SAP BI Monitoring

In today's BI scenarios it is critical to ensure that end users retrieve up-to-date information from the BI solution. This requires sufficient performance and availability of all involved components. BI monitoring has the capabilities to ensure that the involved technical systems and components are working as expected. The BI Monitoring application is part of the Technical Monitoring Work Center within SAP Solution Manager.

In a typical customer scenario data from backend systems (SAP ERP) are extracted into data warehouse systems (SAP BW). In case of SAP BW this is done via process chains defined in the SAP BW systems. The resulting data is stored within info objects in the SAP BW systems. This data can be viewed by end users via so-called queries or templates which are also defined within the SAP BW systems. In addition other systems (Business Objects Enterprise / BI Platform Enterprise) can access SAP BW data (directly from info objects or via queries) for producing high sophisticated reports. The definition and scheduling of the jobs, process chains, queries and templates is normally directly performed with the help of standard BO or BW tools like the BO Info View / BI launch pad tool or inside the BW transaction RSPC. The main challenge is -- How to control and monitor BO jobs, BW process chains, queries and templates?

At the minimum, top business critical jobs, process chains, templates and queries should be monitored and an immediate resolution has to be found in case of a problem. Before BI Monitoring in the past, manual monitoring via the above mentioned tools had to be performed.

Following are the key questions that arise during monitoring of typical BO BW customer landscape:

- Do the most important BW Process Chains run with good performance and finish successfully?
- Are my Business Objects jobs executed as planned and are they running with good performance?
- Do I have somewhere a delay in my Business Warehouse Process Chains processing which hinders right in time delivery of business critical data?
- Do I have a resource bottleneck somewhere in my Business Intelligence solution? Am I automatically informed about it?
BI monitoring has the capabilities to address above questions that arise to perform end to end monitoring of the heterogeneous BI solution landscape. Following are the highlights of capabilities offered by the BI monitoring.

The intention of the BI Monitoring is to centrally perform proactive monitoring of Business Intelligence solutions based on SAP BW and BOE XI including BW Process Chain and BOBJ Job Monitoring and Alerting. The BI Monitoring application is part of the Technical Monitoring Work Center within SAP Solution Manager.

Two monitoring levels are provided:
- System level monitoring for the involved technical systems
- Monitoring of important BI objects (process chains, queries, templates, BO jobs)

BI monitoring is achieved with the combination of below monitors:
- BI Overview Monitor
- BI Details Monitor (BO Job Monitor, BW Process Chain Monitor, BW Reporting Monitor)

**BI Overview Monitor**

The BI Overview Monitor shows at a glance the summary of the current status and the open alerts of all BI components that are included in your technical scenario. With the navigation panel in the upper area you can select one of the layers in the BI solution:
- BO Web Layer (BO Web Application Systems)
- BO Server Layer (BO Server systems)
- BW Server Layer (BW systems)

Clicking on a component type in the BI overview monitor expands the underlying single systems and technical instances with their separate alert and status aggregation per system resp. technical instance
BO Job Monitor
Monitored jobs are grouped by the BO system they belong to and you can see the status of each monitored metric for that job. The thresholds of the jobs to be monitored are easily configurable.

Following table gives explanation of the metrics:

<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Started on Time</td>
<td>Delay in minutes of the last finished or currently running job run to the specified threshold timestamp (today if the timestamp is already reached or yesterday otherwise).</td>
</tr>
<tr>
<td>Out of Time Window</td>
<td>Maximum distance in minutes of the last finished or currently running job run to the specified threshold time window on the day where the window start timestamp has the closest distance to the job start time. 0 if the job start time is &gt; window start time and job end resp. current time for running job is &lt; window end time.</td>
</tr>
<tr>
<td>Duration</td>
<td>Duration of last finished or currently running job run in minutes.</td>
</tr>
<tr>
<td>Status</td>
<td>Status of the last finished job run (= job instance) Green if successful / Red if failed.</td>
</tr>
</tbody>
</table>

BW Process Chain Monitor
Monitored process chains/steps are grouped by the BW system they belong to and you can see the status of each monitored metric for the process chains. Monitoring of complete process chains as well as single process chain steps is supported. Metrics defined for the process chains/steps are: Not Started on Time, Out of Time Window, Duration, Status, Records Processed and Data Packages Processed.
BW Report Monitor
Monitored queries / templates are grouped by the BW system they belong to and you can monitor the Average Response Time in seconds and the alerts for each BW Query or Template.

BI System Monitor Metrics
For each involved technical system the jump-in to the System Monitoring is available and provides metric details on system level:

The system monitoring provides all general system monitoring capabilities for the underlying system plus specific monitoring for BI specific metrics.
BI System Monitor metrics are classified into three categories, Availability, Performance and Exceptions.

Following table gives a summary of the metrics infrastructure for BO Web Application and BO Server System.

<table>
<thead>
<tr>
<th>Category</th>
<th>BO Web Application System</th>
<th>BO Server System</th>
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<tbody>
<tr>
<td>Availability</td>
<td>Regular http ping check for the BO InfoView web application (web UI for BOE). The URL is defined during managed system setup and stored in the Solution Manager URL framework.</td>
<td>BOE Server availability metric from Introscope (collected by BO monitoring service and offered via JMX)</td>
</tr>
<tr>
<td>Performance</td>
<td>Average response time of BO web application frontend calls (Introscope metric)</td>
<td>Average response time of BO Server Introscope metric</td>
</tr>
<tr>
<td>Exceptions</td>
<td>Any message of type ERROR in the BO web application log of the InfoView webapp. More specific ERROR patterns can be customized by the customer based on customer need / experience.</td>
<td>An inactive metric entry is available for BO server type in the SAP template More specific ERROR patterns can be customized by the customer based on customer need / experience.</td>
</tr>
</tbody>
</table>

As an example, the BO Server System Monitor shows the single BO Server components that are part of your technical scenario. Each single instance of a BO Server component is shown including details like number of alerts, availability status, performance status and exception status. BO Server metrics related to all the BO services and servers are captured. To name a few, metrics related to Server Intelligence Agent (SIA), Central Management Server (CMS), File Repository Server, Web Intelligence Processing Service and so on are available. System monitoring for each system can be viewed via the system monitoring UI or as jump in from the BI monitoring UI.

**BI Alerting approach**

The BI Monitoring application is tightly integrated with its specific alerts in the alert inbox including notification management, incident management, task assignment and forwarding to 3rd party tools.