

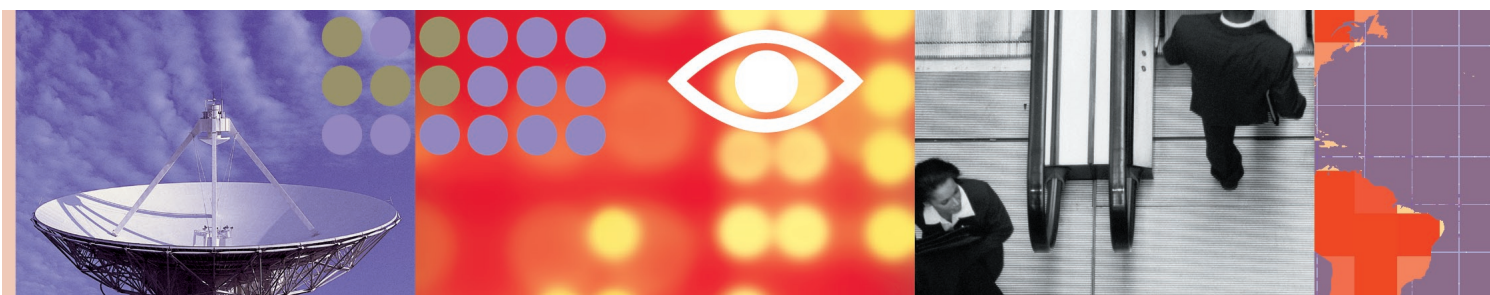
Security management solutions  
To support your IT objectives



**Tivoli** software

# Learn how 10 reports can help you address the most pressing database auditing challenges.





**When making a list of your enterprise’s most vital assets, your database would surely land near the top of the list — that is where all the most critical information resides. But do you know what activities are taking place within your database?**

IBM Tivoli® Compliance Insight Manager provides critical tools for monitoring and reporting on database activities, in order to support information security within your enterprise. Included within Tivoli Compliance Insight Manager are the 10 most critical reports that should be generated around database activity. They help you uncover and investigate security incidents and data breaches, as well as meet audit requirements.

Even if it isn’t practical to deny users access to the database, monitoring database activities is paramount — because both accidental and malicious violations can be very damaging to your organization and threaten information integrity. The Tivoli Compliance Insight Manager reporting engine for audit and compliance initiatives could be your most valuable asset in controlling database security.



When it comes to database security, organizations like yours face considerable pressure on two fronts. On one hand, demands are great for you to guarantee internal security, while minimizing the chances of downtime caused by the accidental or malicious actions of database users.

On the other hand, it's equally important to comply with ever-growing regulations and meet auditor requirements. Today, auditors expect to see the same level of sophistication in security and audit controls on the database management system (DBMS) that they routinely encounter for operating systems, network security devices, authentication servers and other elements of an IT infrastructure.

### **Reduce security incidents and eliminate the “compliance gap”**

It's apparent that proper monitoring and reporting on the activity of database administrators (DBAs) and other users across your enterprise is paramount in creating database security and meeting auditor requirements. Tivoli Compliance Insight Manager includes

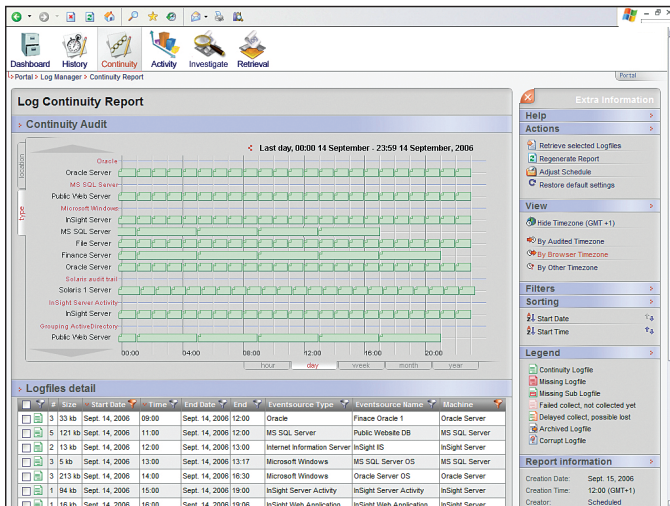
multiple capabilities for meeting both these objectives, including:

