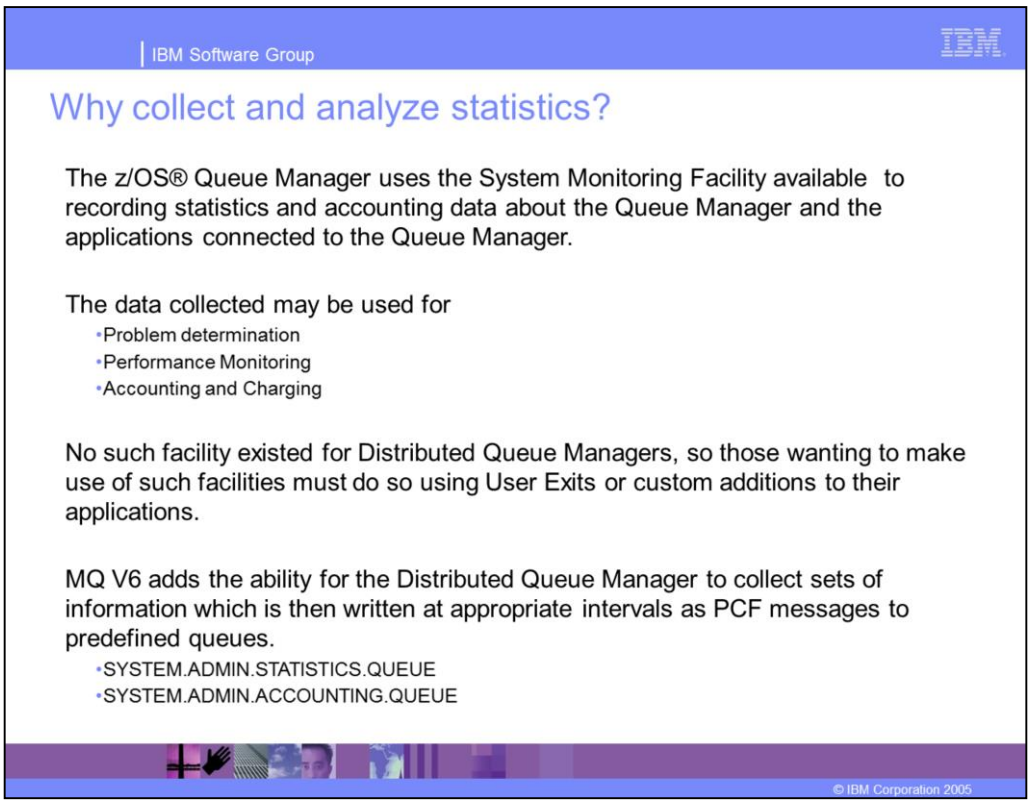
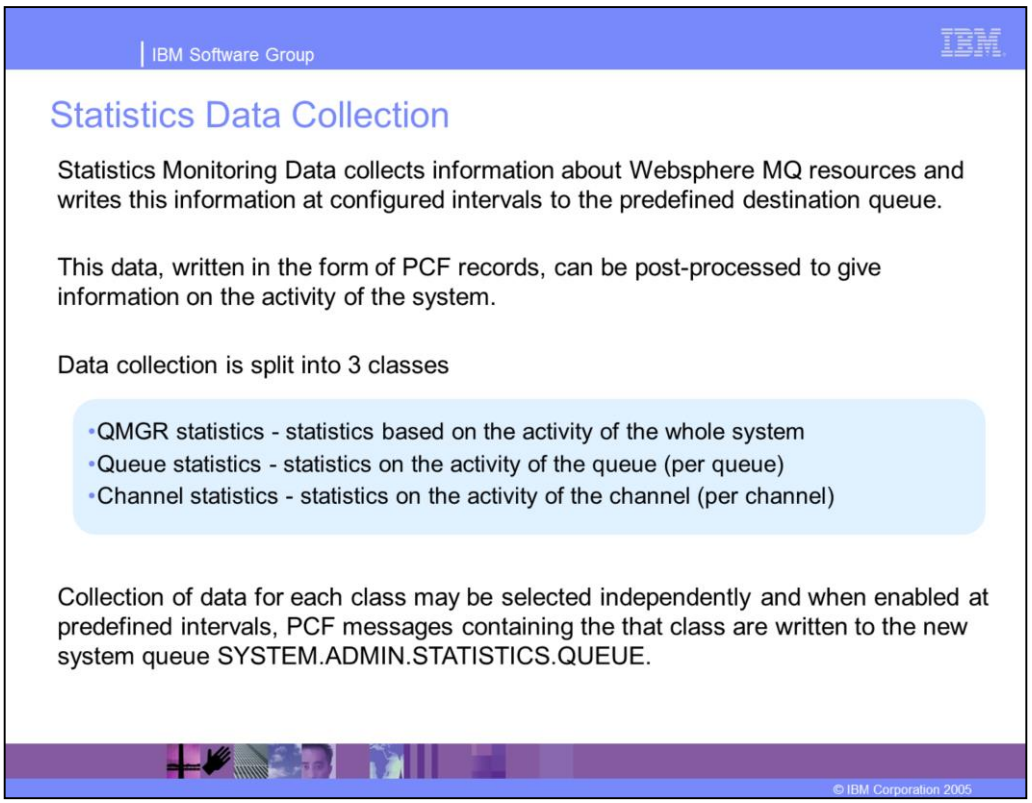
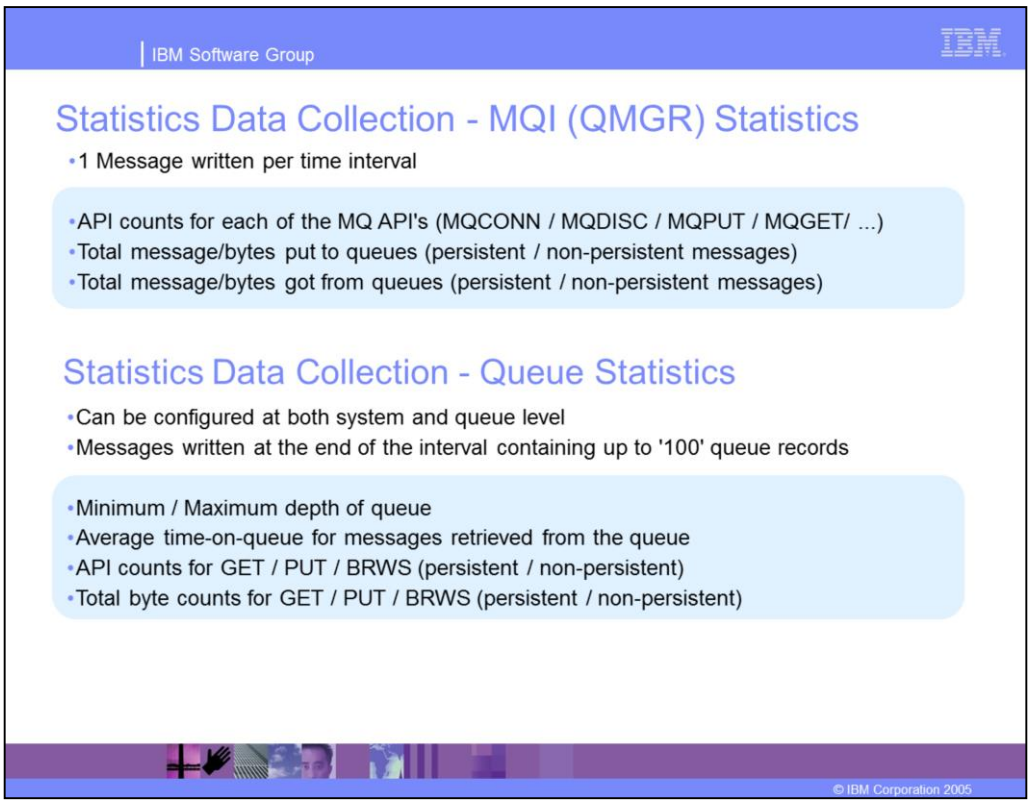
This presentation will cover WebSphere® MQ V6.0 Accounting and Statistics.



