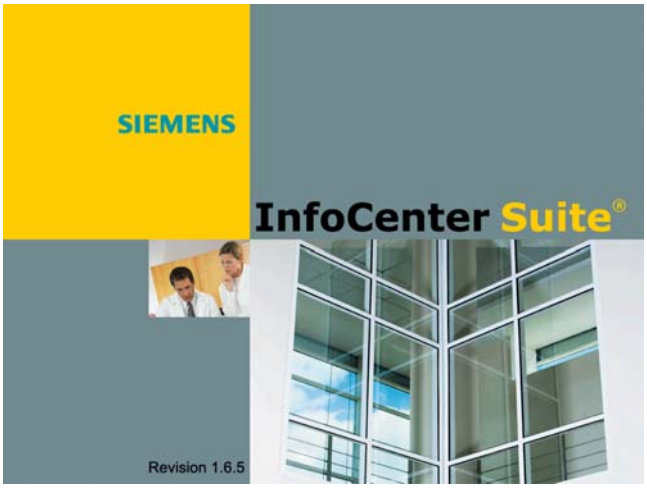
InfoCenter Suite 1.6.5 Advanced



Description

As the demand for historical facility information grows, a solution providing easy user access to system data becomes invaluable. InfoCenter Suite® is designed to deliver solutions that meet ongoing facility needs for information management tools. InfoCenter Suite Advanced provides a means of archiving, managing, processing and retrieving business critical data for a range of information management/reporting needs including analysis, compliance and management reporting.

State-of-the-art InfoCenter Suite, combined with the power and flexibility of Microsoft® SQL Server™, opens up new avenues in information management. From high-level analysis to lifecycle data management, InfoCenter Suite allows users in a facility to manage information without having to use an Insight® workstation, providing cost-effective information sharing. InfoCenter Suite provides a solid foundation for data storage, management and retrieval to facilitate tracking, analysis, and reporting of facility performance.

InfoCenter Suite Advanced is the most flexible version of InfoCenter Suite and supports all features available within the InfoCenter Suite product. InfoCenter Advanced was specifically designed for installations with high data volumes, offline storage requirements and significant client access requirements. Features provided with InfoCenter Suite Advanced are specifically designed to protect and manage the valuable asset of information and support regulatory compliance needs.

InfoCenter Suite Advanced is a key component of the APOGEE® Compliance Solution, providing support for the secure lifecycle management of key APOGEE electronic records. When combined with the Compliance Support Option for Insight, InfoCenter Suite effectively completes an end-to-end solution for management of electronic records that supports the highest level of compliance.

System Architecture

InfoCenter Suite Advanced is comprised of the following software programs:

- InfoCenter Server® Advanced — The engine behind InfoCenter Suite provides the interface between client applications and the Microsoft SQL Server database where all information is stored.
- InfoCenter Administrator® — Client application designed for management and administration of information within InfoCenter Server.
- InfoCenter Report Manager® — Client application designed to allow you to create basic report templates that query the InfoCenter Server for point data. Report templates can be scheduled to automatically generate reports with predefined data ranges.

InfoCenter Suite is built on the Microsoft SQL Server relational database engine. The SQL Server database provides an open, flexible platform designed to meet all your data storage needs. InfoCenter Suite's close integration with the SQL Server provides an integrated, straightforward installation procedure and increased performance capabilities. Long-term security and performance are enhanced by the integration of the Windows Server and Microsoft SQL Server.

InfoCenter Server is designed to coexist with Insight software in a shared server environment or on stand-alone servers. InfoCenter Administrator and InfoCenter Report Manager are client applications residing on Microsoft Windows platforms.

InfoCenter Suite Advanced includes five client applications licenses. InfoCenter licensing controls concurrent access of client applications to the InfoCenter Server. Client applications include: InfoCenter Administrator, InfoCenter Report Manager, InfoCenter Spreadsheet, Utility Cost Manager, APOGEE GO for InfoCenter Suite, APOGEE GO for Animal Facility Reports, and InfoCenter Interactive, Only the licensed amount of client software programs can be connected to InfoCenter Server Advanced at any one time. Additional client licenses are available in five user packs.

InfoCenter Server Advanced

InfoCenter Server is the interface between client applications and the SQL Server Database. InfoCenter Server manages all application-specific Windows services as well as communications between the client applications and Microsoft SQL Server.

Integrated Windows Server security protocols combined with InfoCenter Server features ensure the integrity of the InfoCenter Suite controlled information (see Figure 1). Integrated security means that data written to the InfoCenter database assists in meeting the audit standards of the JCAHO, NFPA, ALAAC and the FDA's 21 CFR Part 11 rule for electronic records and electronic signatures.