- **Automating the collection of data about both privileged and nonprivileged database access.**
- **Centralizing the collected data in a secure data store.**
- **Normalizing database logs into a single, platform-neutral language that is understandable by all concerned parties.**
- **Allowing privileged users to perform essential job duties by unobtrusively monitoring and auditing their behavior.**
- **Improving the effectiveness of internal security controls by providing an understanding of variances between access control policies and actual user behavior.**
- **Allowing you to answer auditor questions about how you manage the activity of DBAs and other privileged users on databases across your enterprise.**

### **Take advantage of depth in database monitoring**

The depth IBM offers when it comes to database monitoring is exemplified by Tivoli Compliance Insight Manager support for IBM DB2® on z/OS® and IBM DB2 Universal Database,™ IBM Informix® Dynamic Server, Oracle Database, Microsoft® SQL and Sybase ASE. Tivoli Compliance Insight Manager integrates database auditing into your enterprise compliance efforts by providing a single framework for monitoring across multiple platforms, including databases, operating systems, applications, and security and network devices.

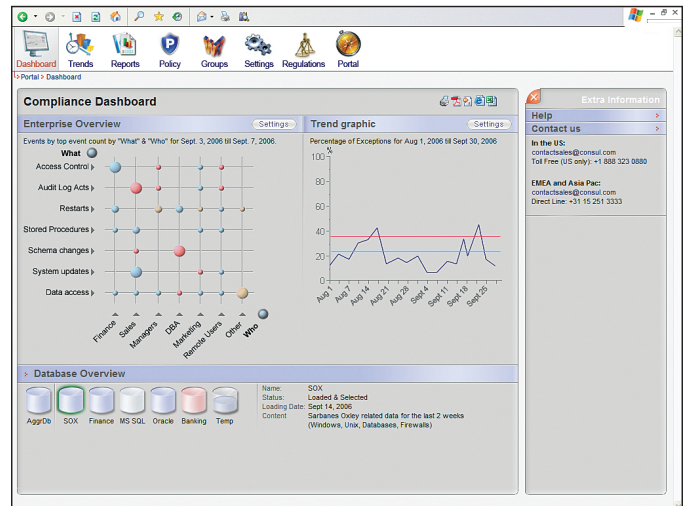
Turn the page to see how the top 10 reports in Tivoli Compliance Insight Manager for database auditing enable you to take advantage of this versatility.



The log continuity report can help make visits from the auditor short and painless, because it can help prove that you are collecting logs.

### 1. Log continuity

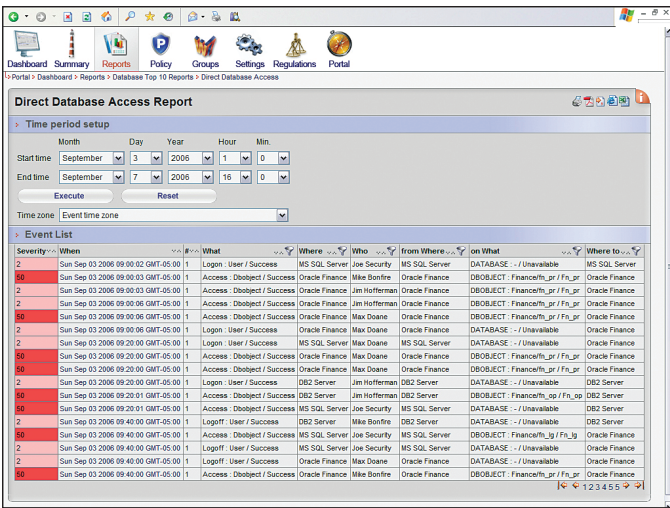
The Tivoli Compliance Insight Manager log continuity report verifies that all the various logs have been successfully collected and archived in the log management system. This report can help simplify and expedite audit activities, because it can prove you are collecting logs (and failing to perform this task is a common deficiency cited by auditors). The log continuity report also lets DBAs know that it is safe to remove the logs from their database platforms, since Tivoli Compliance Insight Manager collects, compresses and stores the original log data, freeing valuable space on production servers.



