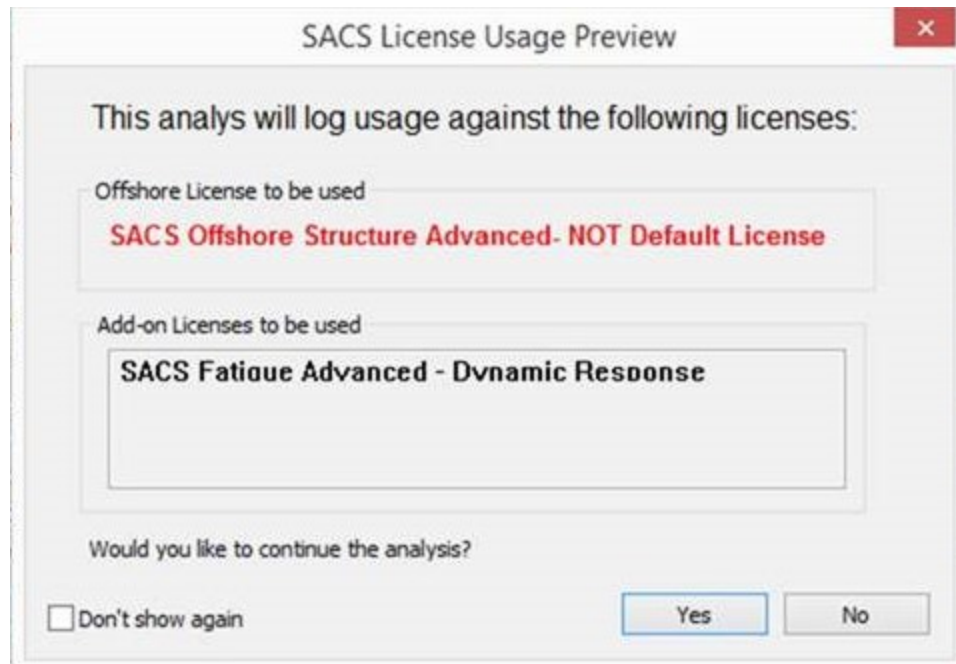
11. CONNECT Licensing Best Practices

- Use the License Management Tool installed with your applications to view what licenses you are entitled to on a particular machine.
- Ensure that your designated contact person and/or system administrator is able to sign in to the CONNECT Center and view reports on usage
- If you wish to control which licenses can be used on which machines, look [here](#).
- Communicate with your Bentley Account Manager about your license usage, particularly if you expect your peak usage to increase above the number of licenses you own.