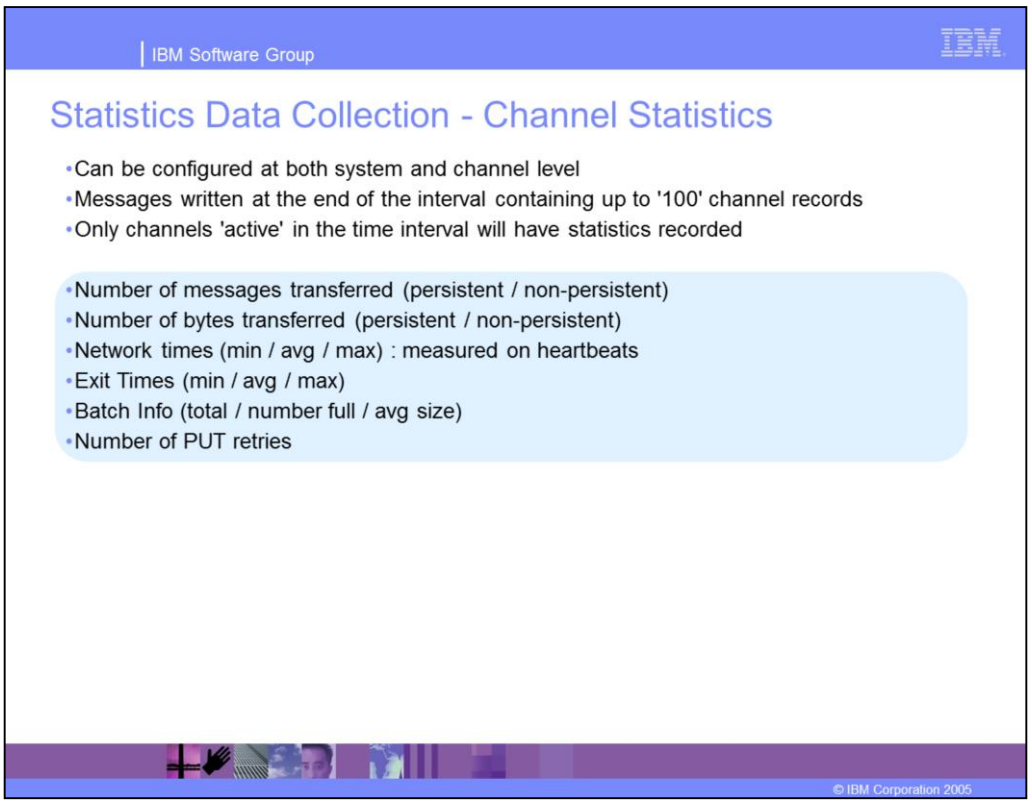
System Monitoring Facility (SMF) is offline monitoring that, at the end of specified interval, packages up all the work that Queue Manager has done. This information can be used for problem determination, performance monitoring, and accounting and charging purposes. This monitoring is split into the logical division of statistics and accounting.