The enterprise activity dashboard gives you a quick, comprehensive view of "who's doing what" across your enterprise.

### 2. Enterprise activity dashboard

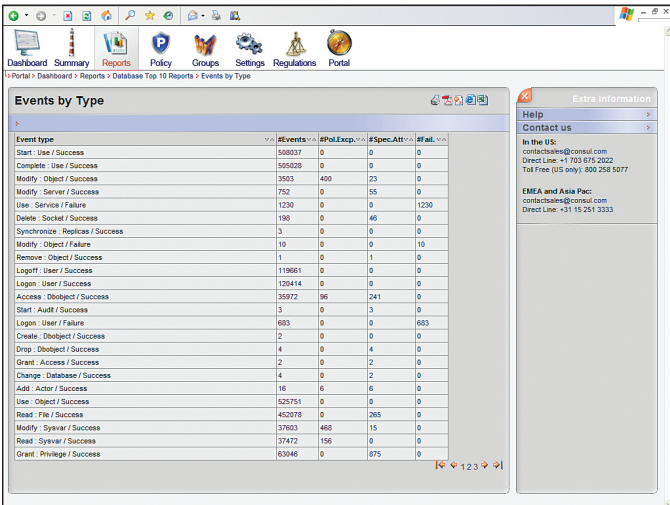
Do you want to determine who did what across your enterprise on any given day? A look at the Tivoli Compliance Insight Manager enterprise activity dashboard will give you a "bird's-eye" view into your enterprise. The larger circles highlight areas with high activity levels, while the red circles represent concerns about specific policy violations that require further investigation. The enterprise activity dashboard lets you determine quickly if significant activity is violating your organization's acceptable use or change management policies.



The direct database access report allows you to view all accesses to your database from outside the application layer.

### 3. Direct database access

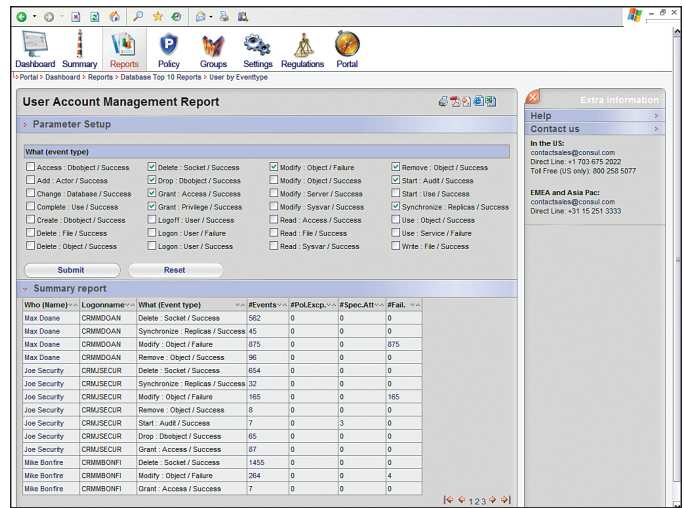
The direct database access report can be viewed from within the Tivoli Compliance Insight Manager report center. This report shows all accesses to your database that did not originate from the application layer. Undoubtedly, many of the activities shown will be routine DBA events, but some may well turn out to be clear violations of policy that you will want to analyze more closely.



The events by type report allows you to quickly determine which operational changes can cause damage to your enterprise.

### 5. Privileged operations

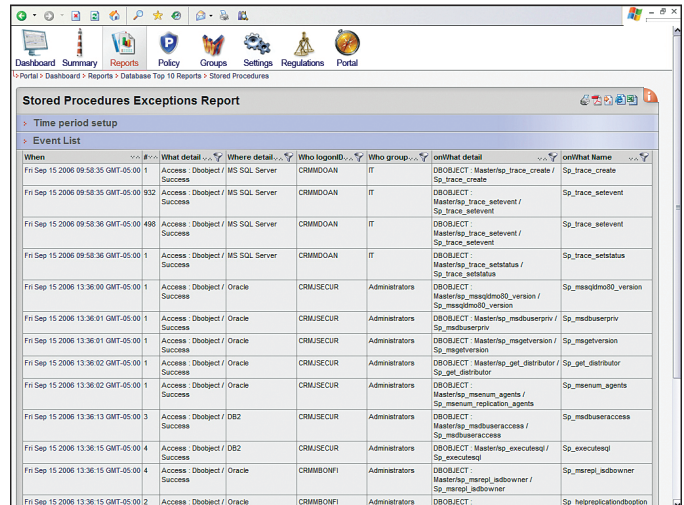
The events by type report in Tivoli Compliance Insight Manager facilitates the monitoring of activities on your database that may routinely cause business problems such as system downtime. This report allows you to scan operational events — such as alter, create, drop table shutdown, kill, revoke and grant — to see if any activity violated your change management policy. If you find such a problem, you can easily send the report to organization management for discussion and resolution.