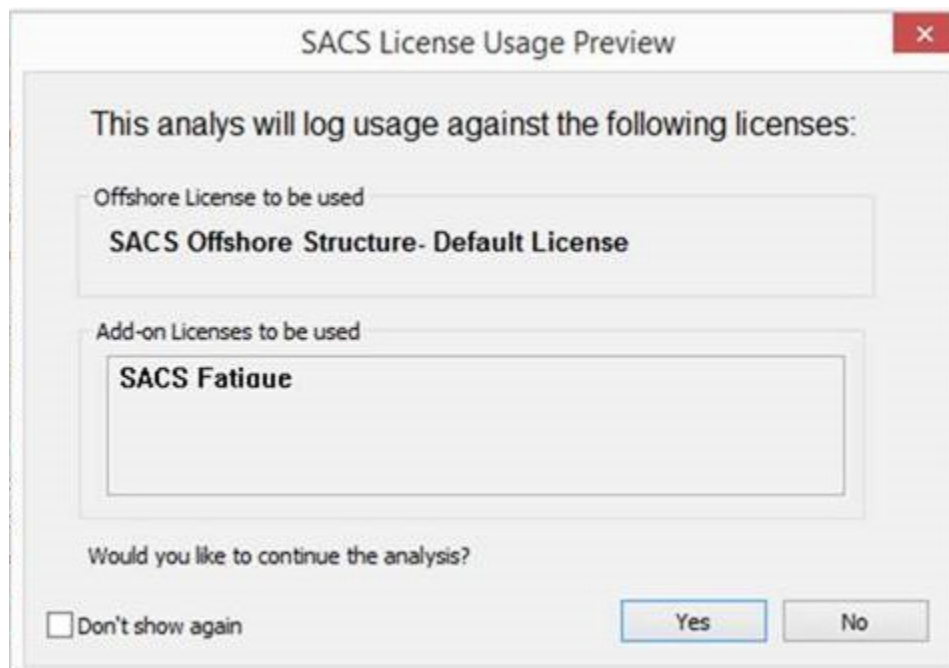
12. SACS License Usage Preview

SACS CONNECT Edition V(13.1)-CL offers a tool to help manage license usage. The user now has the option to display a dialog describing the licenses to be used by the SACS run before execution starts and any usage is logged.

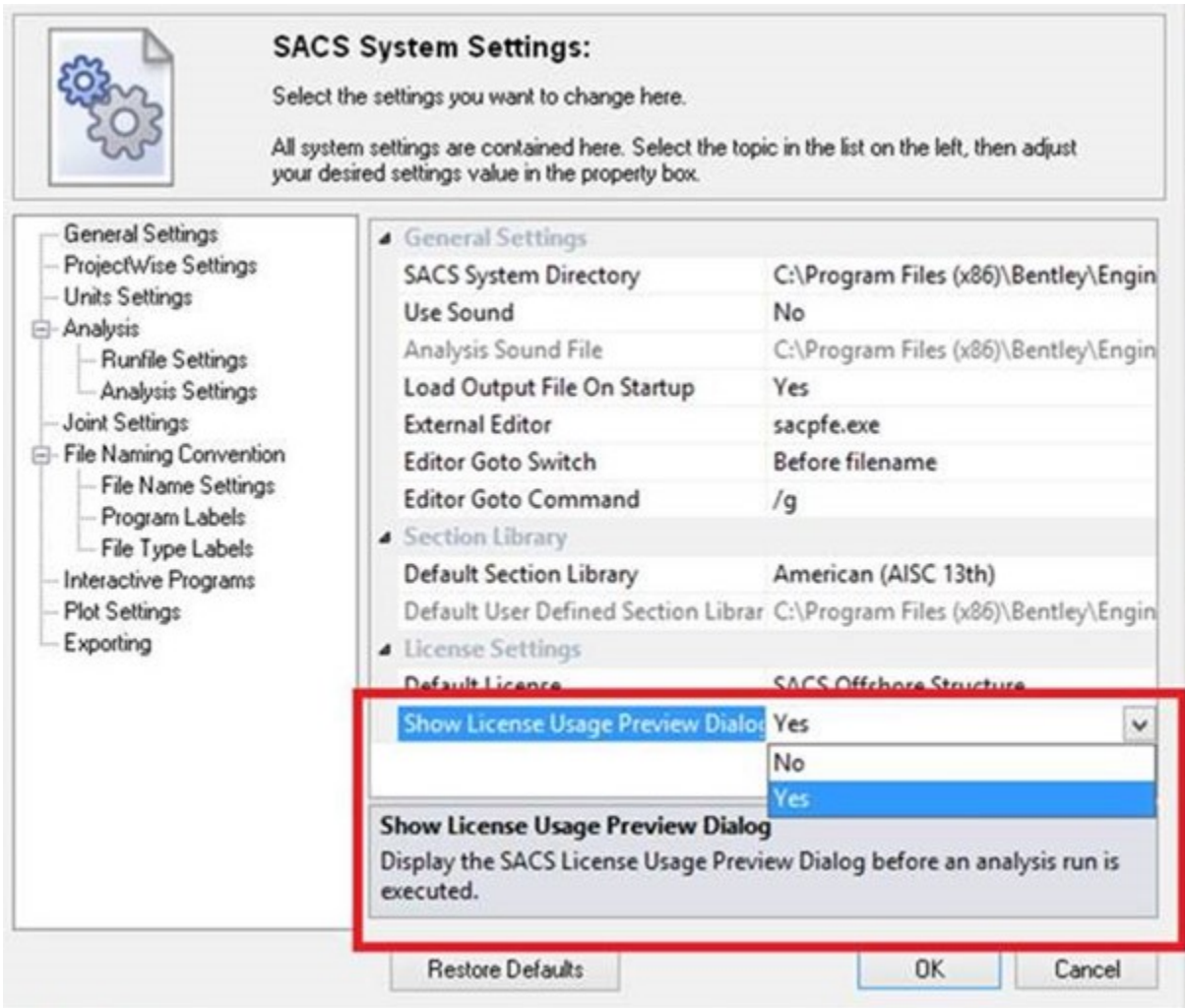
The dialog shown below is displayed prior to starting any SACS run. For this particular example, notice that the “Offshore License to be used” message is in red to highlight that SACS needs to move to a higher license from the default selected by the user, “SACS Offshore Structure” in this case. The dialog also displays any add-on licenses that will be used. If the user continues with the analysis by pressing “Yes”, SACS will run the analysis and log usage to those licenses. In this case, after the run, SACS will return to the default license.



