



**APOS Insight:
Enhanced System Introspection
for SAP BusinessObjects**



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Table of Contents

| | |
|--|----|
| Executive Summary..... | 1 |
| APOS KPI: Understanding BI System Behaviour via Metadata | 1 |
| How KPI Monitors Metadata | 3 |
| SAP BusinessObjects Audit vs. APOS Insight KPI | 4 |
| Feature Comparison | 4 |
| APOS RealTime Monitor: Proactive Server Management | 6 |
| Management Console | 6 |
| Alerts | 6 |
| Off-Line Historical Activity Analysis | 7 |
| APOS Instance Monitor: Blanket Instance Monitoring..... | 7 |
| Managing with APOS Insight: Putting It All Together | 7 |
| Assistance with Migration..... | 8 |
| Impact Analysis | 8 |
| License Management..... | 8 |
| Security Issues..... | 8 |
| Report Design Issues | 8 |
| Historical Instances By Format | 8 |
| Processing Time By Reports..... | 8 |
| Report Processing Windows | 9 |
| Lifecycle Issues | 9 |
| Load Levels..... | 9 |
| Universe Management | 9 |
| Business Views Management | 9 |
| Discussions Management | 9 |
| MyInfoView Management | 10 |
| About APOS..... | 10 |



Executive Summary

You implement a business intelligence solution to achieve operational efficiencies – to do more with less. SAP BusinessObjects helps you to analyze the details of your operations, and to plan and execute a program of continuous improvement within your organization.

The accuracy of the information you analyze, and your timeliness in delivering reports to your organization's decision makers, are critical to an effective and efficient enterprise: the only way to succeed is to act upon carefully constructed plans developed through detailed analysis of valuable information that is the product of trusted data. Therefore, the primary responsibility of those overseeing your business intelligence system is to ensure the system is operating on trusted data. SAP BusinessObjects helps you manage risk, but only when it is delivering timely, accurate information.

APOS Insight provides enhanced metadata management, system monitoring, timely alerts, and SNMP agents to help administrators and platform managers manage proactively and react quickly to events and issues that threaten the quality and timeliness of SAP BusinessObjects system performance. With APOS Insight, you can rest assured that you will meet the business intelligence needs of information consumers across the organization.

Insight's metadata management features complement SAP BusinessObjects' Audit and MDM applications by providing both statistical and functional analysis of all SAP BusinessObjects' services, issuing threshold-driven alerts, and initiating automated remedial activities. Insight monitors your SAP BusinessObjects' services from outside of the environment, ensuring that monitoring is not compromised by problems within your business intelligence system.

The APOS Insight solution consists of three modules:

- **KPI** - metadata management and threshold-driven alerts
- **RealTime Monitor** - event monitoring and SNMP alerts
- **Instance Monitor** - instance failure monitoring and alerts

APOS Insight gives executives, administrators and platform managers key insights into SAP BusinessObjects system and user activities. It complements native SAP BusinessObjects functionality and offers a higher level of confidence than any other solution on the market.

APOS KPI: Understanding BI System Behaviour via Metadata

SAP BusinessObjects is a leader in the business intelligence industry. It offers unparalleled information access and enables distribution of that information across a wide range of industries and enterprises. As these enterprises realize the ROI of business intelligence, they expand its use and it becomes mission critical for all decision makers. With increased use comes increased support requirements. The IT organizations that support these platforms must now manage, control and grow these platforms more effectively. Managing a large business



intelligence platform effectively requires a deep understanding of system operations and behaviour.

Understanding SAP BusinessObjects system behavior means understanding both user activities and system activities. APOS Insight will help you answer critical questions about your SAP BusinessObjects deployment quickly and accurately, questions such as:

- Do we need more licenses?
- Can we get reports to the sales organization in a timely manner?
- Will a temporary budget freeze prevent us from adding the new users we need to keep operations working smoothly?
- Can we justify our computer capital increase for next year?

These questions address three fundamental issues:

- Business issues;
- User issues; and
- System planning issues.

It is especially important today that IT organizations have a deep insight into the behavior of their SAP BusinessObjects system because of increasing budget pressure, rapidly growing user demands, and tighter planning requirements.

Before APOS developed its Insight solution, companies wanting to monitor system performance, increase operational efficiency, and plan effectively for change and growth had to engage in custom solution development just to access very limited types and amounts of information. Now companies can realize benefits quickly and achieve a much broader and deeper view of their system by implementing APOS Insight. IT support staff and managers can:

- Collect and analyze the required system information without writing code;
- Capture an extensive range of historical system statistics and user metrics;
- Write these key performance indicators to an accessible database outside the SAP BusinessObjects system;
- Analyze statistical and functional information off-line; and
- Create reports against that information to answer questions and resolve issues.