Privileged users sometimes become risks. The user account management report allows you to monitor administrative activities and minimize risk.

### 4. User account management

The Tivoli Compliance Insight Manager user account management report allows you to easily determine if administrators adhere to your organization's IT user account management policy. This report gives you insight on a very specific level — for instance, it allows you to scan for the addition of users or granting of rights listed as policy exceptions, special attentions and failures that may be suspicious, common when they occurred or what they entail.



The stored procedures exceptions report lets you easily determine if any "rogue" stored procedures have been executed.

### 6. Stored procedures exceptions

Most stored procedures are compliant, but occasionally one will be executed that causes significant damage to your database. The Tivoli Compliance Insight Manager stored procedures exceptions report helps you monitor for these dangerous procedures. When this report is implemented, and administrators are informed about the monitoring being performed by Tivoli Compliance Insight Manager, the frequency of unauthorized stored procedures often drops precipitously.

When	What class	Where field	Who logged in	Who group	Wherefrom field	what detail
Fri Sep 15 2006 09:53:38 GMT-05:00	Stop	MSSQLSRV	SYSTEM	System	MSSQLSRV	SERVICE - / / Mssqlsrv
Fri Sep 15 2006 09:53:38 GMT-05:00	Start	MSSQLSRV	SYSTEM	Unknown	MSSQLSRV	SERVICE - / / Mssqlsrv
Fri Sep 15 2006 09:58:30 GMT-05:00	Start	MSSQLSRV	SYSTEM	Unknown	MSSQLSRV	SERVICE - / / Mssqlsrv
Fri Sep 15 2006 09:58:30 GMT-05:00	Start	MSSQLSRV	SYSTEM	Unknown	MSSQLSRV	SERVICE - / / Mssqlsrv
Fri Sep 15 2006 09:58:30 GMT-05:00	Start	MSSQLSRV	sa	IT	MSSQLSRV	AUDITLOG - / / Unavailable
Fri Sep 15 2006 09:58:30 GMT-05:00	Start	MSSQLSRV	sa	Unknown	MSSQLSRV	AUDITLOG - / / Unavailable
Fri Sep 15 2006 09:58:30 GMT-05:00	Start	MSSQLSRV	Administrators	Administrators	MSSQLSRV	AUDITLOG - / / Unavailable
Fri Sep 15 2006 09:58:30 GMT-05:00	Start	MSSQLSRV	sa	Database Admin	MSSQLSRV	AUDITLOG - / / Unavailable
Fri Sep 15 2006 13:36:02 GMT-05:00	Create	MSSQLSRV	CRMDOAN	IT	MSSQLSRV	DBOBJECT: Masterlucanaphot / Ucanaphot
Fri Sep 15 2006 13:36:02 GMT-05:00	Create	MSSQLSRV	CRMDOAN	Unknown	MSSQLSRV	DBOBJECT: Masterlucanaphot / Ucanaphot
Fri Sep 15 2006 13:36:02 GMT-05:00	Create	MSSQLSRV	CRMDOAN	Systems Admin	MSSQLSRV	DBOBJECT: Masterlucanaphot / Ucanaphot
Fri Sep 15 2006 13:36:02 GMT-05:00	Create	MSSQLSRV	CRMDOAN	Administrators	MSSQLSRV	DBOBJECT: Masterlucanaphot / Ucanaphot
Fri Sep 15 2006 13:36:02 GMT-05:00	Create	MSSQLSRV	CRMDOAN	Administrators	MSSQLSRV	DBOBJECT: Masterlucanaphot / Ucanaphot
Fri Sep 15 2006 13:36:02 GMT-05:00	Create	MSSQLSRV	CRMDOAN	Administrators	MSSQLSRV	DBOBJECT: Masterlucanaphot / Ucanaphot
Fri Sep 15 2006 13:36:13 GMT-05:00	Drop	MSSQLSRV	CRMSECUR	Systems Admin - Production	MSSQLSRV	DBOBJECT: Masterlucanaphot / Ucanaphot
Fri Sep 15 2006 13:36:13 GMT-05:00	Drop	MSSQLSRV	CRMSECUR	IT	MSSQLSRV	DBOBJECT: Tempdb\mp\dbs\tempfile
Fri Sep 15 2006 13:36:13 GMT-05:00	Drop	MSSQLSRV	CRMSECUR	IT	MSSQLSRV	DBOBJECT: Tempdb\mp\dbs\tempfile