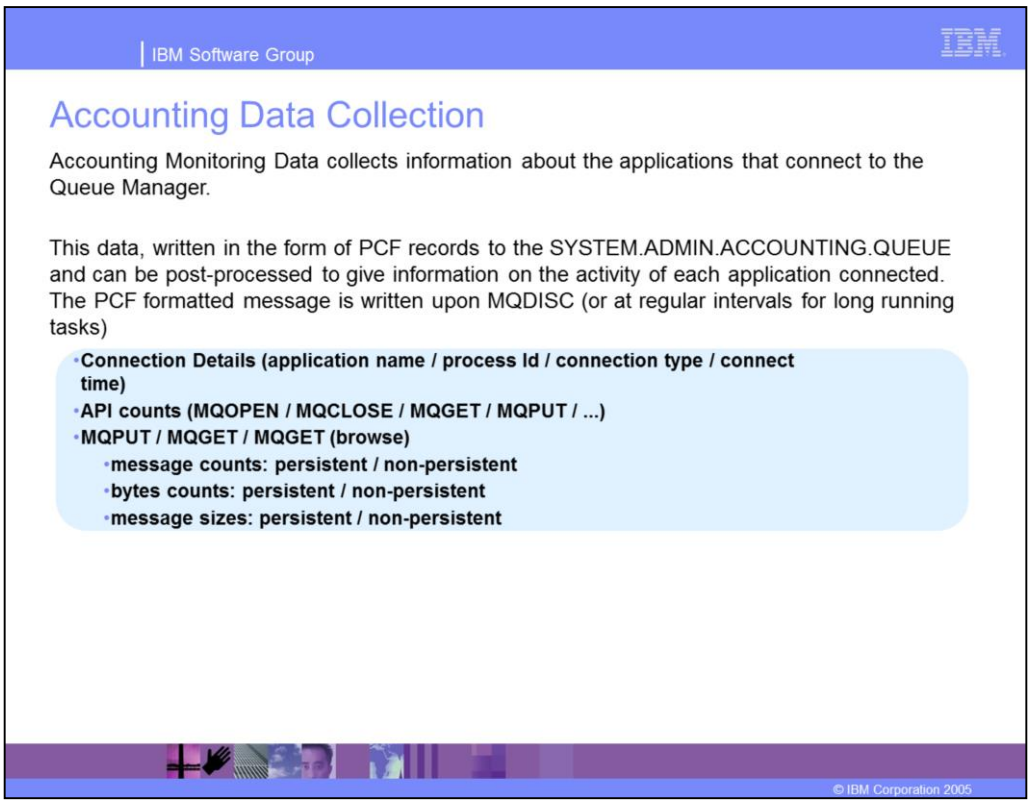
Statistics Data Collection writes WebSphere MQ monitoring data, in the form of PCF, records at configured intervals. This data is split into three classes as shown here, based on queue manager system activity, individual queue activity, and individual channel activity.