SAP BusinessObjects includes two monitoring applications

- **Audit** - a performance auditing subsystem that tracks user and system actions, which can then be used for historical analysis; and
- **MDM** – Metadata Management, which consolidates and integrate metadata into an open, relational repository.

When used, these tools provide actionable information, but system administrators and platform managers generally acknowledge that they can benefit from additional assistance in the administration and planning of large business intelligence deployments. APOS Insight complements the functionality of these SAP applications, providing *enhanced* metadata management and auditing capabilities.



APOS Insight makes monitoring and auditing easier and more reliable.

How KPI Monitors Metadata

APOS Insight's KPI module takes a snapshot of various aspects of your SAP BusinessObjects system and creates metadata of these snapshots for comprehensive off-line analysis and reporting. Included in these snapshots are:

- **System status snapshots**—current load and activity levels of all SAP BusinessObjects XI components;
- **System structure snapshots**—current information about servers, users, user groups, folders, reports, etc.; and
- **Report design snapshots**—current information about the report design content of all your reports.

KPI's metadata management function uses a number of Windows services, one for each of the following aspects of SAP BusinessObjects:

- System
- Objects
- Schedules
- Universes
- Instances
- Crystal Reports
- Web Intelligence ("Webis")
- Desktop Intelligence ("Deskis")
- Report extensions
- Process extensions
- Audit

Each service runs independently, and can be distributed across your SAP BusinessObjects deployment to take advantage of available resources. They work together to create an accurate and timely picture of your system's operational activity. The KPI services run in a cycle, and you set them up accordingly, staggering their start times to ensure that they have updates to read as they each begin their cycle.

The key service in the KPI metadata monitoring cycle is Objects. This service scans your SAP BusinessObjects system for metadata on various object types. The Universes, Report, and Desktop Intelligence services are dependent on the Objects service.

KPI snapshots capture metadata about system and user activities (the number of current jobs being run by each SAP BusinessObjects component, the users currently connected etc.), and about system structure (instances, reports, folders, users, etc.). In essence, it takes snapshots of the system's components and activities using time cycles you configure.



KPI supports writing the captured metadata to a number of different database types. It is the content of the database that give you the ability to develop comprehensive analytical reports for further analysis.

Once you've determined what activities or characteristics you want to analyze, you can use one of the provided Crystal Reports or Web Intelligence documents or create your own against the APOS Insight database to extract the information you need.

SAP BusinessObjects Audit vs. APOS Insight KPI

The SAP BusinessObjects Administrator's Guide provides an overview of Audit:

You can use auditing to track the actions of individual users of SAP BusinessObjects Enterprise as they log in and out of the system, access data, or create file-based events. You can also monitor system actions like the success or failure of scheduled objects...

For each action, SAP BusinessObjects Enterprise records the time of the action, the name and user group of the user who initiated the action, the server where it was performed, and a variety of other parameters...

Once you have collected this data, you can use a custom or pre-configured report to view the raw data, or to answer more complex queries such as "how many concurrent licenses are we using at a given time?"

Audit enriches SAP BusinessObjects, because it provides a method to investigate the system actions within. However, APOS Insight's KPI module improves access to the SAP BusinessObjects log by capturing log information, de-normalizing it, and loading it into topical tables for easy reporting.

KPI also provides a much richer view by taking snapshots of system information at specified times and intervals and posting them to an accessible database structure for subsequent analysis. Each snapshot shows a detailed picture of system components and objects.

Because KPI combines log data with the wealth of data captured by KPI's snapshots, the APOS Insight solution provides a much broader picture of the transactions occurring within your SAP BusinessObjects system, allowing you to make informed decisions concerning licensing, migration, and many other issues.

Feature Comparison

SAP BusinessObjects XI lets you audit user and system actions. Table 1 provides a high level comparison chart showing how APOS Insight's metadata management functionality extends SAP BusinessObjects Audit capabilities.