The dialog below is an example of a run that uses the default offshore license.



The user has the option to not show the dialog by checking the “Don’t show again” check-box. The user can manage this setting in the SACS Systems Settings dialog.



13. Product Licensing FAQ

Version 05.06.00.08 or later

- **How do I configure the license SACS uses?**

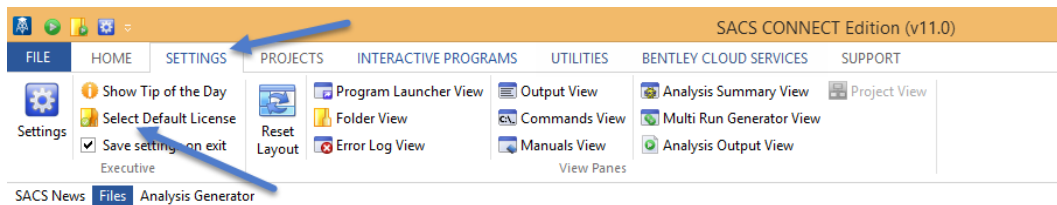
This support solution provides steps for configuring the package license used by SACS when it opens.

Background

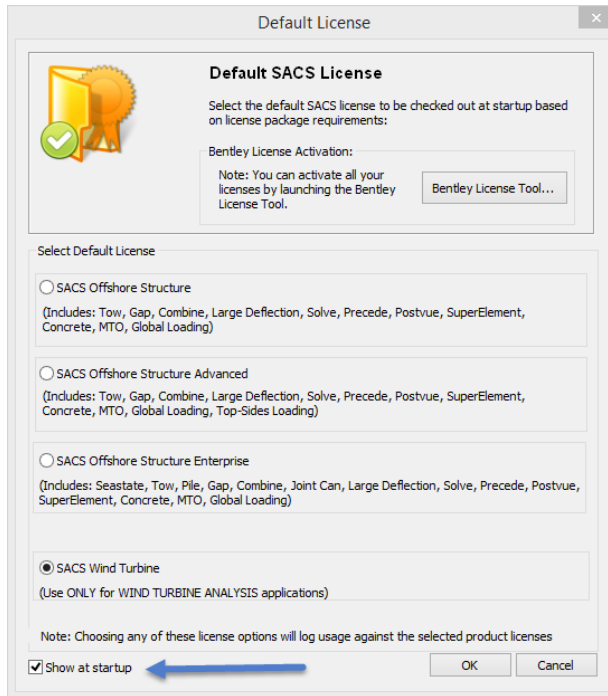
SACS automatically retrieves a package license on startup to license modules such as SACS Precede. It can be configured to prefer a specific package license. It can also be configured to prompt for a package license on startup. This is useful for controlling license usage and ultimately costs.

Steps to Accomplish

- Open the SACS Executive
- Click the Support tab in the upper-left corner.
- Click on "Select Default License" in the ribbon that appears.



- In the dialog that displays, select the package license SACS should use by default. If your package license is grayed out, refer to the following activation instructions.
- If your company uses licenses for more than one of the packages listed, you may want SACS to prompt the engineer for a package license each time the program is opened. In this case, enable the "Show at startup" checkbox. Otherwise if the checkbox is unchecked, the dialog will not be shown and SACS will default to the last used license from the previous open SACS session.