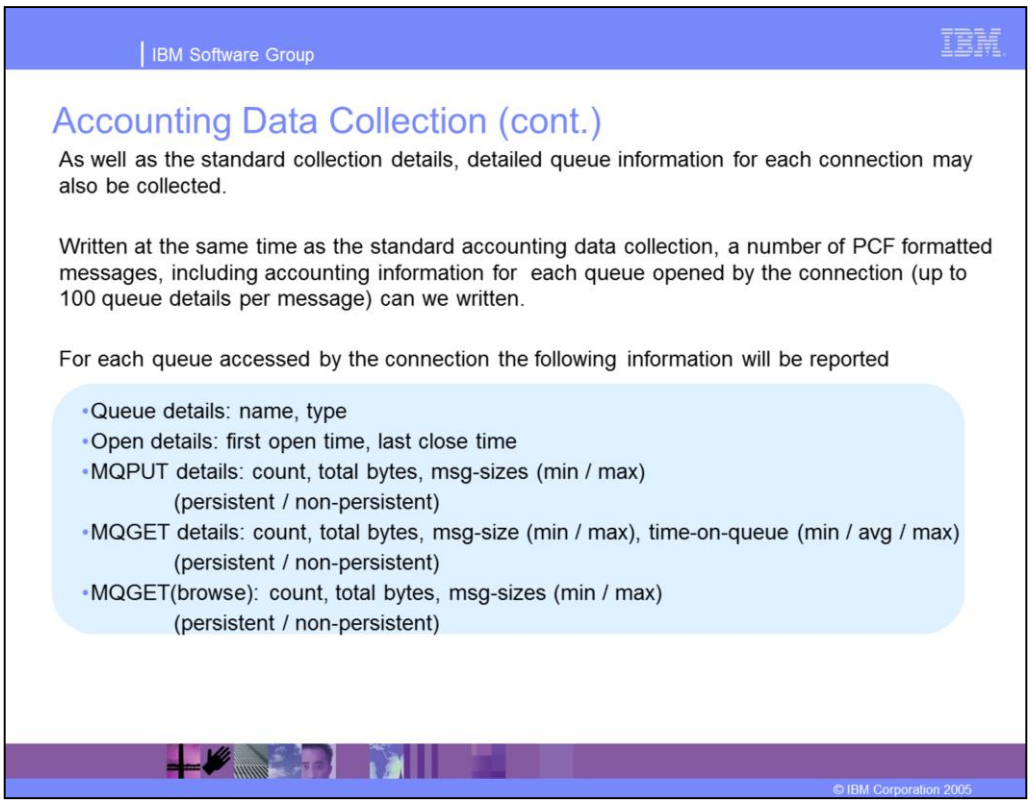
Shown here are some of the statistics that can be gathered at the Queue Manager and the individual Queue levels. API accesses, quantity and size of messages, and total put and get operations performed are among the statistics that can be gathered at the Queue Manager level. Minimum and Maximum depth of queue, average time on queue, and both API and byte counts can be gathered at the individual queue level. This data is provided in the form of a PCF message.