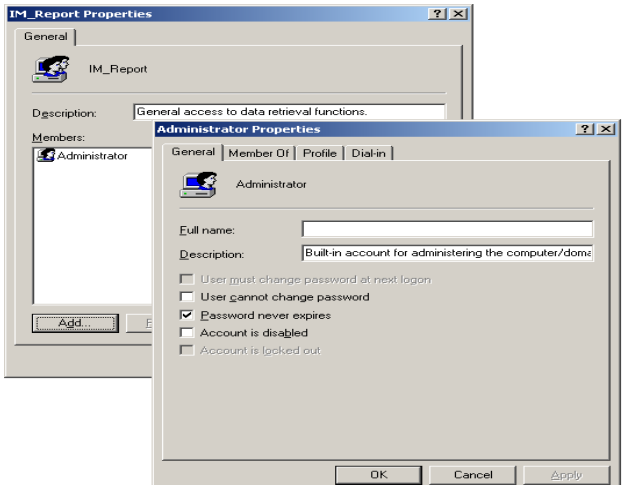


Figure 1. Integrated Security.

Data records generated by the APOGEE Automation System can be dynamically transferred into InfoCenter Server over an Ethernet network using the Insight/InfoCenter Data Server function (see Figure 2). This provides a direct access to the Insight workstation from within the InfoCenter Suite application to configure and collect data. All data records can be retained indefinitely with InfoCenter Server Advanced using robust online and offline archiving technologies.

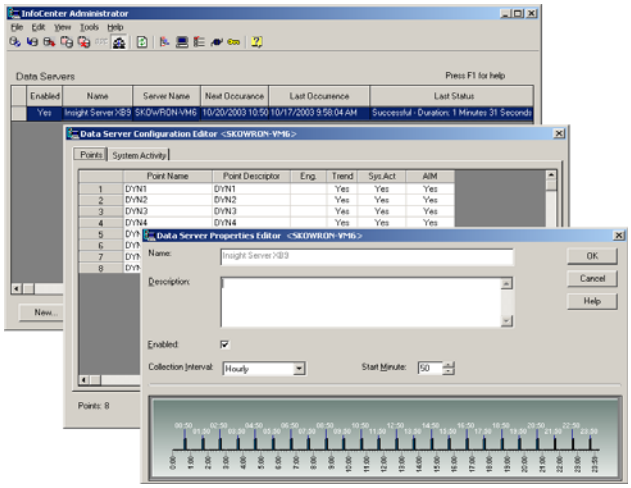


Figure 2. Data Server Collection.

Information from third-party systems can be integrated into InfoCenter Server, providing a centralized data management system. InfoCenter server supports five ASCII file format types for data import and provides an optional OPC client capability for data collection.

Dynamic access to offline archived data is a key function of the InfoCenter Server. When requests are made by client applications for data stored in offline archive volumes, a librarian feature within the InfoCenter Server provides a message with the data volume (Disk) name where the requested data is stored. Once you insert the disk media, the report

can be created. As a result, manual logs detailing what data is stored in archive volumes and cumbersome tape archiving systems are not required. You can focus on data reporting and analysis, not cumbersome data management.

InfoCenter Server provides storage for the following types of electronic data:

- **Change-of-Value (COV).** This point's values are generated by control and monitoring of the APOGEE Automation System when the value changes by a specified amount.
- **Interval Data.** This point's values are generated by control and monitoring the APOGEE Automation System on a predefined interval.
- **Summary.** This point's values are calculated at regular intervals based on the values of another point residing in InfoCenter Server or the calculated result of a formula. An example of a Summary point would be the daily maximum temperature of one day's worth of 15-minute samples or a Mean Kinetic Temperature calculation commonly used in warehousing and stability applications. Summary points are defined through the InfoCenter Administrator.
- **Manual**. This point's values are entered by a user through a custom/third-party client application.
- **Alarm Activity**. A point's alarm activity from the APOGEE Automation System can be stored along with the value of the point.
- **Insight System Activity**. Insight system activity including supervised object activity and firmware MMI activity.
- **InfoCenter System Activity**. Events generated by the InfoCenter Server. Insight System Activity and InfoCenter System Activity make up all APOGEE Automation System activity
- **Alarm Issue Management**. APOGEE Alarm Issue Management records are sent to InfoCenter Suite once they are resolved and cleared.

InfoCenter Administrator

InfoCenter Administrator is a client application that provides an interface to the InfoCenter Server, allowing you to manage and control access to the data and functions within InfoCenter Server. InfoCenter Administrator combines automated scheduling of critical tasks as well as secure access to critical configuration and maintenance functions such as; scheduling data archiving (see Figure 3).

