Turn On Data Auditing

Most companies have a number of employees running their applications on a daily basis. While the application or database may manage who has access to the system, legislation such as HIPPA or Sarbanes Oxley may mandate monitoring write or remove operations made to one or more data files accessed by the application. Change Audit Logging in BBj® makes the process of building an audit trail fast and easy to implement.

How It Works

Change Audit Jobs consist of a job name, location for the audit log database(s), a list of one or more directories and/or data files to be monitored, and the frequency at which the log database should rollover. When an application changes a monitored data file using direct file access calls from a BBj program or via SQL, the auditing system logs the change and type of change to an "audit log database." At any time, an administrator can query the log database using the interface built into the Enterprise Manager or query the log database tables directly using SQL.

When using change auditing, overhead is typically minimal since in most cases administrators configure jobs to use the default asynchronous mode. In asynchronous mode, the audit system adds audit details to a background queue rather than waiting for the log operation to complete before continuing. In synchronous mode (not recommended), it completes the logging of the audit details before allowing the original write or remove operation on the file to complete.

Creating a Change Audit Job

To create a change audit job, select the "Auditing" item in the Enterprise Manager (EM) navigator to display the list of currently configured audit jobs. Click the ⊕ button to create a new job. **Figure 1** shows the "Audit Job Configuration" dialog.
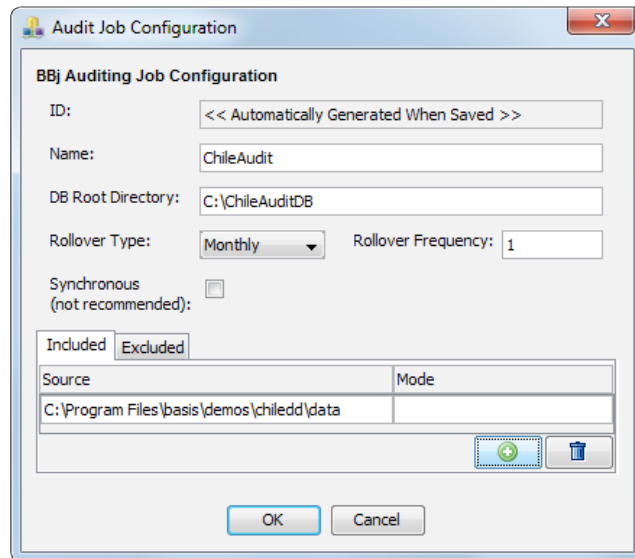

Figure 1. Audit Job Configuration dialog

Figure 2 shows the audit job from **Figure 1**, in the list of available audit jobs. "Type" indicates it is an audit job; "Last In Sync" shows the time the audit job was last in sync with all audit changes. "Running" displays YES or NO to indicate whether the job is actively running. If the job is paused, audit actions still accumulate in a queue but are not written to the audit database until resuming the job.
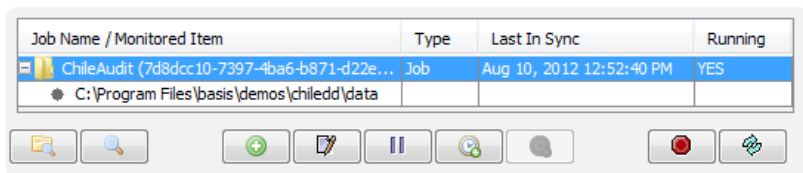

Figure 2. Audit Job List panel

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Since the auditing system stores audit log messages in a BBj ESQL database, the database list in the EM shows the auditing databases with all the other databases. Audit job databases use the name of the job followed by the date created and a counter if there are more than one for a given date. **Figure 3** shows an audit database in the list of databases.