The database system events report helps you monitor database systems for critical risks.

## 7. Database system events

No database sits in isolation — its underlying server can suffer from the same sort of inadvertent mistakes and malicious attacks that plague your DBMS. The Tivoli Compliance Insight Manager database system events report provides the overview you need to monitor the DBMS server system and ensure that noncompliant activities are not taking place.

Severity	When	What	Where	Who	from Where	on What	Where to
00	Fri Sep 15 2006 12:00:02 GMT-05:00	Login: User / Success	MS SQL Server	Joe Security	MS SQL Server	DATABASE - / / Unavailable	MS SQL Server
00	Fri Sep 15 2006 12:00:02 GMT-05:00	Access: Dobject / Success	MS SQL Server	Mike Borline	MS SQL Server	DBOBJECT: Masterth_trace_gettable / Ft_trace_gettable	MS SQL Server
00	Fri Sep 15 2006 12:00:02 GMT-05:00	Access: Dobject / Success	MS SQL Server	Jan Hofferman	MS SQL Server	DBOBJECT: Masterth_trace_gettable / Ft_trace_gettable	MS SQL Server
00	Fri Sep 15 2006 12:00:02 GMT-05:00	Access: Dobject / Success	MS SQL Server	Jan Hofferman	MS SQL Server	DBOBJECT: Masterth_trace_gettable / Ft_trace_gettable	MS SQL Server
20	Fri Sep 15 2006 12:00:02 GMT-05:00		MS SQL Server		MS SQL Server	DATABASE - / / Unavailable	MS SQL Server
20	Fri Sep 15 2006 12:00:02 GMT-05:00		MS SQL Server		MS SQL Server	DATABASE - / / Unavailable	MS SQL Server
00	Fri Sep 15 2006 12:00:02 GMT-05:00		MS SQL Server		MS SQL Server	DBOBJECT: Masterth_trace_gettable / Ft_trace_gettable	MS SQL Server
00	Fri Sep 15 2006 12:00:02 GMT-05:00		MS SQL Server		MS SQL Server	DBOBJECT: Masterth_trace_gettable / Ft_trace_gettable	MS SQL Server
00	Fri Sep 15 2006 12:00:02 GMT-05:00		MS SQL Server		MS SQL Server	DBOBJECT: Masterth_trace_gettable / Ft_trace_gettable	MS SQL Server
00	Fri Sep 15 2006 12:00:02 GMT-05:00		MS SQL Server		MS SQL Server	DBOBJECT: Masterth_trace_gettable / Ft_trace_gettable	MS SQL Server
20	Fri Sep 15 2006 12:00:02 GMT-05:00		MS SQL Server		MS SQL Server	DATABASE - / / Unavailable	MS SQL Server
20	Fri Sep 15 2006 12:00:03 GMT-05:00		MS SQL Server		MS SQL Server	DATABASE - / / Unavailable	MS SQL Server
00	Fri Sep 15 2006 12:00:03 GMT-05:00		MS SQL Server		MS SQL Server	DBOBJECT: Masterth_trace_gettable / Ft_trace_gettable	MS SQL Server
00	Fri Sep 15 2006 12:00:03 GMT-05:00		MS SQL Server		MS SQL Server	DBOBJECT: Masterth_trace_gettable / Ft_trace_gettable	MS SQL Server
00	Fri Sep 15 2006 12:00:03 GMT-05:00	Access: Dobject / Success	MS SQL Server	Mike Borline	MS SQL Server	DBOBJECT: Masterth_trace_gettable / Ft_trace_gettable	MS SQL Server
00	Fri Sep 15 2006 12:00:03 GMT-05:00	Access: Dobject / Success	MS SQL Server	Joe Security	MS SQL Server	DBOBJECT: Masterth_trace_gettable / Ft_trace_gettable	MS SQL Server

The all events report allows you to see all DBMS events at a glance.