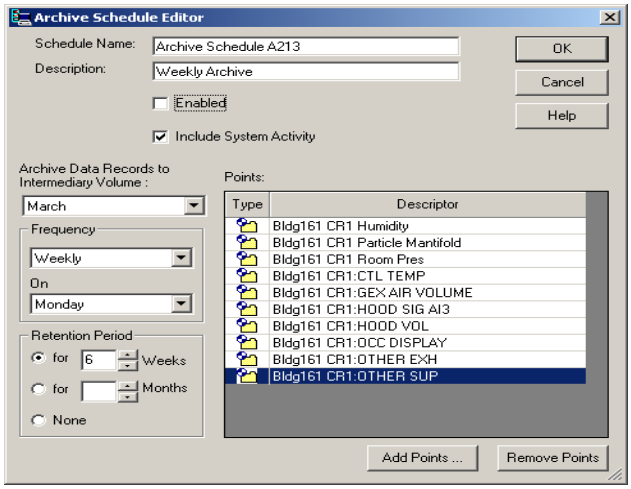
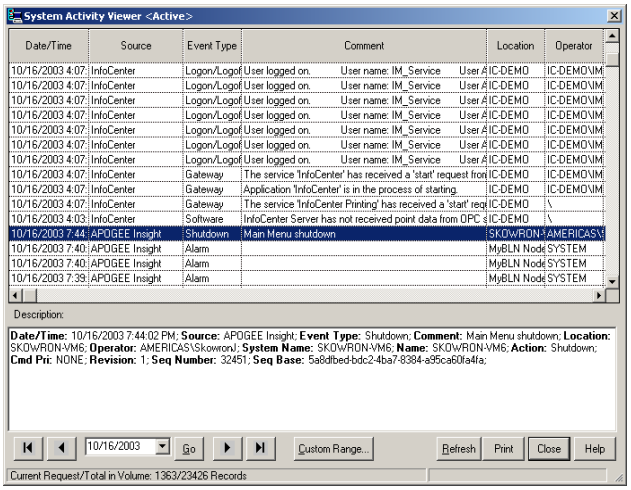


Figure 3. Automated Archiving.

InfoCenter Administrator provides administrative level access to all data types stored within InfoCenter Suite, allowing effective sorting and management of records.



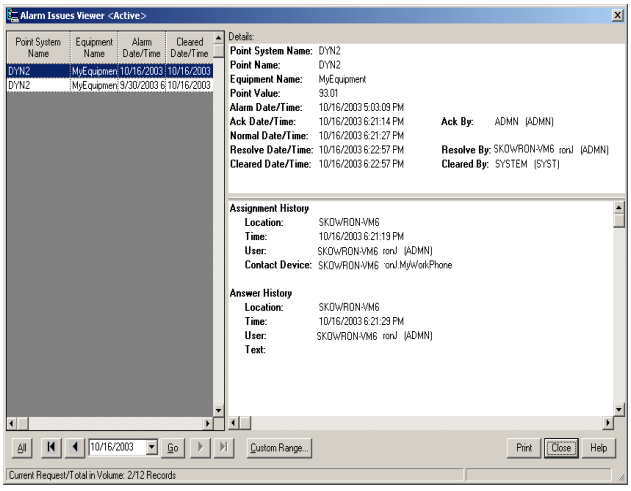


Figure 4. APOGEE System Activity and Alarm Issue Management Data in Administrator.

Once the proper users and user groups have been defined using integrated Windows security, InfoCenter Suite Administrator supports effective assignment of rights to electronic records using the tree-view profiler.

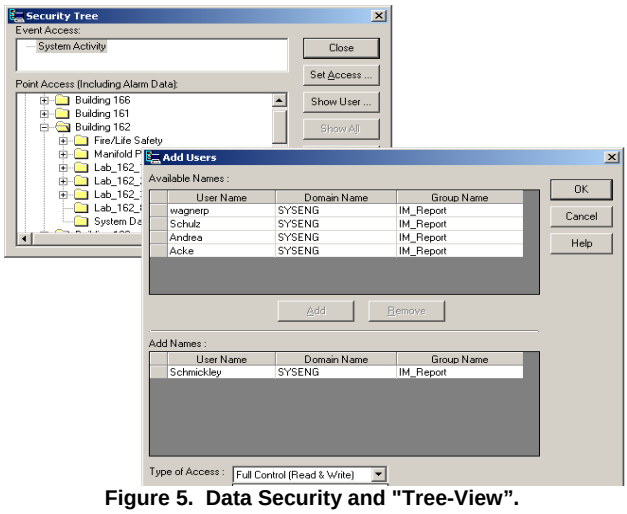


Figure 5. Data Security and "Tree-View".

InfoCenter Administrator's advanced data modification and annotation features ensure that a detailed and secure audit trail is provided for all changes. All previous modifications are stored in the system so that auditors or end users can review a specific point's data modification/annotation history. Comments or approvals for a record can be entered as an annotation or comment without requiring the data value to be changed. Each entry or modification includes the administrative user's Windows account name, date/time and reason for change.