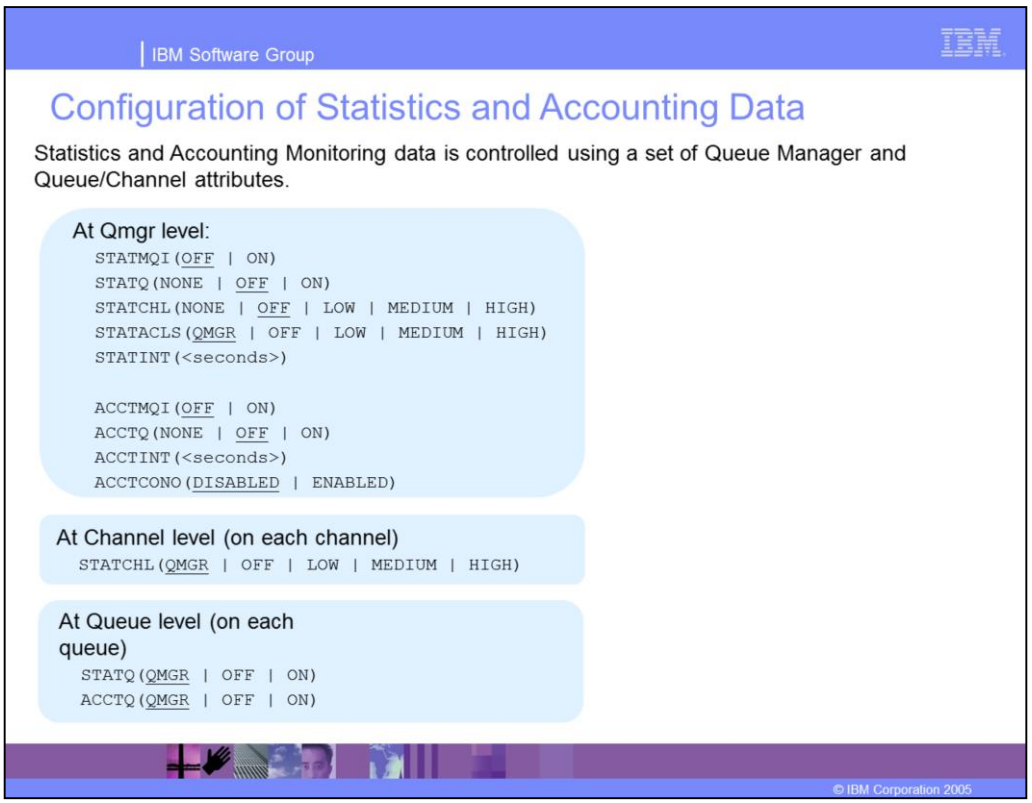
Channel statistics, like queue statistics, are provided in the form of a PCF message containing up to 100 channel records with each channel contained within a PCF group. Statistics include number of messages transferred, bytes transferred, network times, exit times, batch information, and PUT retries. This information is useful in capacity planning.



Accounting monitoring collects information about the applications that connect to the queue manager. Data is provided in the form of a PCF message and in a format similar to that of a statistics message. This message is written to the SYSTEM.ADMIN.ACCOUNTING queue and can be post-processed. Data collected includes connection details, such as application name, process ID, connection type, and connection time, API counts, such as PUTS and GETS, and MQPUT and MQGET calls. There is also information about message sizes and types. This data is useful in determining how system resources are being utilized.



You can also drill down to get more detailed information on a per queue basis, with each queue contained within a PCF group. The data available includes name and type of queue, first open and last close time, and details about MQPUT, MQPUT1, MQGET, and MQGET (browse) operations.



Configuration of Accounting and Statistics data is based upon Queue Manager and object attributes. When the QMGR value is set to DISABLED, collection for that type of monitoring data is disabled for all types of that resource regardless of the setting on the object.

At the queue level, you can configure STATQ and ACCTQ, which determines what statistics you are collected for this queue. QMGR means inherit from the Queue Manager definition STATQ attribute.

