

Spreadsheet for InfoCenter Suite



As an InfoCenter Suite application, InfoCenter Spreadsheet benefits from InfoCenter's data management capabilities. Specifically designed to archive, preprocess, manage and retrieve large amounts of data, InfoCenter Suite provides a solid foundation for data management. This foundation allows you to benefit by using Microsoft Excel for data analysis and reporting, not data management or archiving. Standard Windows security protocols combined with InfoCenter Server features ensure the integrity of the data provided to InfoCenter Spreadsheet. Advanced point security features in InfoCenter Server not only ensure accurate data storage, but also allow system administrators to manage access to each point.

Description

Today's building automation systems are capable of providing extensive amounts of data that hold valuable information about a facility's operation. Many times this valuable information is overlooked because of the difficulty in extracting it from overwhelmingly large data sets. InfoCenter Suite® is the first step in solving this problem by providing a means to automatically collect and manage these data sets. The next step is to turn this data into valuable information. InfoCenter Spreadsheet is designed to meet the ongoing facility needs for data analysis and reporting by allowing you to effectively turn raw data into meaningful answers.

InfoCenter Spreadsheet integrates the power of Microsoft® Excel® and InfoCenter Server® to provide an effective data analysis and reporting option for the InfoCenter Suite family of software. InfoCenter Spreadsheet is an add-in to Microsoft Excel that allows you to dynamically query InfoCenter-based data. Once the data is made available to Microsoft Excel, you can take advantage of the powerful Excel capabilities to find the answers you need.

System Architecture

- InfoCenter Spreadsheet — A Microsoft Excel add-in designed to convert Excel into an InfoCenter client application that can dynamically query the InfoCenter database and retrieve point data on request. Once data has been retrieved it can be processed using any of Excel features and functions.
- InfoCenter Server Advanced or InfoCenter Server Base — InfoCenter Server is the application that interfaces with Microsoft SQL Server to provide automated data collection, data archiving, data security and advanced data processing to turn raw data into useful information. InfoCenter Server is the engine behind InfoCenter Spreadsheet.
- Microsoft Excel — InfoCenter Spreadsheet requires Microsoft Excel (not included with InfoCenter Spreadsheet). Excel provides comprehensive tools to help users create, analyze and share spreadsheets.

InfoCenter Spreadsheet

The InfoCenter Spreadsheet application provides a user interface for dynamically retrieving information from InfoCenter Suite into Microsoft Excel. InfoCenter Spreadsheet is an Excel add-in that resides as an additional menu item on the standard Excel application (see Figure 1).

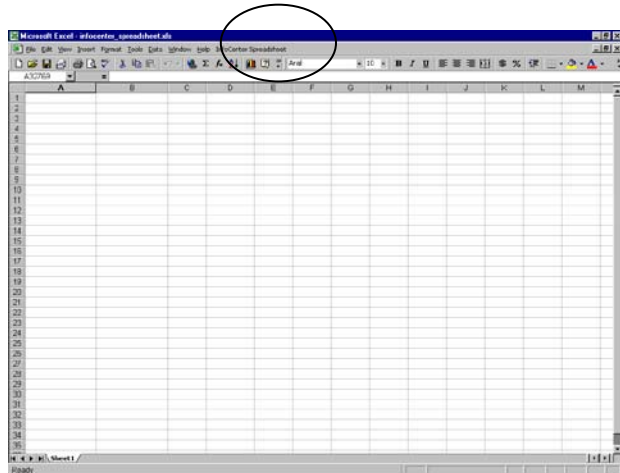


Figure 1. InfoCenter Spreadsheet Menu Item.

Once you select the InfoCenter Spreadsheet menu item, the InfoCenter client application connects to the InfoCenter Server using ODBC technologies that contain your NT security information. After the InfoCenter server determines your access rights, a tree view of available point information is displayed to the client (see Figure 2). The InfoCenter Spreadsheet follows the same security model as other InfoCenter applications and only provides you with their unique list of accessible points. Data retrieval utilizes the InfoCenter data librarian feature to find data wherever it resides in InfoCenter Suite.

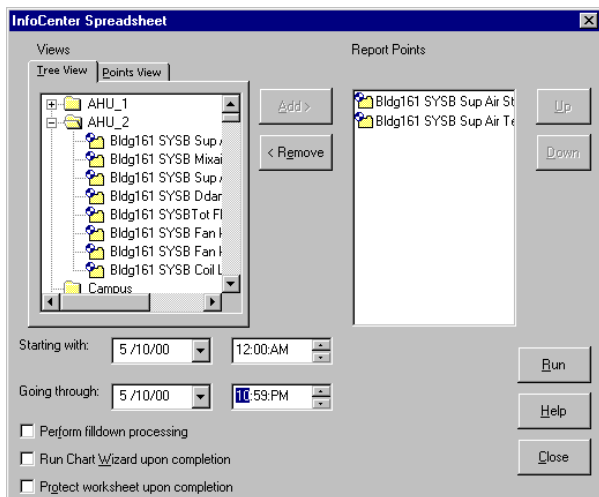


Figure 2. Point Tree View.