Figure 3. Auditing Database

Viewing the Audit Log Data

Audit logging data resides in a BBj ESQL database so there are two ways to access the data: the Audit Log Viewer in the EM, or querying the database directly using SQL. We won't go into the SQL option in detail except to say that the auditing system logs each type of operation to a different table in the audit database. The Audit Log Viewer shown in **Figure 4** makes it easy to search and access this data. Use the 🔍 button to query the audit database.
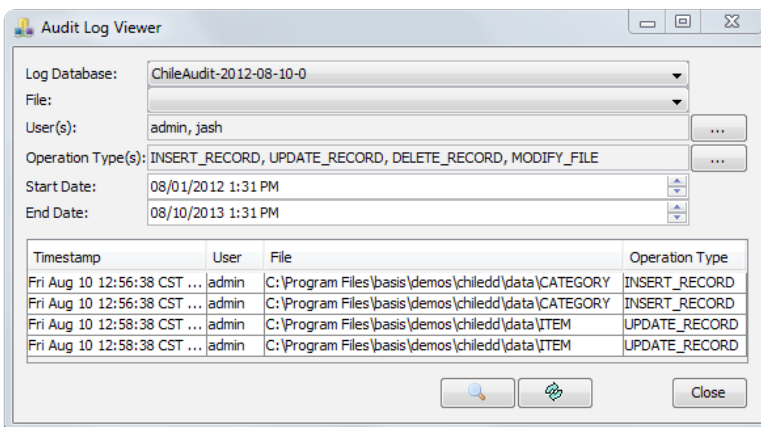

Figure 4. Audit Job Viewer

In addition to general information about each audited operation, the viewer provides drill-down support to further investigate the details of each change. Double-clicking on an operation in the viewer opens another dialog which displays the record details. For example, an UPDATE_RECORD operation shows the old record and the new record after the change, while an INSERT_RECORD operation shows only the new record added to the file. A string template entry box makes it easier to evaluate the record data since the audit operation stores the record data in its raw format. **Figure 5** shows what the user sees when viewing an UPDATE_RECORD detail.
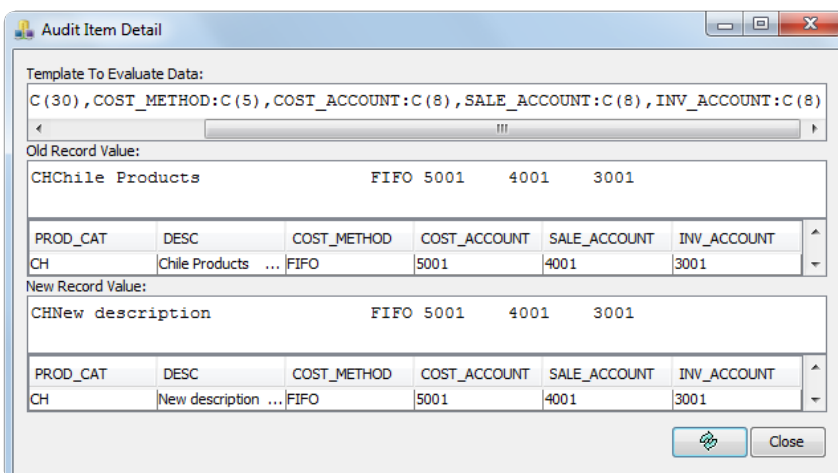

Figure 5. Audit Operation Detail

Additional Benefits

There are additional benefits of using a BBj ESQL database for the log. First, it gives the administrator the ability to configure user access permissions to the audit database in the same way one would configure user permissions on any other BBj database. The other notable benefit is that using iReport or BBJasper, administrators can create more robust, limited, and/or customized reporting for others to view in an external application without the need to grant them access to the EM.

Summary

If legislation such as HIPPA or Sarbanes Oxley mandate that a company needs to monitor write and remove operations made to one or more data files that their application uses, the Audit Logging feature built into BBj is a great option. Setup and configuration takes only minutes and does not require any new coding or even shutting down BBj Services. Further, with the use of an SQL logging database, administrators can use the built in Audit Log Viewer, or query the data directly using SQL for even more power and flexibility. ■

For more information, read *Jazz up Your Applications – Seamlessly Embed JasperReports* at links.basis.com/09jasperreports