At the channel level, you can specify the level of statistics gathering for channels, with QMGR again meaning to inherit the STSTCHL attribute from the Queue Manager. Averages are more accurate at the HIGH level because a larger volume of data is analyzed.

Statistics QMGR attributes

STATMQI - Collect MQI/QMGR based statistics (ON/OFF)

STATQ - Default statistics collection for queues. Can be overriden using per Queue attribute.

STATCHL - Default statistics collection for queues. Can be overriden using per Queue attribute.

STATACLS - Value of STATCHL for Auto defined cluster sender channels.

STATINT - Interval at which collected statistics are written out.

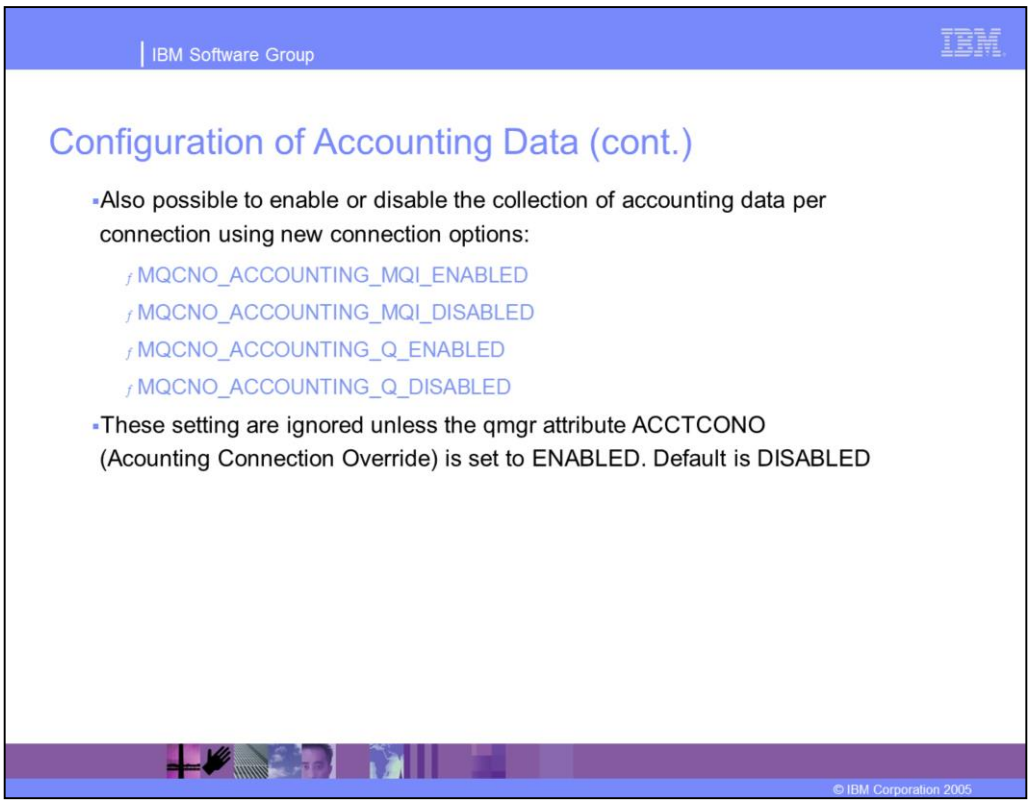
Accounting QMGR attributes

ACCTMQI - Collect MQ/QMGR bassed accounting data (ON/OFF)