The InfoCenter Spreadsheet allows you to select the point names and date range of the query along

with any one of three automated data processing functions that take place during the retrieval of data from InfoCenter Suite. These include fill down processing, data tampering prevention and automated launching of the Excel chart wizard.

Selected prior to querying the InfoCenter Server for information, fill down processing is used to convert COV based trend information into a useable data set. If two or more points are selected for the query, InfoCenter Spreadsheet will fill down data values instead of leaving blank spaces under the assumption that a point's value remains unchanged at a particular time interval if no new data is available (see Figure 3). This allows you to create presentation quality charts and reports or analyze a complete data set using many of Excel features.

Report Range: 4/17/00 12:00:00 AM to 4/25/00				Report Range: 4/17/00 12:00:00 AM to 4/25/00			
Report Options: FillDown: N Protection: N Room Tem:				Report Options: FillDown: Y Protection: N Room Tem:			
Date/Time	Particle Count	OAT	Room Tem	Date/Time	Particle Count	OAT	Room Tem
4/21/00 12:00 AM	8	52.4		4/21/00 12:00 AM	8	52.4	77
4/21/00 1:00 AM	3	52.4		4/21/00 1:00 AM	8	52.4	77
4/21/00 1:30 AM				4/21/00 1:30 AM	3	52.4	77
4/21/00 2:00 AM	11	52.5	78	4/21/00 2:00 AM	11	52.5	78
4/21/00 2:30 AM				4/21/00 2:30 AM	11	52.5	78
4/21/00 3:00 AM	7			4/21/00 3:00 AM	7	52.5	78
4/21/00 3:30 AM		52.3		4/21/00 3:30 AM	7	52.5	78
4/21/00 4:00 AM	19	52.4		4/21/00 4:00 AM	19	52.4	78
4/21/00 4:30 AM		52.5		4/21/00 4:30 AM	19	52.5	78
4/21/00 5:00 AM	6			4/21/00 5:00 AM	6	52.5	78
4/21/00 5:30 AM		53.2		4/21/00 5:30 AM	6	53.2	78
4/21/00 6:00 AM	19			4/21/00 6:00 AM	19	53.2	78
4/21/00 6:30 AM		52.7		4/21/00 6:30 AM	19	52.7	78
4/21/00 7:00 AM	17	52.4		4/21/00 7:00 AM	17	52.4	78
4/21/00 7:30 AM			74.5	4/21/00 7:30 AM	17	52.4	74.5
4/21/00 8:00 AM	8			4/21/00 8:00 AM	8	52.4	74.5
4/21/00 8:30 AM		54.8		4/21/00 8:30 AM	8	52.4	74.5
4/21/00 9:00 AM	13	52.4		4/21/00 9:00 AM	13	52.4	74.5
4/21/00 9:30 AM				4/21/00 9:30 AM	13	52.4	74.5
4/21/00 10:00 AM	5	54.8		4/21/00 10:00 AM	5	54.8	74.5
4/21/00 10:30 AM		56.1		4/21/00 10:30 AM	5	56.1	74.5
4/21/00 11:00 AM	3			4/21/00 11:00 AM	3	56.1	74.5
4/21/00 11:30 AM				4/21/00 11:30 AM	3	56.1	74.5
4/21/00 12:00 PM	14	55.9		4/21/00 12:00 PM	14	55.9	74.5
4/21/00 1:00 PM	3	55.5		4/21/00 1:00 PM	3	55.5	74.5
4/21/00 1:30 PM		55.3		4/21/00 1:30 PM	3	55.3	74.5

Figure 3. No Fill Down vs. Fill Down.

Data tampering can be prevented by choosing protect sheet upon completion. This option uses the Excel advanced worksheet protection function to lock the worksheet. Once data has been retrieved with the option, it cannot be manipulated. This makes InfoCenter Spreadsheet a viable option for producing reports for regulatory agencies by ensuring that the copy of the data set in the Excel Worksheet is identical to the secure data set in the InfoCenter Suite database. InfoCenter Spreadsheet's header information reports what options were selected at runtime to explicitly communicate whether data was protected upon retrieval and if any fill down processing took place.

The chart wizard option allows you to automatically convert tabular data retrieved from InfoCenter Suite into a range of graph types. The chart wizard contains a range of graph types and formatting options (see Figure 4). Once a graph is produced, it can be saved, printed or copied to other office applications.

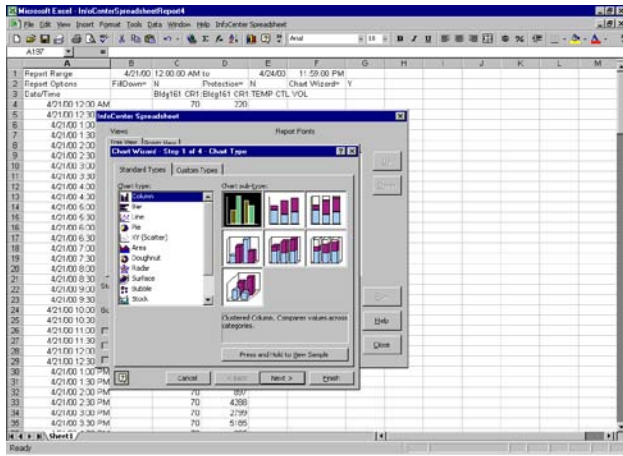


Figure 4. Chart Wizard.