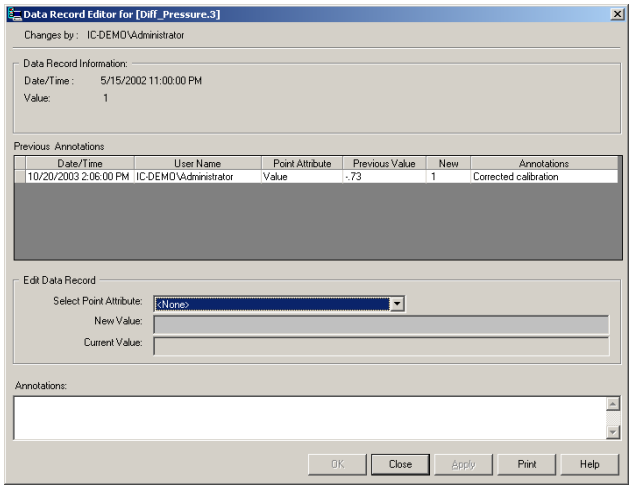


Figure 6. Audit Trails.

InfoCenter Administrator allows Summary points to be created at regular intervals based on the values of other InfoCenter points. Summary point types supported by InfoCenter Suite include Average, Minimum, Maximum, Sampling, Sum, Mean Kinetic Temperature and Delta.

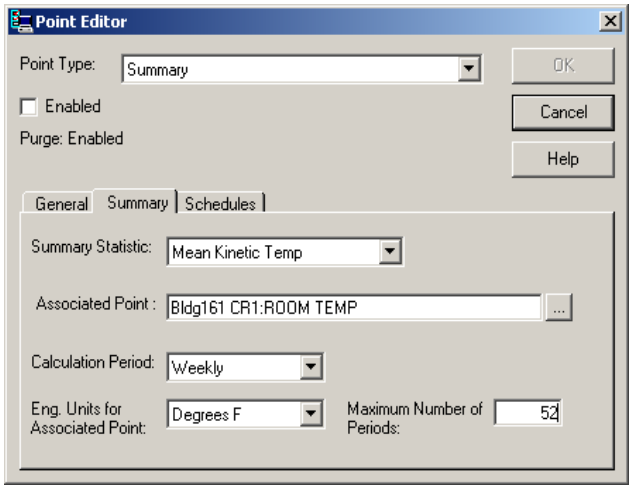


Figure 7. Mean Kinetic Temperature Summary Point.

Summary points can also be created based on formula calculations. The formulas support: +, -, *, /, ABS (Absolute Value), COS (Cosine), COT (Cotangent), EXP (Exponential value), LOG (natural log), LOG10 (log base 10), PI, POWER, ROUND, SIN, SQRT, and TAN (Tangent). Using formula points is extremely effective in moving complex calculations from the system control hardware to the InfoCenter Suite software.

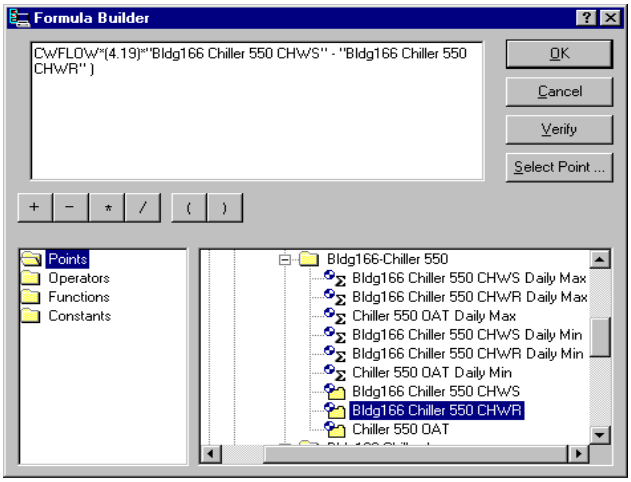


Figure 8. Formula Summary Point Setup.

InfoCenter Report Manager

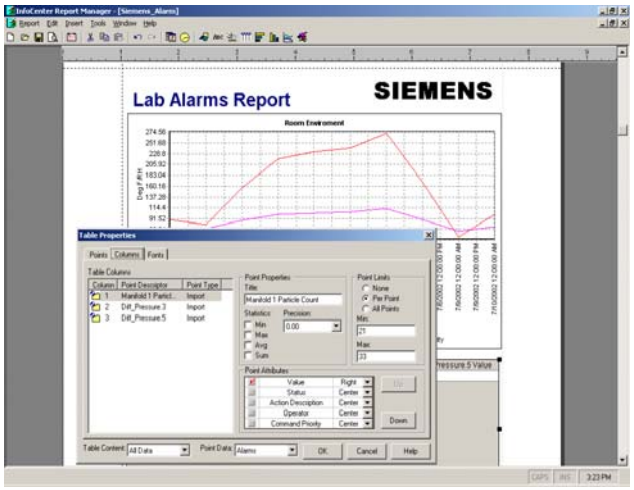


Figure 9. Create Report Templates with Report Manager.