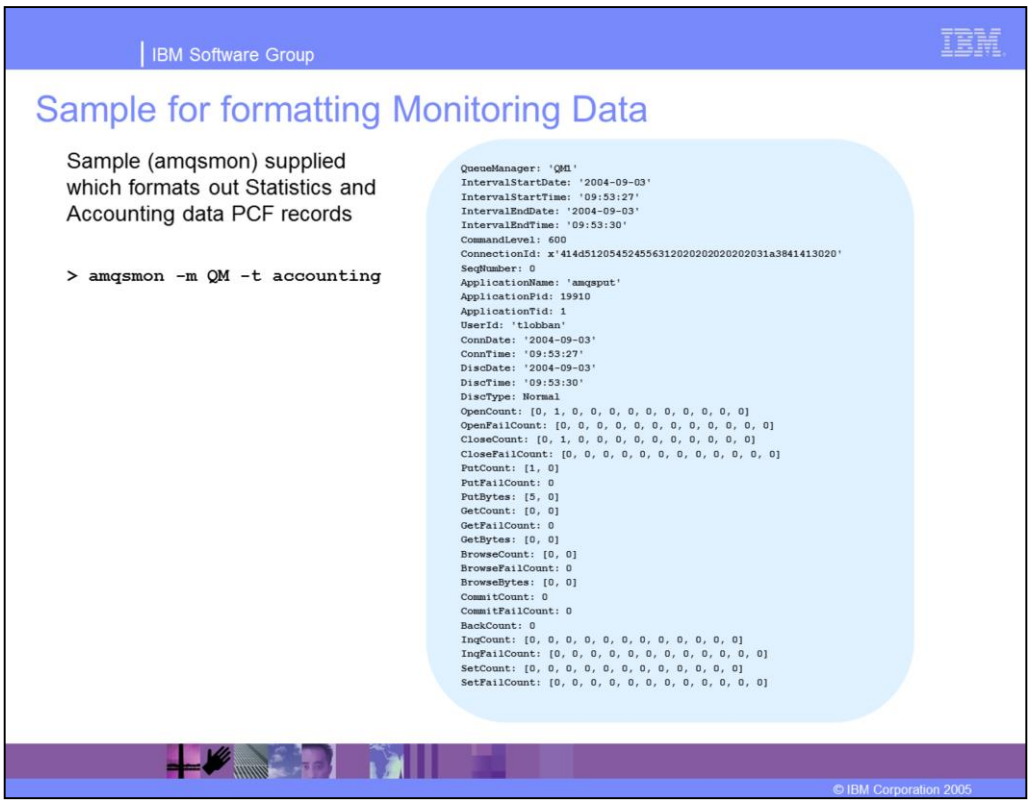
ACCTQ - Default accounting collection for queues. Can be overriden using per Queue attribute.

ACCTINT - For long running connections interval at which intermediate records are written

ACCTCONO - Can the collection of accounting data be overriden using the MQCNO option on the connection



You can now choose to enable or disable MQI or Q accounting.



Shown here is a sample PCF message formatted for better readability using amqsmon with an example of the command syntax.

Trademarks, Copyrights, and Disclaimers

The following terms are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both:

IBM	CICS	IMS	MQSeries	Tivoli
IBM(logo)	Cloudscape	Informix	OS/390	WebSphere
e(logo)business	DB2	iSeries	OS/400	xSeries
AIX	DB2 Universal Database	Lotus	pSeries	zSeries

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are registered trademarks of Microsoft Corporation in the United States, other countries, or both.

Intel, ActionMedia, LANDesk, MMX, Pentium and ProShare are trademarks of Intel Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Linux is a registered trademark of Linus Torvalds.

Other company, product and service names may be trademarks or service marks of others.

Product data has been reviewed for accuracy as of the date of initial publication. Product data is subject to change without notice. This document could include technical inaccuracies or typographical errors. IBM may make improvements and/or changes in the product(s) and/or program(s) described herein at any time without notice. Any statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. References in this document to IBM products, programs, or services does not imply that IBM intends to make such products, programs or services available in all countries in which IBM operates or does business. Any reference to an IBM Program Product in this document is not intended to state or imply that only that program product may be used. Any functionally equivalent program, that does not infringe IBM's intellectual property rights, may be used instead.

Information is provided "AS IS" without warranty of any kind. THE INFORMATION PROVIDED IN THIS DOCUMENT IS DISTRIBUTED "AS IS" WITHOUT ANY WARRANTY, EITHER EXPRESS OR IMPLIED. IBM EXPRESSLY DISCLAIMS ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT. IBM shall have no responsibility to update this information. IBM products are warranted, if at all, according to the terms and conditions of the agreements (e.g., IBM Customer Agreement, Statement of Limited Warranty, International Program License Agreement, etc.) under which they are provided. Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products in connection with this publication and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. IBM makes no representations or warranties, express or implied, regarding non-IBM products and services.

The provision of the information contained herein is not intended to, and does not, grant any right or license under any IBM patents or copyrights. Inquiries regarding patent or copyright licenses should be made, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. The actual throughput or performance that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput or performance improvements equivalent to the ratios stated here.