Table 1: APOS Insight vs. SAP BusinessObjects XI Audit Comparison

| Feature | APOS Insight | XI Audit |
|---|--------------|----------|
| Create an audit log of user and system actions associated with system objects and events. | ✘ | ✓ |
| BOE server components activity levels - take regularly scheduled snapshots and post to historical database for analysis. | ✓ | ✘ |
| Current users logged in - take regularly scheduled snapshots and post to historical database for analysis. | ✓ | ✘ |
| Report processing activity - take regularly scheduled snapshots and post to historical database for analysis. | ✓ | ✘ |
| Report scheduling information - take regularly scheduled snapshots and post to historical database for analysis. | ✓ | ✘ |
| All XI objects and their properties (users, groups, folders, etc.) - take regularly scheduled snapshots and post to historical database for analysis. | ✓ | ✘ |
| All object security settings - take regularly scheduled snapshots and post to historical database for analysis. | ✓ | ✘ |
| Design content of all XI report objects (tables used, fields, formulas, SQL used, etc) - take regularly scheduled snapshots and post to historical database for analysis. | ✓ | ✘ |
| Discussions thread content - take regularly scheduled snapshots and post to historical database for analysis. | ✓ | ✘ |
| All repository objects (formulas, images, etc) - take regularly scheduled snapshots and post to historical database for analysis. | ✓ | ✘ |
| Business Views structure (including datasource, filters, fields, etc.) - take regularly scheduled snapshots and post to historical database for analysis. | ✓ | ✘ |
| Universe and connections information - take regularly scheduled snapshots and post to historical database for analysis. | ✓ | ✘ |



| Feature | APOS Insight | XI Audit |
|--|--------------|----------|
| MyInfoView properties - take regularly scheduled snapshots and post to historical database for analysis. | ✓ | ✗ |
| Sample report templates for various Crystal reports provided for use or quick start. | ✓ | ✗ |

APOS RealTime Monitor: Proactive Server Management

The APOS Insight RealTime Monitor module lets you monitor the health of your SAP BusinessObjects system proactively. While there are many products that will tell you whether a service is running, RealTime Monitor uses statistics and functionality tests specific to SAP BusinessObjects to verify that services are not only running, but running according to specifications. RealTime Monitor predictive analysis uses thresholds to anticipate instabilities in the system, and to initiate automatic corrective actions.

RealTime Monitor runs as a background service includes a management console, or dashboard, to let you monitor all live server components, and also to analyze off-line historical activity visually.

Management Console

The RealTime Monitor Management Console lets you:

- View and monitor all user sessions. Delete sessions when necessary.
- Analyze and control all servers from one command center. Bulk server start, stop, restart, enable or disable. Control server settings.
- Monitor all running and pending jobs. Stop, pause, or release jobs as needed.
- Receive alerts in real time.
- Analyse historical data and search the audit log.

Alerts

RealTime Monitor Alerts enable proactive server management:

- Monitor various system activities and performance indicators and set timed thresholds for alerts when the threshold is crossed or when service levels return to normal.
- Monitor system functionality to make sure your servers are operating properly.
- Monitor memory levels, CPU usage, and event log messages from services to identify system instabilities.
- Take corrective action by running scripts automatically when alert conditions occur.
- Alert by sending email messages, sending to the Windows Event Log, or using SNMP.



Off-Line Historical Activity Analysis

Analyze historical data to anticipate future needs. RealTime Monitor lets you extract metadata about your system's operational activities for offline analysis.

APOS Instance Monitor: Blanket Instance Monitoring

SAP BusinessObjects instances shouldn't fail, and while a failed instance may be attributable to human error (for example, a wrong parameter entered by a user), such a failure may also be symptomatic of larger problems, such as a failed service/server, and IT needs to know about existing or impending problems immediately.

The APOS Insight Instance Monitor module informs administrators of the instance failure, and copies the error message in the notification, permitting proactive action. Instead of coming in Monday morning to find out large batches have failed, you are notified in a timely manner and can fix the problem before it interferes with business activities.

SAP BusinessObjects lets you set email notifications on a report-by-report basis, but it's not a blanket monitoring and notification system. With the APOS Insight Instance Monitor module, you can set email notification on a report-by-report basis, but you can also develop a detailed configuration strategy to create a blanket monitoring and notification system. Someone in IT will always be notified when there is an instance failure. The administrator receives a digest of failures and can scan through the digest to see what kinds of error messages are being generated, and decide how best to deal with them.

Instance Monitor sends notifications via email, or by raising an event in the Windows event log. The notification contains valuable administrative information about the failed report, including:

- Report instance ID
- Report location
- Report name
- Report instance start time
- Report instance end time
- Parameter values used
- Selection criteria used
- Error message
- Error details

You can configure the frequency with which APOS Insight queries multiple SAP BusinessObjects Enterprise environments for failed report instances.

Managing with APOS Insight: Putting It All Together

APOS Insight is a complete SAP BusinessObjects introspection solution. Insight gives you a complete picture of what is happening within your SAP BusinessObjects deployment at any



given time, as well as an historical view that helps you make decisions about the growing or migrating the system:

Assistance with Migration

Compare the source and target system to validate you migration and help with the process.