The advantage of InfoCenter Spreadsheet over other Excel-based reporting options such as Insight/Excel custom reports or InfoCenter exporting is that InfoCenter Spreadsheet offers a dynamic integration to Excel instead of a batch file transfer approach. Using InfoCenter Spreadsheet, you can simply request points and date ranges and the InfoCenter Librarian feature will locate that data regardless of whether it is online or offline. InfoCenter Spreadsheet also has full access to InfoCenter summary points that can make your Excel-based analysis or reporting that much more effective because the summarization of data is preprocessed.

Applications

InfoCenter Spreadsheet combined with the flexible InfoCenter Suite platform and the power of Excel can be structured to meet your individual needs. InfoCenter Spreadsheet can be used for a number of applications.

Advanced Data Analysis

Microsoft Excel includes a number of advanced data analysis features. InfoCenter Spreadsheet can be used to quickly retrieve manageable, secure data sets from InfoCenter Suite. The efficiency of the data management and retrieval will allow you to focus your time and energy on getting the information you want. Whether it is developing a curve fit of energy consumption versus occupancy and weather conditions for load predictions or analyzing past performance of a terminal box, the following Excel analysis functions are available:

- Fourier Analysis
- Exponential Smoothing
- Descriptive Analysis
- Moving Average Calculations
- Variance Analysis

- Rank and Percentile Analysis
- Regression Analysis
- Sampling Analysis

InfoCenter Spreadsheet allows you to focus your energy on evaluating your data and turning it into information.

Advanced Macro-based Reporting

A powerful feature of Excel is the ability to develop macros to automate common tasks. Regardless of whether your needs are simple reports or complex analysis routines, a macro can automate the process thus saving time and energy. Once InfoCenter Spreadsheet retrieves a data set, any type of macro can be run to process the data. Because the actual data set is in InfoCenter Suite, this means you can run the same macro on a data set from any date in the past, by simply requesting a new data set and rerunning the macro. Once you have completed your analysis, there is no need to save the data, because it can be reproduced at anytime by simply rerunning the query. Figures 5 and 6 display two common Excel macros that work with the data returned by InfoCenter Spreadsheet.

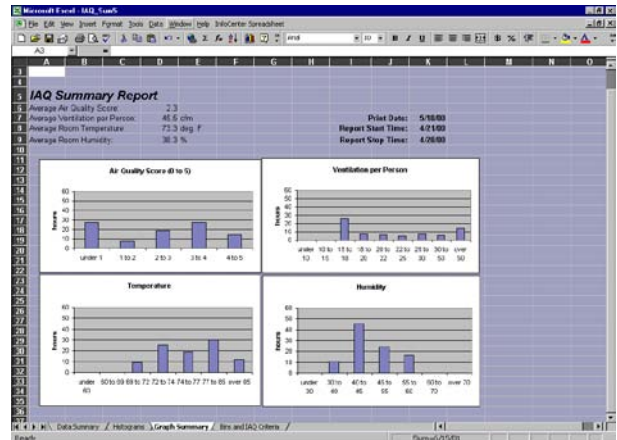


Figure 5. IAQ Scorecard Macro.

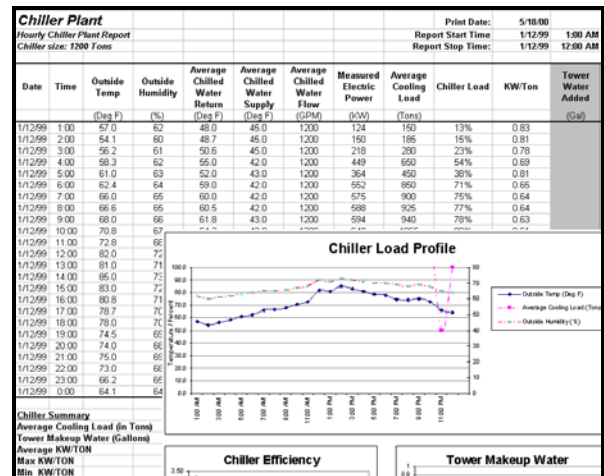


Figure 6. Chiller Plant Performance Macro.

Specifications

InfoCenter Spreadsheet Client System Requirements

Operating System	Windows Server 2008 Standard or Enterprise edition 32-bit, Windows Server 2008 R2 Standard or Enterprise edition 64-bit, or Windows Server 2012 R2 Standard or Enterprise edition 64-bit.
	Windows 7 32-bit or 64-bit, Windows 8.1 64-bit
Third-Party Software	Microsoft Excel 2007, 2010, and 2013 (32-bit).
Required Personal Computer	See APOGEE Automation Configuration and Sizing Guidelines (145-236) on InfoLink.

Ordering Information

Description	Product Part Number
InfoCenter Spreadsheet	571-422
InfoCenter Suite Advanced Server	571-390
InfoCenter Suite Base Server	571-389

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