NOTE: For an analyses types that requires a 'higher' default license type than the selected default license, then the program will automatically step up to that specific license and then step back down again to the selected default license once the analysis is completed. In cases such as these, usage will be recorded for the original selected default license and also the required 'higher' license. The user will be charged using tiered pricing.

For users under Bentley's CONNECT Licensing, the default license should always be set to 'Offshore Structure' to minimize usage of higher default licenses.

For users that have Bentley's 'Select Open Access' agreement, the 'activated license' (i.e. the one that purchased/leased) should be set as the default. However, if the analysis requires a 'higher' license type, then the program will automatically step to the specific license and allow the user to run it in 'Offline Mode', and then step back to the default license once the analysis is complete. The user can run licenses in Offline mode for 7 days before being locked out. It should be noted that usage under Offline mode is logged.

If the user is running the CONNECT edition of SACS, any usage less than ten minutes will not be counted for billing purposes based on the new billing rules. So, if such a user opens SACS, chooses the wrong product on the welcome screen, and encounters an activation dialog, he or she can close it and reopen it with the correct product selected without penalty.

	SEA STATE	TOW	PILE	GAP	COMBINE	Joint Can	LDF	SACS IV Solver	Precede	PostVue	Super Element	Concrete	MTO	Global Loading
Offshore Structure		X		X	X		X	X	X	X	X	X	X	X
Offshore Structure Advanced	X*	X		X	X		X	X	X	X	X	X	X	X
Offshore Structure Enterprise	X**	X	X	X	X	X	X	X	X	X	X	X	X	X

X* - Includes wind loading only. X** - Includes complete set of environmental loading

	Offshore Structure Enterprise	Pile Structure Design	Collapse	Fatigue Enterprise
Wind Turbine	X	X	X	X

- **How do I monitor my license usage?**

You can review your team’s usage of SACS via a web-based interface through a wide range of reports. These reports are available at the [CONNECT Center](#) and let you see who used what software and when. This information will be valuable to you in ensuring that you are getting best value from your software. The designated account contact for your organization will have permission to login to this server and to review these reports. This CONNECT web portal also includes tools for managing licenses including managing check-outs, forcing check-ins of licenses, if required, and controlling access to applications.

- **When does the usage get logged against the licensed options? E.g. after a license option is selected or selecting a Tab or menu command or start the program or other process.**

The usage of the default licenses selected in the startup license dialog box is logged on the launch of the SACS Executive. The usage of add-on packages such as SACS Fatigue, SACS Collapse...etc. will be automatically logged at the onset of an analysis type requiring the add-on package. The add-on package is automatically checked back in on the completion of the analysis. The table below shows the modules contained each add-on package.

	PSI	Collapse	DYNPAC	Dynamic Response	Wave Response	Fatigue Pro
Pile Structure Design	X					
Collapse		X				
Fatigue						X
Fatigue Advanced - Dynamic Response			X	X		X
Fatigue Advanced - Wave Response			X		X	X
Fatigue Enterprise			X	X	X	X

	Launch	Flotation	Martec Motion/Stability	Hull Modeler	Stability	Motions
Marine	X	X				
Marine Advanced	X	X	X			
Marine Enterprise (new Q4 2012)	X	X		X	X	X

- Which license are required for different types of analysis?

The table below shows typical license usage for some of the different types of analysis required for offshore structures.

Analysis	License Type												
	OS	OSA	OSE	PSD	C	F	FA-DR	FA-WR	FAE	M	MA	ME	WT
Basic FE	x												
Topside Design		x											
Jacket Inplace			x	x									
Wave Fatigue			x	x		x		x					
Wind Fatigue			x			x	x						
Seismic Design			x	x			x						
Pushover Design			x	x	x								
Ship Impact			x	x	x		x						
Blast Analysis	x				x		x						
Dropped Object	x				x		x						
Installation Design			x							x			
Motion Analysis			x								x		
Wind Turbine													x