## 8. Database events list

The all events report in Tivoli Compliance Insight Manager puts it all there in black and white for everyone (including the auditors) to see. This report, combined with the log continuity report, verifies that you've collected all the logs and can account for all the activities on the database.



What (Event group)	On What (Object group)	#Events
Application Access	Financial Data (Oracle)	356
Application Access	HR Data (MS SQL)	2
Backup - DB	Financial Data (Oracle)	56
Backup - DB	HR Data (MS SQL)	6
DB - Login_off	Financial Data (Oracle)	56
DB - Login_off	HR Data (MS SQL)	16
DB Administration	Financial Data (Oracle)	43
DBA - StoreProcedures	Financial Data (Oracle)	461
DBA - StoreProcedures	HR Data (MS SQL)	16

The user summary report allows you to investigate any user's activities and quickly identify suspicious behavior.

## 9. User summary

The user summary report in Tivoli Compliance Insight Manager allows you to scan all the database activities of any specific user (such as a system administrator who is suspected of fraud), study the information provided and note any policy exceptions before distributing the report to other interested parties within your organization.

Field	Group	
Severity	0 (1)	This is a policy exception
When	Fri Sep 15, 2006 13:16:21 GMT-05:00	Office Hours (10)
What	Access - Objected / Success	Security Changes Administration 50
Where	XPWIKST03 (MS SQL Server)	Systems with non-segated administration 10
Who	Max Doane	Administrators 30
From Where	XPWIKST03 (MS SQL Server)	Systems with non-segated administration 10
On What	DBOBJECT - Finance/nl_jg / Fr_nj	Financial Data 30
Where To	XPWIKST03 (MS SQL Server)	Systems with non-segated administration 10

The event detail report allows you to instantly view all the details of a potentially fraudulent or suspicious action.

## 10. Incident investigation

Any particular event highlighted in the user summary report can be "pulled out" and viewed in greater detail in the event detail report. This feature of Tivoli Compliance Insight Manager will help you, and others in your organization, understand suspicious user activities in precise and comprehensive terms.



### **Achieve true information security**

Tivoli Compliance Insight Manager and its top 10 reports for database auditing provide the comprehensive, detailed reporting demanded by both security professionals and internal and external auditors — and they allow you to compile this information in just minutes instead of hours. Tivoli Compliance Insight Manager custom reporting and expert services can help you investigate possible data breaches, as well as comply with regulations and security policies, by automating cross-platform log collection and providing the visibility you need into your IT systems.

By providing critical tools for monitoring and reporting on database activities, Tivoli Compliance Insight Manager can be a key component in your effort to support true information security within your enterprise.

### **For more information**

To learn more about how Tivoli Compliance Insight Manager can help your organization achieve true information security, contact your IBM representative or IBM Business Partner, or visit [ibm.com/tivoli](http://ibm.com/tivoli)

### **About Tivoli software from IBM**

Tivoli software provides a set of offerings and capabilities in support of IBM Service Management, a scalable, modular approach used to deliver more efficient and effective services to your business. Helping meet the needs of any size business, Tivoli software enables you to deliver service excellence in support of your business objectives through integration and automation of processes, workflows and tasks. The security-rich, open standards-based Tivoli service management platform is complemented by proactive operational management solutions that provide end-to-end visibility and control. It is also backed by world-class IBM Services, IBM Support and an active ecosystem of IBM Business Partners. Tivoli customers and business partners can also leverage each other's best practices by participating in independently run IBM Tivoli User Groups around the world — visit [www.tivoli-ug.org](http://www.tivoli-ug.org)

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