InfoCenter Report Manager serves as the interface for queries to InfoCenter Server and generates reports based on templates that you create. Reports can include any of the record types stored in the InfoCenter Server. InfoCenter Report Manager's user-friendly toolbars and menus simplify query-based reporting and allow for fast and simple creation of report templates without the need for extensive macro language coding. The templates define the formatting of the report and the points used to collect data for a report. Formatting options include charts, table and other details such as legends, pictures, and texts. Available charts include bar, column, scatter, scatter with y-axis, histogram, Mean Kinetic Temperature and pie charts. Properties of charts include min/max lines, fonts, styles, colors and axis definitions

Exception reporting is designed to show you just what you need to know by excluding information that is within range. Exception-based charts provide min/max lines that allow you to quickly determine if the point data is within range. Exception-based tables allow you to filter data and only display exceptions on a per point or per table basis. Exceptions can be color coded to quickly identify when out-of-range data is below or above predefined boundaries. Data that has been modified or annotated isp displayed with a "*" to identify that the data has been modified or includes an annotation (note or reason for change).

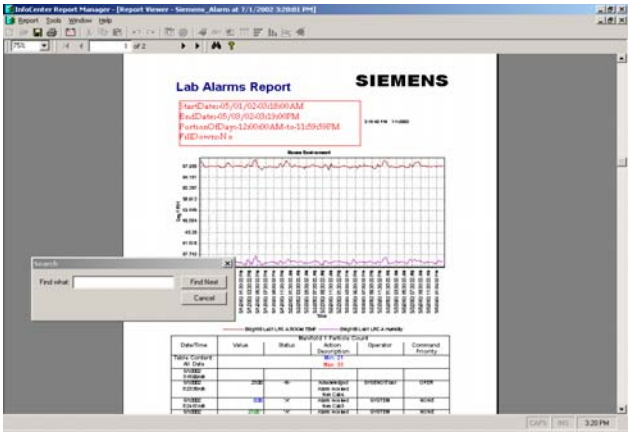


Figure 10. Exception Reporting.

Statistics or batch based reporting can be effectively deployed using the statistic table object. This report table calculates and summarizes critical data statistics to quickly identify performance issues. Each parameter includes the number of samples, min/max, average, sum, alarm count, high point limits, low point limits and standard deviation for the user-defined time period.

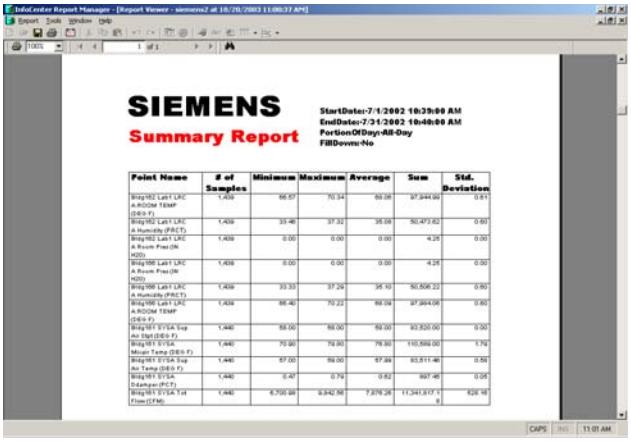


Figure 11. Statistics Reports.

Alarm Analysis reporting can be used to identify alarm issues and summarize your systems alarm activity. This report table calculates and summarizes critical alarm data and statistics. Each point includes the number of alarms, duration of alarm and highest alarm level. Statistics for each point include average alarm time, longest alarm time and highest alarm level reached.

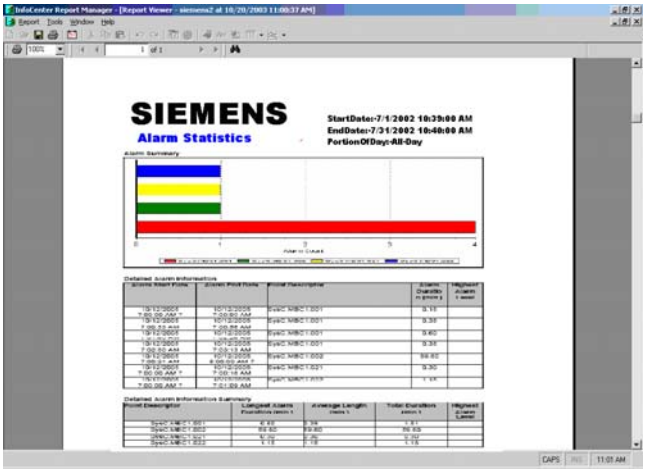


Figure 12. Alarm Analysis.