Impact Analysis

Know which reports will be affected by changes to the database fields, universes, business views, etc.

License Management

License management becomes an issue when the number of users grow. Knowing the number of licenses and – perhaps more importantly – their usage will help you determine the level of additional platform licensing required, and what opportunities exist for license redistribution based on business needs and projected growth.

Security Issues

There are a number of security aspects that might be of concern or interest to system administrators. For example, there are security settings on folders, reports, and other objects. With the snapshot approach, you can form an accurate picture of all security elements. Snapshots can be easily compared to determine when security modifications were made and, by combining Audit data, by whom.

Report Design Issues

Use APOS Insight to extract design information—which tables are being used, the formulas they have, and so on—about the reports in SAP BusinessObjects, then analyze these characteristics off line. This is an essential feature if you need to make global changes to report designs.

Historical Instances By Format

You can create a report that shows historical instances by format and destination —report id, description and location, latest instance date, average run-times and number of instances. So, for example, if the mail-server administrator complains that too many e-mails are being sent by SAP BusinessObjects, you can you can easily determine how many reports are being e-mailed using APOS Insight's historical records.

Processing Time By Reports

If you need to analyze processing time by reports, you can quite easily create a report that shows the top 10 reports by processing time, for example, and then analyze the reasons behind these processing times. Alternatively, use APOS Insight to find the reports that are extremely popular and assess their processing time effectiveness and history.



Report Processing Windows

If you are analyzing architectural issues and are investigating report processing windows, you can look at the processing activity for a particular time and day. You may also want to compare that processing activity with other times and days to form a picture of bursts, if they exist.

Lifecycle Issues

There are many aspects to lifecycle that you can investigate and analyze with APOS Insight such as:

- Which reports are not being used
- Which reports are rarely used
- Which reports are scheduled unnecessarily

Load Levels

APOS Insight collects statistical information from all the servers and puts that information in historical perspective. It is relatively easy to see load levels on the various servers through time. In other words, you can readily see how busy the servers are at what times. The converse is also true: you can see when servers are not busy. Load levels are particularly important for the SAP BusinessObjects Job Server.

Universe Management

Universes bring additional data security capabilities to SAP BusinessObjects. APOS Insight creates metadata about your Universes, allowing you to document which reports use specific Universes, which Universes use which data connections, and assess which users are running reports that access specific Universes.

Business Views Management

Business Views add essential data security capabilities to SAP BusinessObjects. APOS Insight creates metadata about your Business Views structure and usage, allowing you to generate mission critical Business Views structure documentation, analyze which reports use which Business Views, and assess which users are running reports that access specific Business Views.

Discussions Management

Discussions allow users to post an entry to a discussion thread for one specific report object. APOS Insight collects discussion threads on all reports and lets you review and print them. You can create a scheduled report against the Insight database and email discussion thread updates to specific users. You can assess which reports are being used for discussions and which users are posting content in the same manner. With APOS Insight, discussions are a more manageable system feature.



MyInfoView Management

MyInfoView adds user-specific customization capabilities. APOS Insight allows you to analyze and document information about the use of MyInfoViews within your organization.

About APOS

APOS Systems Inc. has been an SAP BusinessObjects Technology Partner since 1996. APOS has acknowledged a key SAP BusinessObjects XI strength - its open architecture - and has designed and developed a variety of solutions that offer customers additional capabilities within the SAP BusinessObjects enterprise infrastructure.

As a leading SAP BusinessObjects solution provider in the SAP PartnerEdge™ program, APOS offers incomparable knowledge and expertise in extending the SAP BusinessObjects platform. Today, APOS Solutions are helping over 850 SAP BusinessObjects customers, in 37 countries worldwide to maximize their ROI on the SAP BusinessObjects platform. APOS has been named the SAP BusinessObjects "Technology Partner of the Year" numerous times.

BI Platform Management



Administrator – automated administration and management



Insight – enhanced system monitoring and analysis



Storage Center – archive, backup and selective restore

BI Publishing



Publisher – document bursting, consolidation and delivery



Output Management – assured publishing of BI content

Pervasive BI



Outlook Synergy – access BI through an Outlook portal



Content Fusion – enrich business workflows with BI content

Location Intelligence



Location Intelligence – advanced location visualization in reports & dashboards



Location Intelligence: Cloud Edition – hosted location intelligence



Location Intelligence: Premium Edition – enhanced database connectivity

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