- **What is the best way to manage our company's licenses?**

- Use the License Management Tool installed with your applications to view what licenses you have available on a particular machine.
- Ensure that your designated contact person and/or system administrator is able to sign in to selectserver.bentley.com and view reports on usage.
- Configure SELECT server to send over usage messages to a designated administrator weekly.
- Use the Scheduled Reports function in SELECT server to send usage reports to a designated administrator weekly Use these email and web reports to better understand how your team uses SACS licenses. In particular, the Peak Usage reports will indicate if your license usage matches your ownership.
- If you wish to control which licenses can be used on which machines, use the Client Access Restrictions command in the Site Configuration menu of selectserver.bentley.com to apply these controls.
- Communicate with your Bentley Account Manager about your license usage, particularly if you expect your peak usage to increase above the number of licenses you own.
- Use license check-out only when you need to work off site without an internet connection for more than 30 days. There is no need to check out licenses when working in a connected environment and doing so will record that license as being continuously in use. This may add to your peak usage level.
- **If I use more licenses than I own, will I automatically get a bill from Bentley?**

If your license usage reports show that your peak usage is higher than the number of licenses that you own, your Bentley Account Manager will contact you and discuss options with you. These options may include adding more licenses, changing the mix of licenses that you own, quarterly term licenses or changing how you use licenses.

- **Do I need an internet connection to use my licenses?**

For day to day use, a continuous internet connection is not required. You need an internet connection only when initially activating your license and at least once every month in order to record usage on the SELECT server. It is also possible to

manually submit usage logs if your security requirements mean that an internet connection is not possible.

- [Do multiple sessions of SACS on one machine record multiple uses](#)

No, usage is recorded per machine. Multiple instances of an application running on the same machine records 1 use, it does not record multiple uses.

- [Our SELECT licensing agreement mentions peak usage within an interval. What is that interval and how is peak usage calculated?](#)

Other options to restrict license usage are available as described in the Bentley wiki below

https://communities.bentley.com/products/licensing/w/licensing__wiki/13916.can-i-restrict-license-usage-to-checkouts-only

Note: To take advantage of the new 10min licensing does require to install the CONNECT Edition of SACS

https://communities.bentley.com/products/licensing/w/licensing__wiki/29899.how-to-take-advantage-of-bentley-s-allowance-for-usage-under-10-minutes

- [Do I need to check out licenses to use SACS?](#)

There is no need to check out a license to your machine unless you are going to be working offline for 30 days or more. In fact, checking out a license will record the license as being in continuous use so this could potentially increase the calculation of your firm's peak license usage.

- [Is the license usage logging secure and private?](#)

Licensing uses the same usage logging mechanism you are using now with non-trust licensing. It transmits usage data using standard internet protocols and obscures user and machine names using a SHA-1 hash so that they cannot be read outside your company.

- [Where can I get training on how to understand and monitor license usage?](#)

SELECT subscribers are able to access SELECT server training via the Bentley LEARN server.

- What is Select Open Access?

SELECT Open Access is an industry first that provides any subscriber with unrestricted portfolio-wide access so they can employ the best and most comprehensive mix of Bentley applications for all disciplines for every project. For more information, see

<http://ftp2.bentley.com/dist/collateral/docs/Select/Internal/2014SubscriptionChangesEmail.pdf>

and also visit

<http://www.bentley.com/en-US/Subscriptions/SELECT+Open+Access/>

- Is there a Demo mode? If so what functions are enabled for Demo mode?

SACS is not available in a demo mode.

- Does the license dialog clearly identify the named license option matching the pricebook and SELECTServer?

The license dialog uses the same names as per the SACS pricebook and SELECTserver.

14. Bentley Select Open Access

SELECT Open Access is an industry first that provides any subscriber with unrestricted portfolio-wide access so they can employ the best and most comprehensive mix of Bentley applications for all disciplines for every project. For more information, see

<http://ftp2.bentley.com/dist/collateral/docs/Select/Internal/2014SubscriptionChangesEmail.pdf>

and also visit <http://www.bentley.com/en-US/Subscriptions/SELECT+Open+Access/>

15. Bentley Offshore Be Communities Website

This is where you can find and contribute to discussions, ideas, and other information about Bentley Offshore products. <https://communities.bentley.com/products/offshore/default.aspx>

16. Problem Reports

We greatly appreciate any bug reports or suggestions you may have. Please report any bugs or anomalies you find through www.bentley.com/serviceticketmanager.