Additional capabilities include the Histogram Chart report that takes the number of occurrences of data values for one or more points and splits them into equal-sized bins. The Mean Kinetic Temperature (MKT) table calculates the MKT values for selected points. This report table allows you to change the parameters of an MKT calculation on demand.

Access rights to point information through the InfoCenter Report Manager are set up using the InfoCenter Administrator. This ensures you only see point data necessary to fulfill your business responsibilities (see Figures 13 and 14). Report templates can be shared among users by making them public or access can be limited by defining them as private.

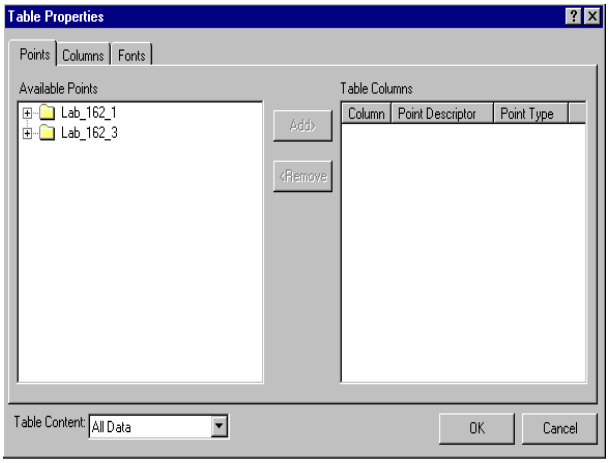


Figure 13. Report Manager Point Selection for User with Limited Point Access.

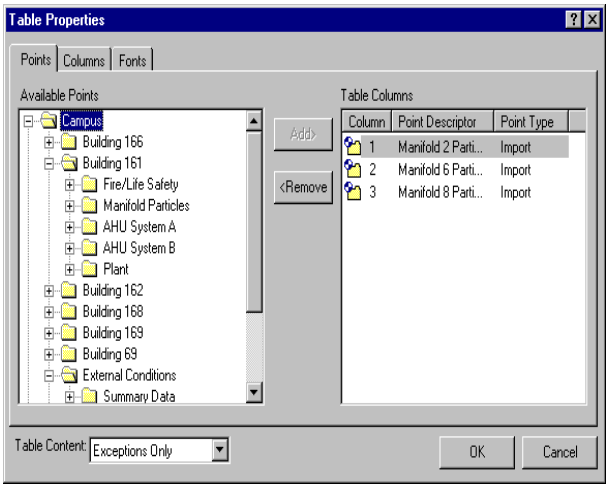


Figure 14. Report Manager Point Selection for User with Extensive Point Access.

Report templates are used to create reports by either running an ad hoc report on demand or scheduling reports to be produced at a predefined time. Scheduled reports can be sent to a printer, emailed or stored electronically on the InfoCenter Server.

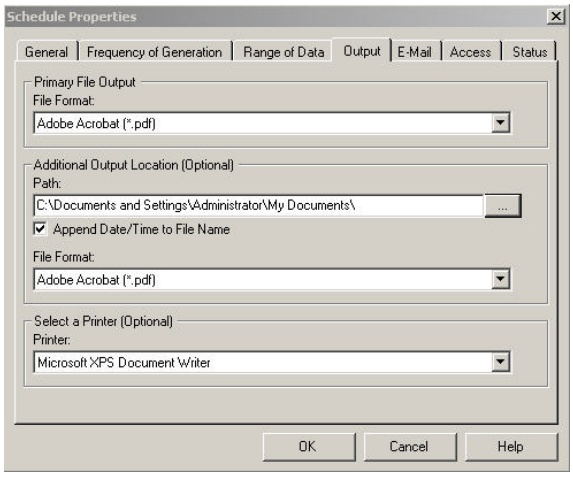


Figure 15. Report Scheduling Output.

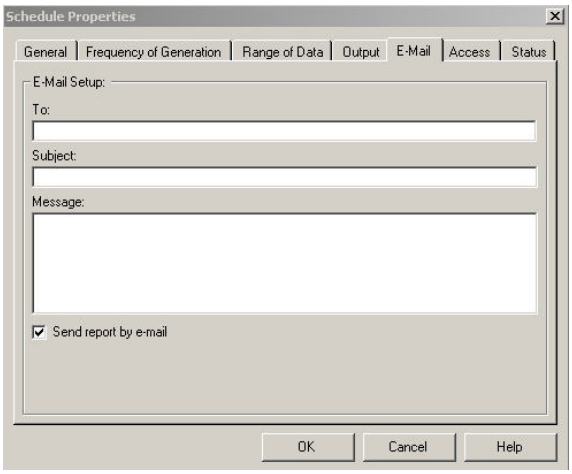


Figure 16. Report Scheduling Email Output.

Applications

Application solutions capabilities from Siemens Industry, Inc. combined with the flexible InfoCenter Suite platform provide information structured to meet your individual needs. InfoCenter Suite delivers solutions to support ongoing facility management information needs including:

- Regulatory Compliance
- Research Study Support
- Indoor Air Quality Analysis
- Energy Use Analysis

Regulatory Compliance

InfoCenter Suite Advanced provides timely access to archived data allowing you to answer FDA, JCAHO or EPA inquirers, or to facilitate accurate reporting for qualification and validation processes. InfoCenter Suite's security is specifically designed to store data records as a protected electronic asset. InfoCenter Suite's features such as PDF-based reporting, data archiving and audit trails can be combined with validation services and the Insight workstation to provide a complete compliance solution to regulated information management needs.

One of the most popular uses of InfoCenter Suite is to help organizations that are regulated by the Food and Drug Administration (FDA) in complying with its rules for electronic records and electronic signatures. The goal of the rule (21 CFR Part 11) is to encourage the widest possible use of electronic technology to speed the review and approval of documents submitted to or audited by the FDA. Since its release in 1998, InfoCenter Suite has been successful in supporting the electronic record requirements of the rule. This is achieved through InfoCenter Suite's InfoCenter Server software and Report Manager application. InfoCenter Server is designed to automatically collect data from multiple data providers, securely store that information in a relational database system and track all modifications and annotations to data using an advanced audit trail system. InfoCenter Suite Report Manager supports compliance-based reporting needs by providing state-of-the-art reporting capabilities.

Research Study Support

Retrieval and compilation of environmental system data to support and validate research studies is often a time-consuming task for scientist, doctors and lab technicians. InfoCenter Suite allows fast, easy access to accurate historical data to support R&D information needs. Historical temperature, humidity, and differential pressure parameters as well as on/off status of lights can be accessed from researchers' desktop computers when they need it.

Indoor Air Quality Analysis

InfoCenter Suite facilitates the analysis of indoor air quality conditions over time and assists in pinpointing problem areas. Reports can be used to help determine the cause of IAQ problems, or substantiate the air quality and environment conditions within a facility.

Energy Use Analysis

The ability to have an accurate picture of utility resource usage at a facility is an ongoing need. Faced with a growing deregulation environment, businesses need tools to assist them in making better utility buying decisions. By gaining and understanding of where, when and how energy is used, these decisions have strong tangible support. InfoCenter Suite can support these efforts by:

- Obtaining load profiles for electricity, water, gas, and steam resources for budgeting purposes.
- Developing reports which document usage for major consuming equipment to verify saving of capital improvement projects.
- Using building load profile to assess the benefits of deregulation and changing rate structures.
- Having the Emission Report track greenhouse emissions based on energy consumption.

Performance Analysis

InfoCenter Suite provides access to historic HVAC system information to provide in-depth analysis, diagnostics and optimization of facilities operations. Access to information for analysis allows facility managers to take early preventive actions and avoid potential equipment downtime, protecting capital investments. InfoCenter Suite supports these efforts by:

- Allowing equipment-operating parameters to be viewed over time, or compared relative to each other or a baseline, to determine operating efficiencies.
- Allowing you to detect slight operation changes that may not result from alarm conditions but over time will cost the facility additional dollars.
- Using summary point functions within InfoCenter Suite allowing for more effective analysis without adding undue computations thus burdening the control system.
- Automating alarm and statistics analysis.

InfoCenter Suite API installation drivers and ODBC configuration software is included with the

Infocenter Software. InfoCenter API documentation has been incorporated into the online Administrator help. These files were designed to allow software developers to access the InfoCenter Server Application Programming Interface (API). With this software and intermediate/advanced capabilities in Visual Basic or Visual Basic for Applications, programmers or third-party integrators can develop their own custom InfoCenter Suite client applications or integrate to third-party applications.

InfoCenter Suite's flexible platform allows Siemens to efficiently develop client applications that meet your specific business needs. Whether integration to other desktop applications or complex statistical processing, Siemens can develop custom client applications to meet your specifications. Customizable options include:

- Custom Microsoft Visual Basic clients
- Integration with Microsoft Office
- Expand import formats for third-party systems trend data management and reporting options for the InfoCenter Suite platform
- OPC Data Integration

Supporting Products

The InfoCenter Suite family includes additional products that provide powerful data analysis, management and reporting options for the InfoCenter Suite platform. Additional offerings include:

- Utility Cost Manager for InfoCenter Suite — Utility Cost Manager (UCM) is an InfoCenter Suite client application designed to provide information management solutions for energy metering and submetering applications. UCM provides meter hierarchy layout capabilities along with energy consumption, demand, allocation and cost reports. UCM leverages the data management capabilities of InfoCenter Suite and turns raw utility data into valuable utility information.
- APOGEE GO® for InfoCenter Suite — APOGEE GO for InfoCenter Suite provides state-of-the-art, Web-based access to InfoCenter Suite's Report Manager and Utility Cost Manager applications. Specifically, you can run, schedule and review all report templates available in these applications and explicitly review databases for audit trail information. As part of the APOGEE GO group of applications, APOGEE GO for InfoCenter Suite will allow you access to specific InfoCenter Suite information via the Intranet, Internet or Extranet using a standard Web browser.
- APOGEE GO® for Animal Facility Reports — This is a market specific InfoCenter Suite application designed to support information management needs in animal research facilities. The application is designed around the animal researchers' need to ensure efficient operation. It provides evidence of animal well-being and supports regulatory requirements and guidelines. As part of the APOGEE GO group of applications, APOGEE GO for Animal Facility Reports allow you access to specific InfoCenter Suite information via the Intranet, Internet or Extranet using a standard Web browser.
- InfoCenter OPC Client — This solution allows InfoCenter Suite to dynamically receive data from OPC servers. As an OPC client, InfoCenter Suite effectively becomes a "trending" device for data. InfoCenter Suite continually monitors the Ethernet for specified OPC servers and collects information for requested points. Information collection can occur when the OPC server broadcasts a change-of-value (COV) or InfoCenter Suite can poll the OPC servers for point values at regular intervals.
- InfoCenter Spreadsheet — Microsoft Excel and InfoCenter Server combine 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.
- Microsoft Cluster Server Support — InfoCenter Suite supports an optional addition that allows the InfoCenter Server software to support the use of Microsoft's Cluster Technology. This technology is targeted for installations requiring high reliability.
- Additional 5 Client Licenses — The InfoCenter Suite software concurrent connections can be expanded in 5 license increments.
- Infocenter Critical Environments Report Add-in — A market specific InfoCenter Suite Application designed to support information management needs in Life Science facilities. The set of reports includes:
    - Critical Storage Report — Documents temperatures and alarms of critical storage equipment such as refrigerators, freezers, and incubators.
    - Room Pressurization Report — Documents the operation and alarms of Airborne Infection Isolation rooms (AII), Protective Environments (PE), Pharmacies, Surgical Suites, and other areas in healthcare facilities where monitoring room pressurization is critical to infection control.
    - Controlled Room Temperature Report — Documents the operation and alarms

of temperatures in spaces such as laboratories and surgical suites.

- Infocenter Building Performance Report Add-in — An InfoCenter Suite Application designed to provide building owners, facility managers, and building operators with detailed system performance information. The set of reports includes:
  - AHU Report — Gives you the ability to analyze the operation of selected equipment.
  - Chiller Report — Gives you the ability to analyze the operation of selected chillers
  - Comfort Report — Compares two parameters in relation to one another, for example temperature and humidity for a given room.
  - Controlled Performance Report — Gives you the ability to examine the performance of their system to given setpoints.
- InfoCenter Interactive — The InfoCenter Interactive option allows you to quickly visualize facility data using an interactive interface that lets them dynamically analyze and present data. This feature is accessible via the InfoCenter Report Manager software.

Specifications

InfoCenter Server Advanced System Requirements

Operating System	Windows 2003 Server/Enterprise Server or Windows 2008 Server/ Advanced Server.
Networking Environment	Windows Networking.
Relational Database	Microsoft SQL Server 2008 (Included with InfoCenter Suite).
Minimum Recommended Hardware	1.6 GHz (or faster), 11 – 80 GB of available hard drive space, CD/DVD Drive, 1 GB RAM, video card supporting 1024 × 768 resolution and a minimum of 16 bit colors, and 10/100 MB Ethernet Adapter.

InfoCenter Administrator and Report Manager System Requirements

Operating System	Windows XP, Windows Vista, Windows 7 or Windows 2003/2008.
Minimum Recommended Hardware	1 GHz (or faster), 10MB available hard drive space, CD/DVD Drive, 256 MB RAM, video card supporting 1024 × 768 resolution and a minimum of 16 bit colors, and 10/100 MB Ethernet Adapter.

Ordering Information

Description	Product Part Number
InfoCenter Suite Advanced Server w/USB Sentinel	571-390

Increase your system utilization by adding one or more of the following options to the Package:

Description	Product Part Number
InfoCenter Suite. Base to Advanced upgrade	571-396
APOGEE GO for InfoCenter Suite	571-615
Utility Cost Manger for InfoCenter Suite	571-397
APOGEE GO for Animal Facility Reports	571-571
InfoCenter Spreadsheet	571-422
Additional 5 client license pack	571-391
InfoCenter Interactive Option	571-832
InfoCenter Critical Environments Report Add-in	571-833
InfoCenter Building Performance Report Add-in	571-719

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